

Perceptions of clinical pharmacy specialists' contributions in mental health clinical teams

Chris Gillespie, PhD¹; Felicia Kleinberg, MSW²; Anna Zogas, PhD³; Anthony Morreale⁴;
Heather Ourth, PharmD⁵; Michael Tran, PharmD⁶; Tera Moore, PharmD⁷;
Donald Miller, ScD⁸; and Megan McCullough, PhD⁹

How to cite: Gillespie C, Kleinberg F, Zogas A, Morreale A, Ourth H, Tran M, et al. Perceptions of clinical pharmacy specialists' contributions in mental health clinical teams. *Ment Health Clin* [Internet]. 2022;12(1):15-22. DOI: 10.9740/mhc.2022.01.015.

Submitted for Publication: February 10, 2021; **Accepted for Publication:** November 8, 2021

Abstract

Introduction: Mental health (MH) clinical pharmacy specialists (CPS) are increasingly functioning as integral providers in MH care teams. MH providers may delegate many medication management tasks to the CPS. As there is a shortage of primary care and specialist MH providers, CPS are increasingly being utilized in MH care clinics. We assess provider and CPS perceptions of the contributions of CPS to MH clinical teams in the Veterans Health Administration.

Methods: We examined the roles and functions of CPS in MH clinics through surveys (n=374) and semistructured interviews (n=16) with MH CPS and other members of MH clinical teams (psychiatrists, nurse practitioners, registered nurses, social workers) to gain insight into how CPS were integrated in these settings. We assessed perceptions of CPS contributions to MH teams, interactions between CPS and other providers, and challenges of integrating CPS into MH clinical teams.

Results: Contributions of CPS in MH were received positively by clinical team members. Clinical pharmacy specialists providing comprehensive medication management were especially valuable in the management of clozapine. The knowledge and training of CPS reassured providers who frequently referred to them with questions about medication and medication therapy management. MH CPS were also perceived to be received well by patients.

Discussion: The integration of MH CPS into MH teams was well received by team members and patients alike. The MH CPS have become important members of the MH team and are widely viewed as being able to improve access, quality, and workflow.

Keywords: clinical pharmacy specialists, comprehensive medication management, rural health

¹ (Corresponding author) Research Health Scientist, Center for Healthcare Organization and Implementation (CHOIR), VA Bedford Healthcare System, Bedford, Massachusetts, christopher.gillespie@va.gov, ORCID: <https://orcid.org/0000-0001-5316-0671>; ² Health Science Specialist, Center for Healthcare Organization and Implementation (CHOIR), VA Bedford Healthcare System, Bedford, Massachusetts, ORCID: <https://orcid.org/0000-0003-0633-3730>; ³ Research Health Scientist, Center for Healthcare Organization and Implementation (CHOIR), VA Bedford Healthcare System, Bedford, Massachusetts, ORCID: <https://orcid.org/0000-0001-8080-2158>; ⁴ Associate Chief Consultant for Clinical Pharmacy, Clinical Pharmacy Practice Office, Pharmacy Benefits Management Services, US Department of Veterans Affairs, Washington, DC, ORCID: <https://orcid.org/0000-0003-2206-0744>; ⁵ Assistant Chief Consultant for

Clinical Pharmacy, Clinical Pharmacy Practice Office, Pharmacy Benefits Management Services, US Department of Veterans Affairs, Washington, DC, ORCID: <https://orcid.org/0000-0001-7687-2305>; ⁶ National Pharmacy Benefits Management Program Manager, Clinical Pharmacy Practice Office, Pharmacy Benefits Management Services, US Department of Veterans Affairs, Washington, DC, ORCID: <https://orcid.org/0000-0002-1823-7554>; ⁷ National Pharmacy Benefits Management Program Manager, Clinical Pharmacy Practice Office, Pharmacy Benefits Management Services, US Department of Veterans Affairs, Washington, DC, ORCID: <https://orcid.org/0000-0002-9781-6545>; ⁸ Research Health Scientist, Center for Healthcare Organization and Implementation (CHOIR), VA Bedford Healthcare System, Bedford, Massachusetts; Research Health Scientist, University of Massachusetts, Lowell, Zuckerberg School of

Health Sciences, Department of Public Health, Lowell, Massachusetts, ORCID: <https://orcid.org/0000-0002-7881-8801>; ⁹ Research Health Scientist, Center for Healthcare Organization and Implementation (CHOIR), VA Bedford Healthcare System, Bedford, Massachusetts; Research Health Scientist, University of Massachusetts, Lowell, Zuckerberg School of Health Sciences, Department of Public Health, Lowell, Massachusetts, ORCID: <https://orcid.org/0000-0002-3387-1967>

Disclosures: The authors report no conflicts of interest.

