# Resource Document on Implementation of Measurement-Based Care

Approved by the Joint Reference Committee, June 2023

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## Objective

To develop resources to help solo as well as small-group psychiatrist practices and health systems including psychiatric care implement measurement-based care into routine practice.

## Format

Presented as a resource document/white paper and toolkit on the APA website.

## Table of Contents

## Executive Summary

Measurement-based care (MBC) is the process of repeatedly assessing psychiatric symptomatology through structured means to inform the process of care.[1] Backed by years of experience and scientific evidence, the use of standardized rating scales in psychiatric practice is associated with significant gains in the efficiency of care delivery and achievement of clinical outcomes.[1-3] Scales are becoming more widespread, affordable and digitized.[4, 5] Increasingly, private and public payers are requiring evidence of implementation of MBC across different practice settings in order to satisfy reimbursement criteria, and accreditation bodies are adding routine use of measures to their list of requirements for ongoing accreditation.[6]

In spite of a growing chorus calling for the adoption of routine MBC, the psychiatric field has been slow to implement MBC in routine practice. This resource document is intended to review the rationale and evidence behind MBC, highlight payment and practice incentives to entice clinicians to consider more consistent implementation of MBC, and identify common barriers and best practices to aid in MBC adoption.

Practitioners should consider MBC implementation for a variety of reasons. It has evidence in support of improved quality of care and achievement of patient-centered clinical outcomes.[5, 7] Additionally, there are associations with the implementation of MBC and improved patient engagement, insight, validation, and reduced stigma, and some gains in practice efficiency.[1, 4, 5] Opportunities are available for practitioners to add insurance billing codes to visits and in-between visits for the performance of MBC and interpretation of results by staff to many insurers. What's more, the process of MBC is becoming a consistent feature of value-based reimbursement contracts between systems, solo and small-group practitioners, and many private insurance payers.[4-6] Finally, for systems interested in accreditation, The Joint Commission and URAC are incorporating proof of routine use of standardized rating scales in their accreditation standards across a variety of practice settings.[4, 5]

Choosing which measure to implement can be a daunting task. This resource document offers up a framework to aid in the measure selection process that details considerations such as cost, accessibility, reliability, and validity of measures adopted for different clinical settings. Additionally, this resource document reviews technological considerations for solo and small-group practitioners looking to implement MBC into workflows that are digitized and could save time and effort.

Once a measure is chosen, consistent implementation can be difficult. This document breaks down the patient-, clinician-, group-, and system-level barriers often encountered and offers tips and suggestions for a variety of practices to overcome those barriers. Finally, there is a discussion about the future of MBC, with a specific eye toward changes to measures and outcomes that are evolving as our understanding of psychiatric symptomatology and assessment also evolves.

The document is navigable to specific sections through hyperlinks in the table of contents, for ease of use.

## Summary of Pro Tips for Implementation

- Patient-Level Pro Tips
    - Invest in tools that can engage the patient to complete MBC forms/questionnaires prior to their appointments and with as little friction as possible, and that allow clinicians to view and analyze the results in a timely manner.
        - Examples include partnering with companies that can be integrated with your Electronic Medical Record (EMR)(e.g., PsychPRO and others) and proactively texting questionnaires to patients queued on upcoming visits.
        - Utilize any existing integrated EMR surveys that are accessible through the patient portal.
    - Add context and information about the use of MBC indices at patient intake and/or at each administration.
    - Encourage clinicians to acknowledge the receipt of the MBC results to the patient during the clinical encounter (e.g., if the patient just completed the PHQ-9, acknowledge the results at the beginning of the visit to indicate to the patient that the clinician has reviewed them and incorporated their input into their clinical care and recommendations).
- Clinician-Level Pro Tips
    - Perform an in-service review of the use of MBC and associations with improvements in quality of care.
    - Utilize existing clinical quality groups or committees to produce recommendations about which MBC instruments should be implemented and how to utilize them in clinical practice.
    - Select measures that reflect your practice co-morbidity and demographic profile; use the Framework for Measure Selection (see Table 4) in this document to aid in your selection.
- Practice-Level Pro Tips
    - Dedicate staff to processes at check-in that "automate" some MBCs, such as the PHQ-9 or GAD-7.
    - Invest in staff training and having champions in MBC who can facilitate MBC implementation.
- System-Level Pro Tips
    - Invest in departmental or clinical budgetary line items to support the implementation of MBC —through either dedicated staff FTE, technological processes, or time.
    - Designate MBC as the "standard of care" in your health system or institution, making it an expected part of every significant patient encounter.
    - Identify system-based incentives to utilize MBC, including adding the requirement to compensation plan incentives.

## HISTORY AND CONTEXT OF WORKGROUP

The American Psychiatric Association (APA) Council on Quality Care has a primary responsibility to promote evidence-based practice and support the highest standards and consistency in the care quality provided by the psychiatric workforce. As such, the council recognizes that the use of repeated validated rating scales during the routine care of patients, known as measurement-based care (MBC), is a core component of quality. The council continues to be invested in identifying mechanisms to provide members with the tools and resources to utilize MBC. While the APA has done a great deal to educate and advocate for members around the value of MBC, there has not yet been widespread adoption of MBC into daily psychiatric practice. This appears to be particularly true for practitioners working in solo and small-group practices. There are a number of unique barriers these practices face in implementing MBC. As a result, the council has developed this document to provide information, tools, and other resources that will help make MBC the standard of care in psychiatric practice moving forward.

Psychiatric membership of the workgroup consisted of council members (Alter, Ridout, Torous, and Vanderlip); psychiatric representative from the payer background (Livesay); implementation, consulting, and public health background (Carlo); and private practice community members (Kadriu, Vanderlip), with the intention of gathering an array of perspectives across psychiatric practice and systems of care.

## Disclosures

Kathryn Ridout, MD, PhD, is employed by The Permanente Medical Group. Erik Vanderlip, MD, MPH, is a co-founder and CMO of an online telemental health company; an assistant professor at OHSU; a consulting psychiatrist at the Pacific Premier Group (private practice); and a per-diem inpatient psychiatrist with Providence Medical Group. Andrew Carlo, MD, MPH, is employed by Northwestern Medicine and Meadows Mental Health Policy Institute, and was a consultant for Otsuka Pharmaceuticals. Bashkim Kadriu, MD, is a full-time employee and shareholder of Jazz Pharmaceuticals. Cecelia Livesey, MD, is a full-time employee and shareholder of UnitedHealth Group and is on the advisory board of Compass Pathways Ltd. John Torous, MD, MBI, is a full-time employee of the Beth Israel Medical Center and Harvard Medical School as well as a scientific advisor for Precision Mental Wellness. None of the authors report any royalties or funding from the use or implementation of any concepts contained in this resource document.

