

Summary Report on the delivery and impact of MindBeacon TAiCBT in Ontario during the COVID-19 pandemic

By: Dr. Matt Balcarras, Michelle Levine, Dr. Lori Ann Blessing, Dr. Leorra Newman, Dr. Kayleigh-Ann Clegg and Colin Andersen.

Abstract

The COVID-19 pandemic increased the demand for mental health services, while simultaneously making it harder to access traditional therapy delivery models. Digital mental health services, including Therapist-Assisted Internet-Delivered Cognitive Behavioural Therapy (TAiCBT), have been available for more than a decade, but widespread adoption has not yet occurred despite the potential for faster and more equitable access.

Beginning in early 2020 and continuing through fall 2022, MindBeacon offered TAiCBT to the general public of Ontario as part of the government's pandemic response to the increased demand for mental health services. This offering was unprecedented. Never before had TAiCBT mental health services been made available province-wide to Ontarians directly, and with costs covered by the province. The utilisation of the program was also unprecedented, with tens of thousands of people seeking and receiving treatment, many for the first time, and many after needing treatment for a long time.

This report describes MindBeacon's TAiCBT program, its successful delivery to the people of Ontario during the pandemic, lessons learned, the usage and successful impact of treatment on symptoms, and patient satisfaction. This initiative provided innovative made-in-Canada virtual services that can serve as an effective and cost-effective model for mental health care.

Executive Summary:

With the support of the Ontario government, CloudMD's TAiCBT program (MindBeacon) helped meet the mental health needs of some 65,000 people during the pandemic, with significant health equity benefits, broader and more timely access to care and reduced stigma.

This initiative provided innovative made-in-Canada virtual services that can serve as an effective and cost-effective model for the rest of the country. These services can also continue to help address burnout, better use of the health care system and economic recovery.

Furthermore, the collaborative program demonstrated at scale the valuable place TAiCBT has in the continuum of Canadian mental health care.

It should be noted that at the outset of the program, several key decisions regarding scope and design were made to ensure timely program implementation, reduce barriers to entry and increase the willingness of patients to seek help. As the pandemic wore on, ways to improve health equity and build stronger connections to primary care and the mental health system at intake and discharge were explored and those lessons have been incorporated into this paper as well.

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| Takeaway/Key Data Points | Why it's Important |
|---|---|
| <p>Faster time to the right treatment</p> <ul style="list-style-type: none"> ● 5 days average time to start, not weeks/ months ● 63% reported first symptoms over a year prior to seeking treatment ● 92% of people who were offered treatment started it | <p>Keeping the momentum going for the patient from the time they outreach, seek assessment and enter treatment sustains engagement and likelihood of continuing.</p> |
| <p>Access to services outside office hours</p> <ul style="list-style-type: none"> ● 57% of content done outside office hours ● 90% patients engaged outside office hours | <p>Improves access for patients who otherwise couldn't access services during the day (shift workers, parents). Convenience for all patients improves participation.</p> |
| <p>Access for people getting supports for the first time</p> <ul style="list-style-type: none"> ● 51% of patients were new to therapy ● 55% of health care worker and 58% of student patients sought treatment for the first time | <p>Connecting people to services as early as possible has personal and system benefits.</p> |
| <p>Effective treatment for all ages, genders, protocols and symptom severities</p> <ul style="list-style-type: none"> ● 60% of patients with clinically severe depression symptoms experienced reliable symptom improvement; 64% for anxiety ● Half of all depression patients were severe or moderately severe; 89% for anxiety patients. | <p>TAiCBT mental health programs are not just for the young or people with mild/moderate symptoms. Compares favourably with other forms of treatment and experience in other jurisdictions.</p> |

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| <p>Health equity improvements</p> <ul style="list-style-type: none"> • 32% patients identifying as racialized persons reflects diverse population of Ontario. • 55% of clients identified as not full time employed (likely without benefits). | <p>Good general result given access is often difficult for marginalized groups or people living in underserved areas. Targeted outreach and relevant content could improve health equity further.</p> |
| <p>Comorbidities and complexity were common</p> <ul style="list-style-type: none"> • Multiple concurrent mental health and physical health issues (chronic disease, pain) • 7 of 10 depression patients also had anxiety symptoms | <p>Treating the patient holistically speeds up both their mental and physical health recovery. Integrating TAiCBT into stepped care programming allows patients to be triaged or moved into higher intensity services if they need them. Need to provide for >1 presenting issue.</p> |
| <p>Cost effective</p> <ul style="list-style-type: none"> • 1/5th cost of traditional treatment | <p>Benefits funders as well as patients, health care organizations and the health system writ large. Integrating multiple entry points and coordination with employers/insurers would enable government to be payor of second resort and focus its limited resources on those without benefits.</p> |
| <p>Health human resource efficiency</p> <ul style="list-style-type: none"> • TAiCBT therapists can support 3x the caseload weekly • Therapists working remotely can support patients across Canada | <p>Staffing shortages can be mitigated plus surge and specialization capacity is broadened by accessing a cross-Canada network of clinicians.</p> |
| <p>Symptom severities and overall demand increasing</p> | <p>Psychological impacts of crises have been shown to last 3 years past the crisis itself.</p> |
| <p>Easy to use referrals were essential, no single way in</p> <ul style="list-style-type: none"> • 99% used self-referral pathway | <p>Primary care, acute care and self-referral models have alleviated waitlists and given referrers and patients more options. Interoperability and OHIP billing codes would help access from primary care where most patients seek help first.</p> |

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| <p>Effective pandemic response</p> <ul style="list-style-type: none"> Observed spikes in referrals for mental health supports with successive lockdowns | <p>Enhanced local and onshore capacity to address crisis. Patients and therapists alike able to participate from remote locations.</p> |
| <p>Inconsistent awareness of available supports amongst the public, referring clinicians, other ministries and associations</p> | <p>People and organizations whose clients who could have benefited were unaware of available supports, impacting health equity and resulting in lost opportunities to address waitlists.</p> |
| <p>Patient-centred care</p> <ul style="list-style-type: none"> 75% of patients felt the program was valuable 70% were satisfied with the program 81% of patients felt supported by their therapists Effective all ages, genders, severities | <p>Core TAiCBT elements (personalization, therapist guidance, multiple interactions per week, and measurement-based care) help empower patients, increase choice, and keep them engaged and progressing. Program implementation needs to stay patient-centric and not drift to process-centric, especially as special cases inevitably arise.</p> |
| <p>Rigorous online assessment available 24/7 sped up time-to-treatment</p> | <p>Provincial and regional programs should leverage standardized online assessments to achieve efficiencies, improve triage and time to treatment.</p> |

See also Appendix A for a comprehensive list of Key Data Insights

The collaborative TAiCBT program between the Ontario government and CloudMD's MindBeacon set out what it intended to do – improve access to effective therapy at scale to Ontarians during a pandemic. Benefits went beyond those to individual patients, with observed health equity gains, stigma reduction, cost and human resource efficiencies and better use of the health care system. Lessons learned during the project have informed ongoing mental health offerings at the primary, acute, community and provincial level, providing an effective and cost-effective made-in-Canada model for the rest of the country to consider as provinces and regions seek to address burnout, better use of the health care system and economic recovery.

Furthermore, the collaborative program demonstrated at scale the valuable place TAiCBT has in the continuum of Canadian mental health care.

