Elevating the quality of care: **The case for rapid, accurate diagnosis and treatment for mental illness**

White paper

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Increasingly, workplaces play an essential role in maintaining the positive mental health of their employees, through a combination of shifting cultural norms, educational support and improving mental health benefits. For the two-thirds of adult workers in Canada with extended health benefits, their employer plays an indispensable role in the provision of care.[1]

And, work is good for you, especially if the work is meaningful.[2] Even for people with the most serious mental illnesses, maintaining or gaining employment can improve mental health, while unemployment worsens mental health.[3] Yet, even in high-income countries, less than 15% of those diagnosed with a severe mental illness are actually working.[4]

Nationally, mental illness is a leading cause of work-place disability and absenteeism. When an employee with a debilitating psychiatric diagnosis requires a period of absence from work, there is an urgent need for timely, effective and compassionate care.

Investments in mental health training, dedicated resources and virtual care are considered foundational elements of a holistic employee health and well-being strategy. Yet the cost of the resources necessary to maintain, support and promote mental health are substantial and continue to climb.

For the employer, lost workdays, worker replacement and training, increasing the workload placed on others, lost productivity, delays or missed deadlines, frustration, and employee burnout are costly, erode team culture, and undermine customer confidence.[5]

For the employee, the loss of their workplace support and structure often adds to the difficult road to recovery, which can already be lengthy, demoralizing and frustrating. Financial pressures, prolonged emotional distress and the loss of hope are other examples of the costs that mentally ill employees often bear.

These costs are amplified by a seriously dysfunctional healthcare system, the extent of which is largely unknown to most Canadians, until care is needed.

For most, their mental healthcare journey starts with a primary care practitioner (PCP), but increasingly, Canadians are unable to find one. Additionally, misdiagnosis rates for psychiatric disorders in primary care are too high- between 66% and 98%.6 Then, there are challenges associated with treating these complex disorders and with imperfect treatments among patients prescribed medication. For example, the largest pragmatic trial of major depressive disorder (MDD) demonstrated that only 37% of patients achieved remission after starting their first antidepressant treatment. Moreover, up to

[1] Lee-Baggley D, Howatt B. Mental Health Commission of Canada and Canadian Psychological Association. (2022). Extended mental health benefits in Canadian workplaces: Employee and employer perspectives [Research report].
[2] Guha, Martin. Journal of Mental Health. 2018; 27(1).
[3] Drake, RE et al. Epidemiol Psychiatr Sci. 2020; 29.
[4] Drake, RE. Psychiatr Rehabil J. 2020 Mar;43(1).
[5] Stewart N. Missing in Action: Absenteeism Trends in Canadian Organizations, Conference Board of Canada. 2013.
[6] Vermani M et al. Prim Care Companion CNS Disord. 2011;13(2):PCC.10m01013.

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one-third of patients were considered treatment-resistant and did not remit after successive interventions with other clinical options.[7]

Strategies to mitigate these costs – and reduce suffering – must include attention to timely and accurate psychiatric diagnoses and early, appropriate and effective treatment.

There is a better way to start the journey towards recovery.

Organizations are making important investments in the health and well-being of their team members. It's time to ensure those investments are grounded in scientific evidence and meet or exceed the highest clinical standards of care. Accurate and effective treatment, as early as possible, is a critical first step on a compassionate journey towards health.

[7] Rush AJ et al. Am J Psychiatry. 2006 Nov;163(11):1905-17.

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Part 1: The impact of mental illness

The global disruptions of the last few years have exposed the monumental challenges that affect every one of us—the unprecedented threats to our health, environment, and livelihoods. These shared challenges can undermine our collective sense of safety and significantly impact our mental and physical health.

Pre-pandemic data showed that every year, 1 in 5 Canadians experienced symptoms of a mental illness. During the pandemic, there was a significant increase in anxiety and depression rates in the general population[8, 9] and following a COVID-19 infection.[10] Unfortunately, there was also a marked reduction in the proportion of symptomatic individuals seeking treatment for depression.[11]

Regrettably, when patients do seek mental healthcare, they may not be able to reliably access psychiatric expertise in a timely manner. A national study, citing data from 2014-2016, indicates that 25% of Canadian patients face unacceptably long wait times, in excess of seven months, to receive specialist care by a psychiatrist following referral from a primary care clinic.[12] Wait times have undoubtedly worsened over the ensuing 6 years. A 2020 report from Children's Mental Health Ontario found that children under 18 in that province were waiting up to 2.5 years to receive mental health treatment. The report suggested that similar waits are likely to occur across the country.[13]

The uncertainty patients and families experience awaiting healthcare for any disorder, especially from a specialist, can have a significant adverse emotional impact, particularly when the disorder is progressive and the opportunity for a full intervention might be lost. When the disorder is already associated with emotional distress, which, by definition, captures every mental illness, the wait can be intolerable. Additionally, long waits may contribute to the development of avoidable complications and lead patients to seek care in less appropriate, less desirable environments, such as an emergency department, or to require hospitalization, both of which are associated with greater cost, for both the patient and the healthcare system. Additionally, receiving care outside the purview of the primary care practitioner reduces continuity, which impacts the quality of care, worsening patient outcomes and increasing the risk of hospitalization and medical errors.[14]

Historically limited investment in public mental healthcare has resulted in a large gap between the need for clinical care and its availability.[15] In addition to directly affecting the health and well-being of individuals diagnosed with a mental illness and their families, this

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[9] Li J et al. World Psychiatry. 2020 Jun;19(2):249-250.
[10] Mazza MG et al. Brain Behav Immun. 2020 Oct;89:594-600.
[11] Li J et al. World Psychiatry. 2020 Jun;19(2):249-250.
[12] Liddy C et al. Can Fam Physician. 2020 Jun;66(6):434-444.
[13] CMHO, Kids Can't Wait, 2020; retrieved from https://cmho.org/wp-content/uploads/CMHO-Report-WaitTimes-2020.pdf
[14] Ryu J, Lee TH. N Engl J Med 2017;376(24):2309-11.
[15] Chisholm D et al. Lancet Psychiatry. 2016 May;3(5):415-24.

