



Adaptation of the collaborative care model to integrate behavioral health care into a low-barrier HIV clinic

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Abstract

Background

The collaborative care management (CoCM) model is an evidence-based intervention for integrating behavioral health care into nonpsychiatric settings. CoCM has been extensively studied in primary care clinics, but implementation in non-conventional clinics, such as those tailored to provide care for high-need, complex patients, has not been well described.

Method

We adapted CoCM for a low-barrier HIV clinic that provides walk-in medical care for a patient population with high levels of mental illness, substance use, and housing instability. The Exploration, Preparation, Implementation, and Sustainment model guided implementation activities and support through the phases of implementing CoCM. The Framework for Reporting Adaptations and Modifications to Evidence-Based Interventions guided our documentation of adaptations to process-of-care elements and structural elements of CoCM. We used a multicomponent strategy to implement the adapted CoCM model. In this article, we describe our experience through the first 6 months of implementation.

Results

The key contextual factors necessitating adaptation of the CoCM model were the clinic team structure, lack of scheduled appointments, high complexity of the patient population, and time constraints with competing priorities for patient care, all of which required substantial flexibility in the model. The process-of-care elements were adapted to improve the fit of the intervention with the context, but the core structural elements of CoCM were maintained.

Conclusions

The CoCM model can be adapted for a setting that requires more flexibility than the usual primary care clinic while maintaining the core elements of the intervention.

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Plain Language Summary: *What is already known about this topic?* Collaborative care management is an evidence-based intervention to integrate behavioral health care into primary medical care. The model uses a task-sharing approach in which a behavioral health care manager who is supervised by a remote psychiatrist works with the primary medical team. *What does this paper add?* We describe adaptation of the collaborative care management model for a low-barrier HIV care clinic. Adaptation was necessary because the clinic provides all care on a walk-in basis, the team structure differs from usual primary care, and the patient population has complex medical and social needs. *What are the implications for practice, research or policy?* Our experience can inform implementation of collaborative care management into other medical settings that are designed to provide care for high-need, complex patient populations.

Keywords

adaptation, behavioral health treatment, comorbidities/comorbid conditions, HIV-AIDS, marginalized populations, implementation, collaborative care, complex care, EPIS framework, FRAME

Introduction

Mental illness and substance use disorders are common among people with HIV (PWH) and can pose substantial barriers to treatment adherence and engagement in HIV care (Bulsara et al., 2018; Hartzler et al., 2018). Many PWH do not receive behavioral health (BH) care due largely to a shortage of trained practitioners and fragmentation of care services. In the United States, mental health and substance use treatment are not typically colocated or integrated with HIV medical care. A subset of PWH who have mental health and substance use disorders—particularly in the context of poverty, unstable housing, and low social support—do not engage in conventionally organized HIV medical care. Low-barrier HIV care is an evidence-based model of service delivery designed to engage and treat this population (CDC, 2022).

The Max Clinic in Seattle is a flagship low-barrier HIV clinic that includes walk-in access to primary care, incentives for clinical visits and viral suppression, intensive case management support, and multisector care coordination (including jails, supportive housing, and a day support program) (Dombrowski, et al., 2018, Dombrowski, et al., 2019). This model has successfully increased viral suppression, the goal of HIV treatment, among PWH with complex needs. However, the lack of BH care within the clinic is a critical gap in the model. Based on a review of medical records, 69% of patients enrolled in the Max Clinic have a psychiatric diagnosis at the time of enrollment and 85% use substances (stimulants, opioids, benzodiazepines, or hazardous alcohol use). Prior to this project, mental health services were provided primarily through referral to specialty mental health services that were external to the clinic but located on the same medical campus. A retrospective review demonstrated that fewer than half of referred patients completed even one visit (Altwies et al., 2021).

In 2021, we integrated BH care for depression and opioid use disorder (OUD) into the low-barrier clinic as part of an NIH-funded implementation science pilot grant to integrate BH care in HIV clinics funded by the Ryan White HIV/AIDS Program. We selected the evidence-based collaborative

care management (CoCM) model, which integrates mental health care in nonpsychiatric settings using a task-sharing approach with a BH care manager and a remote psychiatric specialist supervisor working in collaboration with the primary medical team (Chwastiak et al., 2014). The care manager delivers brief evidence-based psychological interventions and supports pharmacologic management of mental health and substance use disorders in partnership with primary care providers and uses a registry to track patient progress toward measurement-based treatment targets. We focused on depression and OUD for this project because both conditions are common among PWH (Do et al., 2014; Lemons et al., 2020) and extensive evidence supports CoCM for the treatment of depression in the context of primary care (Archer et al., 2012). Collaborative care for OUD in the context of office-based opioid treatment (Alford et al., 2011; LaBelle et al., 2016) has been widely implemented in diverse settings, including low-barrier treatment settings (Alford et al., 2007; Hood et al., 2019; Payne et al., 2019).