## Introduction

### Background and Context of Measurement-Based Care

Surveying and compiling data from a patient's medical history, symptom report, physical examination, or diagnostic tests is the foundation of clinical diagnosis.[8] In psychiatry, clinical diagnosis relies heavily on patient- or clinician-elicited symptom reporting and determining whether the pattern of symptoms is consistent with the diagnostic criteria for a specific mental health disorder.[9] Historically, clinicians utilize their training and knowledge to assess for mental health disorders and their severity to establish an initial clinical diagnosis and the need for subsequent follow-ups, relying on their assessment alone

rather than on rating scales or standardized diagnostic interviews. However, with growing recognition of the importance of structured symptom measurement in the diagnosis and treatment of mental health disorders, more research has focused on the integration of systematic mental health symptom measurement to inform and guide clinical diagnosis and decision-making.[2, 10] This movement toward MBC followed initiatives to improve health care value and quality[4] and can be considered analogous to the repeated measurement of values such as blood pressure for hypertension or blood sugar for diabetes management, which are associated with improved outcomes in physical health care. The APA Practice Guidelines for the Psychiatric Evaluation of Adults recommends the use of quantitative measures as part of assessment in all psychiatric evaluations.[11]

Studies have shown that patients receiving MBC have superior mental health care outcomes compared to usual care, defined as psychiatric treatment without routine symptom measurement.[1, 3, 12] As an example, patients receiving MBC for mental health have up to a 75% improvement in remission rates compared to those receiving usual care.[13] MBC facilitates collaboration between clinicians and patients while informing medical decision-making by identifying clinically appropriate and targeted interventions for patients, including escalation and de-escalation of care. This systematic feedback established between clinicians and patients ensures progress and outcome monitoring. Moreover, MBC can be used to track and improve care quality across patient panels, practices, systems, and plans by aggregating data from repeated outcome measurements.

Many symptom rating scales have good validity and reliability, allowing for mental health symptom change detection and outcome measurement over time (Appendix 1).[4, 5] Important considerations when selecting scales for practice integration are reviewed later in this resource document, while Appendix 1 lists example measures applicable by condition. Despite these resources and evidence, MBC is poorly adopted in routine mental health care.[14] Barriers to MBC adoption and implementation are present at the patient, clinician, system, and organization levels and include time, theoretical frameworks, and perceptions of or comfort with MBC.[2]

Given the evidence that patients treated with MBC have superior mental health outcomes compared to those undergoing the traditional standard of care that relies on clinical assessment alone, multiple opportunities and incentives to integrate MBC routinely in the treatment of mental health conditions have evolved to incentivize MBC integration and overcome barriers.[4] MBC not only leads to improved clinical care for patients but also provides the foundation for care quality measurement, which is important to health plan accreditation and value-based reimbursement. Implementation of MBC provides an evidence-based framework to meet the shifting focus in health care reimbursement based on treatment value and shared risk. Many validated MBC scales can be used to meet the requirements of quality payment programs or alternative payment arrangements listed in the reimbursement sections and Appendix 1.[6] Thus, MBC can help improve patient symptoms, clinician performance, and value and quality-focused reimbursement models.[6]

## Why Measurement-Based Care?

## Increased Treatment Engagement, Insight, Symptom Validation, and Adherence

Several studies have associated MBC with improvements in patient engagement.[15, 16] Enabling routine symptom monitoring in clinical care has been associated with increases in patient-centered care by ensuring timely feedback and enabling clinicians' understanding of the patients' needs, which ensures more personalized care and improved treatment outcomes. It is hypothesized that MBC enhances communication[17] and systematic and timely feedback via information sharing and shared decision-making,[18] which improves physician-patient alliance and the therapeutic relationship.[19] MBC may improve patient and clinician awareness and symptom changes, which has been shown to be a critical predictor of treatment adherence and engagement.[20, 21]

Additionally, MBC via symptom rating scales allows for clinical symptom validation. Based on clinical experience, patients can better conceptualize their symptoms when completing a common scale used by many others with similar conditions. The use of standard scales may also reduce stigma surrounding mental health disorders, which mitigates a commonly cited barrier to treatment adherence or engagement. Symptom scales charted over time may make it easier for clinicians to engage in informed data-driven decision-making regarding continuation of treatment or treatment adjustments as needed. To this end, it will create a better understanding of mental health disorders and the shared experience of suffering with others with a similar condition.

Finally, in the current climate of ever-changing health technology, MBC may not only be easier to deploy and collect but also offer the opportunity of data sharing among stakeholders involved in mental health care. This can include mental health care clinicians, patient peer communities, and digital therapeutics that deploy interventions based on measurement. Such combined sources of data may give a more holistic and complete clinical picture, which could help advance treatment precision by providing more clarity on what treatments work for an individual patient.

## Interviewing and Visit Duration, Efficiency, and Greater Focus on Psychoeducation and Motivation

The routine use of MBC indices allows for asynchronous clinician ascertainment of the patient's clinical status, which saves time during the clinical appointment. In turn, this can shorten visit times, leading to improved efficiency or, alternatively, allowing the appointment's discussion to focus less on factual data gathering and more on psychoeducation, motivation, goal setting, and shared decision-making.[12] Standard assessments with evidence-based scales can clarify clinical outcomes and align clinicians and patients with treatment targets for different therapeutic modalities. To combat concerns regarding "cookie cutter" clinical care, periodic reconciliation of standardized assessments with the patient's personal values and goals helps ensure individual preferences for treatment are preserved.

Finally, clinician experience has shown that routine use of MBC may help when it comes to comparing treatment efficacy and reducing hindsight and observer bias in clinical therapies.[22] For example, when routinely employing a patient health questionnaire (PHQ-9) score to grade responsiveness to depressive symptoms in clinical care, both patient and clinician can more easily track symptom burden over time and correlate it with the initiation of new medications or therapy approaches. Visually charting out the numerical composite of individual core depression symptoms also clarifies a patient's historical progress through treatment. A person with major depression may improve his or her PHQ-9 score from 15

(moderate depression) to an 11 (also moderate depression) on sertraline 100 mg daily. Subjectively, this improvement may feel greater than improvements on other therapies, but the use of routine MBC would identify a potential partial response to the medication, thereby opening avenues of discussion around increasing the dose to achieve a full response. Those avenues may not have been identified when relying solely on the patient's subjective report of improvement.

