

# Psychological Services

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# Collect, Share, Act: A Transtheoretical Clinical Model for Doing Measurement-Based Care in Mental Health Treatment

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Regardless of discipline or setting, psychotherapists and other professionals working in the field of mental health care share one common goal: For the recipients of care to experience improvements that are meaningful to them. Measurement-based care (MBC) is a transtheoretical clinical process that uses patient-reported outcome measures to monitor treatment progress and to inform treatment planning and goal setting. Though ample evidence supports MBC as enhancing collaboration and improving outcomes, its practice is not the norm. One possible barrier to greater utilization of MBC in routine care is lack of consensus in the literature on what MBC is and how it should be practiced. In this article, we discuss this lack of consensus and detail the model for MBC developed by the Veterans Health Administration (VHA) MBC in Mental Health Initiative. Though it is simple, the VHA *Collect, Share, Act* model is consistent with the best clinical evidence to date and can serve as a guide for clinicians, health care systems, researchers, and educators.

## Impact Statement

MBC has the potential to improve clinical outcomes, treatment engagement, and collaboration between clients and providers, but the field is limited by lack of consensus about what MBC is and how it should be practiced. We begin to address this problem by describing the *Collect, Share, Act* model of Measurement-based care (MBC), which mental health providers, educators, and researchers can utilize to immediately inform their work.

**Keywords:** measurement-based care, veterans, patient-reported outcome measures, implementation, progress monitoring

Measurement-based care (MBC) is the use of quantitative data generated from patient-reported outcome measures (PROMs) to track progress in mental health treatment and to empower clients and providers in collaborative goal setting and treatment planning (Lewis et al., 2019; Resnick & Hoff, 2020). MBC improves outcomes and alliance, promotes patient-centered care (Carlier et al., 2012; Eisen et al., 2000), and is a Joint Commission accreditation standard for Behavioral Health programs (The Joint Commission, 2018). MBC is being adopted across a wide range of mental health program types and is considered by many to be an evidence-based practice. There are several excellent reviews (Fortney et al., 2017; Krägeloh et al., 2015; Lewis et al., 2019), and meta-analyses (de Jong et al., 2021) that conclude that MBC is effective in improving mental health outcomes.

A good deal of attention has been given to discussing challenges and barriers to MBC implementation (Boswell et al., 2015;

Hepner et al., 2019; Lustbader & Borer, 2020; Resnick & Hoff, 2020). Here, we focus on one barrier: The lack of consensus regarding the primary objective of MBC and how it should be practiced. Labels such as *MBC*, *routine outcomes monitoring*, *progress feedback*, or *data-driven care*—among others—describe processes for using measures to track treatment progress in mental health care; these are often used interchangeably despite frequently being defined differently across studies. A review of the literature under the general umbrella of MBC finds fundamental differences in the stated objective of the process, with some authors strongly suggesting that the goal is to inform individual treatment, whereas others emphasize the need to inform program- or organizational-level quality improvement (Bickman et al., 2016; Boswell et al., 2015; Carlier et al., 2012; Connors et al., 2021; Greenhalgh, 2009; Krägeloh et al., 2015; Lustbader & Borer, 2020).

This lack of consensus creates challenges for providers looking for models on which to base their practice of MBC as well as in the field's ability to understand the evidence supporting MBC. In the most comprehensive meta-analysis of MBC in psychotherapy to date, de Jong et al. (2021) cite heterogeneity of studies as a barrier to the evaluation of important moderators and mechanisms of action of MBC. For example, in some studies, PROM feedback is only given to providers, whereas others emphasize that data should be shared with both providers and the recipients of care (Krägeloh et al., 2015). Another noteworthy example of problematic heterogeneity appears

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in the meta-analysis by Kendrick which specifically excludes studies where measurement led to changes in the treatment plan and concludes that MBC has limited efficacy (Kendrick et al., 2016). This is in direct contrast to studies supporting timely adjustments to treatment as a potential mechanism of action of MBC (Chen et al., 2013; Duffy et al., 2008; Guo et al., 2015; Lewis et al., 2019). These examples are important because they reflect drastically different versions of using PROM data to enhance outcomes that translate very differently when applied to actual clinical care.

Lack of consensus and an absence of model clarity limits uptake in routine care because it is simply not clear to providers how to do MBC and do it right. As a response to the lack of consensus, Lewis et al. (2019), in their review of the MBC literature, established four core elements of MBC:

- (1) a routinely administered symptom, outcome, or process measure (ie, PRO[M]), ideally before each clinical encounter; (2) practitioner review of data; (3) patient review of data; and (4) collaborative reevaluation of the treatment plan informed by data (p. 325).

However, to our knowledge, there have been no published descriptions of how to operationalize these elements into a well-defined and easily-implemented clinical model with steps drawn from the MBC and broader mental health literature. Also lacking in the literature is information on how providers should engage with clients in a way that embodies the transparent, collaborative style of MBC so they can make MBC relevant for each client despite psychometric shortcomings of individual measures. A well-defined model should additionally explain how providers can integrate MBC into what they are already doing and with other sources of information. Consensus around such a model would have significant implications for training and adoption of MBC, clinical service delivery, and research.

Without a clearly operationalized clinical process for doing MBC, there is no standard on which practice can be evaluated and no way to differentiate low from high-quality MBC. A clearly operationalized MBC model would serve all providers interested in building competencies in MBC, including seasoned clinicians. Educators and clinical supervisors could use it as a tool for training. A well-defined MBC model similarly benefits researchers, providing a guide to utilize as a study intervention while also allowing for greater ability to operationalize the intervention and measure hypothesized mechanisms of action and fidelity to the core elements of MBC, which, in turn, has the potential to support our ability to draw stronger conclusions across the MBC research literature. Finally, a clear model has the potential to further influence MBC quality in treatment and research settings as it can be expanded into a more detailed manual form and can serve as the basis of fidelity tools for rating clinicians' skill level and adherence.