We recognized that adaptation of the CoCM model was important because of the atypical service environment of a low-barrier clinic and the necessity to fit with the needs of the target patient population. The purpose of this report is to describe our process of adapting CoCM for the Max Clinic. We used Exploration, Preparation, Implementation and Sustainment (EPIS) as the primary guiding framework for implementing the adapted intervention and the Framework for Reporting Adaptations and Modifications to Evidence Based Interventions (FRAME) to document adaptations. We illustrate how the components of the adapted intervention operationalize the core elements of CoCM and detail the implementation strategies we used.

Method

Setting and Staffing Prior to Implementation

The Max Clinic is jointly operated by a county health department (Public Health - Seattle & King County) and

a large public safety net hospital operated by an academic medical center (Harborview Medical Center). The clinic is colocated with the municipal sexual health clinic. The clinic approach and patient population are described in detail elsewhere (Beima-Sofie et al., 2020; Dombrowski et al., 2018; Dombrowski et al., 2019). Briefly, the Max Clinic enrolls PWH who are virally unsuppressed and/or not taking antiretroviral therapy who have not successfully re-engaged in care and treatment after prior outreach attempts from the health department or clinic staff. Although the Max Clinic is designed specifically for people with HIV, the care model and patient population are similar to other clinics designed for people with complex medical and social needs (The National Center for Complex Health & Social Needs, 2022).

People who enroll in the Max Clinic receive primary care (including HIV treatment) and case management at the clinic. The demographics of the patient population generally reflect those of all people living with HIV in King County, although proportionately more cisgender women, transgender persons, and people who inject drugs are enrolled in the Max Clinic. At the end of 2021, approximately 300 patients had ever been enrolled in the clinic and 230 patients remained actively enrolled. Almost all patients of the clinic remain enrolled for the duration of their care. Very few patients (<10 from 2015 to 2021) “graduate” from the low-barrier clinic to a conventional clinic.

Prior to this project, the Max Clinic team included: (1) infectious disease physicians ($N=5$) who provided team-based HIV care (and primary care) in which the physicians did not have individual panels of patients, (2) clinical social workers ($N=3$) who provided medical case management, including referrals to support services and assistance with securing medical insurance, housing, food, and disability services; and (3) public health disease intervention specialists (DIS; $N=4$) who provided patient navigation services, psychosocial support, outreach to engage patients in the clinic, assistance with obtaining bus passes, and general coordination of clinic flow.

Evidence-Based Intervention

CoCM is based on the chronic care model, a framework for improving care for people with chronic diseases by reorganizing the delivery of services using a team-based, proactive, population-oriented approach (Chwastiak et al., 2014; Wagner, 2000). The key elements of CoCM include (1) patient-centered team care; (2) systematic screening of patients for the target health condition; (3) evidence-based psychosocial and pharmacologic treatment; (4) continual care management using an electronic registry and case review meetings with a psychiatric consultant; and (5) measurement-based care to track treatment response, identify patients who are not improving, and adjust treatment for patients who are not meeting targets

(McGinty & Daumit, 2020; University of Washington AIMS Center, 2022a). This model has been extensively studied in primary care medical settings and is typically delivered as a structured, time-limited intervention involving close follow-up and monitoring of progress toward treatment targets.

Implementation Model and Assessment Framework

The EPIS framework was used to guide implementation activities and support through the phases of implementing CoCM in the Max Clinic (Moullin et al., 2019). Specifically, the adaptation of CoCM we describe here was located within both the preparation and implementation phases in response to inner/outer contextual factors we encountered while exploring and preparing to implement CoCM. During the planning phase, the research team had weekly meetings. Once the implementation began, the CoCM clinical team met weekly and the research team met approximately twice monthly to review progress, discuss problems and possible solutions, and make adaptations as needed.