Background

Increasing shortages of primary care and specialist physicians in the US health care system, coupled with increased patient demand, have led to decreased access for patients.¹ These shortages are acute in mental health (MH) care as the number of psychiatrists and other MH providers continues to decrease.²⁻⁴ Retirement, burnout, and structural factors that incentivize psychiatrists to practice in cash-only private settings means that these MH providers are also distributed unevenly across the country.^{5,6} These shortages are especially prevalent in MH care, as fewer providers are pursuing psychiatric specialization.⁷

While primary care providers may be able to expand access when encountering conditions that they feel confident in managing, this may not apply to conditions that require treatment with antipsychotics or mood stabilizers.⁸ Even specialized MH clinics face barriers to managing medication therapy. There are reports of antipsychotic underutilization or misutilization owing to complex monitoring and coordination requirements as well as concerns for adverse events.⁹⁻¹¹

MH clinical pharmacy specialists (CPS) are increasingly functioning as integral providers in MH care teams. These CPS address shortages by taking on some of the providers' medication management tasks and increasing availability to MH care for patients in community settings.^{12,13} The inclusion of CPS in MH teams has been shown to increase patient satisfaction, decrease wait times, improve patient clinical outcomes and medication adherence, and improve access to care.^{14,15} In the Veterans Health Administration (VHA), CPS are advanced practice providers with the authority to prescribe and modify medications based on an established diagnosis, making collaboration essential.^{16,17} MH CPS have the skills and expertise to collaboratively and independently provide comprehensive medication management (CMM) as members of multidisciplinary MH care teams and by contributing knowledge about medication interactions and navigating the sometimes labyrinthian systems of referrals and medication authorization and documentation.¹⁸⁻²⁰

The US Department of Veterans Affairs Office of Rural Health and Pharmacy Benefits Management Services Clinical Pharmacy Practice Office implemented a nation-

wide initiative to improve rural veterans' access to care with MH CPS through the Clinical Pharmacy Specialist Rural Veteran Access (CRVA) Initiative.²³ In VHA, *rural* is determined by accounting for how closely a community is socioeconomically linked to larger urban centers. The MH CPS role in VHA is focused on the provision of CMM services to improve patient-centered care and medication outcomes as a primary MH provider, thereby supporting the needs of the veterans, caregivers, and teams.²⁰⁻²²

In this evaluation, we examine provider and CPS perceptions of the contributions of CPS to MH clinical teams. We examine the roles and functions of CPS in MH clinics to gain insight into how the introduction of CPS into these teams facilitated patient care and enhanced the efforts of the team, as well as what challenges and barriers were encountered with integration. When new members are introduced to clinical teams who are unaccustomed to working with them, there is a need to define and reconfigure roles within the team.^{23,24} Perceptions of team members are a key part of role clarity and team integration in interprofessional care teams.²⁵ This evaluation measures perceptions of MH CPS roles and contributions, as well as the perceptions of these roles and contributions by other MH team members through a mixed-methods approach.

Methods

As part of a multi-year mixed-methods project (2017-2020) to evaluate the CRVA initiative, we conducted surveys and qualitative interviews with MH CPS and other members of the clinical teams on which they worked as part of an assessment of the CRVA initiative. The survey pool comprised all MH CPS who had been employed as part of the CRVA initiative for over 6 months ($n = 39$) and health care professionals on the same clinical teams ($n = 335$). Local facility pharmacy leadership, such as the assistant or associate chief of pharmacy, assisted in identifying providers who worked in teams where MH CPS had been introduced. Providers were sent an email inviting them to participate in the survey. The survey used a self-administered questionnaire in REDCap, a web-based platform designed to support data capture for research studies.²⁶ Email reminders and an instant message from the project manager were sent to people who had not yet responded. There was a 100% response ($n = 39$) for MH CPS participation in the survey and 80% ($n = 335$) for other team members (82% combined response rate). Table 1 includes demographic data for survey respondents.

The survey measured integration of MH CPS into MH clinical teams by comparing CPS' and team members' perceptions of the role of MH CPS using a modified

TABLE 1: Survey respondent demographics

	MH CPS	Psychiatrist	Other ^a	Total
Total, N	39	67	268	374
Age, y, %				
20-29	42.4	0.0	2.4	6.4
30-39	33.3	20.8	19.9	21.5
40-49	18.2	35.8	31.3	30.6
50-59	3.0	24.5	28.0	24.6
60-69	0.0	18.9	17.5	15.8
70 or older	3.0	0.0	0.9	1.0
Gender, %				
Female	63.6	56.6	73.6	69.5
Military veteran, %				
Yes	6.1	9.1	17.5	14.7
Years since last professional degree, %				
1-5	48.3	2.0	13.8	15.3
6-12	27.6	30.0	35.7	33.8
13-20	17.2	18.0	25.0	22.9
More than 20	6.9	50.0	25.5	28.0
Qualitative interviews				
No. of participants	7	4	5	16

MH CPS = mental health clinical pharmacy specialists.

^aIncludes primary care providers and other physicians, physician assistants, psychologists, nurses (ie, RN, RNCC, LPN), social workers.

version of the medication use process matrix (MUPM) developed by Farrell et al.²⁷ The MUPM facilitated the assessment of the perceived contribution of team members on tasks related to CMM, grouped into 5 key domains of medication management (evaluation and management, medication monitoring, medication review, documenting care, and medication education).²⁸ The MUPM was administered to MH CPS and to other providers, assessing their own roles in CMM as well their perceptions of the MH CPS contributions (see Table 2 for MUPM domains and items). Item scores range from 0 (no contribution) to 3 (major contribution), with higher scores indicating greater integration into the team. Standardized composite scale scores, computed as unweighted averages across the 5 domains, were used in analysis of variation in MUPM across VHA stations. Additional survey elements measured perceptions of job-related work environment factors by survey participants.