For these reasons, our aim is to present a unified, transtheoretical model of MBC that can fill the gaps mentioned above: The *Collect, Share, Act* model of MBC developed and implemented in the Veterans Health Administration (VHA) mental health programs (Dollar et al., 2020; Oslin et al., 2019; Resnick & Hoff, 2020). VHA is implementing MBC as the standard of care for all mental health services. As part of this broad and ambitious goal, it was necessary to develop a model that would form the basis of education and implementation efforts. The model needed to be simple enough to disseminate across a national mental health system but comprehensive in capturing elements demonstrated in the research literature

as important in enhancing mental health outcomes. The model breaks down the process of MBC into three steps or phases: *Collect, Share, and Act* (Table 1). Below, we detail the clinical processes underlying each step along with the evidence for each as well as present a case description that shows *Collect, Share, Act* in action. For more information on the model as well as resources for providers and educators, please visit the Yale Measurement-Based Care Collaborative website ([https://medicine.yale.edu/psychiatry/research/programs/clinical\\_people/mbccollab/](https://medicine.yale.edu/psychiatry/research/programs/clinical_people/mbccollab/)).

## The *Collect, Share, Act* Model

### Collect

*Collect* includes three key processes: (a) introducing MBC to the client and explaining the rationale, including how the client and provider will use the measures together to guide goal setting and treatment planning; (b) selecting the measure(s) and engaging in a conversation about why each was chosen and how they relate to the treatment target and the client's goals; and (c) administering the PROMs regularly and repeatedly. Below we elaborate on how these should be practiced.

First, providers should introduce the concept of and rationale for MBC to the client, ideally in the initial session or as early in treatment as possible. When clients are aware of the benefits of MBC, they readily engage in the process (Zimmerman & McGlinchey, 2008) thus increasing the validity and clinical utility of measure responses. In this discussion, the provider should ensure the client understands: Why measures are helpful in mental health treatment; how the standardized, self-reported information obtained from PROMs complements other sources of information, including the client's verbal self-report; and how MBC gives the client another way to communicate how they are doing. Providers can explain that PROMs will not take the place of other assessment or diagnostic activities but rather serve as one component of that assessment that becomes a routine part of treatment thereafter. To help illustrate the reasoning behind repeated assessment for the client and to put MBC into a familiar context, the provider can liken PROM administration to the process of assessing vital signs in a medical visit.

When presenting the rationale for MBC, the provider should also provide education regarding the logistics of the MBC process. This consists of information on how and when the PROMs will be collected, where the data will be stored and/or entered, and who will see the responses and data. The provider might wish to use client-facing educational materials that contain the verbally presented information. Pamphlets or simple, single-page flyers are easy to create and aid in the orientation and rationale presentation (Bickman et al., 2011). Providers should never allow materials like these to take the place of their conversation with the client; but, by highlighting the most important information, they can be a tool to facilitate the initial conversation about MBC and a reference for the client thereafter.

The *Collect, Share, Act* model stresses the importance of discussing the complete rationale with the client early in the process so that the spirit of transparency and collaboration is present from the outset. Providers can easily overlook or omit this first step for a number of reasons, including clinic workflows (Hawkins et al., 2008). For example, in some clinics, clients receive intake packages with PROMs prior to their visit with little or no explanation of what the questionnaires are for or how they are used. PROMs may

**Table 1**  
*The Collect, Share, Act Step-by-Step Process*

Phase	Clinical processes
Collect	<i>Explain the rationale for using MBC in your initial session or early on in treatment including:</i> <ul style="list-style-type: none"> <li>• How you and the client will use the data to track progress and for treatment-planning and goal setting;</li> <li>• How often you will collect the measures;</li> <li>• Who will see the data.</li> </ul>
	<i>Select the measure(s)</i> <ul style="list-style-type: none"> <li>• Engage the client in a discussion about why you chose specific measures and how they align with the client's goals and the treatment you are doing.</li> <li>• Involve the client in the decision when possible.</li> </ul>
	<i>Administer the measures regularly and repeatedly as a standard part of care</i>
Share	<i>Report the PROM data to the client</i> <ul style="list-style-type: none"> <li>• Report the total score and explain what it means.</li> <li>• Share scores for individual measure items of particular relevance to the client.</li> <li>• Highlight strengths or areas of improvement along with areas that might warrant continued focus.</li> </ul>
	<i>Verify that the score reflects the client's subjective sense of their mood, symptoms, &amp;/or functioning</i> <ul style="list-style-type: none"> <li>• Ensure your understanding matches that of the client; elicit clarifications when necessary.</li> <li>• Explore the responses to learn more about the context.</li> <li>• Utilize a nonjudgmental, curious stance.</li> </ul>
	<i>Capture the data in your medical record &amp; progress note</i>
	<i>Act</i>
Act	<i>Appraise the meaning of the data in terms of the client's trajectory: do you see improvement, worsening, or no change?</i> <ul style="list-style-type: none"> <li>• Communicate the data trajectory to the client.</li> <li>• Verify that it reflects the client's subjective sense of their progress.</li> <li>• Explore any discrepancies that arise between the PROM data and the client's self-report.</li> <li>• Explore the client's thoughts as to factors that might be impacting their trajectory.</li> </ul>
	<i>Determine if adjustments to treatment should be made</i>
	<i>Brainstorm possible options collaboratively</i> <ul style="list-style-type: none"> <li>• Share your rationale for any ideas you suggest.</li> <li>• Engage the client in a conversation to understand their priorities, preferences, and any rationale they have for ideas they suggest.</li> </ul>
	<i>Collaboratively choose a plan of action</i>
	<i>Agree on a timeframe to reevaluate</i>
	<i>Document the plan and the discussion you and the client had (i.e., rationale discussion, Share discussion, etc.) in the client's chart</i>

similarly be given by administrative staff at check-in and, increasingly, apps are being used to collect PROM data prior to visits. All these tools and workflows are helpful, but at the beginning of treatment, ensuring that there is an adequate discussion of the rationale for MBC and allowing clients to ask questions is essential. It may be necessary for providers to revisit the rationale for MBC with clients in later treatment encounters before the client fully understands and engages in the process (Holliday et al., 2021). Providers should document these discussions in the progress note.