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treatment gap also has important socioeconomic consequences, related to reduced labour force participation and productivity at work.[16]

In Canada, the annual economic burden of mental illness is $51 billion, due to health care costs and lost productivity.[17] Just considering depression, the indirect workplace costs, characterized by low productivity and absenteeism, account for more than 60% of the disorder's total economic burden.[18] Globally, common mental disorders—such as MDD and anxiety disorders—rank highly among the major causes of disease burden and are estimated to be associated with at least 12 billion days of lost productivity per year, with a cost of approximately $925 billion USD annually.[19,20]

Mental illness can affect the working age population across generations. For example, the onset of MDD is bimodal: while most individuals develop the disorder in their twenties, a second peak is observed in the fifties.[21] All psychiatric disorders are associated with functional impairment and a reduced quality of life. In addition, important economic consequences are linked to occupational costs, medical service costs, and suicide-related costs.[22] Increased severity of anxiety symptoms, for example, is associated with reduced work performance, increased time spent on disability leave, disruptions in career advancement and early exit from the labour force.[23,24]

This is a heavy burden for employers - and Canadians - to bear.

[16] Chisholm D et al. Lancet Psychiatry. 2016 May;3(5):415-24.
[17] Moroz N et al. Healthc Manage Forum. 2020 Nov;33(6):282-287.
[18] Saltiel PF, Silvershein DI. Neuropsychiatr Dis Treat. 2015 Mar 31;11:875-88.
[19] Chisholm D et al. Lancet Psychiatry. 2016 May;3(5):415-24.
[20] Liu Q et al. J Psychiatr Res. 2020 Jul;126:134-140.
[21] Park LT, Zarate CA Jr. N Engl J Med. 2019 Feb 7;380(6):559-568.
[22] Lam RW et al. Can J Psychiatry. 2016 Sep;61(9):510-23.
[23] Erickson SR et al. 2009;26(12):1165-71.
[24] Wedegaertner F et al. BMC Public Health. 2013 Feb 17;13:145.

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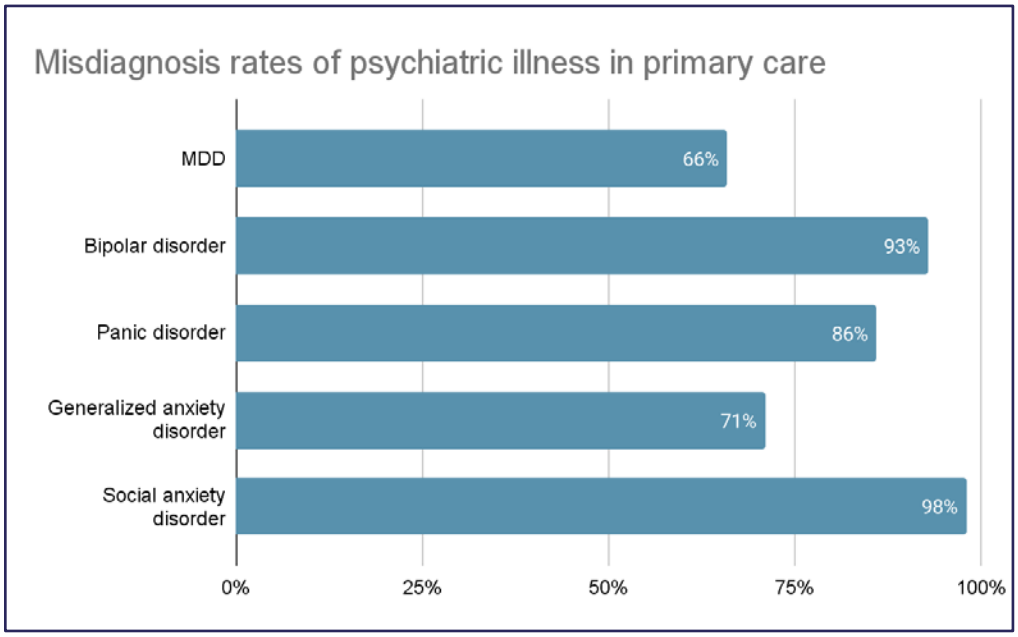
Part 2: The truth behind diagnosis and treatment of mental illness

Poor health outcomes associated with untreated or under-treated mental illness stem from a lack of timely access—or no access—to high-quality care, diagnostic inaccuracy, and ineffective treatment.

The root causes of this problem are multifactorial and the remedy requires extensive change at all levels of care. However, it is never too late to correct course. Guided by the latest empirical evidence and clinical insights, we can improve the diagnosis and treatment of mental illness and help patients—and our healthcare system—accelerate the path to recovery.

Psychiatric disorders are difficult to accurately diagnose

For most psychiatric disorders, the accuracy of a clinical diagnosis is poor, particularly if the diagnostician is not a psychiatrist. In Canada, misdiagnosis rates for psychiatric disorders in primary care range from 66% to 98%.25



[25] Vermani M et al. Prim Care Companion CNS Disord. 2011;13(2):PCC.10m01013.

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Bipolar disorder (BD) is particularly difficult to diagnose, especially in its early stages of illness. [26] In one retrospective review, primary care practitioners (PCPs) did not detect or mis-diagnosed BD in 93% of patients who later screened positive for BD.[27] Of patients who were later diagnosed with BD, more than 90% report that the onset of their symptoms occurred during their teen years, almost always with depression symptoms. Jarringly, only 20% of patients with BD who present with current depression symptoms receive a confirmed BD diagnosis within the first year of treatment. Differentiating BD from major depression is critical in terms of making the best treatment choices. Misdiagnosis and incorrect treatment of BD is associated with worsening symptoms (including alcohol and substance use and suicidality), illness progression and the exacerbation of social and occupational impairments (e.g. family discord, work absence). [28] It usually takes between 5 to 10 years and multiple physicians for a patient to receive an accurate diagnosis following symptom onset.[29,30,31]

