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ORIGINAL ARTICLE

Assessing Collaborative Care in Mental Health Teams: Qualitative Analysis to Guide Future Implementation

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Abstract
The Collaborative Care Model (CCM) is an evidence-based approach for structuring care for chronic health conditions. Attempts to implement CCM-based care in a given setting depend, however, on the extent to which care in that setting is already aligned with the specific elements of CCM-based care. We therefore interviewed staff from ten outpatient mental health teams in the US Department of Veterans Affairs to determine whether care delivery was consistent or inconsistent with CCM-based care in those settings. We discuss implications of our findings for future attempts to implement CCM-based outpatient mental health care.

Keywords Outpatient mental health · Collaborative Care Model · Team-based care · Implementation

Introduction

Chronic health conditions, such as diabetes, cardiovascular disease, and depression, require long-term management by clinicians and patients alike. Treating these conditions requires an increasing share of healthcare costs, with recent analyses suggesting that improving the treatment of chronic conditions is the single biggest challenge facing the US healthcare system (Emanuel 2012). In the face of this challenge, the Collaborative Care Model (CCM) represents an evidence-based approach for organizing the delivery of care for these types of illnesses. While the evidence base for structuring care around the CCM originally focused on chronic medical conditions (Von Korff et al. 1997; Wagner et al. 1996), randomized trials have established its utility for chronic mental health conditions as well (Miller et al. 2013; Woltmann et al. 2012).

The CCM initially included four clinical elements: self-management support to encourage patients to work toward wellness between treatment sessions; clinical information systems in the form of patient registries and streamlined feedback to providers; delivery system redesign to encourage prevention-oriented care; and provider decision support via facilitated access to treatment guidelines or expert consultants. Two additional components were added later: community linkages to help patients access the resources they need outside of the clinic, and the explicit support of health system leadership in the pursuit of the other CCM elements (Bodenheimer et al. 2002a, b; Coleman et al. 2009; Tsai et al. 2005), bringing the total number of CCM elements to six.

Given the robust evidence base for structuring mental health care around the CCM (Badamgarav et al. 2003; Gilbody et al. 2006; Miller et al. 2013; Woltmann et al. 2012), the pivotal issue becomes how best to implement and sustain it in clinical settings (Kilbourne et al. 2004, 2007; Wiltsey

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Stirman et al. 2012). The breadth and depth of efforts needed to implement the CCM depend, however, on the ways in which care is (or is not) already aligned with its six elements.

There are currently two instruments that are meant to assess the extent to which clinical care is being delivered in a manner that is consistent with the CCM. First, the Assessment of Chronic Illness Care (ACIC; Bonomi et al. 2002) relies on an extensive consensus process, rooted in team discussion, to evaluate the alignment of clinical care with each of the six CCM elements. The ACIC distills each CCM element to a numerical rating, making it easy to detect change over time (e.g. Solberg et al. 2006) or predict clinical outcomes (e.g. Sperl-Hillen et al. 2004). For example, one study used the ACIC to study clinical teams engaged in chronic care learning collaboratives (Bonomi et al. 2002). Results from that study revealed that, at baseline, care practices were less consistent with the CCM element of clinical information systems than with the other CCM elements, but that ACIC scores for each CCM element were significantly higher post-collaborative. While the ACIC's ability to distill each CCM element to a numerical rating makes it useful for quantitative analysis, these same numerical ratings shed little light on *how* clinical teams enact the CCM elements. Second, the Patient Assessment of Chronic Illness Care (PACIC; Glasgow et al. 2005) is a self-report scale that gathers information from patients regarding the extent to which they perceive their care to be well-coordinated, but is not directly aligned with the six CCM elements. This body of literature therefore reveals a crucial gap, in that there are no studies comprehensively assessing how mental health providers in real-world clinical settings pursue the six evidence-based elements of the CCM.

Study Goal

We therefore set out to collect extensive qualitative data regarding *how* care providers in a sample of outpatient mental health clinics delivered care that was consistent, or inconsistent, with the six CCM elements. We conducted this study at the outset of a large, cluster randomized study of CCM implementation in the U.S. Department of Veterans Affairs (VA), before participating clinical teams had been exposed to any CCM-related training (Bauer et al. 2016). Rather than using the ACIC for this endeavor—which collapses data on each CCM element into a series of numbers—we relied on qualitative interviews with mental health providers to collect data on CCM elements of care delivery. Qualitative methods are perfectly suited to this type of exploratory work, as our ultimate goal was to develop a robust picture of how care delivered by these clinical teams aligned with the CCM elements. In the current manuscript we describe these qualitative data, and discuss the ways that these findings can inform future attempts to implement CCM-based care in similar outpatient mental health settings. To our knowledge, this study represents the first robust, qualitative description of how care in a sample of outpatient mental health clinics aligns with the set of six evidence-based CCM elements.

Methods

The current study is based on data from ten outpatient mental health clinical teams, each located within a distinct Veterans Affairs Medical Center (VAMC). Data for nine teams (Bauer et al. 2016) were collected between 2016 and 2017, and data for one team was derived from an associated pilot study in 2013 (featuring identical methods; Kim et al. 2017). All study procedures were approved by VA's Central Institutional Review Board.