The next step is to select the measures for ongoing monitoring. PROMs should align with the clinical services the client is receiving and with the client's treatment goals. Measures should be sensitive to change so that changes in client status can be observed and so that the data can aid goal setting and in decisions regarding modification of treatment (Connors et al., 2021; Fortney et al., 2017). Clients should be included in the selection process as much as possible, and depending on the assessment approach providers use, it may take a couple of visits before the provider and client have a clear picture of what PROM(s) should be used for ongoing monitoring. The *Collect*,

*Share, Act* model emphasizes the use of patient-reported rather than provider-administered measures. While both types of assessments have some element of bias (Cuijpers et al., 2010), the use of PROMs ensures that the standardized data reflect the client's perspective, or as described in VHA, ensuring the "veteran's voice" is part of the monitoring process. Clients are encouraged to complete PROMs as independently as possible to minimize the impact of potential provider influence. Brief measures often work best in terms of time and burden. Tools such as measurement feedback systems and proprietary measures have been developed to facilitate MBC, but many excellent PROMs are free and available in the public domain (Beidas et al., 2015; Wrenn & Fortney, 2015).

Providers often make the assumption that MBC is meant to monitor symptoms and therefore only symptom measures are appropriate, but this is not the case. Providers can consider the full range of PROMs when choosing MBC measures. Options include measures of functioning and quality of life, cognitions, particular domains such as pain or sleep, and therapeutic alliance. Including one or more of these may confer greater benefit than symptom-focused PROMs alone (Goldberg et al., 2020;

Harmon et al., 2007; Slade et al., 2008). Although some transdiagnostic measures exist, the field would benefit from more research on their use and the development of more varied measures and measures specifically developed for use in MBC.

That said, there is emerging evidence that some symptom-focused PROMs have cross-diagnostic utility as measures of general distress. One example is the PHQ-9. A study by Katz et al. (2021) found that the PHQ-9 was correlated with a number of transdiagnostic measures administered to participants with depression, depression plus comorbidities, and participants with psychiatric diagnoses other than depression. Therefore, a measure like the PHQ-9 may facilitate treatment regardless of primary diagnosis or focus, even with clients with subthreshold scores (Martin et al., 2006) and in psychotherapy focusing on areas such as interpersonal dynamics or existential concerns, which often cause symptoms of anxiety and/or depression (e.g., poor sleep, poor concentration, reduced motivation). Measures of distress can help the client and provider observe how progress on larger issues translates into overall reductions in distress related to the client's broader concern.

The *Collect, Share, Act* model is based on standardized nomothetic PROMs. These offer several advantages. They have established validity and reliability, may include subscales, and often allow for comparison to population norms and recovery curves to aid in interpretation of data (Connors et al., 2021). However, providers may wish to utilize tailored measures for problems where validated nomothetic PROMs are not available. In these cases, providers might consider incorporating ideographic measures. Ideographic measures are individualized measures that allow the client and provider to gather data and track progress on unique, specific client goals in a standardized way. Most research on MBC to date is on nomothetic PROMs, but ideographic measures may be suitable for some providers and in certain settings. See Connors et al. (2021) for a detailed discussion of ideographic measures for MBC in mental health treatment.

Providers have many options for how to administer the PROMs. Basic pen-and-paper forms work well in many settings. Technological options, such as applications on clients' mobile devices that integrate with electronic medical records, are increasingly available. Some settings employ sophisticated measurement feedback systems that provide graphical displays of data, benchmarks for client progress, and decision support tools (Lyon & Lewis, 2016). All of these tools can support the *Collect, Share, and Act* phases of MBC, but providers and clinic managers should be aware of the potential for some unintended consequences of technologies. In a recent publication, providers from Massachusetts General Hospital describe removing tablets from their waiting rooms as a coronavirus disease (COVID) precaution. They relied solely on their patient portal for PROM collection, which resulted in strikingly reduced PROM completion by clients who self-identified as Black and Hispanic (Sisodia et al., 2021). Therefore, clinic managers should choose methods that are acceptable to all clients and be vigilant in their efforts to monitor how MBC practices impact clients from different racial and ethnic groups.

For providers implementing MBC for the first time or in a new setting, we recommend that they first make themselves aware of any rules or policies in place within their organizations as well as any requirements to meet external standards. Providers in private practice or in small clinics may be free to customize which measures they use with each client, including nomothetic and ideographic

measures, and how frequently they administer them. In larger organizations, however, policy or guidance may dictate measure selection as well as the frequency of administration. External organizations may also impact MBC practice. For example, programs accredited under Joint Commission Behavioral Health standards must aggregate MBC data to the program level (The Joint Commission, 2018). This translates to the need for these programs to select one standardized measure to be adopted by all providers within that program to examine data at the program level for quality improvement efforts. This typically does not preclude adding additional PROMs where doing so would enhance care.

Providers are encouraged to administer PROMs as frequently as possible given their client population, the treatment they are doing, the outcomes they are tracking, and how quickly change is anticipated to occur. There is little in the literature to aid providers in deciding how frequently to administer PROMs, though there is some support for the notion that more often is better. Bickman and colleagues explored this question in a series of studies with youth samples, demonstrating that outcomes were better with weekly PROM administration, versus every 90 days, with a dose-based effect of better outcomes for providers who received the most PROM data (Bickman et al., 2011, 2016). Other factors impacting decisions about administration frequency include the timeframe specified on the PROM, timing of visits, and the client's treatment stage. In an evidence-based psychotherapy protocol, it may be appropriate to use PROMs at every visit. In intensive programs with daily participation, such as intensive day treatment program models, or long-term treatment, such as some community-based, residential, or milieu models, less frequent administration may be more appropriate. Early on in care, greater frequency of PROM administration may be important given the observation that this is when most change occurs (Howard et al., 1986). When progress is not being made, PROM feedback and timely treatment adjustments can increase engagement and decrease dropout (de Jong et al., 2021).