Barriers to making a correct diagnosis

1. **Lack of experience and preparedness.** PCPs are the primary entry point into our healthcare system.[32] They are responsible for much of the coordination and provision of mental healthcare.[33] An estimated 79% of antidepressant prescriptions are generated by non-psychiatrists, the vast majority by PCPs.[34] Yet, studies show that PCP's ability to detect, diagnose and treat mental illness is often unsatisfactory.[35, 36] In terms of the total mental health workforce, Canada has the largest number of professionals per 100,000 population among 11 high-income countries; however, only 61% of PCPs in Canada report being well prepared to appropriately care for patients with mental health conditions.[37] This topic is explored more fully in Part 3 of this paper.
2. **Symptom variation.** Every psychiatric diagnosis has multiple clinical presentations. While some patients with MDD present with classic depression symptoms, such as depressed mood, others deny feeling sad, instead describing feeling numb or nothing, but have lost their interest or pleasure in activities they previously enjoyed. Additionally, there is a constellation of non-specific or

[26] McIntyre RS, Calabrese JR. Curr Med Res Opin. 2019 Nov;35(11):1993-2005.
[27] Vermani M et al. Prim Care Companion CNS Disord. 2011;13(2):PCC.10m01013.
[28] Nasrallah H. J Clin Psychiatry. 2015 Oct;76(10):e1328.
[29] Baldessarini RJ et al. Bipolar Disord. 2007 Jun;9(4):386-93.
[30] Drancourt N et al. Acta Psychiatr Scand. 2013 Feb;127(2):136-44.
[31] Berk M et al. J Affect Disord. 2007 Nov;103(1-3):181-6.
[32] Ferenchick EK et al. BMJ. 2019 Apr 8;365:l794.
[33] Park LT, Zarate CA Jr. N Engl J Med. 2019 Feb 7;380(6):559-568.
[34] Mark TL et al. Psychiatr Serv. 2009 Sep;60(9):1167.
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[36] van Rijswijk E et al. BMC Fam Pract. 2009 Jul 20;10:52.
[37] Tikkanen R et al. Mental health conditions and substance use: comparing U.S. needs and treatment capacity with those in other high-income countries. The Commonwealth Fund, May 2020. https://collections.nlm.nih.gov/catalog/nlm:nlmuid-101769552-pdf

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somatic symptoms associated with depression (e.g., increased or reduced appetite or sleep or painful physical symptoms)[38]. An MDD diagnosis requires the presence of 5 of 9 symptoms, which means there are 227 different ways a patient may present with the disorder.[39] Similarly, BD can present with unique groupings of symptoms, indicative of discrete conditions (e.g., BD type I and BD type II). Each requires an understanding of specific diagnostic criteria and a distinct approach to treatment.

3. **Overlapping symptoms.** Most psychiatric disorders have a significant degree of clinical overlap. For example, anxiety symptoms are often associated with MDD, BD, and many other psychiatric disorders. Approximately three-quarters of the depressed patients meet the criteria for the anxious distress specifier, meaning they have distressing, impairing anxiety symptoms.[40,41,42,43,44] Compared to depression without anxiety, the presence of anxiety makes depression more treatment resistant and heightens suicide risk, making them less likely to respond to treatment and at greater risk of suicide than depressed patients without anxiety. Anxiety is also a core symptom of a number of stand-alone diagnoses, called anxiety disorders, including generalized anxiety disorder (GAD), panic disorder, and social anxiety disorder, among others. The ubiquity of anxiety symptoms and other psychiatric symptoms, such as depressed mood, reinforces the importance of diagnostic accuracy.

4. **Psychiatric comorbidity.** Many patients have comorbid psychiatric conditions, which means they meet the criteria for two or more psychiatric disorders simultaneously and they may require different treatment approaches for each disorder. Comorbidity is common- it's estimated that more than 90% of patients with BD have a psychiatric comorbidity,[45] including at least one anxiety disorder (often two or more). Additionally, people diagnosed with BP are 4 to 5 times more likely to have attention-deficit/hyperactivity disorder (ADHD) than the general population and are at greater risk of developing insomnia and substance use disorders.[46,47]

   Importantly, many people with a psychiatric diagnosis also have physical comorbidities, further complicating the therapeutic picture. (see section 5, below)

5. **Interplay between mental and physical health.** In a recent retrospective analysis of over 2 million Americans diagnosed with MDD, 16% had a comorbid

[38] Ferenchick EK et al. BMJ. 2019 Apr 8;365:l794.
[39]Zimmerman M et al. Comprehensive Psychiatry. 2015 Jan;(56): 29-34.
[40] Zimmerman M et al. Depress Anxiety. 2019 Jan;36(1):31-38.
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[42] Allan NP et. al Psychiatry Research.2015 Aug; 228(3);441-447.
[43] Fava M et al. Am J Psychiatry. 2008 Mar;165(3):342-51.
[44] Gaspersz, R et. al. Curr Opin Psychiatry. 2018 Jan;31(1):17-25.
[45] McIntyre RS, Calabrese JR. Curr Med Res Opin. 2019 Nov;35(11):1993-2005.
[46] Clin Psychol (New York). 2009 Jun; 16(2): 256–277. For ADHD: Neuroscience & Biobehavioral Reviews Volume 124, May 2021, Pages 100-123.
[47] Kessler RC et al. Arch Gen Psychiatry. 2005 Jun;62(6):593-602.

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psychiatric condition, but an even greater percentage had a comorbid physical disorder- 40% were obese, and 40% had cardio metabolic morbidity.[48,49] Cardiovascular disease, hypertension, obesity, diabetes, and metabolic syndrome are highly prevalent in patients with BD and schizophrenia, independent of medication use.[50] Clearly, the implications of psychiatric disorders extend beyond mental health. While the presence of a psychiatric disorder significantly increases the likelihood of developing diabetes, cancer, heart disease, obesity and dementia, the reverse is also true—having any of those physical health disorders increases the risk of developing mental illness. Additionally, having a psychiatric disorder can also worsen the course of physical illnesses, and vice versa. [51]

6. **Physical and psychiatric symptom overlap can lead to diagnostic confusion.** Some common physical disorders, such as dementia or thyroid dysfunction, can present with psychiatric symptoms, leading to their misdiagnosis as a psychiatric disorder. Additionally, depression in older patients is often mistaken for dementia, due to the common and often severe cognitive symptoms associated with MDD. Thus, MDD in older patients has commonly been referred to as pseudo-dementia. Depression, especially if it is recurrent, chronic or severe, is also a risk factor for dementia.[52,53,54,55,56]

7. **Lack of objective diagnostic testing.** The lack of objective diagnostic testing significantly contributes to diagnostic and treatment inaccuracy and delays, increasing the cost and suffering associated with psychiatric conditions. Unlike other areas of medicine that rely on biological markers identified through laboratory testing or brain imaging, the diagnosis of psychiatric disorders relies on identifying typical symptom profiles and is dependent on the reliability and use of psychometric instruments and expert consensus.