Background & Introduction to MindBeacon's TAIcBT

In 2017, the Ontario Telemedicine Network ("OTN" which is now part of Ontario Health) issued a request for services (RFS) for mood and anxiety solutions. The request focused on using an “innovative technology solution to help provide timely care and support to those suffering with mental health and addiction issues.” The stated objectives were to:

- Support people to manage their mental health and addiction problems
- Provide timely access to care
- Reduce stigma associated with mental health and addictions issues
- Increase willingness to seek help for mental health and addiction issues
- Improve quality of life

MindBeacon submitted and was selected from a competitive process to provide its Therapist-Assisted Internet-based Cognitive Behavioural Therapy (TAiCBT) solution. The original vision was to establish a Vendor of Record to enable OTN members to provide faster access to appropriate mental health care in their communities. The COVID-19 pandemic, an unprecedented world-wide public health crisis resulted in province-wide shutdowns and limited access to mental health services at a time when the need for those services was acute. To meet this need, the Government of Ontario leveraged their existing service agreements with TAIcBT providers to provide mental health services to all Ontarians aged sixteen and older.

Within two weeks of a state of emergency being declared, on March 31, 2020, OTN and MindBeacon signed an amended agreement focused on expanding access to TAIcBT to provide support for people experiencing anxiety, stress and other mental health challenges in the wake of the COVID-19 pandemic. Just over one month later, on May 5, 2020, the Ontario TAIcBT program began serving patients.

Several key decisions regarding scope and design were made to ensure timely program implementation in light of the pandemic and also to address the original objectives. First, patients were able to self-refer to the service. Due to challenges accessing health services in-person during the pandemic, self-referral was an efficient pathway that did not burden family doctors or other mental health service organisations. In addition, this pathway aligned with several of the program’s goals – empowering people to manage their mental health issues, providing timely access, reducing stigma, increasing willingness to seek help, and helping to improve quality of life during a trying time.

Furthermore, patients were required to review and provide only minimal information (e.g., read brief service descriptions; provide email address, age, and emergency contact information) prior to accessing the assessment for the TAIcBT service, again helping to reduce barriers to entry and increasing the willingness of patients to seek help. As the pandemic wore on, the scope of data collection and implementation was expanded in order to improve health equity and build stronger connections to primary care and the mental health system at intake and discharge.

During the program implementation, particular emphasis was placed on providing resources for health care workers and post-secondary education students. During the early days of the pandemic, health care workers experienced particularly precarious working conditions and as the pandemic wore on, concern about burnout was high. MindBeacon developed modules to support frontline health workers and monitored their participation in the program. Post-secondary students had been the focus of the original pilot program, and MindBeacon continued to monitor their engagement in the Ontario TAIcBT program as the referral model shifted from hub-referral to self-referral.

At the outset of the pandemic, the Ministry of Economic Development, Trade and Job Creation, through the Ontario Together Fund, asked the supply and innovation communities to submit proposals to help address the spread and impact of COVID-19 on communities, with both an economic impact and building local capacity focus. As a Toronto-based, innovative company, MindBeacon also aimed to address these objectives. Given that a significant majority of patients start their search for mental health services with their primary care provider, MindBeacon proposed and was awarded funding to explore ways to improve access for both patients and referring clinicians. Key facilitators such as interoperability, integration with workflows and communications tools were identified and are discussed later in this paper.

Promotion of the program was limited. While the government did not permit program advertisements, there were several ways that patients learned about the service. The provincial government promoted the program on their website and through public announcements ([Office of the Premier, 2020](#)). Patients searching for mental health programs in Ontario could access the MindBeacon website where they were directed to the free service. Patients searching online for free mental health services were provided information about the program. Some patients learned about the Ontario TAIcBT program from their health care provider as MindBeacon proactively developed relationships with family health teams, community mental health hubs, hospital mood and anxiety clinics and their associations. These providers directed patients to the Ontario TAIcBT program website if TAIcBT was identified as an appropriate treatment.

Given the uncertainties of the pandemic, the COVID TAIcBT program was extended several times and ultimately re-competed to refresh the provider list. Based on the success and lessons learned from the Ontario TAIcBT program, as well as insights from the UK's IAPT program, the government elected to incorporate TAIcBT services into the permanent Ontario Structured Psychotherapy Program (OSP). MindBeacon was one of the companies competitively selected to provide TAIcBT in the new, more integrated service. The Ontario TAIcBT program wound down in Q3 2022 and ended on September 30, 2022, in preparation for the new OSP TAIcBT program. As of March 31, 2023, MindBeacon TAIcBT is available province-wide as part of OSP.

Treatment Structure

MindBeacon TAIcBT is a therapeutic digital mental health intervention. Patients register on MindBeacon's website, where they can complete an assessment and access the treatment protocol that addresses their particular mental health concern(s). Each program consists of

readings, videos, activities and worksheets that are unlocked by a single assigned therapist as the patient progresses through evidence-based treatment. The therapist, who is a master's level registered clinician, and patient communicate through asynchronous text messaging, and the therapist supports the patient by encouraging them to engage with the material, reviewing and providing feedback on completed worksheets, and monitoring outcome measures (e.g., PHQ-9, GAD-7, PCL-5). The therapist personalizes the patient's journey, selecting content based on the patient's needs, progress and preferences. A standard course of treatment lasts up to 12 weeks, and patients have access to their completed materials and message history for 40 weeks after treatment ends.

Service Path

Patients accessed the Ontario TAIcBT program via self-referral or hub-referral. Self-referred patients independently created accounts on the MindBeacon website and submitted an assessment for free TAIcBT services. Hub-referred patients sought mental health services at their local acute or community mental health centre, where based on the patient's needs, schedule and preferences, TAIcBT would be recommended as the first course of treatment. If the patient agreed, their contact information was provided to MindBeacon and they were sent a personal invitation to complete the MindBeacon assessment.

Assessment

To determine suitability for the TAIcBT program, patients completed a non-diagnostic assessment, available online 24/7, with no wait time. The assessment consisted of a combination of structured and open-ended questions (e.g., "What brings you here?", "What do you hope to achieve during your time on MindBeacon?") and validated screening instruments (e.g., the Patient Health Questionnaire, PHQ-9; Kroenke et al., 2001) used to determine the likely presence or absence of various mental health concerns and their associated symptom severity. The assessment also asked about stressors, social support, physical health, and overall functioning. Registered health professionals (e.g., social worker, psychotherapist, or psychologist) reviewed each assessment and assigned appropriate patients to a therapist, who was also a registered health professional. Patients could request to be matched with a therapist with particular experience or background (eg gender, LGBT2SQ+). Patients were considered appropriate for treatment if they:

- Resided in Ontario
- Were 16 years or older
- Were able to read and write in English or French
- Had access to a computer and internet
- Did not endorse active suicidality, homicidality, self-harm, uncontrolled psychosis, mania, or severe eating disorder, or were not dependent on one or more substances
- Provided contact and emergency contact information

MindBeacon TAIcBT Treatment

MindBeacon offers protocols to treat a range of mental health concerns with the number of protocols offered growing over time. Initially patients could be treated for: generalized anxiety, depression, post-traumatic stress, social anxiety, panic disorder, insomnia, or chronic pain. Treatments for stress, illness anxiety, alcohol use, grief and loss, chronic illness and obsessive-compulsive concerns were added during the Ontario TAIcBT program, to address reasons potential patients were ineligible for treatment and to reflect observed increasing comorbidities.

Patients were assigned to the TAIcBT protocol that best matches their primary mental health concern. Therapists are encouraged to remain adherent to the prescribed treatment delivery guidelines but may use clinical judgement to tailor content to address specific patient needs. For example, therapists sometimes incorporate the use of materials outside of the standard protocol for safety reasons (e.g., risk management where suicidal ideation is reported), or to address comorbid conditions (e.g., depression and alcohol, generalized anxiety and insomnia).