Though providers may worry about the acceptability of using PROMs and assessment fatigue, clients generally find completing PROMs regularly to be acceptable, especially when the rationale is well explained and measure data are actively used as part of treatment (e.g., *share* and *act*). Zimmerman and McGlinchey (2008) found that, when providers expressed the benefit of doing so, over 90% of a sample of clients in treatment for depression were willing to complete PROMs at every visit, supporting the aforementioned importance of engaging clients in a discussion of the rationale for using MBC in their care.

## Share

*Share* includes four key processes: (a) reporting the most recent PROM data to the client and explaining what they mean, including the total score and/or responses on individual items that might be of particular relevance; (b) engaging the client in a discussion of the data, including verifying that they are an accurate reflection of the client's subjective experience and inquiring about additional details or context related to the responses; (c) in cases where the client misunderstands important concepts or terms, providing education to ensure a shared understanding; and (d) documenting the conversation and capturing the data in the appropriate way to ensure that it is available in the record for future reference and, in team-based care, for other providers to view.

In the *Share* step, PROM data are used as a jumping-off point for a collaborative discussion, which empowers recipients of care to communicate their perspectives and offer clarifications that lend the data further potency because both the client and provider gain greater insight into the client's concerns and potential treatment targets (Smith et al., 2007). Although sharing with clients is omitted in some MBC frameworks, it is an essential part of the *Collect, Share, Act* model. A review by Krägeloh et al. (2015) categorized studies according to whether the data were given only to the provider or to both the provider and the client and whether there was an opportunity for discussion about the data. Sharing data with the client as part of a collaborative discussion (with and without the inclusion of decision support) was associated with better clinical outcomes.

The provider should receive and share the data with the client immediately, or as close to the date of administration as possible, because the impact of MBC may be greater and improvements faster with more immediate feedback (Slade et al., 2008). Providers may choose to share total scores including relevant clinical cut-offs and other normative data that will help the client make sense of their scores. We also recommend that they invite discussion of the responses on individual items that are of particular relevance to the client and the goals of treatment at that time. Some data collection tools give feedback to the client after completing the PROM, but some research suggests that clients prefer to discuss the data with their provider because they may struggle to fully understand it or make best use of it without the *share* discussion (Hepner et al., 2019).

We recommend that providers approach this conversation from the standpoint of therapeutic feedback, an active collaboration in which the results are discussed with the client, rather than delivered to the client (Smith et al., 2007). As in Motivational Interviewing (Miller & Rollnick, 2012), a nonjudgmental, nondirective stance of curiosity is essential. Providers should not simply accept that the data are accurate but verify with the client whether the scores are a true reflection of their experience through open-ended questions and reflections. This is the difference between a clinician telling the client that their depression is mild versus sharing that their score falls in the mild range and asking the client if that matches how they are feeling. If individual items demonstrate improvement or worsening, the clinician might check-in by sharing what the PROM data suggest ("Based on this, your sleep is worse this week . . .") then verify with the client that is correct (" . . . what are your thoughts on that?").

When discrepancies between measure data, the client's self-report, and/or other sources of information present, providers should first point out these discrepancies then explore them without judgment. Discrepancies may arise due to any number of causes, such as misunderstanding on the part of the provider as to some aspect of the client's experience; misunderstandings on the client's part regarding terminology or instructions; inattention to timeframe; or particular events that occurred during the assessment window that skew the results. At times, clinicians may need to give education to clarify terms or instructions, and the clinician should allow the client to elaborate and provide additional detail and clarification. The goal is not to sway the client's responses, but rather to ensure a shared understanding of the PROM and the client's experience. However, occasionally a response may be given in error due to a misunderstanding of a question or distracted responding, in which case it may be helpful to determine the source of that error so that the data are a valid reflection of the client's self-appraisal. Through this process, providers improve therapeutic alliance and communication with

their clients (Boswell et al., 2015; Carlier et al., 2012; Chen et al., 2013); and they are more likely to address factors associated with lack of progress (Douglas et al., 2015).

## Act

*Act* is comprised of three processes: (a) appraising whether the data trajectory suggests improvement, worsening, or no change and discussing that with the client; (b) a brainstorm process in which the client and provider share ideas for moving forward; and (c) collaboratively deciding on a plan of care, which is documented in the client's chart.

In *Act* the client and the provider collaboratively use all available PROM data collected throughout treatment along with other sources of information to assess progress and to inform treatment. The scores are considered in terms of the client's trajectory over time, which may be more effective than basing decisions solely on current status (Knaup et al., 2009). Because MBC utilizes PROMs with standard scores, it is easy to examine that trajectory and communicate it to clients, especially when measures have indices of clinically reliable change (Jacobson & Truax, 1992).

In cases where adequate progress is being made, the provider and client are likely to agree to progress with treatment unchanged. When measures indicate that clients are not improving or are deteriorating, this provides a signal that some adjustment to treatment may be required. This can be immensely beneficial for clients because providers are poor at predicting who will experience treatment inertia or deterioration, do not always notice these when they occur, and underestimate the rates of worsening in their current clients (Hannan et al., 2005; Hatfield et al., 2010; McAlister et al., 2012) particularly in those with less severe symptomatology (Henke et al., 2009). Frequent, routine PROM administration allows for more timely detection of these signals and, therefore, more timely adjustments allowing clients to get back on track more quickly (Carlier et al., 2012; Chen et al., 2013; Fortney et al., 2017; Lewis et al., 2019; Weisz et al., 2012). Not only does MBC result in more timely adjustments, but it may also provide signals that may not have been identified without the use of PROMs, and thus facilitates a greater number of adjustments to treatment (Guo et al., 2015; Kendrick & Maund, 2020), and can facilitate better tailoring of treatment to ever-shifting client needs.