To describe adaptations to the CoCM model, we used the FRAME (Wiltsey Stirman et al., 2019), which supports systematic tracking and documentation of the rationale for modifications made to evidence-based interventions (Albrecht et al., 2022; Ametaj et al., 2021; Baratta et al., 2021). In documenting the adaptation process, we considered both the *structural elements* of the CoCM intervention and the *process-of-care elements* relevant to the integration of BH with medical care (McGinty & Daumit, 2020). We used a structured spreadsheet populated with the FRAME domains cross-tabulated with the core elements of the intervention. This included the recommended elements of reporting: *what* was modified; *when* in the implementation process the modification was made; *who* made the decision; the *reasons* for the modification and *intent* of the modification; contextual factors that influenced the decision; and whether it was planned/proactive versus unplanned/reactive. Three members of the study team completed the spreadsheet and converted the information into tables as presented in this article, which were subsequently reviewed by other authors through a combination of group discussions and review of written materials with revisions to reflect team consensus.

Implementation Strategies and Approach to Adaptation

The multicomponent implementation strategy we employed was informed by the approach to implementing CoCM described by the AIMS (Advancing Integrated Mental Health Solutions) Center at The University of Washington (University of Washington AIMS Center, 2022). It was also

informed by our team members' prior experience implementing CoCM in other settings, implementing low-barrier approaches to delivering medications for OUD (MOUD), and the specific Max Clinic context (University of Washington AIMS Center, 2022b; Unutzer et al., 2020). We used a combination of strategies described in the implementation science literature (denoted below in italics), which we categorized into groups of preparation, restructuring, education, and facilitation strategies (Powell et al., 2012, 2015). We selected the strategies in the planning phase.

Preparation. We involved patients and service-delivery stakeholders in the process of adapting CoCM for the Max Clinic context using individual qualitative interviews, small group discussions, and local consensus discussions. In the process, we sought to identify barriers and facilitators to implementing CoCM and collaboratively plan to address barriers. In-depth interviews with service delivery stakeholders included all providers and staff in the Max Clinic (physicians, social workers, and DIS); clinic managers; the supervisor of the Max Clinic social workers; and the director of Psychiatry in the HIV clinic located with the associated medical center. Patient interviews included Max Clinic patients who would be eligible for CoCM based on a diagnosis of depression or documented opioid use. To guide the adaptation process, we used a rapid qualitative analysis approach and presented key themes identified to service-delivery stakeholders and the research team. The qualitative interviews were approved by our Institutional Review Board and participation included informed consent. The detailed methods and results of these interviews are beyond the scope of this article and will be described in a separate article.

We assembled a small group to discuss the results of rapid analysis and plan for CoCM adaptation that included the Max Clinic medical director, one social worker, and one DIS (identified by each team), the Max Clinic program director and principal investigator of the research grant supporting this work, a psychiatrist (and research co-I) experienced with CoCM implementation, and the BH nurse hired for CoCM and the research coordinator. Throughout these discussions, we promoted the adaptability of the intervention, identifying how it could be tailored to the local context of the Max Clinic while preserving elements needed for fidelity. After reaching a consensus on key points of operationalizing CoCM in the Max Clinic, we presented plans to the entire Max team to facilitate local consensus discussions, seeking feedback from the larger group and adapting plans in response.

Restructuring. The specific team structure of the Max Clinic required adaptations to the CoCM model with revision of professional roles and creation of a new clinical team to implement the model. A BH nurse care manager and consulting psychiatrist joined the Max Clinic team. During this process, we defined the role of the new nurse care manager in relation to the Max Clinic social workers, physicians, and DIS; and the role of the consulting psychiatrist as compared to the role of psychiatrists

available by referral for direct assessment of patients. Working with the Max Clinic physicians, we defined communication mechanisms for conveying BH recommendations from the nurse and consulting psychiatrist, and Max Clinic physicians were charged with reviewing recommendations. Since the consulting psychiatrist did not directly prescribe medications, Max physicians implemented the appropriate pharmacologic treatment or medication adjustments. We accessed new funding for the implementation through an NIH-funded grant and local funding granted to King County for the federal Ending the HIV Epidemic initiative. Building upon a long-standing academic partnership between the University of Washington and Public Health - Seattle & King County, the research and implementation teams were integrated, with several members of the research team also serving clinical roles.

Education. CoCM was implemented with local technical assistance from the research team, which included an expert in CoCM implementation, and staff training, particularly for the behavioral care manager. This training included didactic components, a group workshop, and one-on-one training and feedback for the assessment and treatment of depression and OUD, including specific training in behavioral activation for depression. The BH nurse care manager met with care managers in other CoCM programs at Harborview Medical Center (i.e., visited other sites) to learn from practices in those clinics and establish a network of colleagues to consult when needed.