   The disorder that best illustrates the seven challenges detailed above is bipolar disorder. BD is associated with repeated mood episodes, which may be characterized as depressive, manic, hypomanic, or a mix of two (depression + mania or hypomania). While any mood type is possible, the first two episodes of BD are most often depressive.[57] Hypomanic episodes are highly under-reported because those periods of high energy and expansive mood are not usually experienced negatively by the patient.[58] In fact, they're often seen as a reprieve

[48] Cardiometabolic multimorbidity refers to having ever been diagnosed with two or more of three diseases: hypertension, diabetes and cardiovascular disease (CVD).
[49] Dibato J et al. Prim Care Companion CNS Disord. 2022 Sep 6;24(5):21m03162.
[50] Merikangas KRArch Gen Psychiatry. 2007 May;64(5):543-52.
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[52] Musselman DL et al. Arch Gen Psychiatry. 1998 Jul;55(7):580-92.
[53] Moussavi S et al. Lancet. 2007 Sep 8;370(9590):851-8.
[54] Scott KM et al. J Affect Disord. 2007 Nov;103(1-3):113-20.
[55] Osby U et al. 2001 Sep;58(9):844-50.
[56] Lespérance F et al. Circulation. 2002 Mar 5;105(9):1049-53.
[57] Mitchell PB et al. Bipolar Disord. 2008 Feb;10(1 Pt 2):144-52.
[58] Singh T, Rajput M. Psychiatry (Edgmont). 2006 Oct;3(10):57

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from the oppressive weight of chronic depression.[59] Episodes of BP depression are usually far more frequent and longer-lasting than hypomanic or manic episodes. In fact, adults diagnosed with BP spend about one-half of their life depressed. For these reasons, BD is commonly misdiagnosed as MDD.[60] Patients with BD report on average 5.7–7.5 years delay between the onset of symptoms and an accurate diagnosis.[61,62] During this time, they consult, on average, four professionals before receiving an accurate diagnosis. [63]

An inaccurate diagnosis leads to, at best, suboptimal treatment, and at worst, treatment that causes harm. Regardless, empirical evidence has demonstrated the value of early optimized treatment for every mental illness, because it reduces the burden of symptoms, lessens functional impairment, halts illness progression, and alleviates suffering.

Psychiatric disorders are difficult to effectively treat

Determining the most appropriate treatment for a mental illness requires careful consideration of many factors, including a patient's symptom presentation (e.g., are they sleeping too much or struggling with insomnia), knowledge of their previous treatments (what has worked and what hasn't), and, most critically, the unique wishes of each patient. In the case of MDD, several psychological and pharmacological interventions, used individually or in combination, are available to optimally treat patients.[64]

There is abundant evidence supporting the value of psychotherapy (AKA talk therapy), particularly cognitive-behavioral therapy (CBT), especially for MDD, anxiety, and insomnia. However, depending on the specific intervention and format, psychotherapy can be costly, challenging to access, and laborious. In short, it's hard work and it requires an ability to learn, which is often impaired during acute, severe exacerbations of mental illness. Thus, it's possible to be too ill to benefit from CBT, because mental illness, especially when severe, impacts cognitive functioning, it is sometimes necessary to initiate treatment with medication while building an empathic therapeutic relationship, and then shifting to a more structured form of therapy when the patient's cognitive capacity starts to improve.

While medication is not required for every person diagnosed with a mental illness, patients with moderately-severe or severe MDD or anxiety often benefit from or require medication to recover. For schizophrenia, ADHD and BD, medication is usually a crucial

[59] Tondo L et al. Curr Neuropharmacol. 2017 Apr;15(3):353-358.
[60] Ghaemi SN et al. J Clin Psychiatry. 2000 Oct;61(10):804-8.

[61] Morselli PL et al. Bipolar Disord. 2003 Aug;5(4):265-78.
[62] Ghaemi SN et al. J Affect Disord. 1999 Jan-Mar;52(1-3):135-44.
[63] Hirschfeld RM et al. J Clin Psychiatry. 2003 Feb;64(2):161-74.
[64] Ramanuj P et al. BMJ. 2019 Apr 8;365:l835.

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aspect of achieving and maintaining full functional recovery. Given the high rate of psychiatric misdiagnosis, the approach to treatment, whether pharmacological or psychological, is frequently suboptimal.

Challenges associated with treatment

1. **Treatment selection.** Finding the right psychiatric medication is almost always a matter of trial and error, because every individual has unique needs.

   All Health Canada and FDA-approved psychiatric medications are effective in treating illness, but they don't work for every patient. That's because every person has a unique brain and their experience with mental illness is also unique to them. For instance, every patient has a different set of symptoms, comorbidities, previous treatment experiences and psychosocial circumstances that must inform a personalized approach to their care.

   Provincial formulary access to newer, better tolerated medications, which help to improve adherence, is extremely poor. In fact, psychiatry has the lowest rate of new listings and reimbursement compared to every other specialty.[65] There is also a wide disparity regarding medication availability between provinces, as drug formulary decisions are made provincially, often without the involvement of the specialists who prescribe them. In short, the decisions are often made by non-experts with an overriding cost imperative, despite evidence that untreated or undertreated mental illness is prohibitively costly for the individual, their family and for society.

   Ideally, experienced clinicians must *personalize treatment*—identify the right treatment for the right person at the right time. Personalization is time intensive and requires effective communication between the prescriber and their patient, ongoing education (e.g., for clinicians, pharmacists, allied healthcare practitioners, patients, caregivers), and access to different treatment options.

