EXPERIENCE REPORT

Pre-implementation patient, provider, and administrator perspectives of remote measurement-based care in a safety net outpatient psychiatry department

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Abstract

Introduction: Psychiatric measurement-based care (MBC) can be more effective than usual care, but health systems face implementation challenges. Achieving attitudinal alignment before implementing MBC is critical, yet few studies incorporate perspectives from multiple stakeholders this early in planning. This analysis identifies alignment and themes in pre-implementation feedback from patients, providers, and administrators regarding a planned MBC implementation in a safety net psychiatry clinic.

Methods: We used interview guides informed by Conceptual Model of Implementation Research to gather qualitative pre-implementation attitudes about perceived Appropriateness, Acceptability, and Feasibility of an MBC measure (Computerized Adaptive Test—Mental Health; CAT-MH) from five patients, two providers, and six administrators. We applied rapid qualitative analysis methods to generate actionable feedback for department leadership still planning implementation. [Correction added on 22 January 2025, after first online publication: In the previous sentence, the word 'general' was replaced with the word 'generate'.] We used a multistep process to generate thematic findings with potential relevance for other similar mental health settings.

Results: There was more attitudinal alignment across stakeholder groups regarding MBC's Acceptability and Feasibility than its Appropriateness. All three groups agreed that it was important to contextualize MBC for patients and providers, anticipate MBC's impact on patient–provider relationships, and consider the system's capacity to respond to patient needs unearthed by CAT-MH before implementation began. Our thematic analysis suggests: (1) Introducing MBC may complicate patient–provider relationships by adding a new and potentially conflicting input for decision making, that is, MBC data, to the more typical inputs of patient report and provider expertise; [Correction added on 22 January 2025, after first online publication: In the previous sentence, the word 'complicated' was replaced with the word 'complicate'.] (2) MBC poses

theoretical risks to health equity for safety net patients because of limitations in access to MBC tools themselves and the resources needed to respond to MBC data; and (3) Tension exists between individual- and system-level applications of MBC.

Conclusions: Our analysis highlights shifting treatment dynamics, equity considerations, and tension between individual- and population-level needs that our participants anticipated when planning for MBC implementation in a safety net psychiatry clinic.

KEYWORDS

adaptive testing, digital mental health, implementation, measurement-based care (MBC), outpatient psychiatry, safety net

1 | INTRODUCTION

Measurement-based care (MBC), or the use of quantitative data to track symptom severity and response to treatment, has potential to improve behavioral health care. Within patient–provider dyads, MBC can help providers and patients engage in shared decision making.[1,2] At the population level, MBC is essential for Learning Health System (LHS) planning efforts and has been promoted as a tool for reducing behavioral health disparities.[3–6] Potential mechanisms include improving health systems' abilities to identify the mental health needs of their patient populations, facilitating disparities identification and tracking, evaluating intervention impact by patient subgroup, and supporting more standardized communication between patients and providers.[7,8] Despite MBC's promise, its use in behavioral health settings remains low due to multi-level barriers,[8,9] which vary across care settings and patient populations.[10–13]

An early barrier to MBC implementation are concerns from patients, providers, and health system administrators about MBC, which vary from one stakeholder to the next.[14] Patients worry about data confidentiality,[14] while providers remain skeptical about MBC's value and lack training to effectively incorporate its data into treatment.[9,14,15] Patients and providers share concerns about MBC's time burdens and impact on the patient–provider relationship.[1,9,14–16] Administrators express concerns about finding time and resources to support implementation activities, including reconfiguring system-level workflows and securing the technological resources necessary for success.[1,14]

Implementation research identifies alignment as a key driver of adoption and implementation success,[17] particularly goal alignment across stakeholders in the *pre-implementation* phase.[18–20] Yet, many MBC implementation studies assess just one or two of the relevant stakeholder perspectives. Studies most commonly analyze provider viewpoints alone,[21–26] with fewer including patient or family perspectives or contemporaneous patient and provider viewpoints.[27–29] Administrator perspectives are rarely characterized, and virtually no studies assess patient, provider, and administrator perspectives simultaneously, leaving a major gap for LHSs seeking to incorporate behavioral health MBC into their quality improvement infrastructure.[30] In real-world LHS settings, potential misalignment between goals and activities across organizational levels may negatively influence intervention effectiveness.