Measuring Treatment Impact

Throughout treatment, patients complete standard outcome measures in order to monitor changes in their symptoms over time. Therapists use these scores to inform clinical decision-making and personalize treatment as part of a measurement-based care approach. Each treatment protocol has a primary outcome measure which patients complete on the first day of treatment and then ultimately weekly (relative to the patients' previous completion) throughout treatment. The primary outcome measures for each treatment type are listed in Table 1 below (National Collaborating Centre for Mental Health, 2021).

In addition, as part of the Ontario TAIcBT program, all patients had to complete the PHQ-9, Generalized Anxiety Disorder-7 scale (GAD-7; Spitzer et al., 2006), and the Work and Social Adjustment Scale (WSAS; Mundt et al., 2002) at regular intervals.

As part of MindBeacon's commitment to continuous improvement and evidence-based treatment, treatment content and structure is revised over time to align with international standards, best practice recommendations, and up-to-date research. Revisions can include changes to the type or frequency of outcome measures used to assess patient symptoms. Consequently, some patients are missing outcome measure data for analysis.

Furthermore, MindBeacon has adopted the IAPT methodology for outcome reporting including its thresholds for caseness and reliable change (Table 1).

Table 1. Primary outcome measure, clinical cut-offs and reliable change index by treatment protocol

| Treatment Type | MindBeacon Primary Outcome Measure | Outcome Measure for IAPT calculations | IAPT Caseness threshold | IAPT Reliable change Index |
|----------------|------------------------------------|---------------------------------------|-------------------------|----------------------------|
| Alcohol | AUDIT | PHQ-9 | 10 | 6 |
| Chronic Pain | PFQ | PHQ-9 | 10 | 6 |

| | | | | |
|----------------------------|-------------------|-------|----|----|
| Depression | PHQ-9 | PHQ-9 | 10 | 6 |
| Generalised Anxiety (GAD) | GAD-7 | GAD-7 | 8 | 4 |
| Illness Anxiety | SHAI | SHAI | 18 | 4 |
| Insomnia | SLEEP | PHQ-9 | 10 | 6 |
| Obsessive-Compulsive (OCD) | OCIR | PHQ-9 | 10 | 6 |
| Panic Disorder | PDSS | PDSS | 8 | 5 |
| Posttraumatic stress | PCL-5 | PCL-5 | 32 | 10 |
| Social Anxiety | SIAS-6/SPS-6/SPIN | SPIN | 19 | 10 |
| Stress | PSS | PHQ-9 | 10 | 6 |

Results of Service Offering & Impact on Patient Symptoms

Demographics

The Ontario TAiCBT program was available to all Ontarians aged sixteen and older, and the patients who sought care reflected the diverse population of the province. Approximately 32% of MindBeacon’s patients were members of a visible minority group compared to 34% of the Ontario Population (Table 2; Statistics Canada, 2021).

Table 2. Percentage of MindBeacon patients reflects diverse population of Ontario

| | MindBeacon - COVID-19 program (%) | 2021 Census - Ontario (%) |
|---|-----------------------------------|---------------------------|
| Total visible minority population | 31.82% | 34.33% |
| South Asian | 9.01% | 10.80% |
| Chinese | 3.58% | 5.85% |
| Black | 4.57% | 5.48% |
| Filipino | 2.07% | 2.59% |
| Arab | 1.54% | 2.03% |
| Latin American | 2.24% | 1.78% |
| Southeast Asian | 0.83% | 1.20% |
| West Asian | 1.11% | 1.51% |
| Korean | 0.55% | 0.71% |
| Japanese | 0.11% | 0.22% |
| Visible minority (not included elsewhere) | - | 0.88% |
| Multiple visible minorities | 1.48% | 1.29% |
| Other | 3.64% | - |
| Not a visible minority / White | 69.29% | 65.67% |

There were some small differences in the proportion of visible minority groups between MindBeacon and the Ontario population. The lower number of patients identifying as a visible minority group may be because MindBeacon patients had the option to select ‘Other’. It could

also be because MindBeacon only introduced the option to select “multiple visible minorities” partway through the Ontario TAiCBT program. Patients who did not wish to be identified or those with more than one ethnicity may have selected the “Other” category, reducing the percentages in other categories.

Patients indicating they identify as First Nations at 1.3% was close to the 1.79% of Ontarians who identified as First Nations in the 2021 census. A potential improvement to MindBeacon’s platform for Indigenous patients would be to add additional ethnicity options, such as adding Métis, and Inuk (Inuit) to the list of options, which would align with both the 2021 Census and the new OSPP program.

Across demographic groups, the most common patient profile was heterosexual, female, aged 26-35, with university as the highest level of education, and working full-time. Most patients (64%) were female (reflective of other mental health services as well). This percentage was higher among students (74%) and highest among health care workers (86%). Twenty per cent of patients identified as LGBT2SQ+, and this percentage was lower for health care workers (13%) and higher for students (24%).

As mental health supports are generally not broadly covered by provincial health plans, the Ontario TAiCBT program made mental health services more accessible to a large number of patients who may not have been able to afford treatment otherwise. One of the barriers to accessing mental health services is the cost. People who receive benefits through their employer may have insurance to cover some or all treatment costs. Forty-five per cent of patients in the Ontario TAiCBT program reported being employed full-time. While those patients likely could have opted to receive other forms of therapy, they may have chosen TAiCBT through the Ontario TAiCBT program because of the ease of self-referral and the absence of needing to seek reimbursement from their insurance. More than half of patients (55%) reported employment statuses where insurance benefits are not typically provided.

Further, more than half of MindBeacon patients reported post-secondary (52%) as their highest level of education. These numbers are consistent with those reported in the 2016 census, where 51% of Ontarians aged 25 to 64 reported college or university as their highest level of education (Statistics Canada, 2022). Additional MindBeacon patients reported high school (28%) and trade school (18%) as their highest level of education compared to the census (23%; 6%; Statistics Canada, 2016). On average, 9% of all patients were from rural communities. This number increased from 7% in 2020 to 11% in 2022.

Table 3. The percentage of MindBeacon patients in different demographic groups

| Group | | Per cent | Group | | Per cent |
|---------|--------|----------|------------------|-----------|----------|
| Gender* | Female | 64.10% | Employment* † | Full-time | 45.29% |
| | Male | 20.27% | | Part-time | 23.87% |

| | | | | | |
|---------------------|---------------------|--------|-------------|------------------------|--------|
| | Other/Not Specified | 15.62% | | Unemployed/Not Working | 14.94% |
| Age | 16-25 | 26.86% | Education*† | Student | 6.80% |
| | 26-35 | 34.58% | | On Disability | 6.16% |
| | 36-45 | 18.80% | | Other | 2.94% |
| | 46-55 | 11.30% | | University | 32.38% |
| | 56+ | 8.46% | | High School | 28.35% |
| Sexual Orientation* | Heterosexual | 80.4% | | College | 20.20% |
| | LGBT2SQ+ | 16.50% | | Trades | 18.21% |
| | Other | 0.03% | | Other | 0.87% |

* of patients who provided this data † Data only available for patients registered before November 15, 2021

It is important to note that patients were not required to describe their ethnicity, education or employment status in order to receive services. As such, demographic information was not available for all patients. This was done intentionally to keep barriers to entry low, ensuring that patients who preferred not to disclose their demographic information were not hindered from access to care. The information that was collected shows that the Ontario TAiCBT program served a diverse and representative set of the Ontario population.