### Measurement-Based Care Can Facilitate Improved Population Health, Patient Discharge, and Allocation of Resources

In addition to the individual clinician- and patient-level benefits cited above, MBC also facilitates targeting of treatment resources to populations most in need of these resources.[23] Quantifying patient symptomatology allows clinical teams to focus their time and energy on those not achieving symptom recovery, through intensified outreach and treatment. At the same time, this method allows for the strategic monitoring of patients in early recovery to quickly detect symptom relapse and identify those at risk for relapse via symptom measurement or other early signals (e.g., sudden lack of treatment engagement). Because MBC helps align treatment goals between the patient and clinician, it may facilitate timely patient discharge once recovery is reached and sustained, promoting improved mental health access for others in need.

### Why Now?

Due in part to increased demand amidst the COVID-19 pandemic[24] and reduced stigma associated with seeking mental health treatment, the need for mental health services has significantly increased.[25] Consequently, the landscape of mental health services is rapidly changing. Private equity and venture capital investors contributed over $5.1 billion dollars in mental health startups in 2021.[26] While most of the new experiments in mental health service delivery do not increase the size of the workforce or lower care demand directly, it's apparent that many are relying on MBC to help make care more efficient, standardized, and outcome oriented. Further, MBC can facilitate timely outflow of patients from a practice by identifying patients with clinical remission or a significant response, allowing clinicians to meet the growing mental health treatment demand by taking on new clients. Practitioners are in high demand, but those unfamiliar with the clinical incorporation of MBC may lack the skills needed for evolving practice platforms.

Additionally, technology and EMRs are increasingly incorporating patient-reported outcome measures (PROMs), typically symptom-based rating scales, into clinical workflows and patient portals. Third-party software vendors are selling integrated MBC workflows to health systems and payers, and directly to consumers. The demand and comfort from patients utilizing routine screening tools appears compelling to some clinicians and systems, leading them to incorporate MBC into their practices.

Finally, MBC may help clinicians and organizations move from fee-for-service models to value-based care (discussed further in reimbursement models).[27] MBC aligns with the triple aim of U.S. health care and goals of the Affordable Care Act, to decrease the cost curve, and improve patient health outcomes

and the patients experience of care. MBC is a low-cost strategy to demonstrate patient improvement through validated measures[10] and has been shown to improve patient-reported experiences of care.[19, 28]

# Opportunities for Reimbursement

## Direct Billing Reimbursement

Large-scale implementation of MBC in routine mental health clinical practice may be facilitated or expedited through sustainable reimbursement channels. At present, there are two primary pathways through which clinicians are reimbursed for MBC: by using direct billing codes and through value-based contracting with payers.

The following codes are often used to bill for mental health screening and follow-up assessments. Each code includes a description and key notes on billing and utilization. Of note, coding stipulations may differ by payer and region. Each physician is encouraged to consult with his or her health system, payer, or local authority for details.

## Table 1. CPT® codes relevant to MBC[29]

| Code/Name | Payment (2023 Medicare rates) | Overview |
|---|---|---|
| 96127 – Brief emotional/behavioral assessment | ~$5 | • Completed by staff on behalf of a clinician (MD, DO, PA, or ARNP)<br>• Interpretation typically billed separately through E&M codes<br>• Allowed to bill for up to four unique screening instruments per visit (i.e., for different diagnoses, such as depression and anxiety)<br>• A variety of instruments are acceptable (including PHQ-9 and GAD-7, among others)<br>• May be limits to number of times billable per year<br>• Reimbursement amount may differ by payer |
| 96161 – Administration of caregiver-focused health risk assessment instrument (e.g., depression inventory) for the benefit of the patient | ~$3 | • Completed by staff on behalf of a clinician (MD, DO, PA, or ARNP)<br>• Interpretation typically billed separately through E&M codes<br>• Part of the Health and Behavior Assessment/Intervention billing; for this code, the focus is not directly on the patient, but is rather on a caregiver for the patient (and how this caregiver's health impacts the patient)<br>• Instruments such as:<br>  o Edinburgh Postnatal Depression Scale (EPDS) |

| | | |
|---|---|---|
| | | o Patient Health Questionnaire (PHQ-2 or PHQ-9)<br>o Vanderbilt ADHD rating scales<br>• May be limits to number of times billable per year<br>• Reimbursement amount may differ by payer |
| 99484 and G0323– Care management services for behavioral health conditions, at least 20 minutes of clinical staff time (over one calendar month) | ~ $43 | • Billed based on the time clinical staff (or the clinician directly) spends on identified activities<br>• Cumulative time must reach at least 20 minutes over the course of a month<br>• Instruments include all validated rating scales<br>• Reimbursement amount may differ by payer |

## Value-Based Reimbursement, Indirect Billing

In addition to direct billing for MBC services, clinicians may be eligible to be reimbursed through value-based payment arrangements with payers. These arrangements may occur at the health system or individual clinician level. In accountable care organizations (ACOs) or pay-for-performance arrangements, mental health screening and MBC may be contract stipulations.[6] In such cases, the administration of evidence-based instruments is not necessarily directly reimbursed, though it could be indirectly financed through capitation or incentive payments when actions such as MBC processes are consistently performed. Furthermore, value-based payment arrangements may include clearly defined clinical outcome benchmarks or targets. For example, an ACO contract could include a stipulation of depression treatment response for 50% of patients initially screening positive. This specific contract benchmark could be linked to incentive payments, either bonuses or penalties. In such an arrangement, mental health screening and rigorous MBC would be required to successfully meet the obligations of the contract, leading to an indirect — albeit powerful — financial incentive.

At the individual clinician level, a growing number of payers are implementing financial strategies to incentivize MBC with evidence-based instruments.[4] A common arrangement is for payers to offer enhanced reimbursement for mental health visits when clinicians commit to using MBC and treatment to target with clear benchmarks. Typically, such arrangements include upside risk only, meaning clinicians stand to gain reimbursement for using MBC, but do not lose financially when patients do not reach outcome benchmarks over a certain time period. The purpose of these arrangements is to incentivize MBC (as payers are aware that it is associated with improved clinical outcomes and quality) while also giving clinicians the option to receive higher reimbursement (thereby possibly also incentivizing clinicians to participate in insurance networks). Although some payers have begun to directly offer such arrangements to their in-network clinicians, others use third-party technology services to define clear outcome benchmarks, implement enhanced reimbursement, and broadly incentivize MBC.