In accordance with principles of patient-centered care, which emphasizes the importance of education, communication, and the client's voice in making decisions about their own treatment, when changes to the plan of care are made as part of the MBC model, the client is invited to share their concerns, needs, and preferences and to offer ideas and suggestions. As in *Share*, we recommend that providers approach this step consistent with the spirit of Motivational Interviewing where the provider asks if they may share their ideas and thoughts about potential treatment options. When doing so, they should present a clear rationale for each possibility so that the client can understand how each treatment option would address their needs. Ample opportunity to ask questions should also be given. The result is a negotiation between the client and provider that results in next steps for treatment, or where progress is observed, discussions about termination. The provider can share their professional clinical opinion, and decisional support tools—which may enhance outcomes beyond sharing and acting alone (Krägeloh et al., 2015)—may also be used; however, consistent with shared decision-making models, the client should be given the final say.

### Case Example

A Veteran in his early sixties<sup>1</sup> was referred for psychotherapy for recent depression. During the initial interview, he verbalized his recent struggles with feeling down. He felt that his mood changes were at least partly related to a still-healing musculoskeletal injury, which necessitated reduction of activities. Most distressing to him was the need to take a leave of absence from a part time but greatly valued job, which reduced his social contacts. *Collect*: I explained what MBC is and presented the rationale for using it in our work together. Given his presenting concern of depression, we agreed that the PHQ-9 was a good fit and chose that as our PROM. He completed it in the session and I scored it. *Share*: His initial score was 10, which fell in the “moderate” range of depression, and he rated his symptoms as “very difficult.” He agreed that this matched his perceptions, and we explored the individual items, linking his responses to information he already shared and eliciting additional details. Most concerning to him was decrease in pleasant activities, though further exploration revealed he was not experiencing anhedonia, but had appropriately reduced activities due to his injury. This presented a good opportunity to provide education as to the difference between these. He also reported negative thoughts about himself that he had let his family and community down. He had no difficulties with sleep, energy, or appetite. *Act*: We discussed options for treatment and agreed to try a course of short-term Cognitive-Behavioral Therapy for depression. We worked on increasing pleasant and satisfying activities that were possible for him physically as he recovered. Since the PHQ-9 revealed negative self-focused thoughts, we explored those. He revealed that he was struggling with broader sense of purpose and identity now that he could not work, which were further impacted by his perceptions of aging and other health concerns that he anticipated worsening over time. This resulted in some cognitive reframing (where appropriate) as well as insight-oriented discussions about his values and self-perceptions.

After just two sessions, his depression score dropped to 5, which is on the threshold of “minimal” and “mild,” and his rating of how difficult his symptoms were changed to only “somewhat” difficult. *Share*: He agreed that this matched his perceptions that he was doing better, and he shared the various factors he felt were contributing to these improvements. He felt some improvements were attributable to focusing on what he was able to do versus what he was unable to do. Though not initially indicated as a challenge, his interactions with his wife were more positive because he was more open to her suggestions of things they might do together that would not hamper his healing. He also found that the cognitive reframing and exploration of his worth, identity, and values were helpful. We discussed the implications of this and agreed that it was a sign that our approach was working. *Act*: We agreed that we should keep on with the current treatment plan.

However, at the fifth visit, his score increased into the “moderately severe” range, and his difficulty rating increased to “extremely difficult.” Furthermore, for the first time, he was reporting passive SI, true anhedonia, and physiological manifestations of depression such as reduced energy and poor appetite. *Share*: We discussed these results and he felt they were accurate, but he was not sure why his mood had changed so much. During this time, he had continued to engage in therapy, to work on goals between sessions, and to reflect on broader values. One potential contributor was that he had

gotten feedback from his orthopedist that his injury needed two more weeks before he could increase certain activities. He was still engaging in a full range of activities that he was physically capable of at that time. Though he expressed that these were important to him and he wanted to keep doing them, he acknowledged that he was deriving less pleasure from them. We discussed the possibility that his depression was not due solely to the injury and resulting impact on functioning. *Act*: We agreed that it made sense to explore additional contributors to his depression beyond changes in functioning and engaged in a discussion of what we should do in light of these data. We agreed to keep the plan of care unchanged but to continue assess to see if things improved.

After another month, neither his self-reported depression nor his score had improved despite being able to return to work, so we discussed additional options. We agreed that a referral to psychiatry would potentially be helpful. We also agreed that a longer course of therapy than initially planned was indicated (*Act*).

### Implications and Future Directions

The *Collect, Share, Act* model of MBC is a valuable clinical process that allows mental health professionals, regardless of discipline or theoretical orientation, to monitor how recipients of care are progressing. MBC helps providers catch treatment inertia, worsening, and client improvement. The data allow providers and their clients to consider and implement timely adjustments to treatment in service of the clients’ goals, celebrate successes and strengths, and terminate where appropriate. PROMs are not replacements for clinical judgment, but rather provide another important source of data to include in forming clinical opinions and decision-making. Perhaps most valuable, PROMs are a simple tool for engaging the client in discussions of their care and how they are doing and helps make clear why treatment decisions are being made. Following the *Collect, Share, Act* model of MBC ensures that PROM data are thoughtfully incorporated into care.

As we have demonstrated, there is strong foundational evidence for MBC, but the ability to draw systematic conclusions across studies such as through meta-analysis is limited, in large part, by heterogeneity in how MBC is practiced (de Jong et al., 2021). Our goal was, therefore, to present a model of MBC to support mental health providers, educators, clinical supervisors, and mental health researchers as they work to advance the field of MBC.