Seeking Help

For 51% of patients, participation in MindBeacon's TAiCBT was the first time they had sought mental health services. The percentage was even higher for health care workers (55%) and students (58%). The percentage of first-time mental health care seekers also varied by age. As shown in Figure 1, a higher proportion of patients who had previously accessed mental health care were in their 20s and 30s, while a larger proportion of first-time help-seekers were in their 40s and 50s.

Sixty-three per cent of patients reported that they first noticed their symptoms over a year prior to seeking services (Figure 2), whereas patients who had received mental health services in the past were quicker to reach out for help. This suggests that the stigma associated with mental illness persists, and that there may be a lack of awareness about the services available. Among patients who had previously sought mental health services, nearly 43% sought TAiCBT services within one year of noticing their symptoms compared to only 28% of first time help seekers. In contrast, 42% of patients who sought help 24 months after first noticing symptoms had sought mental health services in the past, compared to nearly 63% of first-time seekers.

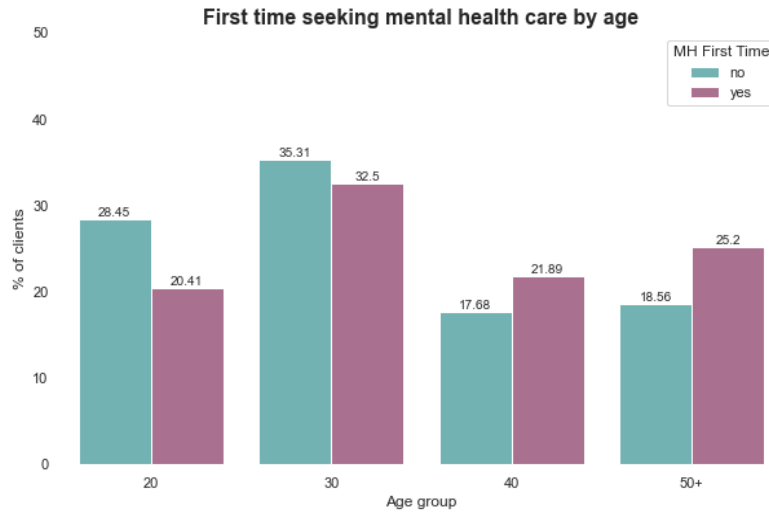


Figure 1. More younger clients sought help, but older clients were more likely to be seeking help for the first time

Reducing barriers such as stigma, lack of awareness, multiple intake steps, and inconvenient scheduling were goals of the program as was increasing willingness to seek help for mental health and addiction issues. Getting a better understanding of the reasons why people wait to seek care after they have noticed symptoms could help in providing more timely access to mental health services and further reducing barriers to accessing care.

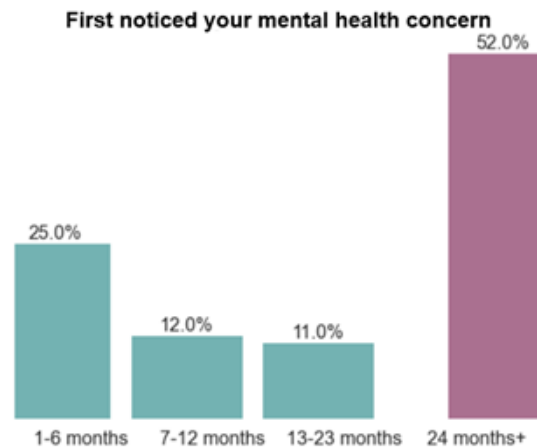


Figure 2. Most patients wait a year or more before seeking help

Referral Pathways

While there were two pathways to care, the overwhelming majority of patients used the self-referral pathway (99.6%). Of the patients who had accounts created by hub-referral, 366 completed their assessment. The number of referrals per hub ranged from 10 to 230 over the course of the program. The number of referrals per quarter also varied over time. Feedback from the hubs indicated that ongoing staff awareness of the TAiCBT service and training were critical to maintaining patient referrals to the program. Staff indicated that the referral processes and tools via a dedicated portal required extra steps, and that they would prefer integration with local existing electronic record systems. In the future, interoperability between TAiCBT providers and the community mental health hubs would facilitate patient transfers. In the interim, regular training sessions on the program and processes were critical to consistent volumes via this referral pathway.

Integration at the primary care level also emerged as a priority, given that is where a significant majority of patients start their search for mental health services. With the support of the Ministry of Economic Development, Trade and Job Creation, through the Ontario Centre for Innovation and the Ontario Together Fund, MindBeacon undertook a project to explore ways to improve access for both patients and referring clinicians. Interoperability with existing EMRs for easy referral, integrating with existing workflows and information tools for patients and referrers were all identified as key facilitators.

Pandemic Response

The Ontario TAiCBT program scaled quickly, with the number of referrals per month more than doubling in the first 6 months, from 974 referrals in May 2020 to 2,105 in October 2020. It took approximately 10 months from the beginning of the program for the volume to stabilize at

approximately 3000 to 3500 referrals per month. This represents approximately three referrals per 1,000 people in the province.¹ This is an important achievement but still represents only a fraction of the population needing mental health services nationwide, with 1 in 5 Canadians (pre-pandemic) experiencing mental illness in any given year (Centre for Addiction and Mental Health, 2020).

The Ontario TAiCBT program provided much-needed services over the course of the COVID-19 pandemic. The number of referrals increased during COVID-19 closures, with noticeable spikes during waves 2, 3 and 5 (see Figure 3). This demonstrates that the program was an important component of the province’s response to the pandemic. TAiCBT helped Ontarians (16+) struggling with the downstream impacts of pandemic waves.

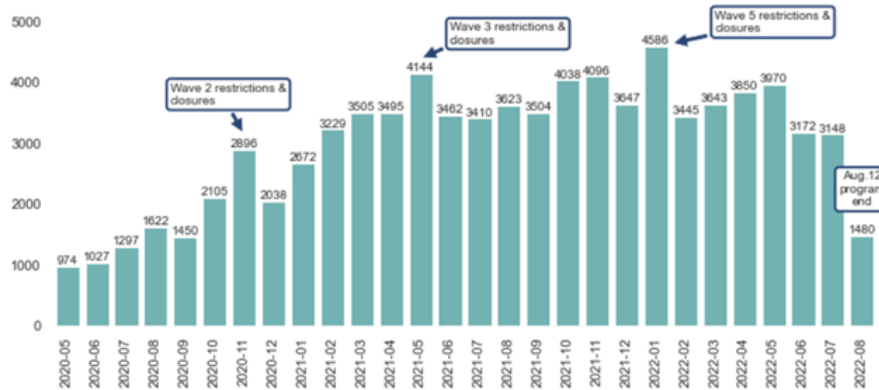


Figure 3. Referrals increased during COVID-19 closures

Eligibility

TAiCBT is not appropriate for all people seeking mental health support. Over the course of the program, 19,475 individuals who sought care were not eligible for TAiCBT and were redirected to more appropriate services for their needs. The most common reason that patients were ineligible was because they had information missing that was needed for service (29.1% of ineligible referrals; 6.8% of all referrals submitted). The most common missing information was emergency contact information, as data validations were not placed on those fields. Patients who had an error or who provided fictitious contacts were contacted to provide emergency contact details prior to being assessed for service. If patients did not reply with updated information details, they were not eligible for service.

¹ An average number of 3,000 per month represents approximately 36,000 referrals per year. In 2021, there were 11,972, 150 Ontarians aged 15 and over ([census](#)).

