nP CLINICAL SPOTLIGHT

Measurement-Based Care (MBC) and Patient Reported Outcomes (PRO) in Psychiatry

Measurement-based care (MBC) and patient reported outcomes (PRO) have been shown to improve outcomes for individuals with psychiatric disorders.[1–3] MBC, defined as utilizing evidence-based and validated scales to screen for disease and track symptoms over time, allows a clinician to more effectively diagnose and monitor response to treatment.[4] As a key element for optimizing outcomes, MBC is recommended in clinical practice guidelines for depression, such as the American Psychiatric Association (APA) and Canadian Network for Mood and Anxiety Treatments (CANMAT).[5,6] Without MBC, the patient's state is usually assessed through subjective discussion and can be affected by recent events such as the loss of a pet or getting a promotion, making it difficult to know how a patient is truly doing. By tracking outcomes over time with MBC, a clinician can get a more complete picture and temporally track a patient's symptoms and disease progression. Use of MBC, in the form of PRO, over time provides a more continuous, quantitative, and longitudinal perspective of the patient experience during treatment.[7] This can also help identify specific symptoms or risk factors to target for treatment with psychotherapy or pharmacotherapy.[8]

A 2015 study compared response and remission rates between participants with depression receiving MBC versus standard treatment.[9] They found that the 73.8% of the MBC group reached remission compared to 28.8% in the standard care arm (p<0.001). This clearly demonstrated the value of MBC in improving outcomes for patients with depression. Of note, there was no difference in drop out rates between groups, indicating that utilizing MBC did not overburden patients. Another study demonstrated that individuals utilizing MBC were more medication adherent than those not receiving MBC.[10] MBC can also assist payers in the transition to a value-based care model of reimbursement, allowing for an objective and consistent method of reporting outcomes.[11] For example, Merit-Based Incentive Payment System (MIPS) is being utilized for Medicare Part B payments and includes reporting of quality measures such as patient outcomes at 6 and 12 months.[12]

Some common scales utilized for MBC in psychiatry are the Patient Health Questionnaire-9 (PHQ-9) and General Anxiety Disorder-7 (GAD-7).[13,14] The PHQ-9 can be used to screen for depression and track depressive symptoms over time. The GAD-7 measures anxiety symptoms. A PHQ-9 score of ≥10 or GAD-7 score ≥11 indicates moderate severity and indicates recommendations for psychotherapy and pharmacotherapy treatment. A recent meta-analysis found that utilization of smartphone intervention applications, particularly those with mood monitoring features, reduced depressive symptoms compared to not using MBC, indicating that digital MBC improves patient outcomes.[15]

In addition to scales, MBC can include worksheets to track specific situations, emotions, urges, and actions. For example, a clinician may recommend that a patient identify a situation where they become aggravated and log their emotions, urges, and management of the situation.

Traditionally, MBC is performed by patients and clinicians filling out questionnaires, usually in the office. This pen and paper MBC approach is time consuming and cumbersome for clinicians; in addition to taking time during an appointment to administer, it is difficult to score and structure the data in a meaningful way.[4,16,17] In this context, less than 20% of clinicians currently utilize MBC in their practice.[4] Digital mental health tools and mobile applications, such as TempusPRO, provide a solution to this workflow problem.

TempusPRO is an MBC platform utilizing patient reported outcomes where clinicians can assign scales and worksheets at specified frequencies to track patient mood and other outcomes. The mobile app platform allows for increased patient engagement through notifications and automated reporting to clinicians. In conjunction with Tempus|nP pharmacogenomic testing, TempusPRO is a cutting-edge tool clinicians can utilize to improve patient-clinician communication, while tracking patient outcomes. Together, TempusPRO can help identify treatment plan challenges and Tempus|nP can help inform changes in medication regimen.

Figure 1. TempusPRO dashboard and mobile app.
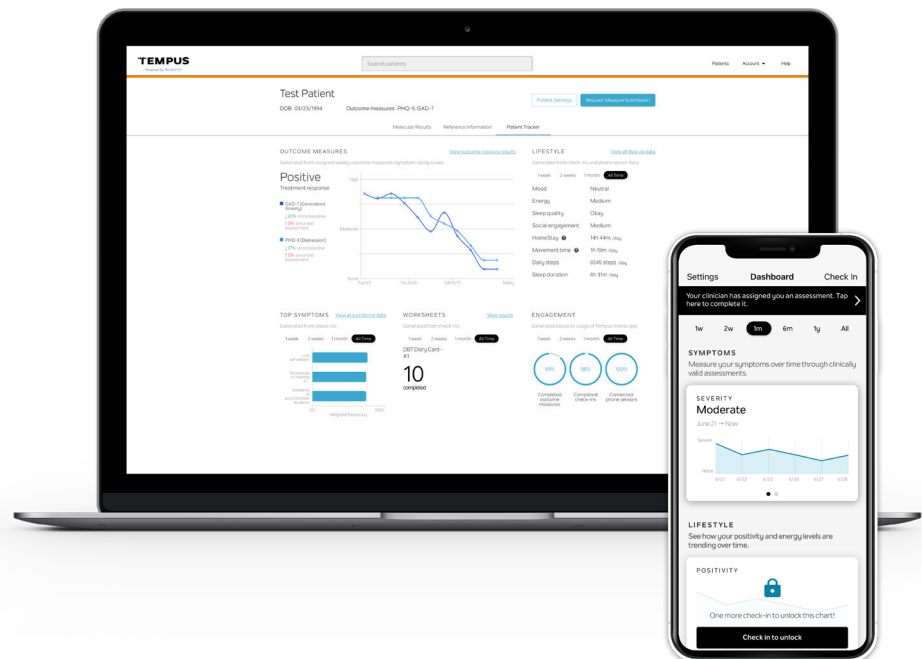
References