MBC implementation may also be hampered by the fact that remote measurement using digital devices is increasingly common.[31] Although essential for scalability, less is known about the feasibility of digital, asynchronous workflows, as prior studies typically used paper-and-pencil questionnaires filled out by patients in clinic waiting rooms.[8] Existing literature indicates that patient and provider engagement with remote MBC remains a challenge, and that patient engagement may wane over time.[32,33] Further, even though research indicates that MBC engagement is higher when initiated by providers or staff known to the patient, LHSs aiming to reduce administrative burdens on providers may develop centralized processes for conducting remote MBC.[32]

Finally, implementing MBC in mental health systems requires up-front investments of time and resources.[14] Many health systems, and particularly those in safety net settings, have faced increased strains since the COVID-19 pandemic. These include provider burnout, increased demand for services, and rapid changes to routine practice. Together, these barriers may hamper health systems' bandwidth for adopting clinical innovations and ability to benefit from MBC's potential to improve mental health equity in the long run.[34–41]

2 | QUESTIONS OF INTEREST

In this analysis, we collected feedback from patients, providers, and administrators *prior to* the planned implementation (i.e., pre-implementation) of a uniform measure, the Computerized Adaptive Test for Mental Health (CAT-MH). This analysis was set in a diverse safety net psychiatry clinic. The details of the implementation plan were still being determined at the time of data collection and rapid summaries from these interviews helped inform real-time decision making. In our analysis, we sought to: (1) understand the degree of stakeholder alignment at this critical pre-implementation period and (2) summarize overarching pre-implementation themes with potential implications for planning future behavioral health MBC initiatives in diverse safety net settings.

3 | METHODS

3.1 | MBC assessment

CAT-MH is a web-based tool that uses multidimensional item-response theory to detect a range of symptom domains in a relatively short period of time. Broadly speaking, adaptive testing offers personalized and efficient assessments by drawing from large question banks and using an individual's response to each question to determine the item that comes next. This feature may limit the testing fatigue and memorization that can occur with repeated exposure to non-adaptive measures.[42–44] [Correction added on 22 January 2025, after first online publication: In the previous sentence, the word 'repeat' was removed.] At the time of this analysis, CAT-MH drew from a question bank of approximately 1500 items and consisted of nine modules assessing for depression, mania, anxiety, psychosis, substance use, post-traumatic stress disorder (PTSD), attention-deficit hyperactivity disorder (ADHD), suicide risk, and quality of life. In prior research, participants from range of clinical and non-clinical settings completed each CAT-MH module in approximately 2 min.[42,44–46]

3.2 | Setting and implementation plan

This evaluation occurred in an adult outpatient psychiatry department in a diverse safety net health system. The department employs about 250 providers, roughly 100 of whom are trainees, and serves approximately 14 000 patients annually.[3] Nearly 65% of patients who receive care in this system are publicly insured or uninsured, and 18%–69% speak a non-English language at home (varying by service area).[3]

Although detailed implementation plans were being worked out as we were interviewing participants, several key decisions had been made. A pilot site had been selected, largely due to being newer and hence more open to workflow changes than more established clinics. The site was a general adult outpatient psychiatry clinic located in a working-class community that is 33% Hispanic or Latino, with nearly 13% of its population living below the poverty line.

As part of eliciting feedback, all participants were informed of the proposed high-level CAT-MH workflow. Specifically, clinic support staff would send patients a CAT-MH weblink over the electronic patient portal several days before their scheduled visit. Patients would complete all nine CAT-MH modules during their first assessment. Patients would subsequently only be sent links for modules where their severity scores were previously elevated. Finally, patients might be asked to complete the entire CAT-MH again once a year.

3.3 | Participants and their familiarity with MBC tool and workflow

Seven administrative and clinical leader key informants ("administrators"), two mental health provider key informants ("providers"), and

six patients (three per provider) were invited to participate in semi-structured interviews. Of these, 85% of administrators (6 of 7), 100% of providers (2 of 2), and 83% of patients (5 of 6) agreed to participate. Administrators were selected because of their involvement in implementation planning or execution. Providers were selected for being experienced, influential clinicians with active patient panels and an expressed interest in clinical innovation (i.e., potential champions). All provider and administrator key informants were given the option to take the CAT-MH from the patient perspective.

Each provider was asked to invite three of their existing patients to participate in a small-scale proof-of-concept pilot of the CAT-MH workflow. Providers were asked to invite existing patients so that they could interface with the measure in a way that mimicked the anticipated implementation plan. To avoid disrupting or introducing new challenges to treatment, providers were advised to invite English-speaking patients with electronic patient portal access who had relatively stable mental health and an established, positive relationship with their provider.

No authors were study participants.

3.4 | Data collection

Interview guides were designed to elicit participants' perception of Appropriateness, Acceptability, and Feasibility of the MBC tool, as defined by the Conceptual Model of Implementation Research.[47–49] Data collection took place between November 2020 and February 2021. Aside from one patient who provided brief feedback via email, all participants completed 30–45 min interviews via phone or secure Google Meet. Recorded interviews were transcribed verbatim, except in the case of two participants who did not consent to recording. In these cases, the interviewer took notes, including capturing salient verbatim quotations. The health system's Institutional Review Board (IRB) considered this a quality improvement project.