Study Setting

The VA is an ideal setting for this study, as over 70% of physicians in the U.S.—and a sizeable proportion of other care providers—have received at least a portion of their clinical training in VA settings (US Department of Veterans Affairs 2016). Specifically, this study was conducted with providers from VA-based outpatient general mental health teams, entitled Behavioral Health Interdisciplinary Program teams (BHIP teams). These BHIP teams had initially been established based on guidance from VA's Office of Mental Health and Suicide Prevention (OMHSP) in 2012, and are meant to deliver mental health services for Veterans struggling with depression, anxiety, and other common mental health issues. In that regard, BHIP teams are akin to Patient Centered Medical Homes (PCMHs; Jackson et al. 2013), but are focused on mental health treatment instead of primary care. National guidance initially recommended that each BHIP team include about 5–8 staff members from multiple disciplines, but at the time that this study was conducted, there was no national guidance regarding specific disciplinary breakdown within BHIP teams, nor was there guidance for incorporating CCM-consistent clinical practices into these teams' day-to-day clinical activities.

This manuscript describes baseline analyses that were conducted as part of a pilot study (Kim et al. 2017) and larger trial (Bauer et al. 2016); the overall goal for both studies was to facilitate implementation of CCM-based outpatient mental health care. All ten participating BHIP teams (one from the pilot study, and nine from the larger trial) were recruited through a process involving an initial announcement to national and regional mental health leaders across VA from OMHSP. This announcement was disseminated through a series of conference calls and outreach emails, and invited sites to volunteer to participate if they had a BHIP team that had been in place for at least 1 year that

would benefit from the opportunity to further develop their care practices. Ten VA medical centers located in seven different VA networks (Veterans Integrated Service Networks [VISNs]) across seven U.S. states agreed to participate in the study, and each designated one BHIP team to enroll in the project.

Measures and Data Collection Procedures

We used qualitative methods to evaluate the extent to which each of the six CCM elements was present at each of the ten BHIP teams. Specifically, the qualitative research team (consisting of four co-authors with extensive qualitative interview experience) administered a semi-structured interview to members of the participating BHIP teams. Members of nine BHIP teams completed the interview by telephone, and members of one BHIP team (located within driving distance of the research team) completed the interview face-to-face. Our interview guide was primarily structured around the CCM elements (Bajor et al. 2013), but included additional open-ended questions regarding how the BHIP team operates and how care delivery could be improved.

Recruitment of BHIP providers to complete these semi-structured interviews was initiated by emails from the qualitative research team that encouraged recipients to reply if they were interested in participating. With participants' permission, qualitative interviews were audio-recorded, professionally transcribed verbatim, and entered into NVivo qualitative analysis software, version 10 (Castleberry 2014).

Analysis Plan

As described above, our goal for this manuscript was to describe the ways in which delivery of mental health care in the enrolled BHIP teams at baseline was consistent, or inconsistent, with the CCM, in the hopes of informing future efforts to implement CCM-based care in similar settings. To achieve this goal, we analyzed the qualitative interviews using a directed content analysis approach (Hsieh and Shannon 2005; Krippendorff 2012) with an a priori coding framework based on the six CCM elements. To initiate this process, three study authors familiar with the CCM developed a preliminary codebook describing each of the six CCM elements (including a brief explanation of the element itself, typical examples that might occur in clinical settings, and guidance for when to apply each code).

Then, the qualitative research team each read the same transcript individually and used the preliminary codebook to identify evidence pertaining to each CCM element. To ensure that our data analytic approach could uncover evidence for both the presence and absence of each CCM element, the qualitative research team applied each code to lines of interview text that exemplified the CCM element in question or demonstrated its absence. Then, the qualitative research team members refined the qualitative codebook through a series of consensus meetings focused on coding for this initial transcript. Inter-rater reliability of 75% was established using a "check-coding" process (Miles et al. 2013) where all coders independently coded the same interview transcript, and initial reliability estimates between all coders was computed. Coders then met to compare their coding, discuss areas of disagreement, and reach consensus. This process was repeated until a stable level of agreement of 75% was achieved across all coders.

Once the qualitative codebook was finalized and reliability was established, each member of the qualitative research team coded between 5 and 11 transcripts, with each transcript coded independently by two separate coders. Discrepancies in coding between the two coders for each transcript were resolved via consensus. We then reviewed coding reports containing evidence for each CCM element, and used these coding reports to identify key a priori and emergent themes related to each CCM element. In terms of data saturation and sufficiency at the BHIP level, we planned to assess whether respondents from each BHIP team described similar phenomena, and to emphasize findings that were repeated by at least two respondents within a BHIP team.

Results

Study Sample

Table 1 provides a description of the facilities and clinics in which the enrolled BHIP teams were embedded. Our sample included teams from the Northeast, Midwest, South, and South-Central regions of the US, but did not include any teams from the West. In terms of facility complexity—a VA designation based on patient volume, patient risk, number of physician specialists, teaching/research activities, and intensive care unit capacity—our sample also featured reasonable diversity, and broadly mirrored the distribution of VA medical centers nationally (Veterans Health Administration 2018). Table 2 provides a breakdown of what disciplines were represented in our study sample. Five of the ten participating teams had fewer than three participants. We therefore chose to aggregate data across sites rather than analyze each site separately, as it was not feasible to assess within-site saturation for many of the participating BHIP teams.

Qualitative Interview Results

We report results below for each CCM element separately. A summary of findings can also be found in Table 3.