Other common reasons for ineligibility were severe substance use (15%) or because the patient’s primary concern was an issue for which TaiCBT was deemed not to be a good fit (13.4%) - e.g. there wasn’t an appropriate treatment protocol on the platform at the time or the issue required additional support to manage (e.g., ADHD, bipolar disorder). Additional reasons for ineligibility were patient risk of self-harm (11.5%) or a level of severity and complexity in symptoms that could not be adequately managed on the platform (9.2%). Individuals who were deemed ineligible for the TaiCBT service were provided with a rationale behind the decision of ineligibility as well as a list of personalised resources based upon their presenting problems which was generated, in part, with the assistance of Connex Ontario. Such individuals were further afforded the opportunity to follow up by phone with MindBeacon’s intake team to discuss concerns and rationale for the decisions made.

Table 4. Top 5 reasons patients were not eligible for TaiCBT

| Reason | N | Percentage of total ineligible | Percent of all referrals |
|------------------------|------|--------------------------------|--------------------------|
| Missing information | 5674 | 29.1% | 6.8% |
| Substance Use | 2992 | 15.4% | 3.6% |
| iCBT not best fit | 2609 | 13.4% | 3.1% |
| Risk to self or others | 2235 | 11.5% | 2.7% |
| Severity/complexity | 1792 | 9.2% | 2.1% |

Timely Access

Ensuring timely access to care was one of the original goals of the RFP. This objective can be explored in different ways. Did patients get access to care quickly after reaching out for service? Did patients get care at times that worked for their schedule? Were therapists responsive to patients during treatment? As a digital health intervention, the MindBeacon platform creates a unique opportunity to explore all these forms of timeliness.

Canadians typically wait 25 days for community mental health services (Canadian Institute for Health Information, 2021). Wait times were longer during the first and second quarter of 2021 (11-13 days). Several factors contributed to the spike in wait times, including the sudden increase in volume, platform changes, and recruiting/staffing demands. While the peak wait time was less than the Canadian average, additional staff and more efficient clinical processes were introduced in the spring of 2021 to get patients into treatment faster. In Q3 2021, wait times were reduced to three days and remained consistent for the remaining fifteen months of the program.

Fifty-seven per cent of patients submitted their assessments outside of typical working hours (e.g., 9am-5pm, Monday to Friday) and 57% of all content (e.g., readings, worksheets, outcome measures) was completed outside of typical working hours.

Over the course of a typical day, there were two peaks in average activity, with patients primarily completing assessments between 10am and 4pm and again from 8pm to 10pm. There was a similar pattern for completing content, with more engagement between 10am and 2pm and again from 7pm to 8pm. Patients reaching out for service most frequently did so over the

course of the typical workday, or late in the evening before bed. Patients engaging in treatment most often did so during the middle of the day or in the early evening.

Patients received asynchronous support from their therapist. Asynchronous support means that the patient could engage with platform content or send a message to their therapist whenever it was most relevant or convenient for them and receive multiple engagements from their therapist in a week rather than waiting for a next appointment. Therapists, in turn, were instructed to respond within two business days. In fact, therapists often responded faster than the two day maximum. The median response time of therapists to patients was 38 hours and 35% of therapist messages were sent outside of typical office hours. Likewise, therapists responded to patient activity (e.g., readings, OMs, messages, or worksheets) in less than two days, which likely helped patients progress through treatment in a timely manner. Therapists were also able to leverage the flexibility of a digital platform to respond to patients at times that worked best for them.

Patient Treatment Journey

Each evidence-based treatment protocol has a standard set of playlists, with each playlist composed of readings, videos, thought records and worksheets. Therapists can assign just the standard set, or they can use their clinical judgement to add or remove content to address a patient's specific needs as reflected in messaging and outcome measure scores. Therapists regularly tailored the content for 55% of patients.

The average treatment duration was nine weeks and typically patients actively engaged in five of those weeks. On average, patients engaged with the MindBeacon content on two days per active week. Active engagement was defined as a week when a patient completed either a reading, a worksheet, or an outcome measure or messaged their therapist. Patients set the pace of treatment by completing readings and worksheets that the therapists unlocked, or by messaging with their therapist. The typical patient sent 10 messages and received 19 messages from their therapist. On average, patients completed 23 readings and six worksheets, which were grouped into six playlists.

Patients who progressed further through the program completed more playlists. Completing content is a core component of TAI-CBT programs but is not the only therapeutic component of treatment. The range of playlists completed widened as the number of active weeks increased. This indicates that some patients who engaged across many weeks were doing so by messaging their therapist or completing OMs, while completing relatively few playlists.

Missed appointments and late cancellations are a challenge to successful treatment in traditional mental health care settings. Recent research from a mental health clinic in an Ottawa teaching hospital found that 26.7% of patients did not attend their appointments at least once during treatment and the no-show rate for office visits was 46% (Tempier et al., 2021). The most common reason for missing appointments is forgetting or not feeling well enough to attend (Mitchell & Selmes, 2007). The asynchronous nature of digital health interventions can help address those barriers, but engagement and attrition are also challenges for digital mental health tools. The drop-out rate from randomised controls of smartphone apps for depressive symptoms is similar to that of appointment no-shows (26.2%; Torous, et al., 2020). There is also significant variability in how engagement is measured for digital health interventions (e.g., number of readings, number of logins, duration on the platform, amount of content per login, etc.).

Without any standards or benchmarks for reporting on engagement, usability or satisfaction, it is difficult to interpret the engagement results for individual tools and even more difficult across applications.

Not all people who explored the MindBeacon platform engaged in treatment. Twelve per cent of patients who consented to treatment did not engage at all (i.e., no readings, worksheets, or outcome measures completed and no messages sent) and an additional 18% of patients did not engage beyond one week of treatment. In terms of treatment content, 18.5% of patients did not complete any playlists and 17.8% of patients completed just the first two playlists. These results are consistent with the research cited above related to attrition from digital health interventions. While digital health interventions do not resolve all engagement issues, they do have an advantage over traditional services in addressing disengagement because of the opportunity to study patient flow data and introduce digital nudges to increase participation.

We found that 70% of patients were active for two or more weeks during treatment, 49% were active for four or more weeks and 25% were active for eight or more weeks. In terms of content, 24.5% of patients completed three to five playlists and 39.2% completed six or more playlists during their treatment.

Impact of Treatment on Patient Symptoms

Helping patients manage their mental health symptoms and improving quality of life were core objectives of the Ontario TAI-CBT program. TAI-CBT is proven to reduce symptom severity and the impact of symptoms on day-to-day functioning.

One measure of symptom severity, called *caseness*, comes from the IAPT framework. A person is considered to be 'at caseness' when their symptom score exceeds the accepted clinical threshold for the relevant measure of symptoms (National Collaborating Centre for Mental Health, 2021). Caseness is a useful measure of symptom severity because it is relevant across a range of different mental health concerns (e.g., mood, anxiety, post-traumatic stress, etc.). The caseness thresholds for each of the concerns treated by MindBeacon are listed earlier in Table 1. Overall, 84% of referred patients were at caseness. This indicates that the majority of patients seeking TAI-CBT services could benefit from treatment for their mental health issues.

The three outcome measures that we focus on are: PHQ-9, GAD-7 and WSAS which measure depression, generalized anxiety, and daily functioning, respectively. MindBeacon collects other outcome measures to assess the severity of symptoms related to other mental health concerns. For example, the Post-traumatic Checklist-5 (PCL5; Weathers, et. al., 2013) is used to assess symptoms of post-traumatic stress. The Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993) screens patients for unhealthy alcohol use. A primary outcome measure is used in each MindBeacon protocol to measure change in the symptoms being targeted by that treatment. For simplicity in this analysis, we focus on the PHQ-9 and GAD-7, as these were the metrics required by the Ontario TAI-CBT program. There are, however, limitations to using measures that are not symptom-specific, which are described below.

