

camh
FOUNDATION

Research Report
2023

NO ONE LEFT BEHIND



YOU ARE CHANGING MENTAL HEALTH CARE FOREVER.

Thank you for your support of CAMH research and the important role you are playing in improving outcomes and building awareness about mental illness and addiction, here in Toronto and around the world. Together, we are revolutionizing how to predict and diagnose mental illness sooner and ensuring people receive personalized care that is tailored to the individual and their family, making sure no one is left behind.

Across our research enterprise we are proud of the tremendous team of brilliant and compassionate researchers we have recruited—enabled by you—and who are driven to advance care for people who rely on us. This past year included significant leaps in clinical care, headline-generating discoveries, one-of-a-kind educational opportunities and a chance to reconnect in-person with our communities.

In January 2023, CAMH was once again recognized as the top mental health research hospital in Canada. We are delighted to share this accomplishment with you, as it couldn't have happened without philanthropic support. In this report, you will read about how we are using data to ensure people receive the right care at the right time and changing the paradigm for how addiction is treated; learn about our proud history, our accomplishments this year, and where we are headed tomorrow; and meet people whose lives have been touched by CAMH.

What's truly remarkable to me is that it feels like we have only scratched the surface of what is possible. As we approach the groundbreaking on the new Research & Discovery Centre, there is renewed energy in the air. Our teams are excited to show the world what we can really do.

As a CAMH supporter, no doubt you share our belief that addressing mental illness is one of the greatest causes of our time. Thank you for your faith in our vision to revolutionize brain research and change mental health care forever, for everyone.

Sincerely,



Dr. Aristotle Voineskos
*Vice President of Research and
Director of the Campbell Family Mental
Health Research Institute, CAMH*



DELIVERING DATA-DRIVEN MENTAL HEALTH CARE



I decided that I wanted to be the change in my community. I would make it my life's mission to ensure that no child had to reach their breaking point before receiving the help they needed to be healthy.

- Cierra Garrow



Suicide survivor helps develop Canada's largest informatics-based platform for youth mental health

"In high school I tried to end my life three times before I was finally able to access help. And even then, I had to travel six hours away from home to get the treatment I needed to be healthy."

Growing up in Kenora, Ontario, near the Manitoba border, mental health resources for Cierra Garrow were scarce. It took her four years to gain access to the help she needed to begin recovery. Once she got help, she began to regain her zest for life and completely restructured her lifestyle.

"I decided that I wanted to be the change in my community," says Cierra. "I would make it my life's mission to ensure that no child had to reach their breaking point before receiving the help they needed to be healthy."

Today, Cierra is a registered psychotherapist in Annan, just outside of Owen Sound. She's also an advisor on the Canadian Youth Mental Health Insight Platform (CYMHI), launched by CAMH in November 2022. This first-of-its-kind, Canada-wide initiative will use state-of-the-art informatics technology to facilitate high-impact research and the development of innovative youth mental health approaches.

"The CYMHI platform will help ensure that young people across the country have access to the best evidence-informed treatments no matter where they live. Having a platform like the CYMHI would have meant me and my family could have accessed the best practices and known where to search for help at different stages of my illness."

With Cierra's guidance, CAMH is building young people's voices and concerns into the DNA of this project so that knowledge is accessible to everyone.

"We all deserve access to the care we need to be healthy. We all deserve a meaningful, fulfilled and purposeful life and no one will be left behind in this journey because we need other people, and they need us."



By using pharmacogenetics for treatment-resistant depression, clinicians can be much more precise about exactly which drug will suit each person's unique blueprint for the bodily systems that usher the drug into the brain and enable it to fight depression.

- Dr. Jim Kennedy Head, Molecular Science and Head, Tanenbaum Centre for Pharmacogenetics, Campbell Family Mental Health Research Institute, CAMH

Removing the trial and error in treating mental illness

Mental illness treatment often relies on a trial-and-error approach to finding the right intervention. Unfortunately, only one-third of patients respond to treatment and experience remission. Although effective treatments for mental illnesses are available, their success can be limited by a patient's genetic response to medication, which can result in no improvement, or worse, potentially devastating side-effects.