   A recent retrospective analysis of more than 280,000 patients with depression evaluated psychiatric treatment patterns and identified suboptimal pharmacotherapy practices. Up to 52% were untreated and many others received a medication that was not an antidepressant as their first treatment, in contrast to treatment guideline recommendations.[66]

   Delays in treatment have a material impact on recovery. In the case of a working individual diagnosed with MDD, early symptom improvement is a significant predictor of treatment success. Patients responding to treatment within two weeks of its initiation showed improvements in functional areas of presenteeism, work productivity loss, and activity impairment,[67] [68] [69] while patients who did not

[65] Bishop T et al. JAMA Psychiatry. 2014 Feb;71(2):176-181
[66] Kern DM et al. BMC Psychiatry. 2020 Jan 3;20(1):4.
[67] Soares CN et al. CNS Spectr. 2014 Dec;19(6):519-27.
[68] Trivedi MH et al. Am J Psychiatry. 2013 Jun;170(6):633-41.
[69] Lam RW et al. Int Clin Psychopharmacol. 2014 Sep;29(5):239-51.

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achieve remission after their initial treatment, treatment switch or treatment augmentation did not see functional improvement outcomes to the same degree, indicating the importance of effective treatment at the earliest stage of MDD management to facilitate functional recovery.

2. **Depression can be treatment resistant.** Treatment resistant depression (TRD) is diagnosed when the patient fails to respond or achieve remission after having two or more trials of medications, which were given at an adequate dose and duration. TRD is estimated to occur in at least 30% of patients with MDD. The total annual burden of medication-treated MDD among the US population was $92.7 billion, with $43.8 billion (47.2%) attributable to TRD. The share of TRD was 56.6% ($25.8 billion) of the health care burden, 47.7% ($8.7 billion) of the unemployment burden, and 32.2% ($9.3 billion) of the productivity burden of medication-treated MDD.[70]

   Despite the alarming emotional and economic cost of undertreated depression and the frequency of TRD, recent data shows that nearly 70% of patients with TRD have not had adjustments to their treatment in the last 6 months and 60% have not had a treatment change in the last year.[71,72]

3. **Special populations.** When a patient is pregnant or isn't between the ages of 18 and 65, prescribing becomes more challenging, especially for clinicians without adequate experience. This is because drug manufacturers rarely seek regulatory approval for the use of their products in children, adolescents, pregnant or breastfeeding women, or the elderly.

   While research has clearly demonstrated the morbidity and mortality associated with untreated or undertreated psychiatric disorders in all age groups,[73,74] more inexperienced clinicians may hesitate to prescribe treatments that lack a formal Health Canada or FDA indication. In Canada, there are no psychiatric medications with an official indication for the treatment of depression in patients under age 18.

4. **Side effects and non-adherence.** No medication can be effective if not taken as prescribed. Medication adherence is critical for therapeutic success and is a challenge in all areas of medicine. A major reason for non-adherence is due to side effects that, even if tolerable in the short-term, often become increasingly burdensome with time. Prescribers must consider treatment sustainability when selecting a medication, as most mental illnesses require long-term treatment to maintain remission, prevent relapse, recurrence, and disease progression, and reduce some of the more negative outcomes associated with mental illness, including suicidality and reduced quality of life. [75]

[70] Zhdanava M et al. J Clin Psychiatry. 2021 Mar 16;82(2):20m13699.
[71] Heerlein K et al. J Affect Disord. 2021 Mar 15;283:115-122.
[72] Heerlein K et al. J Affect Disord. 2021 Jul 1;290:334-344.
[73] Jahan N et al. Cureus. 2021 Aug 17;13(8):e17251.
[74] Mullen S. Ment Health Clin. 2018 Nov 1;8(6):275-283.
[75] Dou, L et al. Patient Prefer Adherence. 2020 Jul 31;14:1329-1339

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Antidepressant selection should be individualized and informed by medication tolerability profiles, symptoms, treatment history, comorbid conditions and, most critically, a patient's preference.[76] A top consideration with antidepressant selection is the need to minimize the potential for side effects, notably those that may worsen current symptoms (e.g., fatigue) or comorbid conditions.[64]

As an example, many antidepressants are associated with sexual dysfunction. However, when depressed, many patients report experiencing little or no interest or pleasure from sexual activity. When treatment for acute depression is initiated, sexual dysfunction might seem trivial to a payer, and even to a patient, but can eventually become a significant problem, especially when those side effects become permanent.

Without access to a competent, engaged practitioner offering better alternatives, many patients chose to stop their treatment. If a treatment that doesn't cause sexual dysfunction (or weight gain or another side effect a patient finds intolerable) isn't covered by a patient's insurance, they might also choose to discontinue their antidepressant.

Adherence is also a major challenge for patients treated for BD. While antipsychotic agents and mood stabilizers are the cornerstone of BD pharmacotherapy, an estimated 40% to 50% of patients with the disorder do not regularly take their medications regularly or at all.[77] Adherence to some drug classes are particularly low, with studies reporting antipsychotic adherence as low as 20%. Studies looking at patients diagnosed with schizophrenia report non-adherence rates ranging from 20% to 89%. Additionally, up to half of patients alter the dose and frequency of medication without first discussing with their clinician.[78, 79]

While intolerable side effects are an important cause of non-adherence, side effects frequently thought of by physicians as mild or short-lived, such as gastrointestinal distress or dry mouth, were identified as the reason to stop treatment by 20–30% of patients surveyed by the Depression and Bipolar Support Alliance.[80] Such findings underscore the importance of ongoing monitoring of treatment tolerability and treatment modification (e.g., dose adjustment, medication switching), when necessary, to improve adherence and clinical outcomes.

Stigma is a particularly powerful driver of non-adherence in psychiatry. Patients are often embarrassed or fear judgment when they pick up their prescription, so they avoid discussing their treatment with their pharmacist. Too often, the information they receive is different from what they heard from their prescriber, heightening the patient's concerns about treatment. They might hear or read

[76] Park LT, Zarate CA Jr. N Engl J Med. 2019 Feb 7;380(6):559-568.
[77] McIntyre RS, Calabrese JR. Curr Med Res Opin. 2019 Nov;35(11):1993-2005.
[78] Kampman et. al. Acta Psychiatr Scand. 1999 Sep;100(3)167-75.
[79] Caqueo-Urízar, A. et al. Patient Prefer Adherence. 2020 Sep 3;14:1595-1604.
[80] Rosenblat JD et al. J Affect Disord. 2019 Jan 15;243:116-120.