Table 1 Characteristics of the sample (site level)

Site #	Facility complexity[a]	Geographic location	BHIP location (VAMC vs. CBOC)	Percent rural Veterans[b]	Participants (N)
0 (Pilot)	1c	Northeast	VAMC	50	6
1	1c	Midwest	VAMC	59	4
2	1c	South-Central	CBOC	38	1
3	1b	Northeast	VAMC	40	2
4	3	South	VAMC	22	1
5	1a	South	VAMC	26	2
6	3	Northeast	CBOC	35	3
7	1c	Midwest	VAMC	39	2
8	2	Midwest	VAMC	37	4
9	1b	Northeast	VAMC	57	7
Total	–	–	–	–	32

CBOC community-based outpatient clinic

[a]Defined based on patient volume, patient risk, number of physician specialists, teaching/research activities, and intensive care unit capacity. 1a = highest complexity; 1b/1c = high complexity; 2 = medium complexity; 3 = low complexity

[b]Reflects percent of Veteran population residing in rural areas

Table 2 Characteristics of the sample (provider level)

Provider type	Participants (N)
Psychologist	9
Social worker	8
Psychiatrist	4
Registered nurse	3
Vocational rehabilitation	3
Advanced practice nurse	2
Administrative support	1
Addiction counselor	1
Pharmacy specialist	1
Total	32

Work Role Redesign

The CCM element of work role redesign involves structuring work roles to support more anticipatory care that prevents crises rather than simply responding to them. In randomized trials, this has frequently been accomplished by embedding a research-funded nurse care manager into a clinical team to make outreach calls to patients, follow up on no-shows or cancelled appointments, manage walk-ins or other requests for same-day access, and administer telephone-based symptom assessments between sessions to guide ongoing care (Miller et al. 2013; Woltmann et al. 2012).

Consistent with this, staff at two of our participating BHIP teams reported having access to nurses who fulfilled one or more of these roles. One reported, "… for clients that seem like they may need some additional contact, we'll have them come in and meet with the BHIP nurse in between sessions. And in some instances I think there's been some weekly contact by either the nurse or the [licensed practical nurse], whether it's face to face or just doing a phone check for clients that seem to be higher risk." Staff from other sites, however, reported a lack of personnel to dedicate to this role, with one respondent indicating that "we don't have that level of staffing." Another respondent expressed concern about dedicating staff time to proactive outreach, emphasizing the importance of instead maximizing face-to-face visits: "We see our [patients] when they come in."

At sites without formal care managers, the spirit of work role redesign—namely, taking steps to prevent crises from occurring between sessions—was generally accomplished by various other means. First, nearly all respondents reported a local policy (common across VA nationally) to attempt at least three contacts with a Veteran after a no-show. There was variety, however, in exactly how these contacts were conducted. In some cases these contacts took the form of two phone calls (from clinical and/or administrative staff) followed by a letter, while in other cases three phone calls sufficed. One clinic had established a policy of proactively calling Veterans at high risk for missing their appointments (based on previous no-shows) to maximize the chance that they attend.

The provision of same-day services for Veterans who have urgent needs—but do not necessarily require an emergency room visit or inpatient hospitalization—has also been the subject of recent VA-wide mandates. There was variety in the ways that BHIP teams provided same-day services for their Veterans. For example, one respondent reported the

Table 3 Examples of CCM-related practices in the study sample

CCM-related practice	Examples in our study sample
CCM element #1: work role redesign	
Create specific staff position to engage in proactive outreach, administer symptom assessments, and follow up after appointments	– Staff at two sites reported having a nurse care manager dedicated to these tasks – Staff at other sites reported having insufficient staff to dedicate to such a role
Take steps to minimize no-shows, and/or to ensure that no-shows receive adequate follow-up	– Staff at all sites reported adhering to VA requirement of three contacts (phone and/or letter) after a no-show – Staff at one site reported calling Veterans at high risk for no-show prior to scheduled appointments
Provide same-day services for walk-ins	– Staff at several sites reported dedicated open-access slots in each provider's schedule, although this could interfere with access for returning patients – At other sites, same-day services were provided on an ad-hoc basis by the next provider to have a cancellation or other opening in their schedule
CCM element #2: patient self-management support	
Use evidence-based psychotherapies that include a self-management component	– Social workers and psychologists at nearly all sites reported using evidence-based psychotherapies with a self-management component
Work with Veterans to develop treatment plans that include self-management components	– Treatment plans were used at all sites, but typically focused on the treatment provided rather than steps Veterans could take between sessions to pursue wellness – Respondents at two sites described the treatment planning process as an administrative burden of limited clinical utility
Develop procedures for Veterans to access services between scheduled sessions	– Respondents at nearly all sites noted that Veterans could call their clinicians in times of need – Few respondents reported frequent use of secure messaging between sessions
CCM element #3: provider decision support	
Make evidence-based psychotherapies and medical algorithms widely available	– Social workers and psychologists at nearly all sites reported using evidence-based psychotherapies; many were trained in these treatments by VA – Respondents at several sites, however, noted that workload pressures made it very difficult to attend trainings for evidence-based psychotherapies or deliver those psychotherapies as intended – Few respondents with prescribing privileges reported using medication algorithms
Develop procedures for providers to rapidly seek recommendations from clinical experts	– One respondent reported frequent use of e-consult system – Respondents at nearly all sites reported less formal means of accessing expertise (e.g. face-to-face meetings, phone calls, emails, instant messages)
Develop procedures for providers to rapidly refer patients to specialty services if needed	– Respondents at all sites reported use of referral system in CPRS – Respondents at two sites noted that the CPRS referral system has insufficient feedback systems, at times resulting in Veterans receiving inadequate follow-up – One respondent reported frequently supplementing CPRS referral system with direct communication to ensure continuity of care
CCM element #4: clinical information systems	
Use an automated reminder system to maximize adherence to practice guidelines	– One respondent reported using clinical reminder system built in to CPRS (many of which are nationally mandated)
Provide automated feedback to clinicians on their performance on established metrics	– Respondents at all sites reported receiving performance evaluations – One respondent described the performance evaluations as being tied to administrative metrics of limited clinical utility – Respondents at several sites reported receiving clinical feedback directly from their supervisor(s), above and beyond formal performance evaluations