## Quality Measurement: Reimbursement and Accreditation

### Impact of Quality Measurement on Reimbursement

Quality measurement is used to standardize the approach to outcome measurement and quality across health systems and clinicians.[30] Quality measures are developed and tested using large data sets that are linked to patient outcomes and informed by clinical experts. Health care clinicians collect data that they then report to federal and commercial payers; the results of these measures (whether a clinician or health system met the defined threshold for a particular measure) can then influence their reimbursement rates (e.g., Medicare adjusts future payments based on Merit-based Incentive Payment System reporting). Performance on these measures may also be used more broadly in public rankings of the quality of care delivered by a particular health plan or hospital (e.g., Medicare Star Ratings).[31] Quality measures that report directly on outcomes (e.g., the number of patients with diabetes in a health plan who have evidence of HbA1c levels within normal range, and therefore have well-controlled diabetes) provide the most valuable information on whether quality care is being delivered.  Because the repeated use of validated rating scales has been linked so strongly with improved outcomes, it can serve as an important surrogate for actual improvement in outcomes.

For example, while clinicians might use a validated scale like the PHQ-9 to measure a patient's progress toward achieving depression remission, the translation of that clinical activity into a quality measure aggregates the data from many clinicians, thereby facilitating an assessment of whether the service system as a whole is achieving a benchmark level of depression remission in their patients. Use of the PHQ-9 in the clinical setting is an example of MBC, but examination of the scores on all the PHQ-9s over a population of patients leads to reporting on the quality measure. Therefore, MBC can be conceptualized as individual patient-level data, while quality measurement is used to analyze population-level data. While there are numerous validated rating scales that can be used within routine mental health care for the most common disorders (Appendix 1), the only aggregated QMs developed thus far related to depression response or remission require use of the PHQ-9.

Quality measures are used within payment programs to determine the extent to which individual clinicians or health plans will be reimbursed for the care they deliver. For example, the Medicare Shared Savings Plan (MSSP) program rewards health plans for reducing costs, and those reward payments can be increased or decreased based on the quality of care delivered as well as specific outcomes within a population. The Merit-based Incentive Payment System(MIPS) rewards/penalizes individual clinicians based on their reporting on quality measures and outcomes, providing up to a 9%) increase in payment rates for high performance and up to a 9% decrease in payment rates for low performance.[32] A recent analysis of MIPS performance data showed lower average performance rates among psychiatrists than among other outpatient physicians.[33] The authors suggest this is at least in part due to a lack of available MIPS measures directly relevant to psychiatry; this highlights an opportunity for improvement that could be addressed by a higher uptake of MBC among outpatients' psychiatrists. The APA recently completed work, funded by CMS, to develop several new quality measures that can be used in MIPS and other quality measurement programs. Most of these measures will be focused on the delivery of MBC,

covering a number of behavioral health conditions, as well as on expanding measurement of outcomes to additional conditions beyond depression. These new measures will support provide the opportunity to directly tie use of MBC clinically with opportunities for performance payment.[13, 34-39]

## Accreditation

In addition, organizations that accredit health plans also require reporting on quality measures and the implementation of MBC. The National Committee on Quality Assurance (NCQA) utilizes health care effectiveness data and information set (HEDIS) measures to accredit publicly funded and commercial health plans. HEDIS includes measures of depression remission based on PHQ-9 results. Plans that succeed with these measures will be able to receive higher payments and enroll more patients than those that do not meet these goals.

Accreditation entities, such as The Joint Commission (TJC) and URAC (formerly known as the Utilization Review Accreditation Commission), conduct periodic reviews of hospitals, health plans, pharmacies, and health care organizations. Most hospitals and health systems participate in at least one of these programs and must meet these accreditation requirements in order to deliver care and remain competitive. Both TJC and URAC have recently added standards that address MBC.

In 2018, TJC instituted a new standard that assesses whether behavioral health organizations are routinely using MBC in their provision of care. Health systems and clinicians that are now TJC accredited for behavioral health are required to document how many patients with any behavioral health disorder have received screening and follow-up measurements to guide treatment decisions. TJC Standard CTS.03.01.09 requires behavioral health clinicians to (1) use standardized tools to monitor patients' treatment progress, (2) use the data obtained from repeated measurement in treatment planning and delivery, and (3) compile and analyze said data in order to improve the quality of care delivered.

## Table 2. Joint Commission Standard for Behavioral Health Providers

Standard CTS.03.01.09 – The organization assesses the outcomes of care, treatment, or services provided to the individual served.

EP 1 – The organization uses a standardized tool or instrument to monitor the individual's progress in achieving his or her care, treatment, or service goals.

EP 2 – The organization gathers and analyzes the data generated through standardized monitoring, and the results are used to inform the goals and objectives of the individual's plan for care, treatment, or services, as needed.

EP 3 – The organization evaluates the outcomes of care, treatment, or services provided to the population(s) it serves by aggregating and analyzing the data gathered through the standardized monitoring effort.

## Table 3. URAC Measurement-Based Health Care Designation Standards at a Glance

1: Evidence-Based Self-Assessment – The organization engages in timely evidence-based patient self-assessment at each clinical encounter.

1-1: Self-Assessment Data – The self-assessment process includes:

    a.   Gathering structured quantifiable data describing the patient's perceptions about psychiatric symptoms;

    b.   Enabling the clinician to compare current symptom severity to past symptom severity;

    c.   Informing the provider's evaluation of the clinical effectiveness of the current treatment; and

    d.   Promoting accountability for treatment outcomes.

2: Symptom Rating Scale – The standardized symptom rating scale is designed to produce reliable symptom severity data.

2-1: Symptom Severity Data – The rating scale(s) in use are:

    a.   Supplemental to clinical interviews;

    b.   Current, interpretable, and readily available during the clinical encounter;

    c.   Clinically actionable;

    d.   Culturally validated in low-income and minority populations; and

    e.   Stored in electronic medical records in such a way that it is/they are easily extractable.

3: Classification of Symptom Severity – Changes in symptom severity are classified into clinically meaningful categories.

4: Treatment to Target – Guidelines are employed to enable the development of individualized plans of care and enable identification of patients who achieve remission.

URAC has recently released an accreditation standard that is available across all its accreditation programs: Designation for MBC. Currently, this measure is voluntary (as opposed to TJC), but the clinician organizations are encouraged to complete it, and employers and payers could be encouraged to consider it when partnering with health systems and clinicians.