Facilitation. During the early implementation phase of CoCM, we supported a process of interactive problem-solving to adapt CoCM for the Max Clinic context and support the implementation process. We informally conducted small tests of change with success measured either by an increase in enrollment or qualitative feedback. This process was informed by the principles of continuous quality improvement, with recognition of a problem/gap, team discussion, additional stakeholder input, and targeted change to address the gap. We incorporated feedback from patients (which was captured informally and opportunistically during implementation); from the nurse care manager during the weekly case conference; and from social workers, DIS, and physicians at a standing monthly team meeting.

Results

During both the planning and the early implementation phases, we made several adaptations to the process-of-care elements of CoCM to improve contextual fit with the Max Clinic and acceptability of the CoCM interventions for providers and patients, but the core structural elements of CoCM were maintained.

Adaptations to Structural Elements

The context of the Max Clinic required adaptation to how each core element of CoCM was delivered, but this process

Table 1*Structural Elements of the Collaborative Care Model as Adapted for Integrating Behavioral Health Services into a Low Barrier HIV Clinic*

| Element | Adapted or maintained | Description |
|--|-----------------------|--|
| Addition of behavioral care manager and consulting psychiatrist to care team | Maintained | <ul style="list-style-type: none"> • One physician represents low barrier clinic HIV medical team in systematic case review meetings • Psychiatrist also consults on patients not enrolled in CoCM caseload |
| Population-based patient registry | Maintained | <ul style="list-style-type: none"> • CoCM registry • Shared EHR |
| Evidence-based biomedical and behavioral interventions | Maintained | <ul style="list-style-type: none"> • Medications for opioid use disorder and depression and other mental disorders • Behavioral activation for depression (Cuijpers et al., 2007) • Care coordination and self-management support |
| Behavioral health care plan | Maintained | <ul style="list-style-type: none"> • Program evolved to include multiple care pathways to accommodate patients who did not engage in structured sessions with the BH nurse care manager, including emphasis on engagement and care coordination with other providers • BH nurse care manager assesses patient goals and care plan is finalized in systematic case review |

Note. CoCM = collaborative care management; EHR = electronic health record; BH = behavioral health.

did not fundamentally alter the model (Table 1). In CoCM, a care plan is jointly developed by the patient and care team with individualized treatment goals. The treatment is delivered in the primary care clinic setting—typically with scheduled visits at regular intervals—and patients are referred to higher levels of care when appropriate. The walk-in model of the Max Clinic required that formulation of the BH care plan and delivery of biomedical and behavioral interventions occur flexibly in alignment with patient availability in the clinic and level of engagement with the BH care manager.

During the early implementation period, two key factors affected how the individual treatment plans were developed and delivered:

1. *Patient receipt of services at multiple agencies*—Among the 30 patients enrolled during the pilot phase of the low barrier clinic CoCM program, we observed a consistent pattern in which patients were formally established with BH providers outside of the Max Clinic but were not fully or consistently engaged in those services. Although we had decided during the planning phase to exclude patients engaged in treatment elsewhere, in practice, many patients had a sporadic engagement at several different agencies or had a single encounter at another agency without follow-up. In response, the role of the nurse care manager increasingly emphasized coordination of BH services across systems with the goal of ensuring that the individual treatment plan could be advanced whether the patient was in the Max Clinic, admitted to the hospital, or in another care setting (e.g., a day program for people with HIV, a supportive housing facility, or a methadone

treatment clinic). This required the BH nurse care manager and consulting psychiatrist to coordinate with other agencies to clarify and advance the individual treatment plan collaboratively, particularly regarding medication changes. While care coordination is a central role of a BH manager in the CoCM model, this activity accounted for more of the BH care manager's effort than we envisioned during the planning phase. Sharing information across organizations for this purpose was feasible since the federal law governing the privacy of health information (the Health Insurance Portability and Accountability Act) permits the disclosure of protected health information between healthcare providers for the purpose of coordinating treatment, case management, and care. Moreover, patients sign a release of information forms upon enrollment in the clinic. Most of the coordination was done by phone, through the electronic health record messaging system, or through secure e-mail.