At referral, the average symptom scores for patients were in the moderate range for both depression (PHQ9 = 14.91) and anxiety (GAD7 = 12.35), with severe impairment in day-to-day

functioning (WSAS = 21.90; see Table 5). The average scores of patients eligible for service were lower than for patients who were ineligible for service (PHQ: $t=53.98, p=0.0$, GAD: $t=29.98, p=0.0$; WSAS: $t=40.25, p=0.0$).

TAiCBT is sometimes publicly perceived as a treatment for people with mild or moderate symptoms, but more than half of those served through the Ontario TAiCBT program had more severe symptoms. Half of all patients treated were in the moderately severe (27%) or severe (23%) range for depression, 37% reported severe anxiety symptoms, and 52% reported moderately severe functional impairment. Four out of every five patients who sought care had symptoms above a clinical threshold and, depending on the measure, between 1/3rd to 1/5th of those treated reported moderately severe or severe symptoms.

Table 5. Average scores for depression anxiety and functioning scores at assessment

| | All patients Mean (SD) | Ineligible patients Mean (SD) | Eligible patients Mean (SD) |
|------|---------------------------|----------------------------------|--------------------------------|
| PHQ | 14.91 (6.35) | 17.12 (6.59) | 14.38 (6.09) |
| GAD | 12.35 (5.58) | 13.49 (5.73) | 12.14 (5.45) |
| WSAS | 21.90 (8.79) | 24.56 (9.04) | 21.41 (8.53) |

Generalized anxiety and depression are highly prevalent conditions – 28.8% and 20.8% respectively, of the general population (Kessler et al., 2015), and TAiCBT has been used to treat these disorders for over 20 years (Andersson et al., 2019). Through the Ontario TAiCBT program, the most commonly assigned protocols were for generalized anxiety (36%) and depression (31%). Nearly 1/3rd of patients received treatment for other symptoms, most commonly stress (11%) or post-traumatic stress (11%). Not all TAiCBT providers offer treatment for less common mental illnesses (e.g., post-traumatic stress, panic, social anxiety), but it is clear that many people in the general population seeking mental health care require more specialised support and can benefit from a wider array of treatment options.

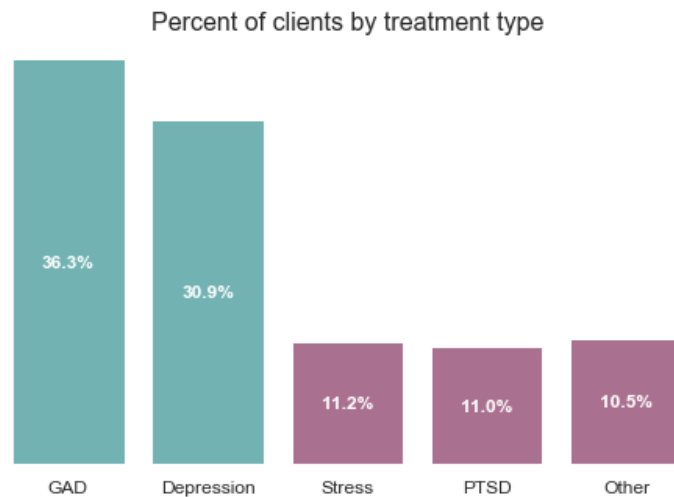


Figure 4. Nearly one-third of patients were treated for less common mental health

Symptoms

The Ontario TAiCBT program had a positive impact on patient symptoms. One of the ways to explore the impact of treatment on patient's symptoms is using the metrics of change from the IAPT framework, called *recovery* and *reliable improvement*. A patient moves to recovery if their symptoms were above the caseness threshold at the start of their treatment and below the threshold at the end of their treatment. A patient experiences reliable improvement if the difference between the first and last symptom scores is greater than one would expect by chance, i.e. the change in their symptoms is reliable and not due to natural variation in measuring symptoms. The size of this change (the reliable improvement index) is listed in Table 1. These metrics were calculated for patients who complete treatment; patients were considered to have completed treatment when they participate in therapy for two or more weeks (sometimes described as two or more sessions).

Throughout the program, 58% of patients completed treatment. Of those, 44% moved to recovery and 54% experienced reliable symptom improvement. The proportion of patients seeing symptom improvement was consistent over the course of the program.

The proportion of patients who experience reliable improvement varies across protocols. Nearly 61% of patients assigned to the protocol for general anxiety and 54% of patients assigned to depression and post-traumatic stress protocols experienced reliable symptom improvement.

TAiCBT can benefit patients with a range of presenting symptoms and using a range of metrics helps capture these benefits. Patients with more severe symptom scores at the start of treatment have more room for improvement. In fact, a higher proportion of patients with moderately severe or severe depression at referral experience reliable improvement (60%) compared to those with lower scores (48%). See Table 6. For patients with severe anxiety, 64% experience reliable improvement compared to 48% of those who started with mild or moderate symptoms. Fewer patients with moderately severe and severe symptoms moved to

recovery (PHQ:34%, GAD:33%) compared to those with moderate and mild symptoms (PHQ:42%, GAD:41%). This indicates that for some patients TAiCBT provides sufficient support for recovery, while for others TAiCBT is a step in their treatment journey. The goal of treatment for a patient with severe or chronic symptoms may not be recovery but to build skills, reduce symptoms, and improve functioning. Exploring a range of outcome measures helps uncover these diverse results.

Table 6. Treatment outcomes for patients with differing severity levels at referral

| | | Move to recovery | | Reliable Improvement | |
|-----|------------|------------------|-------|----------------------|-------|
| | | Yes | No | Yes | No |
| PHQ | Score >=15 | 34.48 | 65.52 | 60.44 | 39.56 |
| | Score <15 | 42.07 | 57.93 | 47.63 | 52.37 |
| GAD | Score >=15 | 33.39 | 66.61 | 64.60 | 35.40 |
| | Score <15 | 41.26 | 58.74 | 47.50 | 52.50 |

Fewer patients on the social anxiety and stress programs experienced symptom improvement (32% and 25%, respectively). This may be due to limitations in the outcome measures used for those treatments. MindBeacon changed from a non-IAPT approved measure to the Social Phobia Inventory (SPIN; Conner, et al., 2000) in Q2 2022. The PHQ-9 and GAD-7 were used to assess patient outcomes for patients assigned to the social anxiety protocol before that date. But because those measures aren't specific to the mental health concern being treated, the proportion of patients who show reliable improvement is lower than for patients on protocols better aligned with their measures. The primary outcome measure for the stress program, the Perceived Stress Scale (Cohen et al., 1983), is not an IAPT measure, so the PHQ-9 and GAD-7 scores were used to assess symptom change. However, patients were only assigned to the stress program if their PHQ-9 and GAD-7 scores were below caseness at assessment, which means there are floor effects for score change. Specifically, patients who scored five or lower on the PHQ-9 or four or lower on the GAD-7 could not experience symptom change greater than the index. Reporting outcomes across all protocols can underestimate the impact the program had on patient outcomes because 1/3 of patients were assigned to protocols with outcome measures limitations.

The proportion of patients who experienced reliable improvement increased with the number of active weeks in the program. Sixty per cent of patients who completed treatment were active for four or more weeks, and 60% of those patients experienced reliable improvement. Only 47% of those who engaged for three or fewer weeks saw improvement in their symptoms. This suggests a dose-response relationship, with more patients experiencing improvement as they engage longer and speaks to incorporating engagement inducing features such as personalization, nudging and building therapeutic alliance.