1. Hong, R.H., et al., *Implementing Measurement-Based Care for Depression: Practical Solutions for Psychiatrists and Primary Care Physicians.* Neuropsychiatric disease and treatment, 2021. 17: p. 79–90.

2. Scott, K. and C.C. Lewis, *Using Measurement-Based Care to Enhance Any Treatment.* Cognitive and behavioral practice, 2015. 22(1): p. 49–59.

3. Fortney, J.C., et al., *A Tipping Point for Measurement-Based Care.* Psychiatr Serv, 2017. 68(2): p. 179–188.

4. Lewis, C.C., et al., *Implementing Measurement-Based Care in Behavioral Health: A Review.* JAMA Psychiatry, 2019. 76(3): p. 324–335.

5. Kennedy, S.H., et al., *Canadian Network for Mood and Anxiety Treatments (CANMAT) 2016 Clinical Guidelines for the Management of Adults with Major Depressive Disorder: Section 3. Pharmacological Treatments.* Canadian journal of psychiatry. Revue canadienne de psychiatrie, 2016. 61(9): p. 540–560.

6. *Practice guideline for the treatment of patients with major depressive disorder (revision). American Psychiatric Association.* Am J Psychiatry, 2000. 157(4 Suppl): p. 1–45.

7. Bech, P., S.F. Austin, and M.E. Lau, *Patient reported outcome measures (PROMs): examination of the psychometric properties of two measures for burden of symptoms and quality of life in patients with depression or anxiety.* Nord J Psychiatry, 2018. 72(4): p. 251–258.

8. Borentain, S., et al., *Patient-reported outcomes in major depressive disorder with suicidal ideation: a real-world data analysis using PatientsLikeMe platform.* BMC Psychiatry, 2020. 20(1): p. 384.

9. Guo, T., et al., *Measurement-Based Care Versus Standard Care for Major Depression: A Randomized Controlled Trial With Blind Raters.* Am J Psychiatry, 2015. 172(10): p. 1004–13.

10. Chang, T.E., et al., *Depression monitoring and patient behavior in the Clinical Outcomes in MEasurement-Based Treatment (COMET) trial.* Psychiatr Serv, 2014. 65(8): p. 1058–61.

11. Axelson, A. and D. Brent, *Regulators, Payors, and the Impact of Measurement-Based Care on Value-Based Care in Psychiatry.* Child Adolesc Psychiatr Clin N Am, 2020. 29(4): p. 743–754.

12. APA. *MIPS Quality Performance Category: 2017 Performance/2019 Payment.* [cited 2021 Jan 22]; Available from: https://www.psychiatry.org/psychiatrists/practice/practice-management/coding-reimbursement-medicare-and-medicaid/payment-reform/toolkit/quality-performance-category.

13. Kroenke, K., R.L. Spitzer, and J.B. Williams, *The PHQ-9: validity of a brief depression severity measure.* J Gen Intern Med, 2001. 16(9): p. 606–13.

14. Spitzer, R.L., et al., *A brief measure for assessing generalized anxiety disorder: the GAD-7.* Arch Intern Med, 2006. 166(10): p. 1092–7.

15. Firth, J., et al., T*he efficacy of smartphone-based mental health interventions for depressive symptoms: a meta-analysis of randomized controlled trials.* World Psychiatry, 2017. 16(3): p. 287–298.

16. Trivedi, M.H., et al., *Implementing Measurement-Based Care to Determine and Treat Inadequate Response.* J Clin Psychiatry, 2020. 81(3).

17. Jacob, C., A. Sanchez-Vazquez, and C. Ivory, S*ocial, Organizational, and Technological Factors Impacting Clinicians' Adoption of Mobile Health Tools: Systematic Literature Review.* JMIR mHealth and uHealth, 2020. 8(2): p. e15935–e15935.