3.5 | Data analysis

Analysis followed a two-stage process. Stage 1 was designed to provide actionable feedback to department leadership. In Stage 1, we applied rapid qualitative analysis methods to generate analytic memos from participant transcripts or notes (Figure A1) and rapid summaries based on key operational domains (Figure A2).[50,51]

In Stage 2, we used a multistep process to generate thematic findings with potential relevance for other mental health clinics. First, we generated one consolidated matrix data summary sheet per participant group (three sheets total), organized by the operational domains listed in Figure A2. Second, we identified which data in the aforementioned sheets related to participant perceptions of MBC's Acceptability, Appropriateness, and Feasibility (i.e., implementation outcomes). Third, we used these data to

generate codes for each implementation outcome and analyzed interview transcripts for the presence or absence of these codes. This allowed us to identify areas of alignment across participant groups. Finally, the first and senior authors identified three overarching themes by grouping the entire list of codes first as individuals, then in conversation with one another, and when needed in consultation with other authors. Five proposed themes were distilled to three final themes over nine revision steps.

4 | RESULTS

4.1 | Stage 1: Rapid qualitative analysis

Feedback from participant interviews was summarized for department leaders once per month during the data collection phase. The recommended changes are listed in Table 1. They ultimately fell into five categories: patient-facing communication, provider and staff training, provider engagement and support, MBC data collection, and health systems management. Changes that were recommended and successfully incorporated into implementation

planning tended to be free or low cost, spearheaded by an individual or small group, or dependent on a one-time investment of resources. Changes that were suggested but *not* made tended to be costlier, more labor-intensive, or dependent on coordination with outside entities.

4.2 | Stage 2: Thematic analysis

Table 2 synthesizes findings from the third step of the thematic analysis and highlights which participant groups gave feedback linked to each code, organized by implementation outcome. We used key insights from this step to identify major areas of alignment and misalignment across participant groups. For example, this step highlighted that patients, providers, *and* administrators were aligned on: the importance of contextualizing MBC for patients and providers (Ac-2), the need to anticipate MBC's potential impact on patient–provider relationships (Ac-1), and concerns about the system's clinical capacity to respond to patient needs that CAT-MH identified (F-1). Other patterns, including conceptual groupings of codes, were also used to generate themes. Table 3 summarizes the final grouping of codes by

TABLE 1 Recommended changes to planned implementation based on participant interviews.

Change category	Changes made	Changes not made
Patient-facing communication	• Developed introductory letter to help patients understand reasons for implementing MBC and mitigate anticipated challenges • Revised guidelines for providers to use when introducing patients to CAT-MH	• Did not make real-time technical support available • Did not convert CAT-MH into all languages spoken by our patients
Provider and staff training	• Established content for planned visits to pilot sites by MBC implementation team • Prioritized training of team leaders and champions • Developed online repositories of training materials • Developed training for CAT-MH score interpretation • Developed training for administrative staff supporting the implementation effort	
Provider engagement and support	• Developed and revised provider-facing data dashboards • Developed list of suggested resources for providers to share with patients based on CAT-MH results (e.g., online wellness offerings, mental health apps) • Utilized centralized support staff for sending invites to patients to complete CAT-MH • Designated an IT support point person(s) to assist with anticipated challenges	• Did not offer incentives for providers who adopt CAT-MH, such as bonuses or other rewards • Did not make caseload adjustments for providers whose patients have more severe CAT-MH scores • Did not provide additional visit time budgeted for discussion of CAT-MH results • Did not hire paraprofessionals to help with data review and triage
MBC data collection	• Removed CAT-MH suicide risk module from remote pre-visit assessment • Revised sensitivity cut-offs for specific modules based on data analysis for our patient population • Began planning for in-person CAT-MH assessments via tablet to increase access for patients without the online portal or appropriate personal technology	• Did not offer personalized selection of CAT-MH modules • Did not include individual item responses in EHR • Did not adopt new measures that address functioning, relationship, and quality of life
Health systems management	• Prioritized research projects following the roll-out which focus on health equity impacts and patient–provider relationship impacts	• Did not use CAT-MH data to triage referrals from and return patients to primary care • Did not incorporate CAT-MH data into value-based contracts

TABLE 2 Codes by implementation outcome and participant group.