2. *Heterogeneity in patient engagement*—In the first 6 months of the program, we observed substantial differences in the level of patient engagement with the BH care manager after accepting a referral. Some patients expressed interest in the program but repeatedly deferred meeting with the nurse care manager for the intake process. The Max Clinic care team reported perceptions that patients had time constraints or did not feel ready (or were otherwise unwilling) to engage in a formal intake process. In response, we recognized the need for additional activities related to engagement with the BH nurse care manager and developed a process for the care manager to greet patients briefly or add sessions focused on building rapport and

Table 2*Process Elements of the Collaborative Care Model as Adapted for Integrating Behavioral Health Services into a Low Barrier HIV Clinic*

| Element | Adapted or maintained | Description | Adaptation decisions ^a | | |
|--|-----------------------|---|------------------------------------|----------------------|---|
| | | | Who decided? | When? | Why? |
| Team-based care by general medical and specialty behavioral health providers | Maintained | Weekly systematic case review (Bauer et al., 2019) with behavioral health nurse care manager, psychiatrist consultant, and HIV physician | | | |
| Proactive and systematic patient identification and connection to treatment | Adapted | Step 1: Targeted screening of established patients based on social work assessment (~3 months) | Small group | Preimplementation | Improve context fit and acceptability |
| | | Step 2: Broadened screening to various staff and staged attempt to reach all potential CoCM candidates | Large group | Early implementation | Improve reach |
| Information tracking and exchange among behavioral and medical providers | Maintained | Patient caseload tracker used in case conferences, electronic health record documentation for sharing information with all team members | | | |
| Systematic quality improvement | Adapted ^b | The program was piloted with an iterative process of improvement lacking the formality of plan-do-study-act cycles. Systematic quality improvement will be incorporated in maintenance phase. | Research group | Preimplementation | Rapid iterative process needed to pilot |
| Continual care management (ongoing pro-active follow-up) | Maintained | <ul style="list-style-type: none"> Care delivery adapted to walk-in setting, time constraints, and level of patient engagement Flexible method (videoconference, telephone, text message) to increase engagement, coordinate care, and deliver behavioral treatment | | | |
| Measurement-based care to track treatment response and adjust treatment for patients not meeting targets | Adapted | Completing PHQ-9 measurements was difficult due to patients' competing priorities, patient acceptance, and time constraints | Patients and BH nurse care manager | Early implementation | Improve context fit, acceptability, feasibility |
| Self-management support | Maintained | Psychoeducation and support related to the management of depression, substance use, and HIV in the context of other life stressors | | | |

(Continued)

Table 2
(Continued)

| Element | Adapted or maintained | Description | Adaptation decisions ^a | | |
|---|-----------------------|--|-----------------------------------|-------|------|
| | | | Who decided? | When? | Why? |
| Linkages with community and social services | Maintained | BH nurse care manager assists with linkage to BH services; social workers link patients to services addressing housing, food support, financial assistance | | | |

Note. CoCM = collaborative care management; PDSA = plan-do-study-act; BH = behavioral health; MOUD = medications for opioid use disorder; PHQ = Patient Health Questionnaire-9.

^aShaded cells indicate “not applicable” for intervention elements that were maintained. ^bDiffered by phase of implementation: adapted during early implementation phase during program development but planned to be maintained in the maintenance phase of the program.

increasing engagement prior to conducting a formal intake assessment.

In response to these two factors, the low barrier clinic CoCM program evolved to include different care pathways including (1) direct treatment (behavioral or medication), with or without care coordination, (2) care coordination only (without direct treatment), or for patients with minimal to no engagement in CoCM, (3) focus on engaging patients in BH services wherever possible. Specifically, for the third group, this meant meeting with patients in less structured interactions and shorter visits than a formal intake to generate rapport with the patient and work toward more in-depth assessment and therapeutic encounters over time.

Adaptations to Process-of-Care Elements

The key contextual factors that required adaptation to process elements of collaborative care (Table 2) were the lack of scheduled appointments and formal screening and assessment processes at the time of check-in to the Max Clinic, the relatively small population of patients who were already well-known to the Max clinical care team, and time constraints with competing priorities for patient care.

Proactive and systematic patient identification—A population management approach to screening for BH disorders is a core element of collaborative care. The most rigorous approach involves systematic screening with validated tools. For CoCM programs in primary care settings with large patient populations, this typically includes clinical support staff such as medical assistants screening for the target health conditions at the beginning of a visit. Prior to implementing CoCM, the Max Clinic procedures included a social worker or DIS rooming the patient and verbally inquiring about the patient’s key concerns and priorities for the visit. The Max Clinic had not previously

implemented standardized screening or intake forms and the team had explicitly decided to minimize these approaches to streamline the process of care and focus on patients’ priorities and expressed needs. Moreover, because the clinic population is relatively small, most patients are well-known to the Max Clinic care team, and most already have either established diagnoses of depression or documented opioid use, the introduction of formal screening tools was inconsistent with the clinic culture.