CAMH's Tanenbaum Centre for Pharmacogenetics is dedicated to understanding the way individual genetic profiles affect how people respond to different medications. The goal is for patients to receive personalized care, using gene-guided treatment to select the optimal medication and dose to reduce their symptoms of illness and minimize side-effects.

In 2022, Dr. Jim Kennedy, lead at the Centre, announced the results of a first-in-Canada study that showed pharmacogenetic testing was associated with an 89 per cent increase in remission rates for people with treatment-resistant depression, compared to treatment as usual.

"Remission, or full recovery from symptoms, is one of the most challenging endpoints to achieve when treating major depressive disorder," says Dr. Kennedy. "By using pharmacogenetics for treatment-resistant depression, clinicians can be much more precise about exactly which drug will suit each person's unique blueprint for the bodily systems that usher the drug into the brain and enable it to fight depression."

There are system-wide benefits too. The average health care savings following pharmacogenetic testing, per depression patient, are over \$3,000.

"If half of the 1.6 million Canadians with depression could get the test, savings could total \$2.4 billion per year, in addition to reducing patient suffering during the trial-and-error prescription process."

Feeling true happiness for the first time in a long time

Toronto crown prosecutor, Cara Sweeny, has suffered from depression and anxiety throughout her 20-year legal career. Sweeny works in a challenging environment with a heavy workload. On any given day, she has no choice but to look at child pornography, murder scenes, autopsy photos and child abuse images.

"The stress of the job can really push me over the edge. Anything I can do to manage it is essential to surviving," says Sweeny.

After not responding to a variety of medications for depression and anxiety, at the recommendation of her doctor, Sweeny turned to pharmacogenetics at CAMH. "I'd tried everything and began to think I'd never find something that worked for me."

Genetic testing determined Sweeny's body could tolerate—and in fact needed—three times the standard dose of one anti-depressant drug and she was given the higher dose. Within two months her mood improved dramatically.

"I have this very specific memory of one day opening up my back door to let my dog out, just an ordinary thing, and I felt that feeling of happiness that starts in your gut for the first time in a really long time. It gave me hope for my future—no more trial and error."

HOW TO SAVE A LIFE



What does it mean to save a life? In the most literal sense, the life of Jessica Rogers was saved twice while she was still a teenager when she flat-lined from drug overdoses. But even after her heart started beating again, she was still dead inside and she knew it.

“The physical dependence to heroin and fentanyl and anything I could get my hands on was so strong that I got very sick without it,” says Jessica. “I was using insane amounts hoping to die because I had already lost everything and I just didn’t care anymore.”

Jessica’s life in Toronto had been so traumatic that by the age of 14 she felt the safest place for her was on the streets. Her first suicide attempt came soon after that, along with a diagnosis of anxiety, major depression and later, posttraumatic stress disorder.

“As my life situation got worse, my mental health got worse and I became more suicidal. I kept getting kicked out of places because of my mental health issues and everyone saying my problems were beyond their scope. CAMH was the only place that would take me.”

It was here, at CAMH’s inpatient Concurrent Youth Unit, that she met the doctor who truly brought her back to life. “My doctor there saved me when I couldn’t save myself. I was making a concerted effort to be left behind. She basically was like ‘Too bad. You’re coming with me. The option of you dying is not on the table.’ It’s hard to put into words how phenomenal she is.”

Now 26, Jessica is pursuing a Master’s degree in Public Health while also working both on the front lines and in the field of research to assist survivors of human trafficking. She will also reach the milestone of being five years sober later this year.

Establishing Sudbury’s first supervised consumption site

Sudbury is experiencing a catastrophic opioid crisis. In 2021, the city had a rate of 49.2 opioid-related deaths per 100,000, compared to 18.8 per 100,000 in Ontario overall. Like most of the province, numbers have surged due to the COVID-19 pandemic.