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erroneous information from friends, family, online sources, or even from other healthcare professionals, which can drive fear and impact adherence.[81] The way psychiatric medications are labeled, particularly the term “antipsychotic”, is particularly stigmatizing. Several antipsychotics are indicated by regulatory bodies for non-psychotic symptoms and disorders, including MDD and for mood stabilization in BD.

5. **Treating with a sense of urgency.** Patients diagnosed with a psychiatric disorder, including MDD, BD, schizophrenia and ADHD, benefit from early, effective treatment, which should be approached with a sense of urgency. That urgency is critical for MDD, which can become a chronic, inflammatory disorder, especially following multiple episodes and if left untreated or undertreated .[82] Additionally, the duration of untreated psychosis may impact the prognosis of schizophrenia[83] and bipolar disorder is now considered a neuroprogressive disorder. This means aspects of the disorder, such as the changes in brain structure and function leading to cognitive decline, can worsen with each mood episode.[84]

   Additionally, episodes beget episodes. For instance, a patient who has had one depressive episode has a 60% chance of having another, 2 episodes comes with a 70% recurrence risk, and 3 episodes has a recurrence risk of more than 90%.[85] Recurrence risk is further amplified by symptom severity and the presence of residual symptoms.[86]

   The risk of relapse and recurrence is associated with structural and functional changes present in a depressed brain that are caused by inflammation, which increase the risk of treatment resistance, functional impairment, and cognitive deficits.[87,88,89]

   A recent retrospective analysis of over 2 million Americans with depression showed that, among those who initiated antidepressant treatment, only 23% had their treatment intensified (medication addition or treatment switch) during the follow-up period, despite ongoing symptoms, with a median time to intensification of 17 months.[90]

   Early detection and rapid, optimized treatment are critical to achieving full symptomatic and functional recovery from MDD.[91] Several studies have shown

[81] The Mental Health Commission of Canada has produced extensive resources related to all aspects of stigma and mental health, at home and in the workplace. For more information, visit https://mentalhealthcommission.ca/what-we-do/stigma-and-discrimination/
[82] Beurel E. et al. Neuron. 2020 Jul 22;107(2):234-256.
[83] Allot K. et. al. Psychol Med. 2018 Jul;48(10):1592-1607.
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[87] Berk M. Int J Neuropsychopharmacol. 2009 May;12(4):441-5.
[88] Krishnadas R, Cavanagh J. J Neurol Neurosurg Psychiatry. 2012 May;83(5):495-502.
[89] Berk M et al. Neurosci Biobehav Rev. 2011 Jan;35(3):804-17.
[90] Dibato J et al. Prim Care Companion CNS Disord. 2022 Sep 6;24(5):21m03162.
[91] Habert J et al. Prim Care Companion CNS Disord. 2016 Sep 1;18(5).

that a shorter duration of untreated MDD is associated with increased treatment response and remission, which improves long-term outcomes and reduces the risk of recurrence.[92,93,94] The best chance of achieving remission with treatment is within the first 6 months of MDD onset.[95]

The STAR*D trial, the largest “real-world” randomized clinical trial in psychiatry, demonstrated the value of stepwise care in the management of MDD. Antidepressants typically produce their maximal therapeutic effects within two weeks of initiation, and in the absence of a clinical response after a few weeks, the dose should be increased or the treatment switched.[96]

Consistent with MDD pathophysiology, current evidence indicates that BD is also a progressive disorder.[97] The value of early intervention is now recognized in BD, as initial phases of the disorder may be more amenable to therapy and require fewer or less aggressive treatment approaches.[98] Again, this underscores the critical importance of rapid and accurate diagnosis, which affords an opportunity for early intervention.

The costs of under-treated or untreated mental illness are varied and extensive. Individuals, families, and workplaces bear the financial cost of disability, lost productivity, absenteeism and presenteeism (present at work, but not functioning optimally). Families, friends, and communities feel the strain on relationships. All levels of the already strained healthcare system must respond to the heavy demand for resources. Additionally, misplaced resources, vanishing production, unemployment, absence from work, and premature mortality constitute some of the many indirect economic costs associated with sub optimally treated mental illness.[99]

[92] Habert J et al. Prim Care Companion CNS Disord. 2016 Sep 1;18(5).
[93] Kraus C et al. Transl Psychiatry. 2019 Apr 3;9(1):127.
[94] Ghio L et al. J Affect Disord. 2014 Jan;152-154:45-51.
[95] Bukh JD et al. J Affect Disord. 2013 Feb 15;145(1):42-8.
[96] Ramanuj P et al. BMJ. 2019 Apr 8;365:l835.
[97] Vieta E et al. Nat Rev Dis Primers. 2018 Mar 8;4:18008.
[98] Vieta E et al. Am J Psychiatry. 2018 May 1;175(5):411-426.
[99] Out of the Shadows: Making Mental Health a Global Priority

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Part 3: How did we get here?

When it comes to the provision of mental healthcare in Canada, we are facing a *wicked problem*.[100] A myriad of factors have contributed to the challenging situation we currently face. In this section, we outline some of the greatest barriers to access high-quality mental healthcare. These barriers hinder our collective ability to rapidly deliver an accurate diagnosis and to provide early, effective treatment. Each requires careful consideration and an innovative strategy to develop scalable, sustainable solutions that will make a meaningful difference.

1. **Barriers to access.** The majority of mental healthcare services in Canada (and the US) are provided by non-psychiatrists, usually primary care practitioners (PCPs).[101] International studies show that roughly a third of PCP consultations involve individuals with a diagnosable mental illness, representing one of the most important groups to seek their clinical advice.[102, 103]

   According to an Angus Reid study published in September 2022, one-half of Canadians either can't find a PCP or are unable to get a timely appointment. Among physicians who are providing clinical services, data from the most recent National Physician Health Survey in 2021 reveal that burnout nearly doubled during the pandemic, with more than half (53%) reporting they're experiencing high or very high levels of burnout.