Implementation outcome	Code	Code definition	Patients	Providers	Clinical administrators
Acceptability	Ac-1	MBC impact on patient–provider relationship	X	X	X
	Ac-2	Contextualization and customization of MBC for patients and providers	X	X	X
	Ac-3	CAT-MH testing frequency	X	X	
	Ac-4	CAT-MH length	X	X	
	Ac-5	Patient reactions to numeric survey results	X	X	
	Ac-6	Patient privacy	X		
	Ac-7	CAT-MH repetitiveness	X		
	Ac-8	Uncertainty about added utility of MBC		X	
	Ac-9	MBC impact on provider autonomy			X
Appropriateness	Ap-1	Identification of new clinical problems	X		X
	Ap-2	Variability in appropriateness by use case (e.g., initial screening and triage of referrals to psychiatry, surveillance over time at population level, tracking progress over time with individual patients)		X	X
	Ap-3	Use of CAT-MH scores to offer targeted interventions, track treatment progress, and adjust treatment intensity over time		X	
	Ap-4	Need for universal mental health screening after onset of COVID-19 pandemic	X		
	Ap-5	Degree of overlap between diagnoses measured by CAT-MH and individual patient diagnoses	X		
	Ap-6	Limited focus in CAT-MH on patient's psychosocial context; closed-ended nature of survey	X		
	Ap-7	Potentially low usability for patients with severe mental health symptoms, symptoms impacting executive function, or other disabilities	X		
Feasibility	F-1	Concerns about clinical capacity to respond to identified patient needs	X	X	X
	F-2	Accessibility for patients with technological, linguistic, or cultural barriers to completion		X	X
	F-3	Bandwidth to respond to patients with high-risk survey results		X	X
	F-4	Difficulty interpreting results; need for more training		X	
	F-5	Difficulty discussing results with patients; possible need for guidelines or scripts		X	
	F-6	Concerns about provider burnout		X	
	F-7	Need for further clarification about the short- and long-term IT role in MBC implementation			X
	F-8	Need for new ancillary staff to assist with review of CAT-MH data, or triage newly identified and/or high-need patients			X

Note: [Correction added on 22 January 2025, after first online publication: The alignment of content in Table 2 has been corrected.]

theme, while Table 4 provides salient quotations by theme and participant type, with individual identification numbers ("#"). The three themes are discussed in greater detail below.

> **Theme 1.** Introducing MBC into existing patient–provider relationships may complicate the dynamic by adding a new and potentially conflicting input for clinical decision making, that is, MBC data, to the more typical inputs of patient report and provider expertise.

All three groups expressed concerns about MBC's potential impact on the experience of giving and receiving mental health care. Patients and providers worried that using visit time to focus on MBC results would leave less time for patients' other concerns (*Quotation #5*), and that introducing quantitative data could challenge working diagnoses or even lead to patients feeling stigmatized (*Quotations #1 and #6*). To minimize disruptions to patient–provider relationships, some providers felt that incorporating systematic MBC into treatment would be more appropriate for new, rather than existing, patients. To minimize disruptions to the patient-centered feel of care, providers and administrators emphasized the need for clear messaging to patients about the purpose of completing CAT-MH assessments (*Quotations #5 and #9*). Providers speculated these messages

TABLE 3 Codes by thematic domain.

	Theme 1: Introducing MBC into existing patient–provider relationships may complicate the dynamic by adding a new and potentially conflicting input for clinical decision making, that is, MBC data, to the more typical inputs of patient report and provider expertise	Theme 2: MBC poses theoretical risks to health equity for safety net patients because of limitations in access to both MBC tools themselves and the resources needed to respond appropriately to MBC data	Theme 3: Tension exists between individual- and system-level applications of MBC
Acceptability (Ac)	• Ac-1 MBC impact on patient–provider relationship • Ac-2 Contextualization and customization of MBC for patients and providers • Ac-5 Patient reactions to numeric survey results • Ac-6 Patient privacy • Ac-8 Uncertainty about added utility of MBC • Ac-9 MBC impact on provider autonomy		Individual applications: • Ac-3 CAT-MH testing frequency • Ac-4 CAT-MH length • Ac-7 CAT-MH repetitiveness
Appropriateness (Ap)		• Ap-7 Potentially low usability for patients with severe mental health symptoms, symptoms impacting executive function, or other disabilities	Individual applications: • Ap-1 Identification of new clinical problems • Ap-3 Use of CAT-MH to offer targeted interventions, track treatment progress, and adjust treatment intensity over time • Ap-5 Degree of overlap between diagnoses measured by CAT-MH and individual patient diagnoses • Ap-6 Limited focus in CAT-MH on patient's psychosocial context; closed-ended nature of survey System-level applications: • Ap-2 Variability in appropriateness by use case (see Table 2 for examples) • Ap-4 Need for universal mental health screening after onset of COVID-19 pandemic
Feasibility (F)	• F-4 Difficulty interpreting results; need for more training • F-5 Difficulty discussing results with patients; possible need for guidelines or scripts	• F-1 Concerns about clinical capacity to respond to identified patient needs • F-2 Accessibility for patients with technological, linguistic, or cultural barriers to completion • F-3 Bandwidth to respond to patients with high-risk survey results • F-6 Concerns about provider burnout • F-7 Need for further clarification about the short- and long-term IT role in MBC implementation • F-8 Need for new ancillary staff to assist with review of CAT-MH data, or triage newly identified and/or high-need patients	

would be more effective if trusted clinicians could tailor these messages to their patients' specific circumstances than if the messages were conveyed in generic terms through a centralized process. Patients felt MBC might be seen as more relevant if their providers had an active role in deciding when to administer CAT-MH and which modules to administer.