In addition to surveys using quantitative measures (MUPM),²⁷ qualitative interviews were conducted to assess MH team member perceptions. We conducted qualitative interviews with 7 MH CPS and 9 other providers (psychiatrists, nurse practitioners, registered nurses [RNs], and social workers) on MH clinical teams who had completed the MUPM survey (see Table 1). We selected a purposive sample of MH CPS, psychiatrists, and

TABLE 2: Medication use process matrix items

Evaluation and Management
Evaluate the need for medication therapy through direct patient assessment.
Assess the patient's symptoms, coexisting conditions, problems, and treatments, including treatment received from other providers.
Discuss pharmacologic and other medical interventions with patient, including disease-related questions and concerns, side-effects, and effectiveness.
Ask patient's preferences regarding medication therapy and incorporate these preferences into selecting the most appropriate medication.
Select best drug for patient, considering contraindications, precautions, drug interactions, efficacy, best available evidence, cost, convenience.
Select best regimen (ie, dosage form and dose) based on individual characteristics including previous intolerance, renal and hepatic function, comorbidities, etc.
Prescribe medications, devices, and supplies for specific disease states.
Initiate referrals for consults and specialty services care (eg, nutrition, care coordination home telehealth, cardiology, nephrology, pain management, mental health, substance abuse).
Manage medication tapering regimens.
Medication Monitoring
Monitor effectiveness and safety of the medication therapy (eg, order lab tests at appropriate intervals or arrange for follow-up phone calls or appointments).
Monitor adherence to prescribed regimens and institute adherence interventions (ie, pill boxes, pill splitters, education, etc) as needed.
Decide whether to continue medication, renew prescription, alter medication regimen, or discontinue therapy based on response to therapy.
Medication Review
Screen patient's medication lists to determine potential drug-related problems.
Provide complete medication review, including patient interview, to identify drug-related problems.
Documenting Care
Document patient assessment, therapeutic plan, and education in the patient's chart.
Educate the patient about their medications (eg, medication use, administration, monitoring) and address patient's concerns and questions during initial and ongoing therapy).
Provide group patient education regarding medications.
Provide drug information and medication education to the treatment team and other providers.
Medication Education
Educate pharmacy students and residents.
Educate and counsel patients about self-management of diseases.
Educate patient about disease prevention (eg, vaccinations, disease screening) and health promotion (eg, diet, weight control, exercise, lifestyle).

TABLE 3: Qualitative interview questions

CPS Questions
Tell me about establishing your practice in this Mental Health Clinic?
How well is clinical pharmacy integrated with other providers in mental health?
How would you describe the relations between pharmacists and doctors? Between nurses and pharmacists?
What do other providers typically turn to pharmacists for?
What do you think other providers or other health care professionals misunderstand most about the work of a CPS?
What part of your job gives you the most professional satisfaction?
Provider Questions
What were your expectations when the CPS was hired in your clinic?
What are your thoughts on having a CPS as part of mental health clinical teams?
How well is clinical pharmacy integrated with other providers in mental health?
What are your impressions of how CPSs are working with your clinical care team?
How do you think CPSs impact patient access?
How has the addition of the CPS improved your work, workflow, and work environment?
What do other providers or members of the medical team think about the expansion of CPS roles?

CPS = clinical pharmacy specialist.

other providers who had completed the survey and were identified by site champions and confirmed by MH CPS as working with each other in MH clinical teams. Demographic information about interview participants was not collected during the interview nor linked to survey results. Interviews addressed the roles the MH CPS performed in their clinic, interactions between MH CPS and other team members, perceptions and details of how MH CPS contributed to MH teams' function and perceived patient satisfaction, as well as any challenges that having MH CPS in these teams presented for other providers (see Table 3 for select interview questions). Interview questions were evaluated by CRVA leadership and practicing CPS prior to the beginning of interviewing and were continuously refined throughout the study, as necessary. Data collection and analysis were performed by a highly experienced qualitative team of 2 PhD anthropologists and 1 PhD sociologist.

Telephone interviews were audio recorded and transcribed verbatim. Transcription was performed by a VA-approved vendor. A process of critical review and consensus building was used to develop a codebook based upon impressions

TABLE 4: Perception of clinical pharmacy specialist (CPS) role by mental health (MH) CPS and others

	MH CPS	Psychiatrist	Other
	Mean (SD)		
Evaluation and management ^a	2.86 (0.20)	2.28 (0.73) ^c	2.71 (0.48) ^c
Medication monitoring ^a	2.93 (0.18)	2.54 (0.71) ^c	2.70 (0.55) ^c
Medication review ^a	2.96 (0.14)	2.77 (0.50) ^c	2.89 (0.38)
Documenting care ^a	2.83 (0.45)	2.41 (0.86) ^c	2.76 (0.54)
Medication education ^a	2.63 (0.31)	2.59 (0.49)	2.64 (0.47)
Composite ^b	93.82 (5.44)	80.98 (19.83) ^c	89.79 (15.24) ^c

^aScale 0 to 3, where 0 = no contribution, 1 = minor contribution, 2 = moderate contribution, and 3 = major contribution.

^bItems combined; range, 0-100.

^c $P \leq .05$.

from the interviews and a priori concepts from the larger mixed-methods project. Codes were clearly defined to enable consistent use among coders.²⁹ Analysis followed a modified grounded theory approach, informed by the initial codebook with the additional codes being included as they emerged from inspection of the data. Summaries of coded data facilitated the identification of thematic elements that pertained to participants' perceptions of MH CPS contributions in MH clinical teams.³⁰⁻³³ This evaluation was reviewed by the IRB at VA Bedford Healthcare System, and the IRB determined that the evaluation fit in the category of quality improvement. In VHA, quality improvement studies are not subject to IRB oversight. However, the elements of informed consent were adhered to, and participant confidentiality was followed.