Following a multi-year needs assessment and feasibility study conducted by the Sudbury Community Drug Strategy, there was unanimous support—including all levels of government—to open the city’s first supervised consumption site. The site will offer a safe, clean space where people can bring their own drugs to use in the presence of trained staff. It is expected to open in 2023.

Once the site is operational, a team of CAMH researchers led by Dr. Fariyah Ali, Scientific Lead and Research Manager specializing in substance misuse, will collaborate on evaluation activities with Public Health Sudbury & Districts. Supported by funding from the Curtis Ranger Addictions Fellowship at CAMH, Dr. Ali has presented an evaluation proposal to the Public Health team. The next step will be to develop study materials, such as interview guides and methods, before proceeding with the evaluation in tandem with the opening of the site.

Brain stimulation shows promise as treatment for cannabis use disorder in people with schizophrenia

According to a CAMH-led study published in spring 2022, repetitive transcranial magnetic stimulation (rTMS) was associated with a reduction in self-reported cannabis use by up to 60 per cent among people with schizophrenia who have cannabis use disorder (CUD). One of the reasons there is currently no effective treatment for CUD in people with schizophrenia is that people with schizophrenia or other mental illnesses are usually excluded from CUD clinical trials.

“People with schizophrenia have very high rates of cannabis use disorder compared to the general population, and there is strong evidence that cannabis use worsens psychiatric symptoms and quality of life in these individuals,” says Dr. Tony George, clinician scientist at the Temerty Centre for Therapeutic Brain Intervention. “Despite the known harmful effects, there is currently no approved treatment for CUD with or without schizophrenia. These results indicate rTMS may be a safe and effective way to reduce cannabis use among people with schizophrenia.”

Dr. George says that CAMH is uniquely positioned to do this kind of research.

“In addition to our ability to conduct clinical trials with brain stimulation at the Temerty Centre, CAMH also has one of the largest schizophrenia outpatient clinics in North America as well as state-of-the-art addiction treatment programs. All those factors make CAMH one of the few places in the world that can lead a study like this.”

The first-of-its-kind study was supported by the U.S. National Institute on Drug Abuse and donors to CAMH Foundation.

“

I kept getting kicked out of places because of my mental health issues and everyone saying my problems were beyond their scope. CAMH was the only place that would take me.

- Jessica Rogers

CHARTING THE PATH OF CAMH

In many ways, the history of CAMH’s Queen Street West site and its physical evolution is the history of mental health care in Canada. The address has been home to a mental health facility for over 170 years. Today, CAMH is in the final phase of what has been a 25-year journey of redevelopment and transformation—one that has been powered by philanthropy and will ignite research breakthroughs for decades to come.

The Provincial Lunatic Asylum opens its doors. Walls around the facility were built in stages by patients—unpaid and considered part of their treatment.

The original asylum is demolished to make way for modern treatment facilities. In 1976, the infamous “999 Queen Street” address is changed to 1001 as symbolic separation from its stigmatized past.

CAMH launches its redevelopment master plan to transform the historic 27-acre Queen Street West site. New buildings are designed to connect with the community, promote recovery and shift societal attitudes towards mental health.

Three new residential buildings open as part of the first phase of the CAMH campus redevelopment. Each floor functions as an “apartment,” with six individual bedrooms and shared kitchen, dining and living spaces.

The McCain Complex Care & Recovery Building and Crisis & Critical Care Building open to revolutionize mental health care by offering dignified spaces for patients to heal and recover.



Image courtesy of KPMB Architects, TreanorHL

The next era of transformation at CAMH is focused on research. Fundraising to support construction of CAMH’s Research & Discovery Centre on the Queen West campus is now underway.

Through brain imaging, genetics, big data, new drug development and much more taking place at the Campbell Family Mental Health Research Institute and across the research enterprise within the Centre, we will strive to ensure no one is left behind.