Providers also expressed concerns about their own readiness to interpret and use CAT-MH results (*Quotations #7*

TABLE 4 Quotations by thematic domain and participant type.

Thematic domain	Patients (n = 5)	Providers (n = 2)	Clinical/administrative leaders (n = 6)
Theme 1: Introducing MBC into existing patient–provider relationships may complicate the dynamic by adding a new and potentially conflicting input for clinical decision making, that is, MBC data, to the more typical inputs of patient report and provider expertise	(#1) Patient 3 (Ac-5: Patient reactions to numeric survey results): "…*Scores might make it seem like a competition. If you don't get a good score, you might be a little bit hopeless […]. Like why do I have such a bad score? And I really, you know, am I really depressed?*" (#2) Patient 3 (Ac-6 Patient privacy): "*Some people might feel really skeptical about it because they're not sure who was receiving [the results of their assessment] and they might be assured that only the provider sees [the] information, but some people just can't trust digital or electronic information like that….*" (#3) Patient 5 (Ac-6 Patient privacy): "*[Using scores to inform treatment] would have to be with my permission.*"	(#4) Provider 1 (Ac-2: Contextualization and customization of MBC for patients and providers): "*I think a lot of communication, a lot of communication [with providers] and an investment up front that pays off in the long run.*" (#5) Provider 1 (Ac-1: MBC impact on patient–provider relationship): "*…So many patients, when they do get to talk to me, talking about the test, unless it serves them, um, makes me feel like I'm taking something away from them.*" (#6) Provider 2 (Ac-5: Patient reactions to numeric survey results): "*…What do patients think about [the module scores]? Will they kind of agree and will they feel stigmatized or pathologized and how to be responsive to that?*" (#7) Provider 1 (F-4 Difficulty interpreting results; need for more training): "*…Show them [providers] what to expect, give them some examples, uh, you know, um, make sure everybody feels like they get it.*" (#8) Provider 2 (F-4 Difficulty interpreting results; need for more training): "*So maybe kind of like a manual kind of for score interpretation, and then next steps could be useful.*"	(#9) Clin/Admin Leader 2 (Ac-2: Contextualization and customization of MBC for patients and providers): "*I think patients really need to understand what they're filling out and why.*" (#10) Clinical/Admin Leader 6 (Ac-9: MBC impact on provider autonomy, verbatim from interview notes): *Some clinicians may feel that* "*If I need a dashboard, I'm incompetent.*" *…No clinician is guided* "*only by the numbers*" *in mental health.* (#11) Clin/Admin Leader 3 (F-5 Difficulty discussing results with patients; possible need for guidelines or scripts): "*It would be really important […] to have to make sure that clinicians are all getting the same information and given suggestions about scripting on how to inform patients.*"
Theme 2: MBC poses theoretical risks to health equity for safety net patients because of limitations in access to both MBC tools themselves and the resources needed to respond appropriately to MBC data	(#12) Patient 2 (Ap-7 Potentially low usability for patients with severe mental health symptoms […] or other disabilities; verbatim from interview notes): "*If you take out all the people I just named, it would be a small population left over [who are able to complete CAT-MH].*" (#13) Patient 2 (F-1 Concerns about clinical capacity to respond to identified patient needs; verbatim from interview notes): "*First of all, if you're going to capture more people, you may need to 'capture' more clinicians.*"	(#14) Provider 1 (F-2 Accessibility for patients with technological, linguistic, or cultural barriers to completion): "*…So those folks, I think, are going to be a little problematic because they're going to probably be the least technically skilled….*" (#15) Provider 2 (F-3 Bandwidth to respond to patients with high-risk survey results): "*We really have to think about the constraints of our clinical practice and then the ways in which the CAT-MH can be useful. Can we make accommodations, like for instance, having […] urgent slots in our schedule.*" (#16) Provider 1 (F-6 Concerns about provider burnout): "*[It might help if there were] some way to acknowledge [the providers'] contribution and, and we know that they're working or I don't know, give them some extra money if they can't give them time, just something [for adopting CAT-MH].*"	(#17) Clin/Admin Leader 2 (F-3 Bandwidth to respond to patients with high-risk survey results): "*[Patients whose results indicate] some dangerousness, like danger to self or danger to others. [Patients whose results indicate] somebody needs to be alerted and somebody needs to know what to do with that alert.*" Note: [Correction added on 22 January 2025, after first online publication: In the previous sentence, the text '[Patients whose results indicate]' was added.] (#18) Clin/Admin Leader 3 (F-8 Need for new ancillary staff to assist with review of CAT-MH data): "*I think we need MAs [medical assistants] who can actually look at the results - review the results […] Our psychiatrists are so busy, just enormous case loads.*" (#19) Clin/Admin Leader 2 (F-7: Need for clarification about short- and long-term IT role): "*What does the maintenance look like over time? And, uh, and, and how is that going to be supported?*"
Theme 3:	(#20) Patient 5 (Ac-7 CAT-MH repetitiveness): "*The repetition of the same question over again, just in*	(#24) Provider 2 (Ap-3 Use of CAT-MH to offer targeted interventions): "*… Really being able to attack like one*	(#25) T3-6: Clin/Admin Leader 3 (Ap-2 Variability in appropriateness by use case): "*It*