   Difficulty accessing a PCP are compounded by the near impossibility of obtaining a psychiatric consultation. Family doctors describe psychiatrists as the most difficult specialists to access. In a phone survey performed in Vancouver, researchers tried to book a real patient for a psychiatrist consultation from a PCP's office. Out of 230 psychiatrists in private practice, only six could see the patient on short notice (within 2-3 months), illustrating the significant access challenge.[104]

   Many patients can only access psychiatric care by presenting to an emergency department. Emergency departments may provide entry into the system for people in crisis, but cannot be relied upon as a primary solution to psychiatric

[100] Petrie S, Peters P. Untangling complexity as a health determinant: Wicked problems in healthcare. 2020. Health Science Inquiry. Vol 11:2020;131-35.
*First formally described in Management Science in 1973 by Horst Rittel and Melvin Webber, **wicked problems** contain several aspects which makes them unsolvable including: connection to other problems, range and variety of stakeholder opinion regarding proper action, economic burden, and imperfect or paradoxical knowledge for best action. Consequently, the operating environment of healthcare provision has created a strained system at every interface – from reducing wait times, to constraining operations costs – ultimately, wicked problems have significantly hindered our ability to provide healthcare to Canadians.*
[101] Moroz N et al. Healthcare Mgt Forum. 2020 Jul;33(6):282-287
[102] Watson DE et al. Can J Psychiatry. 2005 Jun;50(7):398-406.
[103] Lester H et al. Br J Gen Pract. 2007 Mar;57(536):196-203.
[104] Goldner EM et al. Can J Psychiatry. 2011 Aug;56(8):474-80.

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access challenges. For patients experiencing acute psychiatric symptoms, ER visits are often experienced as stigmatizing, humiliating, and unhelpful. For those who do find their way to the ER, an evaluation of over 1921 Ontario psychiatrists' administrative data revealed that only 40% of patients who presented at the emergency department following a suicide attempt were able to see a psychiatrist within six months of their visit.[105]

Further compounding the challenge is that the few provincially-funded services accessible by patients without a referral have unacceptably high barriers, including long wait times and stringent disorder-specific requirements. For example, many require complete abstinence from drugs or alcohol.

Inadequate physician training. According to the World Health Organization (WHO), "integrating mental health services into primary care is the most viable way of closing the treatment gap and ensuring that people get the mental health care they need."[106] However, a Canadian survey of family physicians found that less than half (46%) were satisfied with the mental health care they were able to provide to their patients.[107]

While most psychiatric disorders are diagnosed and treated by non-psychiatric clinicians, the accuracy of initial psychiatric diagnoses made by referring non-psychiatric physicians is suboptimal. Misdiagnosis rates for psychiatric disorders in primary care ranging from 66% to 98%.[108]

There are many reasons for the unacceptably high rates of misdiagnoses. Chief amongst these is the lack of comprehensive psychoeducation for non-psychiatric clinicians. Despite their central role in providing mental healthcare, many physicians are not adequately trained to treat mental illnesses. Many Canadian family medicine residency programs do not require a psychiatric rotation or, if required, training is limited to one month.

Psychiatry has evolved, with significant advances in our understanding of the genetic and inflammatory bases of many DSM-5 disorders. Not long ago, many mental illnesses were considered the fault of poor maternal behaviour, such as the "schizophrenogenic mother." Yet, the training of physicians and other health professionals rarely includes these advances, which are critical in magnifying the importance of early, urgent and full management of psychiatric disorders.

Knowledge gaps among non-psychiatric physicians have been shown to delay accurate diagnosis and the timely initiation of appropriate treatment.[109] Comprehensive psychoeducation directed at non-psychiatric physicians and earlier access to psychiatric expertise have been shown to improve clinical

[105] Rudoler D et al. CMAJ. 2017 Dec 11;189(49):E1509-E1516.
[106] World Health Organization. The introduction of a mental health component into primary health care. [Jun;2017]; retrieved from http://www.who.int/iris/handle/10665/37021 1990.
[107] Clatney L. Can Fam Physician. 2008;54:884–889.
[108] Vermani M et al. Prim Care Companion CNS Disord. 2011;13(2):PCC.10m01013.
[109] AlSalem M et al. Medicine (Baltimore). 2020 Dec 18;99(51):e23708.

outcomes in patients with a mental illness.[110]

2. **Barriers to effective collaboration between PCPs and mental health specialists.** Access to a psychiatrist isn't only an issue for patients. Accessing psychiatric guidance from a specialist colleague is challenging—if not impossible—for most PCPs. If available, guidance is often delayed, coming after the patient has been given a tentative diagnosis and prescribed medication.

   In a study looking at the collaboration between PCPs and mental healthcare professionals in Quebec, numerous hindering factors associated with shared care were identified, including a lack of resources (either professionals or programs), long wait times, lack of training, time and incentives for collaboration and inadequate payment for PCP services.[111]

   While many changes to practice models are being implemented or explored to support the goal of effective collaborative care, PCPs identify the need for expanded psychosocial services and greater collaboration to increase overall access and quality of care for patients diagnosed with a mental illness.[112]

3. **Stigma lives in medicine.** The greatest patient advocates should be doctors. However, mental illness-related stigma exists in the healthcare system and among practitioners, which creates significant barriers to access and care quality. Healthcare-practitioner stigma can include negative attitudes and behaviours, lack of knowledge, skills and awareness, and therapeutic pessimism. Without strong medical leadership and ongoing high-quality education, such stigma will continue to pervade healthcare workplace culture.[113]

   Physicians must lead by example, by taking better care of themselves—and each other. While burnout statistics are alarming, other findings are more concerning. For example, a Canadian pre-pandemic survey found that 32% of physicians screened positive for depression and 19% reported experiencing suicidal ideation. In a follow-up survey, 59% of physicians indicated that their mental health has worsened since the onset of the pandemic and nearly half (47%) reported low levels of social well-being; their emotional and psychological well-being have also suffered compared to pre-pandemic levels.[114]