Table 3 (continued)

CCM-related practice	Examples in our study sample
Maintain a registry to track data across a panel of Veterans in treatment	– One respondent reported having access to a dedicated team registry, maintained by a data manager – Respondents at several sites reported either not having a registry, or being uncertain whether such a registry existed for their team – One respondent reported keeping a registry of her own patient panel in the absence of a team registry – One respondent expressed skepticism regarding the value of having a registry, and others expressed ambivalence toward this type of approach to organizing care
CCM element #5: linkages to community resources	
Develop partnerships with community agencies to complement health services offered within the medical center	– Respondents at some sites reported that individual providers are responsible for maintaining and disseminating information about community resources – Respondents at other sites reported that one or more team member maintains a central repository of information about community resources – One respondent noted the development of an office within the medical center specifically dedicated to community outreach – Respondents at several sites reported having a close working relationship with a local Vet Center
CCM element #6: organizational and leadership support	
Develop formal ways for local leadership to support the elements described above	– Respondents at several sites noted that local leadership emphasized provision of same-day services for Veterans (consistent with CCM element #1, work role redesign) – Respondents at some sites also noted that local leadership provided opportunities to receive training in evidence-based psychotherapies (consistent with CCM element #3, provider decision support) – Otherwise, respondents generally talked about leadership more broadly (i.e. not in specific reference to the elements described above)

development of an embedded access team to manage walk-ins for their clinic. Others noted that retaining open-access slots in each clinician's daily schedule provided the time and flexibility needed to meet Veterans' needs on the day that they presented for care. Several respondents, however, noted that systematic attempts to ensure same-day access could also reduce the number of clinic slots available for returning patients. One respondent used the term "logjam" to describe the resulting build-up of Veterans in need of additional mental health services within the clinic that followed the adoption of same-day access. In other cases, same-day access was described as being less systematic, with one respondent reporting that walk-ins needed to "just wait until somebody's available or somebody has a cancellation."

More broadly, a theme that emerged from our interviews was that clinicians were typically invested in delivering coordinated and anticipatory care, but that this was frequently accomplished in an ad hoc manner rather than through formal policies or systems. While several providers noted having time in BHIP team meetings to discuss shared patients, they also commonly cited informal conversations between sessions as the primary medium for coordinating this type of care, with one provider noting that "a lot of times it's just grabbing the other team member in the hallway and talking real quickly." Furthermore, providers noted that the absence of a registry of BHIP patients made proactive outreach to patients who might be in crisis difficult (see section on the CCM element of clinical information systems below for additional details). Consistent with this, one provider indicated that "there's no way to even know who all of those patients are."

Patient Self-Management Support

The essence of the CCM element of patient self-management support is the enhancement of Veterans' capacity to work toward their own wellness outside of clinician contacts. Consistent with this, many providers described the marshaling of Veterans' own motivation and effort as an integral component of their treatment approach. This was especially salient in the context of evidence-based psychotherapies (EBPs), which typically include self-management components. These were widely endorsed among the psychotherapy providers we interviewed (see "Provider Decision Support" section for additional details).

Treatment plans that include actions to take between sessions represent another set of tools that can enhance Veterans' self-management capacity. Many respondents reported

collaboratively developing treatment plans with Veterans, but nearly all described these treatment plans as primarily focusing on treatments provided (e.g. frequency of individual therapy visits or medication management) rather than patient self-management. One respondent also described the treatment planning software as clinically unhelpful and "burdensome," while another at a different site described it as "unwieldy, lengthy, and overwhelming to clinicians and patients."

Establishing ways for Veterans to reach their providers between sessions (e.g. to report on current symptoms or at-home assignments from their most recent psychotherapy session) represents another way to enhance self-management skills. While secure messaging is available within VA to allow this, few respondents reported using it routinely with their Veterans. Instead, several clinicians talked about telephone contact as the most common way for Veterans to reach out to them if the need arose between sessions, with one stating, "if the patients are having any problems, they'll call me."

Some interview respondents noted that Veterans' family members can support Veterans' attempts to better manage symptoms and improve functioning—but that it can be difficult to involve families in treatment. One participant noted, "I don't do things with patients' families and, quite frankly, I probably could or should do more of that." Another participant from the same site noted that adopting a recovery-focused model for treatment requires engaging the Veteran as a collaborator rather than a passive recipient of care.

Provider Decision Support

The CCM element of provider decision support, at its core, involves ensuring that clinicians have access to high-quality treatments. This may take the form, for instance, of EBP manuals or validated medication algorithms for individual providers, or streamlined access to specialty consultation if a clinical issue requires input that is beyond an individual clinician's expertise. It may also include facilitated access to referral services if a Veteran requires treatment in a different clinical setting within the hospital.