TABLE 4 (Continued)

Thematic domain	Patients (n = 5)	Providers (n = 2)	Clinical/administrative leaders (n = 6)
Tension exists between individual- and system-level applications of MBC	*different wording, um, was kind of irritating, kind of obnoxious.*" (#21) T3-2: Patient 1 (Ap-5 Degree of overlap between diagnoses measured by CAT-MH and patient diagnoses): "*There was a lot of, a lot of information on substance abuse, which I don't have a problem with.*" (#22)T3-3: Patient 1 (Ap-6 Limited focus in CAT-MH on patient's psychosocial context [...]): "*...They could actually design some questions about that, you know, 'has anything happened recently that has caused you to feel a lot better or a lot worse?'*" (#23)T3-4: Patient 2 (Ap-6 Limited focus in CAT-MH on patient's psychosocial context [...]; verbatim from interview notes): "*How about a survey that asks us what we need?*"	*module and that's being focused on and noticing like, what are the changes could be useful.*"	*would be really great to be able to say, you know, here's your caseload [...] And, 'Oh my goodness, you have, um, your, your caseload is predominantly really high-risk patients or really, you know, complex patients.*" (#26)T3-7: Clin/Admin Leader 5 (Ap-2 Variability in appropriateness by use case): "*If [primary care is] then sending referrals and they've had, you know, CAT-MH surveys done, then we can see, you know, and we can prioritize patients a little differently and we may be able to get patients to the right place in the right time.*"

and #8), while administrators worried that providers might perceive MBC as a threat to their autonomy (*Quotation #10*). To mitigate these concerns, both groups highlighted the need for clear communication to providers about the purpose of implementing MBC and its alignment with organizational goals (*Quotation #4*).

Patients and providers agreed that MBC's value would ultimately stem from having ample time to interpret results together. Although providers emphasized the clinical utility of being able to access the individual item responses that contributed to their patients' scores, an administrator with relevant expertise clarified that storing such granular data would not be possible once the workflow was integrated into the electronic health record (EHR), given the size of CAT-MH's question bank.

> **Theme 2.** MBC poses theoretical risks to health equity for safety net patients because of limitations in access to both MBC tools themselves and the resources needed to respond appropriately to MBC data.

All three groups expressed concern about whether CAT-MH could be implemented equitably. Patients wondered whether people with more severe mental health symptoms, with disabilities (e.g., dyslexia, visual impairment), or from different demographic backgrounds would have more trouble than their peers completing the measure. Providers and administrators speculated that many patients would face technological, linguistic, or cultural barriers to completing CAT-MH, especially given the plan to administer it via an electronic patient portal (*Quotations #12 and #14*).

All three groups shared concerns about the need for new workflows, training, and increased treatment capacity to support implementation of system-wide MBC, which would add strain to an already resource-poor care setting (*Quotation #13*). Providers and administrators agreed that it was imperative to develop a plan for responding urgently and reliably to CAT-MH results indicating an elevated suicide risk (*Quotations #15 and #17*). Administrators who understood the technological infrastructure needed to support CAT-MH implementation noted that while up-front investments had been made to support EHR integration, it was unclear what long-term IT support would be dedicated to maintenance and future process improvements (*Quotation #19*).

To address these concerns, all three groups suggested strategies to address the needs and vulnerabilities of diverse patients. To support patients, providers recommended offering real-time technical support, language support for non-native English speakers, and tablets on which to complete the survey for in-person appointments. To support clinicians, providers and administrators suggested developing resources such as EHR prompts to review new results, data interpretation guides, and decision support tools that might help busy clinicians incorporate MBC into existing workflows. They also suggested adding urgent care slots, hiring medical assistants to help with initial data review and triage, and strategizing approaches to mitigate provider fatigue and burnout (*Quotations #16 and #18*).

> **Theme 3.** Tension exists between individual- and system-level applications of MBC.

Patients and providers focused primarily on CAT-MH applications for individual treatment, while administrators were more likely to see CAT-MH as a tool for population health management. Responses

suggested the optimal timing and frequency of MBC differed depending on whether individual patients or patient populations were prioritized.

Individual-level applications

Patients and providers believed that CAT-MH had potential to help track progress over time and inform treatment decisions (Quotation #24). One patient noted that individuals may feel more comfortable sharing sensitive information over a remote platform than they would face-to-face with a clinician. As such, they thought CAT-MH had the potential to uncover important and previously undisclosed areas of concern.