While the metrics of recovery and reliable change are helpful for understanding final outcomes for patients, patient symptoms can vary over the entire course of treatment. Mean PHQ-9 score (i.e., depression scores), decreased rapidly from assessment through to the second week of treatment and then continued steadily downwards thereafter. On average, PHQ-9 scores reached the recovery threshold in the fourth week of treatment. The mean GAD-7 score (i.e., anxiety score) also decreased rapidly from assessment through to the second week of

treatment and continued steadily downwards. On average, GAD-7 scores reached the recovery threshold at the eighth week of treatment.

The WSAS outcome measure (i.e., daily functioning) was administered in the first week of treatment and at 28-day intervals thereafter. The average WSAS scores started above the recovery threshold at assessment, fell below the threshold in the first week of care and decreased through treatment. It is, however, more difficult to interpret the trends in WSAS scores due to its less frequent administration.

Patients were also surveyed over the course of the program to get their feedback on the program and on the treatment protocol they had been assigned. The survey was offered bi-weekly and included questions about program satisfaction, program value and therapist support. Nearly 75% of patients felt the program was valuable and 70% were satisfied with the program. Eighty-one per cent of patients felt supported by their therapists, highlighting the importance of the role of the therapist and indicating that the therapist is a key element of TAiCBT programs.

Over 9,000 patients provided feedback on what they valued most about their experience. Using topic modelling, we identified the following themes in their feedback:

- Someone to talk (i.e., text) to and to help with readings and exercises
- Better understanding of issues and tools to feel better
- Someone checking in and support to pace learning

A similar number of patients (8,835) provided suggestions for improvements to the program such as:

- Additional ways to communicate with the therapist (e.g., video or phone calls)
- More personalized messages and faster response times from the therapists
- More user friend experience, particularly with the worksheets

Operational and Process Learnings

Leveraging an existing Vendor of Record mechanism allowed quick pivot to a low barrier, easy to access emergency program which became the largest TAiCBT project in North America. The program significantly contributed to onshore/local capacity to address Ontario pandemic health needs including observed spikes in demand for mental health supports with successive lockdowns. Concurrent health and economic benefits and multi-ministry interests could have been better considered to maximize advantages from the program, however. While the duration of the pandemic was unknown, successive short-term renewals caused operational challenges that could have been avoided (e.g. clinician staffing/hiring requires lead time) and precluded beneficial communications during procurement blackout periods (e.g. program improvements).

As previously noted, several key decisions regarding scope and design were made to ensure timely program implementation but as the pandemic wore on, ways to improve health equity and build stronger connection to primary care and the mental health system at intake and discharge were explored. The program also evolved to add a broader array of protocols (PTSD, health anxiety and cross-referral to Breaking Free substance use program) to respond to expanding needs. Broad program changes were difficult to introduce midstream but further opportunities were missed to test “out of scope” alternatives (e.g. warmer step-ups, interoperability, circle of care connection, comparisons to treatment as usual ROI, holistic treatment of patient ((physical

and chronic illness comorbidities)), post-treatment follow-up/boosters, targeted acute/community wait list blitzes and integration with employers/insurance carriers to leverage benefits so government can be payor of second resort and focus its resources on priority populations.

Proactive registration and leveraging a cross-Canada network of regulated clinicians addressed Ontario capacity, surge and specialization needs. Individual therapist capacity to support more patients per week than traditional forms of treatment also better utilized existing health human resource capacity.

Allowing direct self-referral sped up time-to-treatment, kept patient momentum going and reduced “ping-ponging” of patients between government and provider websites. Primary care and acute care referral models alleviated waitlists and gave referrers and patients more options. Given that primary care is where $\frac{3}{4}$ of people start their journey to seek mental health supports, MindBeacon proactively partnered with Family Health Teams who expressed a need for easy referral mechanisms (efax, EMR, OHIP billing code); interoperability (sharing of treatment summaries) and targeted training (setting patient expectations and role of NLO). Going forward, funders and policymakers should consider a centralized intake using standardized online assessment to facilitate referrals from multiple sources (primary/acute/community care, academia, self) to maximize access, minimize steps/barriers, and meet the objective of better connection to health system.

People do not necessarily access supports the first time they are offered, so multiple entry points (home, work, school, primary care provider, NLO) should be provided for. Furthermore, integration and coordination of these entry points would enable government to be payor of second resort and focus its limited resources on those without benefits. There are good public policy reasons for employers to provide supports (they benefit from increased productivity and reduced absences of employees) which could be incented further (e.g. via WSIB premiums).

Ongoing external communications was sporadic/ad hoc with low referrer/patient awareness of available services particularly among marginalized groups. Local service gaps arose from not engaging regional hubs consistently and inconsistently communicating the program. Regional coverage, success stories, memorable URLs, info sheets, social media, and more search marketing for those already seeking mental health assistance would have helped boost awareness.

More frequent upfront and ongoing internal sessions with key representatives all at one table – ministry, agencies, providers, referrers and patients would have improved program management as the pandemic continued on longer than expected. Likewise it would have better informed transition from the emergency program to post-emergency which was challenging given pandemic uncertainty. Service gaps that emerged could have been mitigated.

When asked what they valued most about the service, patients liked the ‘T’ in TAiCBT - they appreciated having to a therapist to talk to (via text), who checked in on them and supported their learning. This is consistent with research showing better outcomes for guided than self-guided iCBT.

Ultimately, the goal of providing an “innovative technology solution to help provide timely care and support to those suffering with mental health and addiction issues” was achieved. While there was no one single measure of success, observed benefits included: improved access

(faster time to treatment, treatment outside regular office hours and remote access to assessment and therapy via mobile device); lower barrier to entry (free, confidential, self-referral), improved health equity (unemployed, LGBT2SQ+, students, BIPOC), better gateway in (e.g. first time users); patient-centred care (empowerment/self-management, personalized journey), targeted outreach (health care workers, BIPOC and students) and effective treatment provided across all demographics and symptom severities.

Summary & Discussion

TAiCBT has been available for more than a decade, and its efficacy in many contexts and for many different conditions has been well studied. What is unique about the results shown in this paper is that until now TAiCBT has not been made widely available in Canada via government funding, and the circumstances of the pandemic contributed to a massive increase in need for these services. What we have shown here is not only is MindBeacon's TAiCBT program as effective as it was expected to be, but the unprecedented access and engagement with this treatment by the people of Ontario is a significant success story that can provide lessons for Ontario and other parts of Canada as people continue to seek help for their mental health.

An important part of delivering public health solutions in Canada is ensuring that services are widely available and that access is equitable across socio-demographic groups. Our results show that even with scope and implementation limitations the program was equitably accessible, widely used and effective in treatment. During this program 83,565 patients, i.e. 3 out of every 1,000 adults in Ontario, sought MindBeacon TAiCBT service during the program, and 64,050 started therapy. For 51% of clients, MindBeacon TAiCBT was their first time seeking mental health counselling. Fifty-seven per cent of activities were completed outside of office hours and 90% of clients engaged with content outside of typical office hours, particularly notable for shift workers, health care staff, parents, students and others whose schedules make it hard to make even virtual appointments. MindBeacon clients start treatment up to five times faster than the average Canadian will wait for community mental health counselling (i.e. two to five days vs 25+).

Fifty-five per cent of clients were not full time employed, meaning they likely have less access to benefits. Thirteen per cent of clients were health care workers and 20% of clients were students, which were two of the hardest hit groups in the pandemic. Also important is that 32% of patients referred to the Ontario TAiCBT program were members of a visible minority group, which reflects the diverse population of the province. Twenty per cent of MindBeacon users identified as non-heterosexual. Seventy-seven per cent of people who submit an assessment were enrolled in treatment and 92% of people who were offered treatment started it.