1850

1907

1976

1998

2002

2008

2012

2020

2023

Renamed the Hospital for the Insane, use of the word “hospital” indicates a shift toward a medical approach to care and treatment of people with mental illness.

CAMH is formed through the merger of the Queen Street Mental Health Centre, Clarke Institute of Psychiatry, Addiction Research Foundation and Donwood Institute.

As part of phase two, the Campbell Family Mental Health Research Institute, Temerty Centre for Therapeutic Brain Intervention, and Tanenbaum Centre for Pharmacogenetics open, ushering in a new era of brain and mental illness research.

THE RESEARCH & DISCOVERY CENTRE



Our vision

The Research & Discovery Centre at CAMH will be a global symbol for mental health research that inspires hope by enabling the discovery of the causes of mental illness and potential treatments and early interventions.

Where we are going

- 1** Revolutionize our understanding of the brain, and causes and biomarkers of mental illness and treatments.
- 2** Transform CAMH so that every patient, clinician and stakeholder becomes a partner in research.
- 3** Gather evidence to drive system and social change to optimize care.

How we will get there



Uncover the fundamental mechanisms in mental illness and brain health.



Advance precise and personalized diagnosis, prevention, care and treatment options that transform outcomes.



Establish preventive and policy interventions that reduce the burden of mental illness, including addictions, across populations.

A STATE-OF-THE-ART HOME FOR CAMH RESEARCH AND INNOVATION

The CAMH Research & Discovery Centre will create over 385,000 square feet of collaborative space where researchers, scientists, clinicians, patients and families come together to drive mental health research forward. It will enhance CAMH's ability to engage more patients and families into research in safe, dignified spaces, enriching the quality and outcomes of our work. The world's best scientific minds and the next generation of mental health leaders will be drawn to CAMH to advance discovery into new treatments.

Mental health researchers across CAMH are saving lives today. The Research & Discovery Centre will equip CAMH experts with cutting-edge infrastructure and the latest tools and technologies to better diagnose, treat and prevent mental illness. The CAMH Research & Discovery Centre will become the incubator for innovations that are already breaking down barriers and leading to world firsts and improved care, including the following.



Image courtesy of KPMB Architects, TreanorHL

Geriatrics and Youth

A faster treatment for depression in seniors

Depression that does not respond to conventional treatments poses unique risks for people over 60. Bilateral repetitive transcranial magnetic stimulation (rTMS) is a noninvasive procedure that uses magnetic fields to stimulate nerve cells in the brain and has been shown to improve symptoms of depression. Theta burst stimulation (TBS) is a newer form of rTMS, believed to be as effective at treating depression, but requiring only about four minutes of treatment time, compared with the standard 45 minutes. In a recent study, CAMH researchers found that TBS can indeed be as effective as traditional rTMS. These findings could help drive substantial improvements in both clinical capacity and treatment cost by reducing treatment time, and increase access to treatment several-fold for older adults with treatment-resistant depression.

Using data to understand mental illness in youth

CAMH's Toronto Adolescent & Youth (TAY) Cohort Study aims to better understand how certain symptoms of mental illness can develop, who is at an increased likelihood of developing certain mental health challenges, and how we can better support young people. This groundbreaking longitudinal cohort study will follow 3,000 youth aged 11-24, who are currently accessing mental health services within the Child, Youth, and Emerging Adult Program at CAMH. Over the course of the study, each participant has the opportunity to participate in different activities that look at biological (i.e., brain structure, heart rhythms), clinical, cognitive, social and family-based data. This information will be used to build a thorough, multi-scale picture of the whole individual from genes to brain, behaviour and community.