## MBC as a Component of a Larger Behavioral Health Integration System

Another example where MBC is required and embedded within reimbursement is the psychiatric Collaborative Care Model (CoCM). CoCM is delivered in the primary care setting to patients with any behavioral health condition. Enrolled patients work with a behavioral health care manager, who collects information related to the patient's history and symptoms and then reviews that information with a

psychiatric consultant. The model has previously been described in detail,[40] with MBC playing an essential role in achieving successful outcomes with engagement, access, and cost containment.[41]

A key requirement for CoCM reimbursement includes the use of validated rating scales to track symptoms on a regular basis. This requirement facilitates treatment toward evidence-based targets and high rates of improvement in clinical outcomes for participants.[40] It also allows clinicians to report on HEDIS quality measures utilizing outcome data collected through the clinical program. The CoCM is reimbursed by Medicare, most commercial insurers, and a growing number of state Medicaid programs.

## Considerations for Measures Selected in Clinical Practice

There are numerous rating scales shown to provide accurate qualitative and quantitative representation of patient mental health symptoms, as compared to an exam conducted by a clinician.[4, 5] Many of these scales are also sensitive to change over time. Scales that meet these criteria are available for most mental health conditions. Some examples of these are listed in Appendix 1. For clinicians or systems interested in implementing MBC in their routine clinical practice, it can be daunting to have to decide which measures to select. Generally, measures can be considered on four separate criteria: cost, ease of use and administration, validity, and reliability.

Many measures are under copyright and only available for use with payment. Payment arrangements can include per use, one-time unlimited access, subscription, or software licensing. Some companies bundle measure packages together and handle the licensing or copyright payment through their one-time or recurring fees. These companies also often provide an interface for patients and physicians to input and track responses, assign measures, and integrate measures into existing EMR systems for aggregate reporting. Many measures, such as the PHQ-9, are free for use without restriction. Appendix 1 lists some common measures.

The mode of administration and ease of use are also important to consider for each measure, as they can affect its validity and access. Some measures are computer guided, some are administered online, some can be completed with pencil and paper, and many are multimodal. And some measures are intended to be completed by the patient, while others are completed by the clinician or other collateral informants, such as teachers or family members. Generally, measures that are valid and can be completed by the patient alone are ideal, as they can save clinician time and are free from clinician reporting bias, which could be a conflict of interest in value-based payment arrangements.

Finally, measures with reported validity and reliability across a range of demographics are superior to measures with little history of empirical evaluation. Widely adopted measures, such as the PHQ-9, have been validated across a range of populations, languages, and ages, with relatively few modifications.[42] Validity of a measure is often ascertained through comparison to another gold-standard measure, structured clinician interview, or both. Reliability is graded through repeated use of the measure in a similar population over time. An important component of both reliability and validity is sensitivity to change with illness state and frequency of measurement. The PHQ-9, for instance, has been shown to be sensitive to change with depression severity over time when compared with a structured clinical interview, and can be repeated every two weeks.[43] It is helpful for the selected measure to be reflective of the state of illness and as near real time as possible.

The following framework can help guide clinicians in choosing measures that meet their clinical practice and population needs.

Table 4: Framework for Measure Selection

| Consideration | Example |
|---|---|
| Cost (licensing, implementation) | PHQ-9 is free for download and use. |
| Administration (channel, frequency, user) | PHQ-9 is patient completed, and can be administered on paper, online, or within the EMR.  Frequency is every 2 weeks. |
| Reliability | PHQ-9 has repeated within-rater and inter-rater reliability. |
| Validity | PHQ-9 has been shown to be a valid measure of depressive symptoms compared with both structured clinician interviews and other depression scales. It is also sensitive to change with the illness state every 2 weeks. |

# Technology Considerations for MBC Implementation

Technology offers a practical approach to implementing MBC, especially through novel means to capture clinically relevant data. While using tablets in waiting rooms was an increasingly popular means of collecting clinical data before COVID-19, the pandemic has pushed clinical measurement in new directions. And while there are many technologies, smartphones are useful to consider given that the majority of patients today already own one and are willing to use them in initiatives geared toward improving their own mental health.[44, 45]

Focusing on measurement, smartphones offer the opportunity to gather patient-reported data at nearly any time and from nearly every patient. Smartphones expand the potential of MBC beyond classical "active" data — such as through surveys or other measurements that require active engagement with a patient for data to be captured. This is because smartphones (and devices with sensors like smartwatches) now also offer "passive" data. Passive data includes measurements like step count, sleep, and exercise patterns collected by the sensors present on most smartphones and many wearables. As the name implies, passive data collection does not require active engagement. Passive data offers a means to begin to quantify health behaviors and functional changes that are often a key target for MBC — and have been challenging to quantify until now.

With the potential to have patients send data at any time, ranging from surveys to step counts, there is potential for useful as well as overwhelming measurement today. Clinical research and scales have not yet caught up to the potential of frequent and repeated patient measures. PHQ-9 and GAD-7 have often been used in this context and appear to offer useful information when assessed over time.[46] There are no standards around digital behavioral data such as step counts, sleep, etc. Helping patients track individual baselines and changes in the context of a specific clinical scenario appears to be the best employment of this data thus far.

The potential to capture so much data presents both ethical and even legal considerations. From an ethical perspective, data capture must be done only in the interest of patient care. As ethical standards for this type of data capture evolve, research ethics around respect of persons, beneficence, and justice offer useful guidance. Clinicians should set clear expectations with patients, particularly around capture of data such as thoughts of suicide. Explaining that although a patient can report symptoms at any time to a device, that does not mean such data will be interpreted or acted upon, is critical to avoid false expectations of care.

Like all digital health data, digital measurements present risk in terms of privacy and data sharing. Often patients must consent to share data with companies that make the technology used to capture active or passive data streams (e.g., device or app companies). For example, there are hundreds of mood and medication tracking apps that can be used to help patients assess their recovery, but many do not adequately protect patient data.[47] Often such data is stored by the company and only summary metrics are available to the patient or clinician. The American Psychiatric Association's App Evaluation framework offers guidance on red flags and other considerations for selecting online mental health apps.[48]

While smartphones enable unique tracking properties that can help realize the potential of MBC, it is important to also consider usability concerns. On the patient side, there is a preponderance of research indicating that repeated tracking through active data, i.e., surveys, wanes to a minimal level of engagement after just a few weeks.[49] Thus, an ideal use case may be briefer periods of measurements to inform a more immediate clinical question, such as changes in sleep in the initial weeks after starting a new medication for example.

On the clinician side, few apps offer easy interoperability with EMRs. This can create a documentation barrier and also a time barrier if the clinician must log in to special proprietary portals to access data. One means that apps can transfer data to EMRs is through an application programming interface (API). The government is working to create standard APIs that will be built into apps and EMRs so that, in the future, it is easier to transfer data. Asking EMR vendors which APIs they support and how they interface with app data is an important step to include in EMR evaluation and selection.