   A growing body of Canadian research has identified promising strategies for mental health stigma reduction in healthcare.[115] We've seen a concerted effort to battle stigma through campaigns such as "Let's Talk" and CAMH's "Mental Health IS Health." While mental health advocates and allies who share their stories and encourage conversations will help to reduce stigma in many arenas of public life, more needs to be done to dismantle the stigma that is deeply rooted

[110] Althubaiti N. et. al. Cureus. 2019 May 25;11(5):e4755.
[111] Fleury MJ et al. Ment Health Fam Med. 2012 Jun;9(2):77-90
[112] Fleury MJ et al. Ment Health Fam Med. 2012 Jun;9(2):77-90.
[113] Knaak S et al. Healthc Manage Forum. 2017 Mar;30(2):111-116.
[114] National Physician Survey, 2021, retrieved from: https://www.cma.ca/news-releases-and-statements/physician-burnout-nearly-doubles-during-pandemic.
[115] Knaak S et al. Healthc Manage Forum. 2017 Mar;30(2):111-116.

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in healthcare's culture, institutions, and practitioners.

Improving the stigma that lives in medicine requires a focus on improved psychiatric education, especially by sharing the scientific advances in our understanding of the causes of mental illnesses. Psychiatric disorders are medical disorders with bio-psychosocial roots in genetics, environmental factors and inflammation. Together, these factors lead to changes in brain structure and function, resulting in symptoms of mental illness, as well as increasing the risk of physical illnesses, such as obesity, diabetes, heart disease and other inflammatory illnesses.

4. **Lack of access to psychiatric expertise at the point of care.** Unlike most areas of medicine, psychiatry lacks biological markers (laboratory and imaging tests) that reliably support a diagnosis and help determine the best treatment. Without objective biological tests, making an accurate diagnosis and finding an effective, tolerable treatment is inexact, more complex and takes longer.

   There is a care gap between the clinical goals outlined in evidence-based guidelines for the management of mental illness and actual clinical practice. Robust clinical decision support systems would provide healthcare practitioners with best-practice information at the point of care, but these tools are profoundly lacking.

   Guidelines developed for mental illnesses are often out-of-date, challenging to access and utilize, and thus, rarely followed.

   Patient and population health data for psychiatric disorders is of poor quality. In addition, given that a large proportion of mental healthcare delivery occurs outside the public health system, data related to understanding service utilization patterns is poor. To improve the quality of psychiatric care, the delivery of diagnostic and clinical management in primary care must evolve towards the level of standardization as established for other chronic conditions, such as diabetes and cardiovascular disease.

   Rigorous implementation of guideline-directed approaches to psychiatric care, utilizing standardized therapeutic decision-making programs and providing sequential treatment strategies,[116] have been shown to improve clinical outcomes and have also demonstrated cost-effectiveness.[117,118]

5. **Lack of technology at the point of care.** Just as an oncologist would refer to clinical decision-making guidance to determine the right course of treatment, based on a patient's age and the tumor/cancer type and grade, psychiatric care must similarly consider age, clinical presentation and other critical factors that guide standardized clinical decision making. However, despite the availability of

[116] Kraus C et al. Transl Psychiatry. 2019 Apr 3;9(1):127.
[117] Bauer M et al. J Clin Psychopharmacol. 2009 Aug;29(4):327-33.
[118] Ricken R et al. J Affect Disord. 2011 Nov;134(1-3):249-56.

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empirical evidence, few clinicians can access or utilize standardized therapeutic decision-making programs.[119]

All areas of medicine, including psychiatry, have validated the importance of algorithm-based care, which is more accurately defined as evidence-based guidance for clinical decision making. Findings from the German Algorithm Project (GAP) demonstrated that employing a highly structured algorithm-guided treatment for depression was associated with a shorter time to remission and the need for fewer medications to achieve remission, compared with treatment-as-usual or less specific computerized medication guidance.[120] Highly structured algorithms, using more advanced prescribing strategies for antidepressants, were associated with improved clinical outcomes and demonstrated cost-effectiveness.[121,122]

Psychiatry is rife with habit-based prescribing, where decisions are based on a clinician's comfort with a treatment rather than an individual patient's unique needs. As a result, an already challenging situation - recommending the best treatment from many different options- is made worse by not considering a patient's needs at all. Additionally, treatment quality is often suboptimal in terms of follow-up and monitoring. Validated clinical measurement tools, which have been shown to improve diagnostic accuracy, are vastly underutilized[123] and clinical decisions are not always rooted in science or the most recent empirical evidence. Taken together, it's no wonder effective treatment rates are unacceptably low in primary care settings, even for common disorders such as depression and anxiety.

[119] Kraus C et al. Transl Psychiatry. 2019 Apr 3;9(1):127.
[120] Adli M et al. Int J Neuropsychopharmacol. 2017 Sep 1;20(9):721-730.
[121] Bauer M et al. J Clin Psychopharmacol. 2009 Aug;29(4):327-33.
[122] Ricken R et al. J Affect Disord. 2011 Nov;134(1-3):249-56.
[123] Craven MA, Bland R. Can J Psychiatry. 2013 Aug;58(8):442-8.

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It’s time for change.

We are judged as a society by how we care for those who are most vulnerable. To lessen the emotional, physical and financial burdens associated with a serious mental illness, and to support recovery, we must demand that patients are treated with dignity and respect. This is further demonstrated by prioritizing their care – urgent access to personalized care is essential.

Mental healthcare urgently requires transformation.

That transformation, to be truly impactful, will require technological advances that support mental healthcare that is timely, accurate and effective.

Through a rigorous design process, considering the needs of patients, practitioners and payers, in terms of healthcare needs as well as privacy, security, and future innovation, technology will improve access to the highest quality care.

Regardless of where one starts on their path to treatment, a PCP should be a partner in care. Yet, they too face barriers, as they work to deliver an accurate diagnosis, formulate an effective treatment plan and guide their patient on the path to recovery.

By supporting PCPs, we will reduce caregiver burnout and foster higher-quality healthcare delivery, while strengthening compassion and respect for patients.

By transforming a patient’s journey, we will reduce suffering, improve functioning, increase hope and maintain dignity.

It’s time to create a more effective, patient-centered and economically-sustainable mental healthcare system.

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