The model we present here is a starting point that would ideally undergo refinement over time as we learn more about mechanisms of action of MBC and which elements of the model are most critical; therefore, future research should investigate these questions. These efforts would be aided by the development of fidelity tools that might be used to verify adherence to the model, both in future research as well as in practice and training. As Greenhalgh (2009) discusses, MBC is a complex process that targets both provider and client behaviors, potentially requiring significant behavior change, which implies the need for strong training and quality assurance tools. Training in MBC not only improves client outcomes (de Jong et al., 2021), but it also enhances provider attitudes toward MBC (Edbrooke-Childs et al., 2016), which, though beyond the scope of this article, is another barrier to greater uptake of MBC in many

<sup>1</sup> Case is based on a composite of real clients with details omitted and altered to protect privacy.

clinical settings (Oslin et al., 2019). Unfortunately, educational resources are not easily accessible by many providers and organizations, which might also benefit from the tailoring of education on MBC toward their client populations and the types of services they provide. It is our hope that the *Collect, Share, Act* model will be useful for training providers and in supervision and that it will aid researchers in the development of evidence-informed training tools.

In the realm of health equity, it will be important to verify that all elements of the *Collect, Share, Act* model of MBC are culturally sensitive. Above, we share the experience from Sisodia et al. (2021) about the creation of disparities by the use of an electronic platform for collecting PROMs. Their example highlights how individuals from different racial and ethnic backgrounds might be disadvantaged by new practices and the importance of attention to unintended impacts. Another important step will be to build upon the library of PROMs with strong psychometric properties across diverse populations representative of the wide range of people we serve. We must ensure that measures are sensitive to change over time and that normative benchmarks capture all populations of interest.

On the other hand, MBC has potential to reduce disparities for people from historically underserved groups, such as racial and ethnic minorities. Though it is beyond the scope of this article to discuss in detail, there is growing interest in this area. Because MBC increases transparent collaboration and communication and improves outcomes, it may help engage clients from minoritized groups and serve to increase confidence in the quality of care. Future research should, therefore, also explore these questions.

## References

- Beidas, R. S., Stewart, R. E., Walsh, L., Lucas, S., Downey, M. M., Jackson, K., Fernandez, T., & Mandell, D. S. (2015). Free, brief, and validated: Standardized instruments for low-resource mental health settings. *Cognitive and Behavioral Practice, 22*(1), 5–19. <https://doi.org/10.1016/j.cbpra.2014.02.002>
- Bickman, L., Douglas, S. R., De Andrade, A. R. V., Tomlinson, M., Gleacher, A., Olin, S., & Hoagwood, K. (2016). Implementing a measurement feedback system: A tale of two sites. *Administration and Policy in Mental Health, 43*(3), 410–425. <https://doi.org/10.1007/s10488-015-0647-8>
- Bickman, L., Kelley, S. D., Breda, C., de Andrade, A. R., & Riemer, M. (2011). Effects of routine feedback to clinicians on mental health outcomes of youths: Results of a randomized trial. *Psychiatric Services, 62*(12), 1423–1429. <https://doi.org/10.1176/appi.ps.002052011>
- Boswell, J. F., Kraus, D. R., Miller, S. D., & Lambert, M. J. (2015). Implementing routine outcome monitoring in clinical practice: Benefits, challenges, and solutions. *Psychotherapy Research, 25*(1), 6–19. <https://doi.org/10.1080/10503307.2013.817696>
- Carlier, I. V. E., Meuldijk, D., Vliet, I. M. V., Fenema, E. V., der Wee, N. J. A. V., & Zitman, F. G. (2012). Routine outcome monitoring and feedback on physical or mental health status: Evidence and theory. *Journal of Evaluation in Clinical Practice, 18*(1), 104–110. <https://doi.org/10.1111/j.1365-2753.2010.01543.x>
- Chen, J., Ou, L., & Hollis, S. J. (2013). A systematic review of the impact of routine collection of patient reported outcome measures on patients, providers and health organisations in an oncologic setting. *BMC Health Services Research, 13*(2), Article 211. <https://doi.org/10.1186/1472-6963-13-211>