Nonetheless, the CoCM program needed a process to assess patient eligibility for the clinical program. We defined eligibility as having one of the following: (1) a score of ≥ 10 on the Patient Health Questionnaire-9 (PHQ-9), following a positive PHQ-2 screen or (2) OUD, defined as an affirmation of opioid use on a brief screen (the National Institute on Drug Abuse [NIDA] Quick Screen). A positive opioid use screen was followed by a BH care manager assessment for OUD using the Diagnostic and Statistical Manual of Mental Disorders-5. The CoCM program excluded patients with schizophrenia or schizoaffective disorder because the core components of the model (evidence-based brief behavioral treatments and measurement-based care) were specific for depression and OUD. (Initially, we planned to exclude patients who were currently engaged in BH treatment elsewhere, but as described above, this was rapidly modified.)

In the preimplementation phase, the small group decided to implement a targeted assessment process in which social workers or physicians would complete the PHQ-9 and NIDA Quick Screen with patients whom they assessed could be eligible for CoCM prior to referral. The small group made this adaptation to increase the context fit and acceptability of the CoCM program to the Max Clinic team. The approach avoided some of the barriers to systematic screening, allowed for a more predictable flow of patients into the program, and allowed social workers and physicians to make a clinical judgment

about whether and when screening for CoCM was appropriate. This facilitated integration of the BH nurse care manager, who was new to the team at the beginning of the program. Additionally, this process allowed the social worker or physician to directly evaluate a patient who expressed suicidality, whereas a DIS would need to link such patients to a social worker for evaluation.

During the early implementation period, the CoCM clinical team and research team identified low levels of screening and linkage to the program. This was primarily due to two issues. First, roles remained unclear and some Max Clinic team members questioned the approach of depending on social workers to complete formal screening instruments and referrals. Second, the Max team reported that completing PHQ-9 assessments was time-consuming and difficult. Specifically, during the process of attempting to administer the PHQ-9, social workers reported difficulty keeping patients focused on completing the screening instrument. In response to the PHQ-9 items, patients often went into complex discussions of their experience rather than responding directly with the frequency of symptoms as the instrument requires. Additionally, some patients expressed concern about depression or opioid use, but deferred further discussion when the need to complete the PHQ-9 was broached. Finally, the team requested that patients who were specifically seeking or interested in MOUD could be referred without a PHQ-9 to screen for depression.

In response, we changed procedures so that the BH nurse care manager contributed to rooming patients and we opened the opportunity for any member of the team to conduct screening and refer patients. By this point, the BH nurse care manager was established in the clinic as part of the care team. After discussion with the larger group of the Max Clinic and research teams, the program goal changed to screening every patient who did not have a condition that would exclude them from CoCM during at least one visit by any member of the Max team. A completed PHQ-9 was not required for referral to initiate MOUD.

Systematic quality improvement—Longitudinal measurement of process and outcome metrics with systematic assessment and improvement processes is a core component of BH integration in primary care. The systematic quality improvement includes the use of Plan-Do-Study-Act (PDSA) cycles to conduct incremental tests of change. In the early implementation phase of the CoCM program, we focused on developing the program with an iterative approach, inviting feedback from all members of the Max Clinic team, the small group, the CoCM clinical team, and the research group as part of the implementation strategy described above. For example, when we identified lower-than-expected screening rates at the start of the project, we discussed the issue and potential solutions with the social workers and DIS, and subsequently the entire Max team, before changing

the screening process. In response to the psychiatric complexity of patients enrolled in the program (high rates of co-occurring mental health disorders) and need to coordinate across systems, we adapted the context of weekly case reviews with the psychiatrist to address comorbid conditions in the treatment plan and largely focused on the details of care coordination across providers in different systems.

The process of iteration during program development and piloting lacked the formality and systematicity of PDSA cycles. In our assessment, the process of rapid iteration was well-suited to the early implementation phase, but a more systematic quality improvement process will be needed during the maintenance phase of the program.

Measurement-based care—Evidence-based BH treatment requires ongoing symptom monitoring and treatment adjustment. A standard target for CoCM for depression is a 50% decrease in the PHQ-9 or remission (PHQ-9 < 5; Coley et al., 2020). In the absence of consensus in the field about OUD treatment targets, we pre-specified the measure-based care target for the CoCM program as stabilization and retention as measured by maintenance on MOUD medications and, if prescribed buprenorphine, evidence of buprenorphine in the urine drug test result.