Findings

Survey Findings

Perceptions of the MH CPS' contributions to the MH team were consistently positive across all domains of the MUPM (Table 4). Average ratings were between 2 and 3, indicating moderate to major contribution. Ratings varied by role. On the composite score, the MH CPS rated themselves more highly (94 out of 100) than they were rated by psychiatrists (81 out of 100) or other providers (90 out of 100). Results for the domains show the same pattern of MH CPS rating themselves higher than they were rated by others. These scores reflect very positive perceptions of MH CPS as members of MH teams. While there were statistically significant differences in some

TABLE 5: Perception of work environment

	MH CPS	Psychiatrist	Other
	Mean (SD)		
Job satisfaction ^a	4.59 (0.78)	4.50 (0.93)	4.40 (0.82)
Burnout ^b	4.12 (1.51)	3.92 (1.66)	3.50 (1.70) ^e
Communication ^c	3.85 (0.77)	4.24 (0.70) ^e	3.97 (0.84)
Interprofessional collaboration ^d	3.13 (1.07)	3.03 (1.19)	2.48 (1.08) ^e

MH CPS = mental health clinical pharmacy specialist.

^aScale, 1 to 5, where 1 = very dissatisfied, 2 = dissatisfied, 3 = neither satisfied nor dissatisfied, 4 = satisfied, and 5 = very satisfied.

^bScale, 1 to 7, where 1 = never, 2 = a few times/year, 3 = once/month, 4 = a few times/month, 5 = once/week, 6 = a few times/week, and 7 = every day.

^cScale, 1 to 5, where 1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, 5 = strongly disagree.

^dScale, 1 to 5, where 1 = none of the time, 2 = 1-2 times, 3 = 3-4 times, 4 = 5-6 times, and 5 = 7 or more times.

^e $P \leq .05$.

MUPM domains between how MH CPS rated themselves and how they were rated by other team members, these differences were small (see Table 4).

All 3 categories of participants reported high levels of job satisfaction but also reported elevated levels of burnout. Psychiatrists reported greater satisfaction with communication between MH team members than MH CPS or other providers, while other providers on these teams reported significantly lower perceptions of interprofessional collaboration (see Table 5). Communication measured levels of agreement of healthy conflict resolution and perceptions of constructive work relationships, while interprofessional collaboration measured the frequency of interactions that comprise collaborative behavior, such as information sharing.

Interview Findings

Interviews with MH CPS and other providers on these teams support survey findings that MH CPS are viewed very positively by other clinical team members and that there are several areas where MH CPS make important contributions to clinical MH teams.

Comprehensive Medication Management

For clinical team members, having a MH CPS on the team was invaluable in the management of patients on clozapine. Clozapine prescribing and management requires additional administrative processes that may be cumbersome or burdensome for clinicians.^{34,35} MH CPS have the appropriate scope of practice, meaning they were credentialed to perform the CMM activities as well

as the administrative and organizational intricacies required for managing clozapine and other medications.¹⁷ This was viewed as a major asset to MH teams.

“Probably one of the biggest impacts it’s had is that they’re [MH CPS] able to see the veterans that are on clozapine. So, it’s kind of freed up time for nursing staff to actually do more follow-up calls and things like that.” P267 (RN)

“We couldn’t do the clozapine thing without them. We’ve got folks on clozapine; and that’s tricky, following the details, remembering all the boxes that need to be checked. They seem to know all the secret phone numbers to contact folks.” P238 (psychiatrist)

Medication Education

Providers discussed how MH CPS were invaluable team members as medication experts. Other team members found this to be convenient, efficient, and reassuring.

“There are a lot of things we wouldn’t be able to do, we wouldn’t be as smart and informed about, we wouldn’t even have time to look more deeply into the medication issues, let alone kind of understand them at the level [MH CPS] do. . . There’s a huge peace of mind for mental health providers just having that person there knowing you can go over and say, ‘Do I need to be worried about this?’ . . . That makes their job easier.” P238 (psychiatrist)

MH CPS were also available to attend groups and to respond to patient medication questions.

“I have one nurse that enjoys me coming into her depression group so that I can answer any questions for the group members regarding medications.” CPS138

Improved Patient Experiences

MH CPS and other providers report that patients were receptive to MH CPS, and both groups of providers perceived CPS-patient interactions to be positive for patients.³⁶ Team members perceived that positive patient reception to MH CPS contributed to improved quality of care and acknowledged how MH CPS enhanced continuity of care as there was often less turnover among CPS in MH clinics.

“I think it’s definitely impacted quality of care. I think it’s also impacted continuity of care. Just the consistency with the population we deal with in mental health. They’re not usually open to change very well. And so, to have that continuity of care actually gives you a better quality of care.” P267 (RN)

“The feedback I get from patients is—‘You actually explained that to me. I’ve never had anyone explaining meds to me before. I’ve never had anyone explain this disease state to me before. You actually listen.’” CPS23

“Patients have told me—‘You know, I like working with you better than all of the other providers I had before.’” CPS24

MH CPS availability was also perceived to decrease wait times for patients, potentially increasing patient satisfaction with the care they receive.