Health Equity

Providing Africentric care to Black youth

The Substance Abuse Program for African Canadian and Caribbean Youth (SAPACCY) at CAMH provides accessible, Africentric and racial trauma-informed support to Black youth who are dealing with mental health and substance use concerns. The program strives to break down barriers to care faced by Black youth trying to access mental health care. Researchers like Dr. Akwatu Khenti, an Affiliate Scientist with the Institute for Mental Health Policy Research at CAMH, played an integral role in the development of SAPACCY and its growth. Due to the tremendous success of the program and a clear need for the services provided, SAPACCY recently secured annual funding that will increase staffing for the program at CAMH, while creating seven new SAPACCY-inspired services within community organizations across the province.

Trans people accessing care more likely to experience marginalization

According to a recent CAMH-led study, transgender individuals who access acute mental health care are more likely to experience marginalization, present with mood disorders, and are twice as likely to be diagnosed with personality disorders than the general population accessing these services. The study is the first to use administrative health data to explore how transgender patients access mental health care services. For a transgender patient, having to teach care providers about the importance of using the correct name and pronouns can be a very disheartening and invalidating experience. Research like this is vital, as it will allow care providers to identify and address the service gaps that exist for trans people seeking care, by offering inclusive intake response options.



Images courtesy of KPMB Architects, TreanorHL

Mood Disorders

CAMH receives first CIHR grant to study psilocybin for treatment of depression

In 2022, CAMH was awarded Canada’s first federal grant to study psilocybin—the chemical component of “magic mushrooms”—with regard to its effect on treatment-resistant depression. Researchers will explore whether experiencing psilocybin’s psychedelic effects are required for it to have antidepressant effects. Previous clinical trials demonstrated significant and sustained antidepressant effects of psilocybin when combined with intensive psychotherapy. If this study shows that psilocybin is still effective at treating depression without inducing a psychedelic state, it could eliminate the time-intensive and costly need for psychological support during treatment. This would make the treatment more accessible both for health care funders, and for those seeking treatment. Previously, CAMH was the only Canadian site for the world’s largest clinical trial of psilocybin in mental health to date, which was instrumental in advancing psilocybin as an emerging treatment for depression.

Electroconvulsive therapy reduces suicides by 50%

According to a recently published CAMH and Institute for Clinical Evaluative Sciences (ICES)-led study of over 67,000 patients, electroconvulsive therapy (ECT) was associated with a 50 per cent reduction in risk for suicide among patients with depression in the year after their hospitalizations. This is the most convincing study to date that establishes a clear link between ECT and suicide prevention, and builds on a 2021 CAMH study using ICES patient data that established that ECT is safe. This most recent study reinforces the importance of ensuring access to ECT for inpatients admitted with severe depression—in Ontario, across Canada and around the world—because it can save lives. Researchers in the study hope it alleviates misconceptions among providers and patients about what ECT is and when it can be effectively used.

Neurodiversity

Mindfulness interventions delivered virtually can help autistic adults

Mindfulness-based interventions have been shown to help reduce psychological distress in autistic adults; however, limited research has been conducted about virtual delivery in the autism community. In collaboration with autistic adults, CAMH researchers designed an adapted virtual group-based mindfulness intervention, and evaluated its feasibility in terms of demand, acceptability, implementation, practicality, adaptation and efficacy. There was high demand for the course, adaptations were successful and participants indicated good acceptability of the intervention. The research team determined that autism-informed adaptations to standard mindfulness-based interventions can lead to self-reported improvements in mindfulness, self-compassion and distress by autistic adults. They believe continued research with outcome measures tailored toward autistic adults will be important, during and post-pandemic.

Partnering with patients with intellectual and developmental disabilities to improve outcomes

Previous research has shown that poor health, combined with poor health care, puts adults with intellectual and developmental disabilities (IDD) at greater risk for repeated emergency department visits and hospitalizations, delayed discharges and premature mortality. Major contributing factors to this situation include health care providers feeling ill-equipped to adapt care to the needs of these individuals and patients with IDD and their caregivers not feeling empowered or prepared to effectively manage health care interactions. CAMH researchers partnered with patients with IDD and care providers to develop effective communication tools that better reflected the needs of the patient community. This project demonstrated that with the right supports, patient and family advisors can effectively leverage and communicate their experiences to share their expertise, thereby helping to improve outcomes.