In the process of care after CoCM enrollment, the BH nurse care manager frequently encountered difficulties completing regular PHQ-9 assessments for reasons that were somewhat different from those reported by social workers during the screening process. As ascertained in the discussions during systematic case review meetings and research team meetings, these included: (1) patients in acute crisis or expressing a specific need that the BH nurse care manager assessed as a higher priority to address than completing the PHQ-9, (2) patients declining to complete the PHQ-9, (3) patients telling the BH nurse they manipulated the answers to the PHQ-9 items, and (4) patients willing to engage with the BH nurse for only a short time, during which she prioritized discussion and counseling rather than PHQ-9 assessment. In response, the psychiatrist offered suggestions to overcome the barriers as appropriate and ongoing support to continue efforts to obtain PHQ-9 assessments when feasible and appropriate.

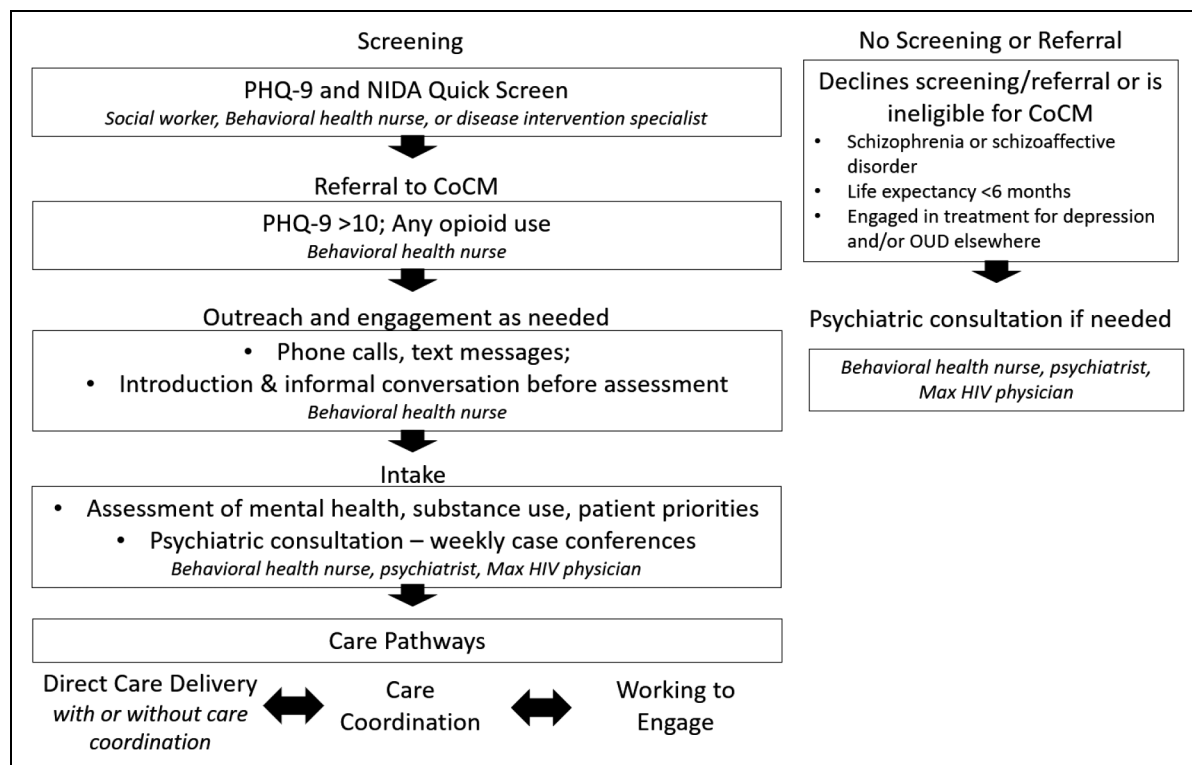
Workflow of Adapted Intervention

Figure 1 summarizes the workflow of CoCM in the Max Clinic at the end of the early implementation period (6 months), reflecting the adaptations described above.

Discussion

We adapted the evidence-based CoCM model to integrate BH services into a non-conventional medical care setting designed to engage people with HIV who have complex medical and social needs. Although the context of the

Figure 1
Collaborative Care Management Workflow in the Low-Barrier HIV Clinic



Note. Direct care delivery includes medication management for depression, psychological treatment for depression (behavioral activation), medications for OUD. OUD = opioid use disorder.

low barrier HIV clinic required adaptation to the process elements of CoCM, we were able to maintain the core structural elements. In the early implementation phase, we rapidly adapted the program to focus on care coordination across systems as necessitated by the complexity of the patient needs and the commonality of partial engagement in multiple systems of care. As such, the relative importance of care coordination versus direct service delivery was different than we envisioned in the planning phase but remained consistent with the CoCM model. The program evolved to include different care pathways based on the needs and engagement level of each patient enrolled.