As a practical example, the Digital Psychiatry Clinic at Beth Israel Deaconess Medical Center in Boston uses apps to inform MBC. As shown in Figure 1 below, a patient can capture real-time surveys (active data) and sensors (passive data) from his or her smartphone. The type of data captured is customized for each patient based on his or her clinical needs. This data can be used to guide self-help activities on the app and is also shared and discussed during clinical sessions. The apps interface with the clinical medical record system, allowing the clinicians to integrate clinical data obtained in the app with their documentation, tracking, and clinical decision-making.

## Figure 1: Data and Measure Integration Through External Devices
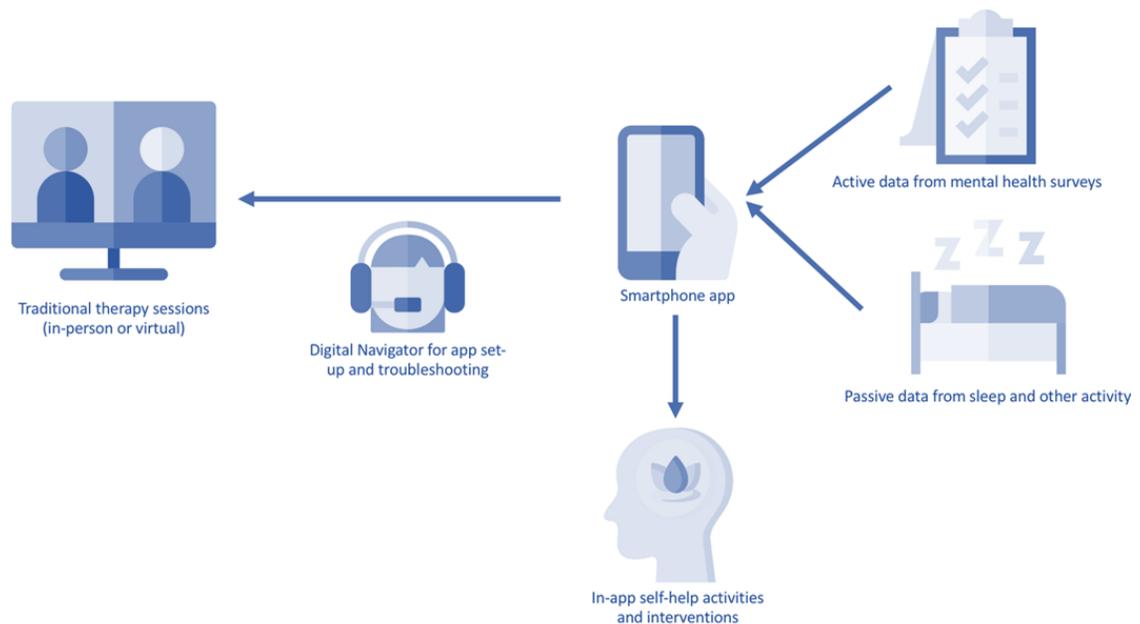


# Challenges and Opportunities for MBC Implementation

Although the evidence for MBC shows that it outperforms usual care, implementation is still limited. Such underutilization likely reflects barriers to MBC implementation, which affect the adoption, implementation, or maintenance of a practice.[1] These barriers can be viewed from a patient, clinician, organizational, or systems level.[1]

## Patient-reported challenges and opportunities for implementation of MBC

Studies examining the barriers associated with implementation of patient-reported outcomes include concerns regarding the time taken to complete the measures,[50] the impact on the patient-clinician relationship,[51] loss of confidentiality,[50] and patients' inability to participate in MBC.[3, 52]

Strategies reported to decrease the patient time burden include MBC systems allowing the patient to complete the assessment at home or prior to the appointment,[53] adaptive testing based on patient replies,[53] and thoughtful choices when it comes to which measures to include in the assessments.[54] Confidentiality concerns are best addressed by sending and storing the measures using HIPAA or HL7 compliance technologies. Providing the MBC in a variety of formats that facilitate completion for patients with cognitive or sensory differences, or engaging with a staff member trained in administration with such populations, are suggested strategies to engage patients with symptoms or impairments that may limit their ability to engage in MBC.[3, 52] To date, the research suggests that MBC

enhances the patient-clinician relationship, and therefore setting organizational culture around MBC would be effective for this perceived barrier.[55]

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Pro Tips to Facilitate Implementation from the Patient's Perspective

- Invest in tools that can engage the patient to complete MBC forms/questionnaires prior to appointments and with as little friction as possible, that also allow the clinician to view and analyze results in a timely manner.
  - Examples include partnering with companies that can be integrated with your EMR (e.g., PsychPRO and others) and proactively texting questionnaires to patients queued on upcoming visits.
  - Utilize existing integrated EMR surveys that are accessible through the patient portal.
- Add context and information about the use of MBC indices at patient intake and/or at each administration.
- Encourage clinicians to acknowledge the receipt of the receipt of the MBC results to the patient during the clinical encounter (e.g., if the patient just completed the PHQ-9, acknowledge the results at the beginning of the visit to indicate to the patient that the clinician has reviewed them and incorporated their input into their clinical care and recommendations).

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## Clinician-reported challenges and opportunities for MBC implementation

There is a robust qualitative literature regarding barriers perceived by clinicians regarding MBC. One of the main barriers is the perception that MBC will not add to clinical treatment or outcomes, with clinical judgment being equal to MBC.[56] Research comparing MBC to clinical judgment shows the efficacy of MBC over clinical judgment alone.[1] Similarly, many clinician s report being unaware of or uncomfortable with MBC.[57] Consequently, strategies shown to improve adoption of evidence-based practices would be effective to overcome these barriers. Such strategies include clinician training,[57] case-based examples,[57] incentives for utilizing MBC,[58, 59] and having clinic champions for MBC.[58-60] Another commonly cited clinician barrier to implementing MBC is the administration burden related to the time needed to give or document the measurements, support staff to help with administration, or financial support to set up and continue MBC.[61] Strategies to overcome these barriers include organizational strategies facilitating the administrative needs, embedding the MBC tools in the EMRs,[53, 62] and adjusting billing requirements.[63] Finally, clinicians may be concerned that MBC will be used to judge clinical acumen, reimbursement, or quality at a patient or organizational level. Providing the rationale behind MBC from organizational leadership and training on the purpose of MBC may overcome this barrier.[1]

Pro Tips for Implementation from a Clinician's Perspective

- Perform an in-service review of the use of MBC and associations with improvements in quality of care.
- Utilize existing clinical quality groups or committees to produce recommendations about which MBC instruments should be implemented and how to utilize them in clinical practice.
  - Select measures that reflect your practice co-morbidity and demographic profile; use the Framework for Measure Selection (see Table 4) in this document to aid in your selection.