More than half of clients with clinically severe depression symptoms experienced reliable symptom improvement. Thirty per cent of clients recovered and 48% of clients on the general anxiety protocol experience reliable clinical change. These results compare favourably with other forms of treatment and TAiCBT studies and experience in other jurisdictions. Treatment was clinically effective for all ages, genders and symptom severities.

In addition to being easily accessible and effective, MindBeacon TAI-CBT is a cost-effective way for governments to deliver care. Cost per case is 1/5th that of traditional treatment, and e-therapists can support three times as many clients per week, helping with staffing shortages

And finally, MindBeacon has partners in all parts of the health ecosystem including acute, primary and community care and directly addresses the quadruple aim of enhancing patient experience, improving population health, and reducing costs, while improving the work life of health care providers.

Appendix A: Ontario TAiCBT COVID19 Program - Key Data & Insights

Access and Equity

Overall, 83,565 patients supported, and 64,050 started therapy, reaching an average of 3,500 referrals per quarter and 2,000 per month at its peak.

- For 51% of clients, MindBeacon TAiCBT was their first time seeking mental health counselling, a great gateway in
- 57% of activities were completed and 90% of clients engaged with content outside of typical office hours, particularly notable for shift workers, health care staff, parents, students and others whose schedules make it hard to make even virtual appointments
- Asynchronous digital services provide flexibility to patients and therapists to engage at times of day that are personally convenient - 35% of therapist messages were done outside of typical office hours
- Self-referral provided easy entry and was most popular entry, speeding up time to treatment and reducing "pingponging" of patients between government and provider websites.
- Overall, 55% of clients identified as not full time employed, meaning they likely have less access to benefits
- MindBeacon clients started treatment up to 5x faster than the average Canadian will wait for community mental health counselling (i.e. 2-5 days vs 25+).
- 13% of clients were health care workers and 20% of clients were students, reaching two of the hardest hit groups
- 32% of patients referred to the Ontario TAiCBT program identified as racialized persons, which reflects the diverse population of the province
- 20% of MindBeacon users identify as non-heterosexual
- 26% of MindBeacon users sought treatment within 6 months of noticing their mental health issues

Effectiveness

- 92% of patients offered treatment started it and 55% of those discharged completed treatment
- While the program was originally envisioned for patients with mild to moderate symptoms more than half of patients had severe symptoms and were treated effectively
- Clinically effective for all ages, genders and symptom severities
- More than half of clients with clinically severe depression symptoms experience reliable symptom improvement.
- 48% of clients on the general anxiety protocol experience reliable clinical change from ICBT therapy and 30% of clients recovery. These results compare favourably with other forms of treatment and TAiCBT studies and experience in other jurisdictions.
- On average, depression patients moved to recovery after 4 weeks in treatment and 49% of patients were active for 4 or more weeks.
- Demand increased four times versus May 2020 and more patients were showing up with more severe symptoms at the outset

- Comorbid issues are common. 7 out of 10 depression clients also had clinical symptoms of anxiety. 1 out of 10 depression clients also had symptoms of PTSD
- Therapist guided feature proved key to patient success (consistent with research showing better results for guided vs self-guided CBT). Patients were also able to be matched with preferred therapist characteristics (gender, LGBT2SQ+, etc);
- Patient satisfaction: 81% of patients felt supported by their ICBT therapist
- 77% of people who submitted an assessment were enrolled. 80% of those who were ineligible for iCBT had a condition that could be treated with in-person therapy
- The proportion of patients who experienced reliable improvement increased with number of active weeks in the program, consistent with past research showing that increasing engagement increases the number of clients achieving reliable clinical change.
- Further opportunities exist to foster engagement with culturally relevant content, warmer nudges and stepup
- 58% of clients had tailored content added to their treatment

Value

- Cost per case is 1/5th that of traditional treatment
- E-therapists can support 3 times as many clients per week, helping with staffing shortages
- MindBeacon engaged partners in all parts of the health ecosystem including acute, primary and community care -- referral models have alleviated waitlists and given referrers and patients more options
- Directly addresses the quadruple aim
- When asked what they valued most about the service, patients liked the 'T' in TAiCBT, appreciating having a therapist to talk (i.e text) to, who checked in on them and supported their learning.
- Concurrent health and economic benefits and multi-ministry interests existed but could have been better considered to maximize advantages from the program
- The program significantly contributed to onshore/local capacity to address Ontario pandemic health needs including observed spikes in demand for mental health supports with successive lockdowns
- Health human resource capacity - proactive registration and leveraging cross-Canada network of regulated clinicians to address Ontario capacity, surge and specialization;

Operational and Process Learnings

- Leveraging an existing Vendor of Record mechanism allowed quick pivot to a low barrier, easy to access emergency program which became the largest TAiCBT project in North America.
- Significant contribution to onshore/local capacity to address Ontario pandemic health needs including observed spikes in demand for mental health supports with successive lockdowns.
- Concurrent health and economic benefits and multi-ministry interests existed but could have been better considered to maximize advantages from the program
- Successive short-term renewals caused operational challenges that could have been avoided (eg clinician staffing/hiring requires lead time).

- Program evolved to add a broader array of protocols (PTSD, health anxiety and cross-referral to Breaking Free substance use program) to respond to expanding needs.
- Broad program changes difficult to introduce midstream but further opportunities were missed to test “out of scope” alternatives (eg warmer stepups, interoperability, circle of care connection, comparisons to treatment as usual ROI, holistic treatment of patient (physical and chronic illness comorbidities), post-treatment followup/boosters, targeted acute/community waitlists blitzes and integration with employers/insurance carriers to leverage benefits so government can be payor of second resort and focus its resources on priority populations.
- Proactive registration and leveraging a cross-Canada network of regulated clinicians addressed Ontario capacity, surge and specialization needs.
- Individual therapist capacity to support 3* patients per week than traditional forms of treatment also better utilized existing health human resource capacity.
- Allowing direct self-referral sped up time-to-treatment, kept patient momentum going and reduced “ping-ponging” of patients between government and provider websites
- Primary care and acute care referral models alleviated waitlists and gave referrers and patients more options. Expressed need for easy referral mechanisms (efax, EMR, OHIP billing code); interoperability and targeted training
- Funders and policymakers should consider a centralized intake using standardized online assessment to facilitate referrals from multiple sources (primary/acute/community care, academia, self) to maximize access, minimize steps/barriers, and connection to health system.
- Multiple entry points (home, work, school, primary care provider, NLO) should be provided for. Integrate to enable government to be payor of second resort and focus limited resources on those without benefits.
- External communications was sporadic/ad hoc with low referrer/patient awareness of available services particularly among marginalized groups. Local service gaps arose. Boost awareness by communicating to referrers and those already seeking mental health assistance.
- Internal sessions with key representatives all at one table to improve program management and informed transition from the emergency program to post-emergency.
- Therapist role appreciated by patients – consistent also with research showing better outcomes for guided than self-guided iCBT.
- Ultimately the goal of providing an “innovative technology solution to help provide timely care and support to those suffering with mental health and addiction issues” was achieved. No one single measure of success, observed benefits included: improved access (faster time to treatment, treatment outside regular office hours and remote access to assessment and therapy via mobile device); lower barrier to entry (free, confidential, self-referral), improved health equity (unemployed, LGBT2Sq+, students, BIPOC); better gateway in (eg first time users); patient centred care (empowerment/self-management, personalized journey); targeted outreach (health care workers, BIPOC and students) and effective treatment provided across all demographics and symptom severities.

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