“The other day [the psychiatrist] was backed up in clinic for a good 2 hours and she asked me if I was seeing patients, which I was, but she was asking if I could take some patients off her caseload, that way she doesn’t end the day behind and we can both kind of end a little closer to time. So, I was able to take patients off her hands and see them in her place.” CPS₂₇

“[Patients] don’t have to wait to speak with something like a nurse practitioner or a physician or another prescribing provider, they can go right to clinical pharmacists. I think as far as access to care, it’s really improved it in that they [patients] don’t have to wait nearly as long . . . from my standpoint, [our clinic’s] ability to take people in as a walk-in with medication questions has really increased.” P₂₆₉ (social worker)

The expertise and accessibility of MH CPS allowed them to take time to discuss medications, answer questions, and ensure patients understood the information. Additionally, as MH CPS were on MH teams as part of a multi-year initiative, lower turnover among MH CPS allowed for a degree of continuity in care that was perceived to be particularly important for MH patients.³⁷

Challenges With Integrating MH CPS Into MH Teams

While perceptions of MH CPS by other MH providers were consistently positive (see Table 3), there continued to be challenges in fully integrating them into clinical teams. MH CPS noted that it takes time for others to appreciate the contributions their scope of practice allows, and to clarify the MH CPS role within the MH team. The MH CPS position has existed in VHA for almost 40 years, but many rural sites have not had access to MH CPS, and many providers in these settings are not fully aware of their role relative to pharmacists in more traditional roles.

“I think [the psychiatrist] had an idea of what pharmacists could do, but she ultimately didn’t have an idea of how far we could really go.” CPS₂₇

“I think just kind of educating the other providers on—‘Hey, this is what a mental health clinical pharmacist does.’ I was only the second mental health clinical pharmacist here.” CPS₁₃₇

Introducing MH CPS to clinical MH teams also required a restructuring of existing roles to clarify how CPS could best maximize their contributions.

“I think one of the hurdles was just the fact that coming in, they had a nurse practitioner versus me, where this nurse practitioner also was managing some of the medical issues as well, which I do not manage in my role. So, kind of trying to figure out what is the clarification of my role versus the medical provider role.” CPS₁₃₇

Providers, including psychiatrists, noted that it could be difficult to relinquish some of the tasks they were accustomed to performing, and that they may be reluctant to do so.

“I have mixed feelings about that. I tend to do my own prazosin titrations. I guess I feel like I sort of own it and

why make it in a way more complicated and involve a pharmacist.” P₃₉₀ (psychiatrist)

However, CPS noted that, over time, other team members became familiar with how a CPS could contribute to MH clinical teams.

“We weren’t really sure exactly how I would integrate into mental health. But slowly but surely, we got it figured out. Obviously, I think probably for everyone there’s some providers that are more receptive to a team-based approach of care. So, there was some, and still is some, resistance with some of the providers. But the longer I was here and the more familiar they got with me and my services the more they started using me.” CPS₁₃₈

With time, these challenges may be resolved, but it is important to recognize that the introduction of CPS into MH teams is not a seamless event.

Discussion

A strength of this mixed-methods study is the use of qualitative (interview) data to contextualize the results of the quantitative (survey) data. The experiences we gathered from MH team members are a valuable source of data for assessing how they feel MH CPS are currently integrated into these teams, the value they assign to the contributions of MH CPS, and efforts to achieve integration within their MH clinical teams. The degree to which perceptions of team member contributions are concordant is an indicator of integration.

An important finding from our data is that MH CPS are generally received well by other providers in MH teams and that these team members recognize and appreciate the contributions of MH CPS in CMM. This is reflected in both the survey and interview data. These data about perceptions were instrumental in understanding the extent of integration of MH CPS in MH clinical teams. Greater detail about variation across teams in the degree and quality of CPS’ integration has been published elsewhere,²⁵ finding that CPS integration has been successful on many levels.

These findings echo those of other reports^{38,39} of CPS integrating into primary care teams. Misconceptions about MH CPS scopes of training often results in poorly defined roles for MH CPS, leading to lower collaboration in patient care. Collaboration with CPS by MH care team members is not only a result of integration but also a driver of that integration.²⁵

CPS in MH clinics providing CMM were viewed by others as potentially increasing access to veterans who have medication management care needs.¹³ The perception among members of MH clinical teams was that this could extend the capacity of the other providers on the team to provide patient care. The knowledge and training of CPS

was reassuring to providers who frequently turned to them with questions about medications. The ability of MH CPS to manage and navigate clozapine prescribing was particularly useful in MH clinics in VHA. This is a cumbersome and time-consuming process that requires obtaining certification to prescribe, and other providers noted how valuable it was to have MH CPS able to assist.

MH CPS also provide direct patient care that was perceived to be received well by patients, increasing their satisfaction with the care they receive. Additionally, MH CPS might remain part of MH teams, while other providers rotate through more frequently, MH CPS were perceived to offer greater continuity of care to patients because they do not frequently rotate off MH teams, unlike other providers.^{37,40}

Integration of new members to a clinical team takes time. While acceptance and integration of MH CPS is not automatic, it does improve over time. It is important to consider that introducing an MH CPS into a clinical team in an MH setting is a process that takes effort by all members of the team. MH CPS found it necessary to educate others, especially psychiatrists, about their scopes of practice and roles, and to navigate the necessary reconfiguration of the roles of others on the team.

This study has limitations. MH CPS in this study were sometimes simultaneously members of multiple care teams, and integration within each may have varied. The experiences and degree of integration of CPS in MH teams may be different in VHA MH clinics than in community MH clinics. Therefore, it is possible that our conclusions may not be generalizable. There are biases in how clinical team members assess the contributions of MH CPS. These biases are expected and allow us to compare the discrepancies in how MH CPS and other MH team members perceive these contributions. Perceptions of MH CPS contributions are an important indicator of integration. This study does not report on patient outcomes following the inclusion of MH CPS in clinical teams. Important next steps include assessing patient satisfaction with MH care where MH CPS are part of clinical teams, the effect of MH CPS on wait times, and the impact MH CPS have on access in rural settings.