## Organizational challenges and opportunities for MBC implementation

Organizations can greatly facilitate MBC implementation by providing training as well as MBC collection and tracking resources and setting an organizational and leadership culture supporting MBC and other evidence-based practices.[62] Engaging local champions,[60, 64, 65] forming MBC implementation teams to spread implementation through the organization, and training of those in leadership in MBC[57] are effective strategies to support an organizational culture supporting MBC. Resources for staff or leadership training can be obtained through funding mechanisms supported by state or federal bodies.[62] A potential barrier in implementing MBC in an organization is understanding the optimal measurements to incorporate in MBC.[66] There are a number of specialty-specific resources available to help guide measurement selection, and partnering with other organizations that have successfully implemented MBC can be helpful to overcome this barrier.[54] Reviewing the literature regarding MBC tool screening or outcome utility can also be helpful. Finally, staff changes or turnovers can impede maintenance of MBC or other practices; local champions and implementation teams that provide ongoing training and support, particularly for new hires, can overcome this barrier.[67]

Pro Tips to Overcome Organizational Challenges

- Dedicate staff to processes at check-in that "automate" some MBCs, such as the PHQ-9 or GAD-7.
- Invest in staff training and having champions in MBC who can facilitate MBC implementation.

## Health care system challenges and opportunities for MBC implementation

Health care systems can support MBC implementation goals through health care policies, professional society recommendations, and economic support.[64] Value-based care can address lack of incentives from third-party payers, engage relevant professional societies to recommend MBC, and begin discussions through expert panels and consensus panels to guide systems health care policies that could support MBC implementation.[1]

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Pro Tips for System-Level Implementation

- Invest in departmental or clinical budgetary line items to support the implementation of MBC —through either dedicated staff FTE, technological processes, or time.

- Designate MBC as the "standard of care" in your health system or institution, making it an expected part of every significant patient encounter.

- Identify system-based incentives to utilize MBC, including adding the requirement to compensation plan incentives.

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## Other potential challenges and opportunities for implementation of MBC

Some MBC solutions or measurement tools are proprietary and associated with costs. However, early adoption of MBC using evidence-based, nonproprietary measurements for common disorders, such as the patient health questionnaire (PHQ-9) for depression, can still accomplish the goals of MBC and set the framework for further implementation. Implementation of MBC is greatly facilitated by integration into an EHR and having a framework for reviewing the patient's answers prior to the visit. APA's Qualified Clinical Data Registry, PsychPRO,[7] provides clinicians (individuals, small groups, and large systems) with electronic access to PROMS through the registry platform with the ability to collect data, monitor patient progress, and benchmark quality measurement performance across registry participants, as well as provide regulatory reporting for possible bonus patients.

MBC can still be conducted in organizations without an EHR, or in smaller clinics or private practices that may not have EHRs. Investing in clinician training, engaging staff with patients to help complete the measurements, and having a tracking tool that can be referenced as part of the clinic visit can facilitate MBC in these settings.

Pro Tips for Other Considerations

- Consider the measures that most meet the needs of the clinics involved.
- Prioritize patient and clinician ease of accessing the MBC data.
- Use of freely available tools for training may help implement MBC.

# The Future of Measurement-Based Care

## Innovations in MBC

As medical care increasingly incorporates digital health components and interventions, it is important to consider the ways in which technology can impact or enhance MBC. For years, evidence-based outcome measures (e.g., PHQ-9, GAD-7) have been administered digitally to patients in the clinic or through secure online portals. This has streamlined outcome assessments and provided numerous advantages. Digital administration allows for more efficient clinical visits, automated scoring, immediate data entry, longitudinal visualization of scores over time, and a reduced carbon footprint. At the same time, there are notable disadvantages to the digital administration of mental health screeners, such as potential disparities in computer or mobile access, limited technological proficiency, privacy concerns, and the identification of acute mental health needs in patients who are off-site (e.g., suicidal ideation).[68] Engagement with and adherence to these measures—both patient completion and clinician review—can be less predictable outside of the clinic setting.[68]

Advantages and disadvantages notwithstanding, digitally administered screeners are typically identical in content and structure to their legacy paper-and-pencil analogues. Consequently, they include the same question items and the same number of items during each assessment, regardless of the respondent's prior answers. This repetitive presentation of question items renders such instruments "static" and can lead to response bias or reduced engagement among patients and clinicians. For example, a patient who has never noted appetite or sleep changes in the past may find it tedious to have to answer question items targeting these symptoms each time he or she completes the PHQ-9. Further, static or legacy instruments are predicated on classical testing theory (CTT), which underpins traditional psychometric parameters like reliability, validity, and other factors. This theoretical paradigm, although well established, has several key limitations, the most notable of which is a lack of real-time uncertainty measurement at the individual respondent level.[68-70]

In recent years, Item Response Theory (IRT) has emerged as an alternative to CTT, with a variety of key advantages. Instruments incorporating IRT, collectively known as Computerized Adaptive Testing (CAT), are built upon large digital question banks in which each item is ranked sequentially by severity. Higher-severity items assess more advanced levels of illness (e.g., severe panic attacks), while lower-severity items target the opposite (e.g., mild social anxiety). Respondents are first presented with questions targeting average illness severity. Based on these initial responses, CAT algorithms tailor subsequent

questions to the detected level of illness severity.[68] In this way, CAT instruments are iteratively personalized to each unique respondent. Importantly, IRT allows composite scores of CAT assessments including different question items, both from the same respondent and among respondents, to be meaningfully compared. Administration ceases after a certain number of items are completed or the concurrently assessed uncertainty level falls below a target threshold. This approach can improve efficiency, since, unlike in legacy instruments, there is no obligation to present the same number of items during each assessment. In fact, previous research demonstrates that CAT instruments reduce the total number of items administered by an average of 50%, with no reduction in measurement precision.[68, 69]