At the same time, patients complained about CAT-MH's length, particularly when specific modules felt irrelevant to their own diagnosis (Quotations #20 and 21). Some patients said they would have preferred a measure that put their responses in context (e.g., asking about life stressors contributing to symptoms) (Quotations #22 and #23). Providers also questioned whether discussing standardized measures was the most effective use of limited visit time for all of their patients. Note: [Correction added on 22 January 2025, after first online publication: The heading 'Individual-level applications' was adjusted to clarify it as a subheading of Theme 3.]

System-level applications

Patients and administrators saw CAT-MH as a viable tool for routine, universal mental health screening. Administrators felt CAT-MH could help triage referrals from primary care to behavioral health, delegate the management of stable patients from psychiatry back to primary care, and generate complexity scores to help balance provider panels (Quotations #25 and #26). One administrator also thought that CAT-MH could help the organization monitor progress on state-mandated mental health screening requirements and quality metrics.Note: [Correction added on 22 January 2025, after first online publication: The heading 'System-level applications' was adjusted for to clarify it as a subheading of Theme 3.]

5 | DISCUSSION

Our pre-implementation analysis sought patient, provider, and administrator perspectives of MBC in an adult outpatient psychiatry department in an urban safety net health system. Our results characterized attitudinal alignment across three key stakeholder groups prior to implementation and identified themes that might guide planning for MBC implementation in other resource-constrained settings serving diverse patient populations. We found that the patients, providers, and administrators we interviewed agreed that introducing MBC could complicate patient–provider dynamics in a multitude of ways and would require careful contextualization to motivate uptake. Further, all three groups expressed concerns about patient- and system-level resource constraints to using MBC as intended, which could inadvertently exacerbate health inequity among some patient subgroups in this system.

Our findings highlight the importance of fostering stakeholder buy-in for MBC before implementation begins. While the patients and providers we interviewed endorsed the idea that MBC could provide important information for tracking symptoms and adjusting treatment, they were skeptical of the value it would add to their own treatment. Multiple participant groups voiced concerns about MBC's potential to disrupt existing patient–provider relationships and were turned off by the selected measure's length and over-emphasis on symptoms without accounting for psychosocial context. In light of prior research, which indicates MBC's success depends on attitudinal alignment and collection of data that are meaningful to those who will engage with it, our findings suggest that healthcare settings which plan to implement MBC would benefit from moving beyond workflow-based training to directly engage the values and norms of key stakeholders.[52,53] Screening tools that incorporate domains that are important to patients (e.g., recovery-based orientations) may improve MBC's acceptability, particularly among diverse patient populations.[54,55] Further, community-based and participatory research may offer useful strategies for developing measures that address the needs of patients and providers in safety net systems.[56,57]

Buy-in on its own, however, may not be enough to ensure MBC's success in safety net settings. While MBC has potential to reduce mental health disparities,[7,8] all three groups gave voice to the risks MBC could pose to equity if implemented without sufficient forethought. They noted that certain patient subgroups may be disproportionately likely to miss out on MBC's benefits due to difficulties completing the measure. For instance, patients with more severe disabilities, who theoretically stand to benefit most from MBC, might be least able to fill out the CAT-MH given their impairments. These concerns mirror the barriers to access and sustained engagement in mental health care in the first place, which results in "healthcare systems allocat[ing] clinical resources to those patients who are able to overcome barriers to care rather than those who are most symptomatic."[32] Some participants also speculated that individuals from minoritized demographic, linguistic, or cultural backgrounds might struggle more than non-minoritized individuals to complete the measure. These concerns echo findings from prior studies of MBC, which stress the need for culturally and linguistically relevant translations of MBC measures.[58] Finally, our participants worried that an asynchronous, digital tool would put patients with low technology access or literacy at a disadvantage. This underscores prior work that points out how digital healthcare delivery eliminates certain barriers to care but can also introduce new access challenges.[59] Mitigating potential novel disparities driven by technical challenges may require new types of patient support to assist with learning to navigate online health tools.[60]

Safety net settings face real and ever-changing resource constraints,[61] but there is little published about how MBC implementation will interface with demands on already-constrained care settings. Safety net settings like the one featured here generally have fewer resources available not only for implementation, but for research and evaluation of these efforts.[62] By prioritizing and deploying research resources early in implementation planning, department leadership was able to unearth and respond to many of these

concerns before implementation began (Table 1). For example, patient-facing messages that provided more information about MBC were developed and refined, while training for providers was optimized to give the necessary background. Modules deemed unsafe to administer outside of a clinical setting were removed from the implementation plan (e.g., the suicide risk module), and attempts were made to utilize existing staff to support implementation and hence reduce provider burden for measure administration.

Meanwhile, some feedback that required expensive or complex fixes was not addressed, likely due to resource constraints in our health system. Multiple of our participants believed that new workflows would need to be created and provider availability would need to increase in order to be fully responsive to the needs identified by CAT-MH. While heeding their advice to offer additional visit time, decreased caseloads, or bonuses might have fostered provider uptake of CAT-MH, these suggestions would also have exacerbated long patient waitlists and organizational budgetary concerns. Similarly, using CAT-MH data to coordinate with other parts of the system might have improved access and quality of care for patients, but the need to invest unreimbursable time, personnel, and equipment into coordination precluded a focus on these recommendations.