Conclusion

Overall, the integration of MH CPS into VHA MH teams was highly successful and well received by team members. Over time MH CPS have become important members of the MH team. When CPS are integrated in MH care teams, providing CMM, there is greater and more productive collaboration among team members. This resulted in perceptions of improved access to health care, improved

quality of patient care, and enhanced workflow. Based on the results of this assessment, strong consideration should be given to assuring that all MH teams and patients have access to a highly trained MH CPS.

Acknowledgments

This CRVA evaluation was funded by VHA Pharmacy Benefits Management Clinical Pharmacy Practice Office as part of the Office of Rural Health's Enterprise-Wide Initiative, OMAT ID: 6119. The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the Department of Veterans Affairs or the US Government.

References

1. Zhang X, Lin D, Pforsich H, Lin VW. Physician workforce in the United States of America: forecasting nationwide shortages. *Hum Resour Health*. 2020;18(1):8. DOI: [10.1186/s12960-020-0448-3](https://doi.org/10.1186/s12960-020-0448-3). PubMed PMID: [32029001](https://pubmed.ncbi.nlm.nih.gov/32029001/); PubMed Central PMCID: [PMC7006215](https://pubmed.ncbi.nlm.nih.gov/PMC7006215/).
2. Bishop TF, Seirup JK, Pincus HA, Ross JS. Population of US practicing psychiatrists declined, 2003-13, which may help explain poor access to mental health care. *Health Aff (Millwood)*. 2016;35(7):1271-7. DOI: [10.1377/hlthaff.2015.1643](https://doi.org/10.1377/hlthaff.2015.1643). PubMed PMID: [27385244](https://pubmed.ncbi.nlm.nih.gov/27385244/).
3. Satiani A, Niedermier J, Satiani B, Svendsen DP. Projected workforce of psychiatrists in the United States: a population analysis. *Psychiatr Serv*. 2018;69(6):710-3. DOI: [10.1176/appi.ps.201700344](https://doi.org/10.1176/appi.ps.201700344). PubMed PMID: [29540118](https://pubmed.ncbi.nlm.nih.gov/29540118/).
4. Burke BT, Miller BF, Proser M, Petterson SM, Bazemore AW, Goplerud E, et al. A needs-based method for estimating the behavioral health staff needs of community health centers. *BMC Health Serv Res*. 2013;13:245. DOI: [10.1186/1472-6963-13-245](https://doi.org/10.1186/1472-6963-13-245). PubMed PMID: [23816353](https://pubmed.ncbi.nlm.nih.gov/23816353/); PubMed Central PMCID: [PMC3750356](https://pubmed.ncbi.nlm.nih.gov/PMC3750356/).
5. National Council for Behavioral Health. The psychiatric shortage: causes and solutions. Washington: National Council for Behavioral Health; 2017.
6. Cummings JR, Allen L, Clennon J, Ji X, Druss BG. Geographic access to specialty mental health care across high- and low-income US communities. *JAMA Psychiatry*. 2017;74(5):476-84. DOI: [10.1001/jamapsychiatry.2017.0303](https://doi.org/10.1001/jamapsychiatry.2017.0303). PubMed PMID: [28384733](https://pubmed.ncbi.nlm.nih.gov/28384733/).
7. Butryn T, Bryant L, Marchionni C, Sholevar F. The shortage of psychiatrists and other mental health providers: causes, current state, and potential solutions. *Int J Acad Med*. 2017;3(1):5-9.
8. Coe AB, Bostwick JR, Choe HM, Thompson AN. Provider perceptions of pharmacists providing mental health medication support in patient-centered medical homes. *J Am Pharm Assoc* (2003). 2019;59(4):555-9. DOI: [10.1016/j.japh.2019.03.002](https://doi.org/10.1016/j.japh.2019.03.002). PubMed PMID: [31010786](https://pubmed.ncbi.nlm.nih.gov/31010786/); PubMed Central PMCID: [PMC6625839](https://pubmed.ncbi.nlm.nih.gov/PMC6625839/).
9. Moody BL, Eatmon CV. Perceived barriers and facilitators of clozapine use: a national survey of veterans affairs prescribers. *Fed Pract*. 36(Suppl 6):S22-S7. PubMed PMID: [31772495](https://pubmed.ncbi.nlm.nih.gov/31772495/).
10. Kelly DL, Freudenreich O, Sayer MKA, Love RC. Addressing barriers to clozapine underutilization: a national effort. *Psychiatr Serv*. 2018;69(2):224-7. DOI: [10.1176/appi.ps.201700162](https://doi.org/10.1176/appi.ps.201700162). PubMed PMID: [29032704](https://pubmed.ncbi.nlm.nih.gov/29032704/).
11. Hampton LM, Daubresse M, Chang H-Y, Alexander GC, Budnitz DS. Emergency department visits by adults for psychiatric medication adverse events. *JAMA Psychiatry*. 2014;71(9):1006-14. DOI: [10.1001/jamapsychiatry.2014.436](https://doi.org/10.1001/jamapsychiatry.2014.436). PubMed PMID: [25006837](https://pubmed.ncbi.nlm.nih.gov/25006837/).