NOTHING IS GOING TO HOLD ERICA BACK

Born with an intellectual disability and later diagnosed with major depressive disorder and borderline personality disorder, Erica Streisslberger has often been told what she supposedly can't do. But she won't let anything, or anyone, hold her back from reaching her goals.

"I have the mentality that, if you think I can't do something, I'm going to prove you wrong," says Erica. "I want to help give more people a voice and show them that if I can do something, they can too."

After hearing Erica speak at a CAMH Foundation event, Dr. Yona Lunsky, Director of CAMH's Azrieli Adult Neurodevelopmental Centre, asked her if she would come



I have the mentality that, if you think I can't do something, I'm going to prove you wrong...I want to help give more people a voice and show them that if I can do something, they can too.

- Erica Streisslberger

give her input on the work they were doing as a person with lived experience. Erica became an Azrieli advisor, playing a key role on several different projects including the ECHO Ontario Adult Intellectual and Developmental Disabilities program, launched in 2020.

Erica was integral to the early success of the program, providing the patient's perspective to care providers about seeking help and navigating the mental health system and other supports. Today, the course is in high demand and the team has since had four other self-advocates supporting them—a testament to Erica.

"We all have something to offer. We just have to stick together and support one another."



CAMH RESEARCH BY THE NUMBERS

A HOME FOR INNOVATION

#1 Canada's top mental health research hospital

2ND

Most research-intensive hospital in Canada in its category

Among medium-sized hospitals with annual budgets between \$500M and \$1B. Research intensity = research dollars as percentage of total hospital spending.

Source: Research Infosource Inc.

\$60.17M

Total value of new research grants awarded

(2021-22)

1,005

Articles published

in peer-reviewed journals (2022)

23

Research chairs

CAMH research personnel

526 Research staff

162 Scientists

638 Trainees



One of the few imaging centres **in the world** fully dedicated to research of mental illness

2,020 Global research collaborations in



132 countries

NO ONE LEFT BEHIND

“No one left behind” is a rallying cry. To stand together, to bring one another strength and to search for answers that don’t yet exist. And if we can’t find what we need, we build it. As Canada’s largest mental health hospital and one of the world’s leading research centres in its field, CAMH is prepared to go further than ever to support those facing mental illness.

With a \$500M fundraising goal, No One Left Behind is the world’s largest fundraising campaign to support hospital-based mental health research. The campaign will support two key elements: life-saving mental health research programs at CAMH and building a new Research & Discovery Centre at CAMH’s Queen Street site in Toronto.

Because of donors like you, we have raised more than \$400M and counting toward our comprehensive goal. This total raised in the past five years is more than CAMH Foundation has raised over the past 20 years combined, demonstrating changing societal views of mental health, CAMH’s growing leadership in the mental health space, and greater understanding of the need to support this cause. Thank you.



THANK YOU

Thank you for your support of CAMH research. Your generosity has been critical in bringing us to where we are today, and we’re only just getting started.

Our **No One Left Behind** campaign gives us an opportunity to reflect on how far we have come with respect to society’s views on mental illness and addiction. Not that long ago, the level of stigma in these areas prevented many people from publicly supporting mental health causes.

Our donor community has helped lay the groundwork for the societal shift in public attitudes toward mental illness and addiction and the resulting groundswell in public support. This has culminated in a growing number of named research centres of excellence at CAMH and the momentum needed to attract the brightest minds to Toronto to advance more incredible breakthroughs for people around the world.

Your continued dedication to CAMH has set us up to capture the opportunities ahead and ensure no one is left behind. In the coming year, We look forward to breaking ground on the Research & Discovery Centre—a beacon of hope that is only possible because of supporters like you.

I am so excited for what the future holds, as we change mental health care forever. Together.

Thank you.

Sincerely,

Deborah Gillis
President & CEO, CAMH Foundation



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