Most of the psychotherapists we interviewed reported that they had received training in, and used, at least one of a number of EBPs (e.g. cognitive behavioral therapy, dialectical behavior therapy). In many cases these trainings were provided by VA, especially those related to posttraumatic stress disorder (PTSD). Several respondents favorably described mental health care in their clinic as being explicitly built around EBP delivery, and noted that local VA staff designated as Evidence-Based Practice Coordinators helped accomplish this. Interview respondents specifically noted that these Coordinators routinely emailed clinicians about available psychotherapy trainings, or set up "lunch and learn" sessions to advertise the availability of local experts in specific EBPs. Some clinicians noted, however, that it could be difficult to carve out time in their busy schedules to attend EBP trainings, with one noting, "the problem is I have no time in my day to do those kinds of [trainings]". Another clinician at a different site described the VA-based continuing education process as "so cumbersome that it's almost pointless to do," and reported seeking EBP training outside of VA—even if it meant paying for it herself—rather than going through the process of rescheduling patients to accommodate VA training. Furthermore, one respondent noted that workload pressures made it difficult to provide the weekly individual therapy component of dialectical behavior therapy, and a provider at a different site noted that only patients officially enrolled as part of an EBP training could be seen frequently enough for those treatments to be maximally effective. Additionally, one psychotherapist noted that the evidence base for psychodynamic therapy (in which this provider was trained) was not fully appreciated by VA leadership, resulting in what was seen as an overly narrow view of what constituted evidence-based practice.

Some prescribing clinicians mentioned having access to evidence-based medication algorithms. One pharmacist reported that local Grand Rounds provided valuable opportunities for such algorithms to be disseminated, while a prescriber at a different site reported a more individualized approach by following the latest research "coming out of Johns Hopkins, the Mayo Clinic, and NIH." Another prescriber, however, noted that medication algorithms and prescribing guidelines were "nearly useless" because the psychiatry field changes too quickly for such documents to be up-to-date for very long.

The VA medical record (called the Computerized Patient Record System [CPRS]) includes functionality for electronic consults (e-consults) at some sites, allowing providers to rapidly seek feedback from expert clinicians related to specific patient populations or treatments. One clinician we interviewed reported frequent use of the e-consult system, while several respondents used informal consultations with BHIP team members or others within the clinic known to have particular expertise. The format for these informal consultations included "drive-by" face-to-face meetings, phone calls, emails, or instant messages. In some cases, BHIP meetings also served this purpose, providing a regular opportunity for clinicians to seek consultation regarding complex or difficult cases from others on the team.

Regarding referrals to other services within the hospital (e.g. substance treatment services or the local PTSD clinical team), by far the most common method endorsed by respondents was the consult system in CPRS. This system allows the referring clinician to submit their request electronically to staff at the specialty clinic in question. Overall, the consult system was appreciated by the clinicians we

interviewed. Two respondents from different sites, however, noted that it does not include a formal way to provide feedback to the referring provider—above and beyond a brief note that the consult has been completed. One clinician explained that, after submitting a consult, "you get a note indicating that it's been done, so you at least have a sense that there's been a follow-up, but once that has happened, the norm is that you will lose contact about that part of the Veteran's care at that stage." Another noted that Veterans who are referred to another clinician through CPRS can easily fall through the cracks, as there is "no catch, no failsafe for me to know what's happened with that patient until it somehow crosses my desk again." In response to these challenges, one respondent reported frequently supplementing CPRS referrals with direct communication (e.g. email, telephone) to ensure adequate follow-up and prevent patients being "bounced around" from clinic to clinic.

Clinical Information Systems

In its fullest form, the CCM element of clinical information systems involves one or more of three interrelated parts: (1) an automated reminder system to maximize a provider's ability to adhere to practice guidelines, (2) an automated feedback system to inform clinicians of their performance on the automated reminder system or other established clinical metrics, and (3) an automated method to track data on the total panel of patients treated by a specific provider, team, or clinic (i.e. a registry).

Within VA, CPRS includes a clinical reminder system that creates pop-up boxes when a Veteran is due for any of a number of assessments (e.g. PTSD screening, alcohol use screening). In addition, one page of the CPRS interface includes all reminders applicable to a particular Veteran and the dates by which they need to be completed. For example, one respondent noted that the expectation throughout their clinic was that all such reminders be completed when they come due.

In terms of feedback on the quality of clinical work, several providers we spoke to noted that they received feedback directly from their supervisors. Furthermore, respondents noted receiving periodic performance evaluations, although these were described primarily as administrative in nature.

Only one of the providers we interviewed reported having access to any type of registry system to track data across patients in an automated fashion. That provider reported that their BHIP team's registry is maintained by a data manager with expertise in extracting data across patients from CPRS. For example, the data manager could, upon request, develop a list of patients on the team's panel who had presented to their facility's walk-in clinic after no-showing to a recent scheduled appointment with a BHIP team clinician. In contrast, several providers from other sites reported having no team registry (e.g. "we don't have a separate database") or reported uncertainty about such a registry (e.g. "I would not know how to do that… I'm sure there's a way to do it; I don't think anybody here in this clinic knows how to do it"). Another clinician expressed disinterest in such a panel-based approach: "I'm not interested in that… I just provide the care [patients] need in general, without worrying about that sort of thing." In the absence of a centralized registry, a few clinicians (one of whom was a self-described "nerd" when it comes to clinical data) reported tracking data on their own personal caseloads (for example using spreadsheet software like Microsoft Excel).