12. Morreale AP, Groppi JA, Ourth H. Specialty services offered by pharmacists in the community. *Isr J Health Policy Res.* 2019;8(1):62. DOI: [10.1186/s13584-019-0325-5](https://doi.org/10.1186/s13584-019-0325-5). PubMed PMID: [31300035](https://pubmed.ncbi.nlm.nih.gov/31300035/); PubMed Central PMCID: [PMC6626365](https://pubmed.ncbi.nlm.nih.gov/PMC6626365/).
13. Moore T, Groppi J, Ourth H, Morreale A, Torrise V. Increasing access to care using clinical pharmacy specialist providers in outpatient mental health: successful practice integration within the Department of Veterans Affairs. *J Am Pharm Assoc* (2003). 2020;60(Suppl 5):S107-S12. DOI: [10.1016/j.japh.2020.03.011](https://doi.org/10.1016/j.japh.2020.03.011). PubMed PMID: [32280020](https://pubmed.ncbi.nlm.nih.gov/32280020/).
14. Herbert C, Winkler H. Impact of a clinical pharmacist-managed clinic in primary care mental health integration at a Veterans Affairs health system. *Ment Health Clin [Internet]*. 2018;8(3):105-9. DOI: [10.9740/mhc.2018.05.105](https://doi.org/10.9740/mhc.2018.05.105). PubMed PMID: [29955554](https://pubmed.ncbi.nlm.nih.gov/29955554/); PubMed Central PMCID: [PMC6007641](https://pubmed.ncbi.nlm.nih.gov/PMC6007641/).
15. Terry H, Frazier E, Adler T, Yates D. Evaluation of provider satisfaction with mental health clinical pharmacy specialists in outpatient mental health clinics. *Ment Health Clin [Internet]*. 2020;10(3):76-9. DOI: [10.9740/mhc.2020.05.076](https://doi.org/10.9740/mhc.2020.05.076). PubMed PMID: [32420003](https://pubmed.ncbi.nlm.nih.gov/32420003/); PubMed Central PMCID: [PMC7213948](https://pubmed.ncbi.nlm.nih.gov/PMC7213948/).
16. McFarland MS, Groppi J, Jorgenson T, Moore T, Ourth H, Searle A, et al. Role of the US Veterans Health Administration clinical pharmacy specialist provider: shaping the future of comprehensive medication management. *Can J Hosp Pharm.* 2020;73(2):152-8. PubMed PMID: [32362673](https://pubmed.ncbi.nlm.nih.gov/32362673/).
17. McFarland MS, Nelson J, Ourth H, Groppi J, Morreale A. Optimizing the primary care clinical pharmacy specialist: increasing patient access and quality of care within the Veterans Health Administration. *J Am Coll Clin Pharm.* 2019;3(2):494-500. DOI: [10.1002/jjac5.1177](https://doi.org/10.1002/jjac5.1177).
18. Clancy C. Optimization of clinical pharmacy specialists at Veterans Affairs facilities. *Am J Health Syst Pharm.* 2018;75(12):844. DOI: [10.2146/ajhp180149](https://doi.org/10.2146/ajhp180149). PubMed PMID: [29654140](https://pubmed.ncbi.nlm.nih.gov/29654140/).
19. McFarland MS, Groppi J, Ourth H, Moore T, Jorgenson T, Torrise V, et al. Establishing a standardized clinical pharmacy practice model within the Veterans Health Administration: evolution of the credentialing and professional practice evaluation process. *J Am Coll Clin Pharm.* 2018;1(2):113-8. DOI: [10.1002/jjac5.1022](https://doi.org/10.1002/jjac5.1022).
20. Ourth H, Groppi J, Morreale AP, Quicci-Roberts K. Clinical pharmacist prescribing activities in the Veterans Health Administration. *Am J Health Syst Pharm.* 2016;73(18):1406-15. DOI: [10.2146/ajhp150778](https://doi.org/10.2146/ajhp150778). PubMed PMID: [27605319](https://pubmed.ncbi.nlm.nih.gov/27605319/).
21. Gibu M, Clark J, Gold J. Mental health pharmacists as interim prescribers. *Ment Health Clin [Internet]*. 2017;7(3):111-5. DOI: [10.9740/mhc.2017.05.111](https://doi.org/10.9740/mhc.2017.05.111). PubMed PMID: [29955508](https://pubmed.ncbi.nlm.nih.gov/29955508/); PubMed Central PMCID: [PMC6007566](https://pubmed.ncbi.nlm.nih.gov/PMC6007566/).
22. Harms M, Haas M, Larew J, DeJongh B. Impact of a mental health clinical pharmacist on a primary care mental health integration team. *Ment Health Clin [Internet]*. 2018;7(3):101-5. DOI: [10.9740/mhc.2017.05.101](https://doi.org/10.9740/mhc.2017.05.101). PubMed PMID: [29955506](https://pubmed.ncbi.nlm.nih.gov/29955506/); PubMed Central PMCID: [PMC6007568](https://pubmed.ncbi.nlm.nih.gov/PMC6007568/).
23. MacNaughton K, Chreim S, Bourgeault IL. Role construction and boundaries in interprofessional primary health care teams: a qualitative study. *BMC Health Serv Res.* 2013;13:486. DOI: [10.1186/1472-6963-13-486](https://doi.org/10.1186/1472-6963-13-486). PubMed PMID: [24267663](https://pubmed.ncbi.nlm.nih.gov/24267663/).
24. Karam M, Brault I, Van Durme T, Macq J. Comparing interprofessional and interorganizational collaboration in healthcare: a systematic review of the qualitative research. *Int J Nurs Stud.* 2018;79(1):70-83. DOI: [10.1016/j.ijnurstu.2017.11.002](https://doi.org/10.1016/j.ijnurstu.2017.11.002). PubMed PMID: [29202313](https://pubmed.ncbi.nlm.nih.gov/29202313/).