One notable example of a CAT instrument for depression is the Patient-Reported Outcomes Measurement Information System-Depression (PROMIS-D). For adults, the minimum number of question items administered is four, and the measure is stopped after either 12 items are administered or the measurement uncertainty reaches a target threshold.[71] The median number of items per administration is four.[72] This can save valuable clinical time, especially when implemented at scale, with one recent article describing a real-world PROMIS-D implementation in a dermatology clinic requiring an administration time of only 1.1 minutes on average (compared to 2 minutes for the PHQ-9).[73] CAT instruments are now available for many behavioral health diagnoses and have been tested in various real-world populations, such as university students, academic clinics, and justice settings. Additionally, CAT measures have been integrated into major EMRs and have established Application Programming Interfaces (APIs) to facilitate large-scale implementation.[68] There are also a growing number of CAT instruments with "conversion factors" that allow composite scores from these novel assessments to be meaningfully compared to legacy instruments.[74]

At the same time, CAT instruments are not without challenges. Their foundation on large question banks and algorithms requires digital administration, which comes with the same limitations as do the digitized versions of legacy instruments described above. CAT instruments may also come with financial implementation and sustainment costs that may be a significant barrier in some settings, especially when legacy instruments are commonly free of charge. However, we believe that these challenges may be outweighed by the potential of CAT to increase engagement in MBC by reducing response bias and receptiveness in assessments, while also improving measurement efficiency and precision.[68]

## Opportunities to coincide measures with changing clinical treatments and pathological understanding

Recent evidence in the field shows that despite effective treatment in the field, about a third of individuals with depression fail to achieve symptoms remission using standard of care treatment.[75] In the recent decade, the emergence of novel treatments such as (R,S)-ketamine and neurosteroid-based treatments such as brexenolone, that show rapid actions within hours in patients with treatment-resistant depression, has revolutionized our understanding of antidepressant response and expanded the pharmacologic options for these subgroups. This led to the first FDA-approved novel therapies with distinct mechanisms of action (i.e., esketamine, brexenolone)[76, 77] in decades. Yet, with the expansion of the treatment armamentarium, there is great unmet need for clinical symptom measures that reflect

the fast-acting properties of these drugs, as most of the current measures are created based on the traditional existing standard-of-care treatment. Digital phenotyping through smart devices, biometric tracking (sleep, movement, heart-rate variability), and natural language processing platforms are being developed to potentially meet this need but have not yet been validated. As noted previously, the outcome selected will need to be based off the capacity for implementation, cost, reliability and validity, and clinical utility.

## Implementation Strategies for Solo and Small-Group Practices

Collection of patient-reported data has long been a common component of health care delivery, relying on paper-and-pencil data collection and clinician review at the time of the patient visit. While EMRs and other digital tools create ample ability to automate and digitize both the collection and the interpretation of this data, health systems and clinicians will need to integrate those tools into their practice workflows.

Most health systems utilize EMRs that already include most of these components, including the ability to deliver rating scales to patients either in the office or prior to a visit; the integration of data collected into the EHR like other lab data, including generation of alerts and action steps; generation of billing codes when appropriate; and aggregation of this data for quality reporting purposes. While these capabilities are readily available, they are often not easily usable without some additional design of the IT system.

Table 5. Considerations for automating or integrating MBC

| Choice of scales | Most EHRs will have a limited set of rating scales available. Either use these or find out if you can add scales. |
|---|---|
| Availability of scales to patients: User access | How will patients be "given" the scales? In the office, through a portal, or on an external website. In some EHRs, scales can be ordered as needed; or they may require a specific appointment type. Determine if there is a way to send patients repeat measures either routinely or as needed. |
| Are scales easy to complete: User interface | Understand what patients will see when they complete the scales. The users' ability to actually fill the scales out matters when it comes to making sure they will actually complete them. |
| Where will the data appear in the chart? | Data should appear like other lab data, with graphics showing results over time. Determine whether someone will get alerts for abnormal results. Results can also be |

| | accompanied by "interpretation" of the results. |
|---|---|
| Will patients be given information about their results? | Patients may see results or alerts when they complete the scales, or a summary can be provided at the time of the visit. |

## Summary and Conclusion

MBC is an evidence-based strategy that improves patient outcomes. In addition to improving patient care, MBC aligns with value-based reimbursement programs and quality measurements, facilitating clinician practice sustainability in a changing reimbursement landscape. MBC can facilitate the identification and prioritization of patients with worsening symptoms, allowing the limited mental health workforce the ability to triage patients based on symptoms and then individualize treatment strategies. There are a number of resources and models available to clinicians interested in implementing MBC in their practice. This evidence summary and the noted resources can help clinicians overcome any potential challenges to MBC implementation.

## Appendix 1: Examples of Validated Adult Rating Scales

| Instrument | Condition/Type | Cost | Patient Administered |
| --- | --- | --- | --- |
| Patient Health Questionnaire-9 (PHQ-9)* | Depression | Free | Yes |
| PROMIS Depression | Depression | Free | Yes |
| General Anxiety Disorder-7 (GAD-7)* | Anxiety | Free | Yes |
| PROMIS Anxiety | Anxiety | Free | Yes |
| Panic Disorder Severity Scale – Self-Report (PDSS-SR)* | Panic attacks | Free | Yes |
| PROMIS Alcohol | Alcohol use disorders | Free | Yes |
| US-Alcohol Use Disorders Identification Test-Consumption (USAUDIT-C)* | Alcohol use disorders | Free | Yes |
| Brief Addiction Monitor (BAM-R)* | Substance use disorders | Free | Yes |
| Post-Traumatic Stress Disorder (PTSD) Checklist (PCL)* | Trauma | Free | Yes |
| PTSD Checklist for DSM-5 (PCL-5) | Trauma | Free | Yes |
| Asuld ADHD Symptom Rating Scale (ASRS) | ADHD | Free | Yes |
| Columbia–Suicide Severity Rating Scale (C-SSRS) | Suicide | Free | No |
| Ask Suicide Screening Questions (ASQ) | Suicide | Free | No |
| Brief Pain Inventory (BPI) | Pain | Free | Yes |
| Positive and Negative Syndrome Scale-6 (PANSS-6) | Psychosis | Free | No |
| Brief Psychiatric Rating Scale (BPRS) | Psychiatric severity | Free | No |
| Altman Self-Rated Mania Scale (ASRM)* | Mania | Free | Yes |
| Eating Disorder Examination – Questionnaire Short (EDE-QS) | Eating disorder pathology | Free | Yes |
| Florida Obsessive-Compulsive Inventory (FOCI) C-FOCI (child version) | Obsessive compulsive symptomology | Free | Yes |
| Edinburgh Post Natal Depression Screen | Maternal depression | Free | Yes |
| Medical Outcomes Study Short-Form Health Survey (SF-12)* | Health-related quality of life/functional status | Free | Yes |
| World Health Organization Disability Assessment Schedule (WHODAS II) | Functional status | Free | Yes |

*Kennedy Forum recommended measure.

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