Linkages to Community Resources

The CCM element of linkages to community resources acknowledges the value of partnering with community organizations such as Alcoholics Anonymous, senior centers, volunteer organizations, and community hospitals to provide services that may not be readily available within VA. Systematically connecting patients to these resources can help improve their functioning and provide valuable support outside of VA settings.

In some cases, clinicians in our sample reported that individual providers were responsible for developing, nurturing, and maintaining links to these types of resources on their own. In other cases, staff reported that one or more BHIP team members—typically a social worker, but sometimes a nurse or substance abuse counselor—was seen as most knowledgeable about such resources. For example, one provider stated, "I think our social workers are pretty good about knowing all the resources and sometimes hooking folks up." Another respondent at the same site noted that, if a social worker on the BHIP team was unable to find applicable community resources, their hospital's Community Outreach Division served as a key liaison between clinicians and outside groups. Similarly, a respondent at a different site noted that their hospital's Homeless Program maintained the strongest connections to homeless shelters in the community. One respondent noted that developing a centralized repository of community resources represented an important goal for the clinic: "We as a team have our separate lists, and then we have a few scattered [pamphlets] around the clinic for patients, but that's another thing we're working on is getting a comprehensive list not only for ourselves, but also a more catered, tapered list for the patients."

One community linkage in particular deserves additional attention—namely, Vet Centers. While technically part of the VA system, Vet Centers are community-based clinics with a separate medical record system, frequently staffed by Veterans, that provide a variety of outpatient treatment services. Several providers across different sites described their local Vet Center as a key referral source, especially for

Veterans desiring individual psychotherapy. One provider described a more robust relationship involving periodic face-to-face meetings: "Two of our psychiatrists, myself and another, go over to the Vet Center each once a month for an hour and a half for case consultations. So there are many cases where the therapy will be done there and then the patient gets their medications or primary care services here in our clinic."

Organizational and Leadership Support

The CCM element of organizational and leadership support acknowledges that any systematic change to improve care for chronic illnesses requires leadership buy-in. In general, when asked about their leadership, the providers to whom we spoke did not talk about leadership support of the CCM elements specifically, but instead talked about support from leadership for their clinical work more generally. Thus, many participants noted the importance of having leadership provide the necessary resources and support for frontline providers—and also noted the challenges and frustrations that can arise when clinic leaders are seen as distant, aloof, or too focused on numbers and metrics.

There were instances, however, in which participants discussed leadership support in a manner that was tied more closely to the other CCM elements, both of which were previewed in the sections above. First, as described in the section on work role redesign, providers did mention a CCM-consistent emphasis on same-day access from leadership. Second, many providers talked about the importance of leadership providing time to complete trainings in EBPs (relevant to the CCM element of provider decision support). More broadly, respondents talked about qualities of leadership that were helpful (e.g. being open to feedback, soliciting staff opinions, providing needed resources) or harmful (e.g. withholding resources, passing down mandates without soliciting input) without necessarily referencing the CCM elements.

Discussion

The CCM represents an evidence-based approach for structuring healthcare delivery according to six specific care elements. Randomized trials have confirmed its utility in mental health settings (Miller et al. 2013; Woltmann et al. 2012), yet we are unaware of any previous studies comprehensively assessing the ways that mental health providers in real-world clinical settings deliver care that is consistent, or inconsistent, with this model. We therefore conducted semi-structured qualitative interviews with staff at ten VA-based BHIP (outpatient mental health) teams regarding how closely their care aligns with the evidence-based elements of the CCM. We begin by summarizing results for each CCM element individually, before turning to cross-cutting themes and implications for future attempts to implement this care model in similar settings.

Work Role Redesign

Many of the care practices endorsed by our interview respondents were consistent with work role redesign (the first CCM element). For example, respondents from two clinics reported having nursing staff dedicated to care manager roles—an approach that is frequently used in randomized trials of the CCM. Similarly, outreach efforts after no-shows—which are mandated by VA policy—were ubiquitous among our respondents. Furthermore, nearly all BHIP teams had some capability to provide immediate services for Veterans presenting for care that day.

Additional interview respondents noted that the overarching goal of work role redesign—namely, taking proactive steps to deliver more anticipatory rather than reactionary care—was pursued on an ad hoc rather than systematic basis at their sites. For example, in some cases, Veterans who presented for care that day were simply seen by the next available team clinicians during a lunch break or patient cancellation. Taken together, these results suggest that work role redesign was generally being pursued among our respondents, but that gaps remain for some of its specific facets.

Patient Self-Management Support

The delivery of EBPs (e.g. CBT) was widely endorsed among the psychotherapy providers we interviewed (e.g. psychologists, social workers). Such psychotherapies frequently contain at-home assignments (e.g. mood monitoring worksheets, or exercises to help Veterans challenge negative thinking) that can help enhance Veterans' ability to manage their own mental health symptoms. Several respondents noted that VA offers a variety of trainings to make it easier for them to deliver these types of treatments.

Treatment plans that include steps for patients to take between sessions represent another potential form of patient self-management support. While our interview respondents reported completing treatment plans for their patients, the treatment planning process was frequently described as burdensome. Furthermore, our interview respondents described the treatment planning templates as being focused primarily on the treatment provided (e.g. frequency and duration of psychotherapy or medication management visits) rather than on self-management goals for patients. This suggests that the treatment planning process represents an untapped resource for enhancing patient self-management skills. However, to minimize patient and provider burden, future efforts to incorporate patient self-management enhancement

into treatment plans will need to ensure that the result is as streamlined and intuitive as possible.