25. Zogas A, Gillespie C, Kleifberg F, Reisman J, Ndiwane N, Tran M, et al. Clinical pharmacist integration into primary care interprofessional teams: team member perspectives. *J Am Board Fam Med.* 2021;34(2):320-7.
26. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)—a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform.* 2009;42(2):377-81. DOI: [10.1016/j.jbi.2008.08.010](https://doi.org/10.1016/j.jbi.2008.08.010). PubMed PMID: [18929686](https://pubmed.ncbi.nlm.nih.gov/18929686/).
27. Farrell B, Pottie K, Woodend K, Yao VH, Kennie N, Sellors C, et al. Developing a tool to measure contributions to medication-related processes in family practice. *J Interprof Care.* 2008;22(1):17-29. DOI: [10.1080/13561820701828845](https://doi.org/10.1080/13561820701828845). PubMed PMID: [18202983](https://pubmed.ncbi.nlm.nih.gov/18202983/).
28. McFarland MS, Lamb K, Hughes J, Thomas A, Gatwood J, Hathaway J. Perceptions of integration of the clinical pharmacist into the patient care medical home model. *J Healthc Qual.* 2018;40(5):265-73. DOI: [10.1097/JHQ.000000000000114](https://doi.org/10.1097/JHQ.000000000000114). PubMed PMID: [29280778](https://pubmed.ncbi.nlm.nih.gov/29280778/).
29. Saldaña J. *The coding manual for qualitative researchers.* Thousand Oaks (CA): SAGE Publications; 2021.
30. Boyatzis RE. *Transforming qualitative information: thematic analysis and code development.* Thousand Oaks (CA): SAGE Publications; 1998.
31. Miles MB, Huberman AM. *Qualitative data analysis: an expanded sourcebook.* Thousand Oaks (CA): SAGE Publications; 1994.
32. Ryan GW, Bernard HR. Techniques to identify themes. *Field Methods.* 2003;15(1):85-109.
33. Clarke V, Braun V, Hayfield N. Thematic analysis. In: Smith JA, ed. *Qualitative psychology: a practical guide to research methods.* 3rd edition. Thousand Oaks (CA): SAGE Publications; 2015. p. 222-48.
34. Citrome L, McEvoy JP, Saklad SR. Guide to the management of clozapine-related tolerability and safety concerns. *Clin Schizophr Relat Psychoses.* 2016;10(3):163-77. DOI: [10.3371/1935-1232.10.3.163](https://doi.org/10.3371/1935-1232.10.3.163). PubMed PMID: [27732102](https://pubmed.ncbi.nlm.nih.gov/27732102/).
35. Gören JL, Rose AJ, Engle RL, Smith EG, Christopher ML, Rickles NM, et al. Organizational characteristics of Veterans Affairs clinics with high and low utilization of clozapine. *Psychiatr Serv.* 2016;67(11):1189-96. DOI: [10.1176/appi.ps.201500506](https://doi.org/10.1176/appi.ps.201500506). PubMed PMID: [27301765](https://pubmed.ncbi.nlm.nih.gov/27301765/).
36. Leach M, Garcia G, Ganzer N. Implementation and evaluation of a pharmacist-run mental health treatment clinic via clinical video telehealth. *Ment Health Clin [Internet]*. 2016;6(3):159-64. DOI: [10.9740/mhc.2016.05.159](https://doi.org/10.9740/mhc.2016.05.159). PubMed PMID: [29955464](https://pubmed.ncbi.nlm.nih.gov/29955464/); PubMed Central PMCID: [PMC6007644](https://pubmed.ncbi.nlm.nih.gov/PMC6007644/).
37. Biringer E, Hartveit M, Sundfør B, Ruud T, Borg M. Continuity of care as experienced by mental health service users—a qualitative study. *BMC Health Serv Res.* 2017;17(1):763. DOI: [10.1186/s12913-017-2719-9](https://doi.org/10.1186/s12913-017-2719-9). PubMed PMID: [29162112](https://pubmed.ncbi.nlm.nih.gov/29162112/).
38. Chisholm-Burns MA, Lee JK, Spivey CA, Slack M, Herrier RN, Hall-Lipsy E, et al. US pharmacists' effect as team members on patient care: systematic review and meta-analyses. *Med Care.* 2010;48(10):923-33. DOI: [10.1097/MLR.0b013e3181e57962](https://doi.org/10.1097/MLR.0b013e3181e57962). PubMed PMID: [20720510](https://pubmed.ncbi.nlm.nih.gov/20720510/).
39. Choe HM, Farris KB, Stevenson JG, Townsend K, Diez HL, Remington TL, et al. Patient-centered medical home: developing, expanding, and sustaining a role for pharmacists. *Am J Health Syst Pharm.* 2012;69(12):1063-71. DOI: [10.2146/ajhp110470](https://doi.org/10.2146/ajhp110470). PubMed PMID: [22644984](https://pubmed.ncbi.nlm.nih.gov/22644984/).
40. Adair CE, McDougall GM, Mitton CR, Joyce AS, Wild TC, Gordon A, et al. Continuity of care and health outcomes among persons with severe mental illness. *Psychiatr Serv.* 2005;56(9):1061-69. DOI: [10.1176/appi.ps.56.9.1061](https://doi.org/10.1176/appi.ps.56.9.1061). PubMed PMID: [16148318](https://pubmed.ncbi.nlm.nih.gov/16148318/).