- Connors, E. H., Douglas, S., Jensen-Doss, A., Landes, S. J., Lewis, C. C., McLeod, B. D., Stanick, C., & Lyon, A. R. (2021). What gets measured gets done: How mental health agencies can leverage measurement-based care for better patient care, clinician supports, and organizational goals. *Administration and Policy in Mental Health, 48*, 250–265. <https://doi.org/10.1007/s10488-020-01063-w>
- Cuijpers, P., Li, J., Hofmann, S. G., & Andersson, G. (2010). Self-reported versus clinician-rated symptoms of depression as outcome measures in psychotherapy research on depression: A meta-analysis. *Clinical Psychology Review, 30*(6), 768–778. <https://doi.org/10.1016/j.cpr.2010.06.001>
- de Jong, K., Conijn, J. M., Gallagher, R. A. V., Reshetnikova, A. S., Heij, M., & Lutz, M. C. (2021). Using progress feedback to improve outcomes and reduce drop-out, treatment duration, and deterioration: A multilevel meta-analysis. *Clinical Psychology Review, 85*, Article 102002. <https://doi.org/10.1016/j.cpr.2021.102002>
- Dollar, K. M., Kirchner, J. E., DePhilippis, D., Ritchie, M. J., McGee-Vincent, P., Burden, J. L., & Resnick, S. G. (2020). Steps for implementing measurement-based care: Implementation planning guide development and use in quality improvement. *Psychological Services, 17*(3), 247–261. <https://doi.org/10.1037/ser0000368>
- Douglas, S. R., Jonghyuk, B., de Andrade, A. R. V., Tomlinson, M. M., Hargraves, R. P., & Bickman, L. (2015). Feedback mechanisms of change: How problem alerts reported by youth clients and their caregivers impact clinician-reported session content. *Psychotherapy Research, 25*(6), 678–693. <https://doi.org/10.1080/10503307.2015.1059966>
- Duffy, F. F., Chung, H., Trivedi, M., Rae, D. S., Regier, D. A., & Katzelnick, D. J. (2008). Systematic use of patient-rated depression severity monitoring: Is it helpful and feasible in clinical psychiatry? *Psychiatric Services, 59*(10), 1148–1154. <https://doi.org/10.1176/ps.2008.59.10.1148>
- Edbrooke-Childs, J., Wolpert, M., & Deighton, J. (2016). Using patient reported outcome measures to improve service effectiveness (UPRO-MISE): Training clinicians to use outcome measures in child mental health. *Administration and Policy in Mental Health, 43*(3), 302–308. <https://doi.org/10.1007/s10488-014-0600-2>
- Eisen, S. V., Dickey, B., & Sederer, L. I. (2000). A self-report symptom and problem rating scale to increase inpatients' involvement in treatment. *Psychiatric Services, 51*(3), 349–353. <https://doi.org/10.1176/appi.ps.51.3.349>
- Fortney, J. C., Unützer, J., Wrenn, G., Pyne, J. M., Smith, G. R., Schoenbaum, M., & Harbin, H. T. (2017). A tipping point for measurement-based care. *Psychiatric Services, 68*(2), 179–188. <https://doi.org/10.1176/appi.ps.201500439>
- Goldberg, S. B., Rowe, G., Malte, C. A., Ruan, H., Owen, J. J., & Miller, S. D. (2020). Routine monitoring of therapeutic alliance to predict treatment engagement in a Veterans Affairs substance use disorders clinic. *Psychological Services, 17*(3), 291–299. <https://doi.org/10.1037/ser0000337>
- Greenhalgh, J. (2009). The applications of PROs in clinical practice: What are they, do they work, and why? *Quality of Life Research: An International Journal of Quality of Life Aspects of Treatment, Care and Rehabilitation, 18*(1), 115–123. <https://doi.org/10.1007/s11136-008-9430-6>
- Guo, T., Xiang, Y. T., Xiao, L. E., Hu, C. Q., Chiu, H. F., Ungvari, G. S., Correll, C. U., Lai, K. Y., Feng, L., Geng, Y., & Feng, Y. (2015). Measurement-based care versus standard care for major depression: A randomized controlled trial with blind raters. *The American Journal of Psychiatry, 172*(10), 1004–1013. <https://doi.org/10.1176/appi.ajp.2015.14050652>
- Hannan, C., Lambert, M. J., Harmon, C., Nielsen, S. L., Smart, D. W., Shimokawa, K., & Sutton, S. W. (2005). A lab test and algorithms for identifying clients at risk for treatment failure. *Journal of Clinical Psychology, 61*(2), 155–163. <https://doi.org/10.1002/jclp.20108>
- Harmon, S. C., Lambert, M. J., Smart, D. M., Hawkins, E., Nielsen, S. L., Slade, K., & Lutz, W. (2007). Enhancing outcome for potential treatment failures: Therapist-client feedback and clinical support tools. *Psychotherapy Research, 17*(4), 379–392. <https://doi.org/10.1080/10503300600702331>
- Hatfield, D., McCullough, L., Frantz, S. H. B., & Krieger, K. (2010). Do we know when our clients get worse? An investigation of therapists' ability to