Patient self-management can also be pursued by establishing efficient systems for patients to reach their providers (as clinically appropriate) between sessions. Most of our respondents reported that phone calls remain the preferred method for their Veterans to reach them (despite the availability of secure messaging and other asynchronous forms of communication). It was unclear from our interview data whether this reticence to use secure messaging was driven primarily by VA staff or Veterans themselves—although one interview respondent expressed a clear preference for telephone contact rather than secure messaging. Previous research suggests that VA providers find secure messaging to be useful, but noted the importance of interfaces that minimize provider burden (Heyworth et al. 2013).

Our findings also dovetail with previous research in suggesting that patients' family members may represent a relatively untapped resource when it comes to enhancing patient self-management (Laws et al. 2018). Fully incorporating family members into mental health care, however, requires overcoming a variety of barriers: many providers may lack experience in clinical methods for incorporating family members, may deliver treatments that do not include provisions for family members, or may simply be unaware of the supporting role that family members can play in treatment. In some cases, patients may be unable or unwilling to involve family members in treatment, or may have damaged their relationships with family members while experiencing mental health symptoms. Furthermore, involving family members in mental health care can bring up issues of privacy, confidentiality, or reimbursement that providers may feel ill-equipped to handle.

Taken together, then, our interview respondents reported supporting patient self-management activities in a variety of ways. Possible areas for improvement in this domain include incorporating patient self-management support into the formal treatment planning process, and developing more robust methods for incorporating patients' families into treatment.

Provider Decision Support

One aspect of provider decision support is ensuring that clinicians have access to guidance regarding evidence-based treatments. As described in the previous section, most of the psychotherapists reported having access to EBP manuals. In fact, many had completed trainings for these manuals within VA, although workload and staffing pressures could make it difficult to carve out time for such trainings. Interview respondents with prescribing privileges were somewhat less likely to report frequent use of medication algorithms.

When providers needed to leverage their colleagues' expertise in the care of a difficult patient, they most frequently sought out informal conversations. To a lesser extent, team meetings and electronic consults also served this purpose. Thus, informal relationships appeared to be the most crucial mechanism for seeking out fellow clinicians' expertise, with formal systems (BHIP team meetings, CPRS, e-consults) playing a supporting role. Referrals to other clinics for treatment were nearly universally completed through CPRS, although some interview respondents noted a lack of feedback mechanisms for CPRS referrals (meaning that referred patients could potentially fall through the cracks).

Clinical Information Systems

Few interview respondents reported having access to any type of registry to track the functioning of an overall panel of patients treated by the BHIP team. Such registries are a hallmark of the CCM element of clinical information systems, as the lack of an up-to-date registry makes it difficult to engage in proactive outreach to patients who may be at risk of adverse outcomes outside of the clinic. Instead, some providers expressed disinterest in, or even skepticism toward, such a panel-based approach. Instead, they preferred focusing on the patients who chose to attend sessions rather than those who may have fallen out of care. The small amount of existing research on this topic suggests that frontline providers may appreciate the utility of registries once implemented, but that they may have concerns regarding the extent to which such registries may add to their documentation burden (Eckstrom et al. 2015).

Our findings regarding registries have particular relevance as health systems and Accountable Care Organizations (ACOs) attempt to implement panel-based approaches to care to maximize outcomes for populations rather than simply the group of patients who attend clinical appointments consistently. For example, VA recently adopted a population-based approach to suicide prevention (REACH VET; US Department of Veterans Affairs 2017). This program involves contacting clinicians to encourage follow-up with Veterans at high risk for suicide—regardless of whether those Veterans are currently receiving services. Furthermore, VA has undertaken additional programs to provide feedback to administrators and clinical leaders regarding hospital- or clinic-level performance, such as the Strategic Analytics for Improvement and Learning (SAIL; Lemke et al. 2017), along with the recently-developed BHIP Panel Management Tool to help BHIP teams track Veterans on their panel. Our interview results suggest that these types of approaches, while potentially useful, may be viewed skeptically by frontline providers who are focused on the patient in front of them at any given time.

The provision of automated feedback regarding the quality of clinical care is another hallmark of the CCM element of clinical information systems. While VA-mandated

performance evaluations were commonly reported in VA, at least one respondent saw these performance evaluations as being primarily administrative in nature (and therefore of limited clinical utility). To address these issues, VA medical centers have recently begun implementing measurement-based care (Fortney et al. 2016) to ensure that providers have access to relevant clinical evaluations to guide ongoing care.

Linkages to Community Resources

The passage of the Veterans Choice Act (US Congress 2014) and the more recent VA MISSION Act (US Congress 2018) have demonstrated VA's commitment to strengthening connections to healthcare resources in the community including non-VA clinics, Alcoholics Anonymous, senior centers, community hospitals, and other organizations. In some cases, our interview respondents noted the existence of a clinic within their medical center that is specifically tasked with developing and maintaining connections to such groups. In other cases, however, specific clinic staff (especially social workers) served this liaison role.

Organizational and Leadership Support

Our analyses in this domain focused on perceptions of leadership support specifically related to the other CCM elements, with two major findings emerging. First, the provision of same-day services was cited as a leadership priority by several respondents, consistent with recent VA policy (US Department of Veterans Affairs 2018). Second, as mentioned above, respondents at several sites described a high level of organizational support for completing trainings in EBPs. Other respondents, however, noted that the provision of training was only maximally effective if they had enough time in their schedules to attend them. These findings are consistent with other literature demonstrating VA's commitment to training and evidence-based care (Karlin and Cross 2014), as well as the high workload pressures that VA clinicians frequently face (Garcia et al. 2015; Helfrich et al. 2017).