While our findings are largely consistent with prior studies of office-based, paper-and-pencil MBC tools in more homogenous psychiatric settings,[7] this analysis uniquely solicited contemporaneous pre-implementation feedback from patients, providers, and administrators in a safety net setting. It adds rich qualitative data about anticipated benefits and drawbacks to implementing remote, asynchronous MBC in a system with diverse patients whose mental health conditions and psychosocial needs vary considerably. These data may provide useful context for understanding observed differences in MBC uptake across patient subgroups and care settings that are detailed in other studies from our health system.[63]

The themes from this qualitative pre-implementation analysis may be most transferable to other settings that share important features with ours. The challenges identified in Theme 1, which relate to shifting patient–provider relationships, may be especially relevant for other systems with strong roots in psychodynamic psychotherapy that aspire to incorporate MBC into their practice. The equity concerns highlighted in Theme 2 are most likely to apply to other safety net settings with diverse patient populations who already face barriers to mental health care. Theme 3, which highlights the tension between individual- and system-level applications of MBC, is less relevant for standalone practices than for clinics housed within broader healthcare organizations, which need to implement MBC across a range of providers, care settings, and diagnostic groups.

Limitations of this experience report include: (1) that it may not have captured the diversity of perspectives represented by all stakeholders; (2) our sample size was small; (3) patient participants spoke English and were selected because their providers thought they could navigate a novel technological tool; (4) both providers were white women; and (5) our participants may have been disproportionately likely to provide favorable feedback due to their willingness to pilot the tool.

6 | CONCLUSION

This pre-implementation experience report highlights the shift in treatment dynamics, equity considerations, and tension between individual- and population-level needs that patients, providers, and administrators anticipated when planning for MBC implementation in our safety net psychiatry clinic. If LHSs intend to use MBC data to guide quality improvement initiatives, they may first need to solve the issues pertaining to buy-in and equity highlighted above. Without buy-in, MBC uptake—and hence data about what interventions are most effective—may be limited. Further, without equitable implementation, safety net systems like ours may be systematically limited in the disparities they are able to observe or address. Finally, because safety net settings are less likely to have the resources to study and write about observed implementation disparities, these challenges are more likely to go unreported in traditional peer-reviewed research literature. Therefore, our experience suggests that these challenges likely need to be tackled upstream, continuously monitored, and systematically disseminated outside of the systems themselves for MBC to deliver on its promise of improving mental health care for all.

ETHICS STATEMENT

The authors do not report any conflicts of interest for this study. The health system paid Adaptive Testing Technologies (ATT) for the use of CAT-MH and for technical assistance with implementation. Representatives from ATT were not involved in drafting, reviewing, and/or approving of this manuscript. The health system's Institutional Review Board (IRB) considered this part of an ongoing quality improvement project and did not require full IRB review. The team followed ethical principles of informed consent, including making clear to all participants that: participation was voluntary and interviews could be stopped at any point, the choice to participate would not negatively impact patient care or employment, specifics of feedback provided would not be traced back to individual respondents, and the ways in which feedback would be used.

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APPENDIX A

Urgent takeaways: *Key take-aways, especially those urgent for implementation*
1.
2.
3.
Relevant background: *Key points on the patient or person needed to understand context for feedback*
•
Detailed feedback organized by recurrent areas of concern:
• CAT-MH Product
• EPIC Integration
• Provider Engagement & Support
• Administrative Staff Engagement & Support
• Patient Engagement & Support
• Patient/Provider Shared Decision making & Relationship
• Workflow Challenges
• Medico-Legal Concerns
• Equity Concerns
• Other

FIGURE A1 Analytic memo.

Domain Area	Successes or Positive Outcomes	Challenges or Areas for Improvement	Suggested Tasks
CAT-MH Product			
EPIC Integration			
Provider Engagement and Support			
Administrative Staff Engagement and Support			
Patient Engagement and Support			
Patient/Provider Shared Decision-Making and Relationship			
Workflow Challenges			
Medico-Legal Concerns			
Equity Concerns			
Other			

Note: These summaries were provided throughout the pre-implementation time period to MBC implementation leadership. Three formal summaries were presented to department implementation leadership over an approximately 6-week intensive pre-implementation period, with informal data sharing occurring more frequently between implementation researchers and the MBC implementation operational lead in order to identify salient emerging factors.

FIGURE A2 Template table summarizing participant feedback for implementation leaders. These summaries were provided throughout the pre-implementation time period to MBC implementation leadership. Three formal summaries were presented to department implementation leadership over an approximately 6-week intensive pre-implementation period, with informal data sharing occurring more frequently between implementation researchers and the MBC implementation operational lead in order to identify salient emerging factors.