- detect negative client change. *Clinical Psychology & Psychotherapy*, 17(1), 25–32. <https://doi.org/10.1002/cpp.656>
- Hawkins, E. J., Baer, J. S., & Kivlahan, D. R. (2008). Concurrent monitoring of psychological distress and satisfaction measures as predictors of addiction treatment retention. *Journal of Substance Abuse Treatment*, 35(2), 207–216. <https://doi.org/10.1016/j.jsat.2007.10.001>
- Henke, R. M., Zaslavsky, A. M., McGuire, T. G., Ayanian, J. Z., & Rubenstein, L. V. (2009). Clinical inertia in depression treatment. *Medical Care*, 47(9), 959–967. <https://doi.org/10.1097/MLR.0b013e31819a5da0>
- Hepner, K. A., Farmer, C. M., Holliday, S. B., Bharil, S., Kimerling, R. E., McGee-Vincent, P., McCaslin, S. E., & Rosen, C. (2019). *Displaying behavioral health measurement-based care data: Identifying key features from clinician and patient perspectives*. RAND Corporation. <https://doi.org/10.7249/RR3078>
- Holliday, S. B., Hepner, K. A., Farmer, C. M., Mahmud, A., Kimerling, R., Smith, B. N., & Rosen, C. (2021). Discussing measurement-based care with patients: An analysis of clinician-patient dyads. *Psychotherapy Research*, 31(2), 211–223. <https://doi.org/10.1080/10503307.2020.1776413>
- Howard, K. I., Kopta, S. M., Krause, M. S., & Orlinsky, D. E. (1986). The dose–effect relationship in psychotherapy. *American Psychologist*, 41(2), 159–164. <https://doi.org/10.1037/0003-066X.41.2.159>
- Jacobson, N. S., & Truax, P. (1992). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. In A. E. Kazdin (Ed.), *Methodological issues & strategies in clinical research* (pp. 631–648). American Psychological Association. <https://doi.org/10.1037/10109-042>
- Katz, I. R., Liebmann, E. P., Resnick, S. G., & Hoff, R. A. (2021). Performance of the PHQ-9 across conditions and comorbidities: Findings from the Veterans Outcome Assessment survey. *Journal of Affective Disorders*, 294, 864–867. <https://doi.org/10.1016/j.jad.2021.07.108>
- Kendrick, T., El-Gohary, M., Stuart, B., Gilbody, S., Churchill, R., Aiken, L., Bhattacharya, A., Gimson, A., Bruett, A. L., de Jong, K., & Moore, M. (2016). Routine use of patient reported outcome measures (PROMs) for improving treatment of common mental health disorders in adults. *The Cochrane Database of Systematic Reviews* Advance online publication. <https://doi.org/10.1002/14651858.CD011119.pub2>
- Kendrick, T., & Maund, E. (2020). Do PROMS improve outcomes in patients with depression in primary care? *BMJ (Clinical Research Ed.)*, 370, Article m3313. <https://doi.org/10.1136/bmj.m3313>
- Knaup, C., Koesters, M., Schoefer, D., Becker, T., & Puschner, B. (2009). Effect of feedback of treatment outcome in specialist mental healthcare: Meta-analysis. *The British Journal of Psychiatry*, 195(1), 15–22. <https://doi.org/10.1192/bjp.bp.108.053967>
- Krägeloh, C. U., Czuba, K. J., Billington, D. R., Kersten, P., & Siebert, R. J. (2015). Using feedback from patient-reported outcome measures in mental health services: A scoping study and typology. *Psychiatric Services*, 66(3), 224–241. <https://doi.org/10.1176/appi.ps.201400141>
- Lewis, C. C., Boyd, M., Puspitasari, A., Navarro, E., Howard, J., Kassab, H., Hoffman, M., Scott, K., Lyon, A., Douglas, S., & Simon, G. (2019). Implementing measurement-based care in behavioral health: A review. *JAMA Psychiatry*, 76(3), 324–335. <https://doi.org/10.1001/jamapsychiatry.2018.3329>
- Lustbader, A. S., & Borer, M. S. (2020). Counterpoint: Risks of implementing measurement-based care in child and adolescent psychiatry. In B. Sarvet, E. Grudnikoff, J. Jeffrey, & R. Krishna (Eds.), *Measurement based care in child and adolescent psychiatry*. Elsevier. [https://www.google.com/books/edition/Measurement\\_Based\\_Care\\_An\\_Issue\\_of\\_Child/bh\\_DwAAQBAJ?hl=en&gbpv=1&dq=lustbader+%26+Borer,+2020.+Risks+of+implementing+measurement-based+care+in+child&pg=PA775&printsec=frontcover](https://www.google.com/books/edition/Measurement_Based_Care_An_Issue_of_Child/bh_DwAAQBAJ?hl=en&gbpv=1&dq=lustbader+%26+Borer,+2020.+Risks+of+implementing+measurement-based+care+in+child&pg=PA775&printsec=frontcover)
- Lyon, A. R., & Lewis, C. C. (2016). Designing health information technologies for uptake: Development and implementation of measurement feedback systems in mental health service delivery: Introduction to the special section. *Administration and Policy in Mental Health*, 43(3), 344–349. <https://doi.org/10.1007/s10488-015-0704-3>
- Martin, A., Rief, W., Klaiberg, A., & Braehler, E. (2006). Validity of the brief patient health questionnaire mood scale (PHQ-9) in the general population. *General Hospital Psychiatry*, 28(1), 71–77. <https://doi.org/10.1016/j.genhosppsych.2005.07.003>
- McAlister, B., O'Donnell, P., & Lambert, M. J. (2012). An investigation of self-assessment bias in mental health providers. *Psychological Reports*, 110(2), 639–644. <https://doi.org/10.2466/02.07.17.PR0.110.2.639-644>
- Miller, W. R., & Rollnick, S. (2012). *Motivational interviewing: Helping people change*. Guilford Press.
- Oslin, D. W., Hoff, R., Mignogna, J., & Resnick, S. G. (2019). Provider attitudes and experience with measurement-based Mental Health Care in the VA implementation project. *Psychiatric Services*, 70(2), 135–138. <https://doi.org/10.1176/appi.ps.201800228>
- Resnick, S. G., & Hoff, R. A. (2020). Observations from the national implementation of measurement based care in Mental Health in the Department of Veterans Affairs. *Psychological Services*, 17(3), 238–246. <https://doi.org/10.1037/ser0000351>
- Sisodia, R. C., Rodriguez, J. A., & Sequist, T. D. (2021). Digital disparities: Lessons learned from a patient reported outcomes program during the COVID-19 pandemic. *Journal of the American Medical Informatics Association*, 28(10), 2265–2268. <https://doi.org/10.1093/jamia/ocab138>
- Slade, K., Lambert, M. J., Harmon, S. C., Smart, D. W., & Bailey, R. (2008). Improving psychotherapy outcome: The use of immediate electronic feedback and revised clinical support tools. *Clinical Psychology & Psychotherapy*, 15(5), 287–303. <https://doi.org/10.1002/cpp.594>
- Smith, S. R., Wiggins, C. M., & Gorske, T. T. (2007). A survey of psychological assessment feedback practices. *Assessment*, 14(3), 310–319. <https://doi.org/10.1177/1073191107302842>
- The Joint Commission. (2018). *New outcome measures standard*. [https://www.jointcommission.org/-/media/enterprise/tjc/imported-resource-assets/documents/approved\\_bhc\\_outcome\\_meas\\_2018pdf](https://www.jointcommission.org/-/media/enterprise/tjc/imported-resource-assets/documents/approved_bhc_outcome_meas_2018pdf)
- Weisz, J. R., Chorpita, B. F., Palinkas, L. A., Schoenwald, S. K., Miranda, J., Bearman, S. K., Daleiden, E. L., Ugueto, A. M., Ho, A., Martin, J., Gray, J., Gibbons, R. D., & the Research Network on Youth Mental Health. (2012). Testing standard and modular designs for psychotherapy treating depression, anxiety, and conduct problems in youth: A randomized effectiveness trial. *Archives of General Psychiatry*, 69(3), 274–282. <https://doi.org/10.1001/archgenpsychiatry.2011.147>
- Wrenn, G., & Fortney, J. (2015). *A core set of outcome measures for behavioral health across service settings*. The Kennedy Forum. [https://www.thekennedyforum.org/app/uploads/2017/06/MBC\\_supplement.pdf](https://www.thekennedyforum.org/app/uploads/2017/06/MBC_supplement.pdf)
- Zimmerman, M., & McGlinchey, J. B. (2008). Depressed patients' acceptability of the use of self-administered scales to measure outcome in clinical practice. *Annals of Clinical Psychiatry*, 20(3), 125–129. <https://doi.org/10.1080/10401230802177680>

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