Cross-Cutting Themes

The six CCM elements are not meant to be considered individually (Wagner et al. 1996), but instead to be viewed collectively and to synergistically contribute to improved care practices. Thus, it is important to consider broader, cross-cutting themes when interpreting the interview results described above. Three such themes emerged from this study. First, it was clear from our interviews that many of our respondents were in favor of the overarching goal of CCM-based care—namely, care delivery that is more collaborative, anticipatory, and evidence-based. Second, it was also clear that the pursuit of many of the CCM elements was frequently conducted separate from, or even in spite of, formal systems and structures. For example, our interview respondents reported using formal team meetings and the CPRS consult system to coordinate care, but described impromptu discussions and outreach as being even more central to this goal. These findings are consistent with the literature on relational coordination (Gittell 2002, 2011) and healthcare teamwork (Miller et al. 2018) in emphasizing the importance of relationships and ad hoc communication alongside more formalized information systems. Third, respondents noted that resource constraints (e.g. staffing shortages, busy clinic schedules) could make it difficult to pursue more CCM-consistent care. This speaks to the need to address human resources, funding, and workforce development issues in healthcare more broadly (Thomas et al. 2009).

Limitations

Our findings should be considered in the context of several limitations. First, staff from one of the ten participating BHIP teams were interviewed about 2 years before the other teams (as part of our pilot study). However, the themes that emerged from these pilot interviews were similar to those discussed in the interviews conducted with staff at the other sites. Second, our recruitment was focused on sites that had agreed to participate in a program meant to enhance the collaborativeness of care provided, raising the possibility that our participating BHIP teams had more favorable views of the CCM than did BHIP teams at other sites. Preliminary analyses, however, indicated that our sites were similar to other VA sites nationally in terms of facility complexity (Table 1), as well as a variety of additional administrative metrics (data available upon request). Third, our recruitment resulted in few participants at some sites, and it is possible that our respondents had either more favorable or more unfavorable views of CCM-based care than their colleagues. We did appear to reach thematic saturation based on the interviews we conducted, although it is still possible that interviewing a broader range of respondents would have revealed additional findings. Fourth, our use of a focused qualitative approach (as opposed to mixed methods) meant that we could not draw firm conclusions regarding the number of CCM elements pursued, or the intensity with which those elements were pursued, at any given site. However, our approach did allow us to note broad patterns of responses across sites. Fifth, our interviews were conducted only with BHIP teams located in VA medical centers or their associated CBOCs, suggesting that our findings may be most applicable to other VA clinics or similarly integrated health systems. However, over 70% of physicians, and a sizeable percentage of other healthcare professionals,

receive training in VA (US Department of Veterans Affairs 2016). Thus, while generalizability is always a concern in a study of this size, our findings are likely still relevant for other hospital- or clinic-based outpatient mental health teams.

Implications and Future Directions

Our findings have several implications for future efforts to implement CCM-based care in outpatient mental health teams. First, while we did note cross-cutting themes as described above, we also found substantive variation in current practices and views among our interview respondents. This underscores the crucial importance of a pre-implementation assessment to ensure that efforts to develop CCM-based care are aligned with the culture and current needs of the team(s) in question. While existing measures such as the ACIC (Bonomi et al. 2002) and PACIC (Glasgow et al. 2005) may be useful in this regard, our results also suggest the value of open-ended qualitative approaches for uncovering important site- or team-level variation.

Second, we were especially struck by the range of responses to questions regarding a team registry, ranging from enthusiasm (e.g. for teams that have a dedicated data manager to maintain the registry) to skepticism (e.g. for clinicians who may see a registry- or panel-based approach as distracting them from their primary goal of treating the patient in front of them at any given time). Even though ACOs and health systems increasingly recognize the importance of registries to track and treat patient populations, future efforts to implement the CCM may need to contend with negative clinician perceptions of registry-based care, and to find ways to help clinicians balance a focus on the team registry with a focus on the needs of the individual patients therein.

Third, our results emphasize that formal structures and policies should best be seen as supplementing, rather than replacing, relationship-based methods for coordinating care. Ultimately, pursuing truly collaborative care requires a foundation of relationships and team cohesion (Gittell 2002, 2011; Miller et al. 2018) that can be enhanced, but not replaced, by structural elements of care delivery like team meetings and health information technology (HIT).

Adopting CCM-based mental health care is challenging and complex. As a whole, our results suggest that many frontline providers are nonetheless already providing care that is consistent with one or more of the six CCM elements. Future implementation efforts in this domain will benefit from the use of comprehensive pre-implementation assessments; balancing a focus on team panels versus individual patients already engaged in care; and more strongly integrating structural and relational approaches to coordinating care.

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Compliance with Ethical Standards

Conflict of interest Dr. Bauer receives royalties (less than $200/year) from publication of a treatment manual that incorporates elements of the Collaborative Care Model (CCM). The authors declare that they have no other conflicts of interest.

Ethical Approval This study involved research on human subjects. All study procedures were performed in accordance with the ethical standards as laid down in the 1964 Declaration of Helsinki and its later amendments. The study protocol was approved by the US Department of Veterans Affairs Central Institutional Review Board (CIRB).

Informed Consent Informed consent was obtained from all individual participants included in the study.

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