From the standpoint of care processes, we primarily modified the approach to screening (proactively) and measurement-based care (reactively). Although our screening approach evolved to a universal one, our decision to begin with targeted screening was important to increase the context fit of the intervention and facilitated staff acceptability. The Max Clinic care team and BH care team reported substantial difficulties with the PHQ-9, both in screening and in measurement-based care after enrollment. Staff reported some difficulties with introducing any standardized screening instrument

into a clinical encounter, including the initial screen of the PHQ-2, because many patients were coming to the clinic to address urgent needs or to pick up an incentive. Some staff reported finding it difficult to switch from a personal conversation to a standardized instrument and perceived this as off-putting to the patients, and others found that it was difficult to complete in a short period of time as intended because it opened the door to patient conversations about the content the PHQ-9 assesses. While we could surmount some of the problems at the time of screening with adjustment of the program processes, completion of the PHQ-9 in ongoing care remained a persistent challenge. This experience is substantially different from CoCM in the primary care setting, in which screening with PHQ-9 is feasible and widely used, and repeated completion of the PHQ-9 is an essential part of monitoring care outcomes during treatment for depression. The extent to which our experience reflects issues common to complex care settings and high-need patient populations versus particular factors of our site is uncertain. Future qualitative work will better quantify the extent to which and elucidate the reasons why the PHQ-9 screening and monitoring was difficult to implement in the Max Clinic.

Our report builds upon the existing literature on CoCM. While the model has been extensively studied in primary care clinics in the United States and globally, and conventional HIV care settings (Cubillos et al., 2021; Curran et al., 2012; Gilbody et al., 2006; McGinty & Daumit, 2020), we are not aware of reports describing its adaptation for treatment of depression in low-barrier HIV clinics or other complex care settings. Many of the factors we encountered during the initial implementation of the CoCM model in a low barrier HIV clinic setting reinforce findings from studies of CoCM in other settings. Role clarity is an important factor in the effectiveness of collaborative care, and many programs must address lack of clarity around roles early in implementation (Moise et al., 2018). As in other settings, the need for ongoing improvements continued at the end of the early implementation period in our clinic. Improved depression outcomes at an organizational level take a substantial amount of time (up to 2 years) and maintenance of gains requires sustained work on the processes of care (Carlo et al., 2019). Longitudinal support with structured monitoring and feedback on treatment processes and clinical outcomes is one method to sustain improvements over time (Unutzer et al., 2020). We encountered challenges coordinating care across multiple systems, which is a common issue in providing care for patients with complex comorbidities that require cross-disciplinary collaboration. An ongoing study of collaborative care for patients with OUD and psychiatric comorbidity is comparing augmented usual care for MOUD (primary care provider working with consulting psychiatrist), collaborative care (addition of a mental health care manager to the team), and “collaborative care plus” (addition of a certified recovery specialist to the collaborative care model; Harris et al., 2021).

The primary strengths of this implementation report are that we designed and described our implementation strategy consistent with best practices in the Implementation Science literature, we used EPIS as a guiding framework for implementation, and we systematically documented our adaptations in line with FRAME. The final product of our adaptation process may not be generalizable to other settings, but this is by design since the goal of this work was to adapt the CoCM model to our specific local context. However, the experience we report here is highly transferrable to other settings that serve high-need complex patient populations.

Future Directions

The low-barrier HIV care approach is expanding in multiple areas of the United States as part of the federal Ending the HIV Epidemic initiative, and the emerging specialty of complex care demonstrates the ubiquity of need for medical models tailored to serve patients with complex medical and social needs. This is an early report, and the sustainability of the approach we present

in Figure 1 is by no means static. Consistent with the Dynamic Sustainability Framework (Chambers et al., 2013), we expect that ongoing adaptations over time will be necessary to improve the model. Forthcoming and future work includes a thematic analysis of preimplementation interviews and postimplementation mixed method evaluation.

In summary, we have described an adapted model of CoCM to integrate BH care into a low-barrier care setting for people with HIV that maintained the core structural elements of the intervention while adapting the process of care to fit the context. We found that it was feasible to implement the model using a multicomponent strategy and iteratively adapt it during the early implementation phase. This work can inform efforts to integrate CoCM into other care settings for people with complex social and medical needs, including those designed to serve high-need people with HIV.

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