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Development and implementation of a physician-pharmacist collaborative practice model for provision and management of buprenorphine/naloxone

Lindsay M. Mailloux, PharmD[1]; Matthew T. Haas, PharmD, BCPP, BCPS[2]; Janel M. Larew, PharmD, BCPS[3]; Beth M. DeJongh, PharmD, BCPP, BCPS[4]

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Abstract

Introduction: Physician-pharmacist collaborative practice models (PPCPM) decrease barriers and increase access to medications for opioid use disorder (MOUD) but are not routine in practice. The purpose of this quality improvement initiative is to develop and implement a PPCPM for management of patients on MOUD with buprenorphine/naloxone to minimize provider burden, expand access to treatment, and enhance overall patient care.

Methods: A PPCPM for management of patients on MOUD with buprenorphine/naloxone was piloted in an outpatient substance use disorder clinic. Approximately 4 hours per week were dedicated to physician-pharmacist collaborative medical appointments for a 5-month trial period. The pharmacist met with the patient first and then staffed the case with the collaborating psychiatrist. Descriptive data from PPCPM appointments was collected and compared to data from psychiatrist-only appointments.

Results: Twenty-five patients were seen over 44 appointments with an estimated 33 hours of psychiatrist time saved. Average initial and end buprenorphine doses, urine drug screen (UDS) results, and mental health (MH) medication interventions were similar between patients seen in PPCPM appointments compared with those seen in psychiatrist-only appointments. Collection of UDS, identification and management of MOUD adherence issues, other service referrals, and medication reconciliation intervention were more frequent in PPCPM appointments.

Discussion: Implementation of a PPCPM allowed for provision of a similar level of care regarding MOUD and MH-related medication management while saving psychiatrist time. Other enhancements to patient care provided through pharmacist intervention included more frequent identification and management of MOUD adherence issues, referral for other services, and medication reconciliation interventions.

Keywords: opioid use disorder, opioid dependence, collaborative practice model, buprenorphine/naloxone, medications for opioid use disorder, pharmacist

[1] (Corresponding author) PGY-2 Psychiatric Pharmacy Resident, Clement J. Zablocki Veterans Affairs Medical Center, Milwaukee, Wisconsin, lmailloux@cedarville.edu, ORCID: https://orcid.org/0000-0003-4864-4238; [2] Mental Health Clinical Pharmacy Specialist, Clement J. Zablocki Veterans Affairs Medical Center, Milwaukee, Wisconsin, ORCID: https://orcid.org/0000-0001-7316-3378; [3] Mental Health Clinical Pharmacy Specialist, Clement J. Zablocki Veterans Affairs Medical Center, Milwaukee, Wisconsin, ORCID: https://orcid.org/0000-0003-4908-2820; [4] Associate Professor of Pharmacy Practice, Concordia University Wisconsin School of Pharmacy, Mequon, Wisconsin, ORCID: https://orcid.org/0000-0002-0964-3788

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Introduction

In 2018, 2 million people in the United States were estimated to have an OUD.[1] Opioid-related drug overdose accounted for 70% (46 802) of drug overdose deaths in

2018.[2] Although opioid-related drug overdose decreased 2% from 2017 to 2018, deaths involving synthetic opioids increased 10%. The persistent increase of synthetic opioid–related deaths highlights the need for increased access to evidence-based treatment for OUD. Treatment of OUD with buprenorphine decreases all-cause and overdose mortality.[3,4] Furthermore, medications for opioid use disorder (MOUD) are associated with increased treatment retention; improved social functioning; and decreased illicit substance use, risk of HIV and hepatitis C transmission, and criminal conviction.[5-8] Efforts to increase access to MOUD are essential in the effort to address OUD and prevent opioid overdose.

Despite benefits of buprenorphine treatment, patient access to services is limited due to an overall shortage of psychiatrists and underutilization by prescribers.[9-11] Providers with the credentialing to prescribe buprenorphine consistently prescribe below their capacity.[10] A study specific to the Veterans Health Administration (VHA)[11] shows that 43% of the credentialed providers had not prescribed any buprenorphine in the preceding 180 days. Those who prescribed at least 1 prescription only prescribed at 18.5% of their patient panel capacity on average. Physician-reported barriers to prescribing buprenorphine include insufficient support, demands of the induction period, insufficient time or space in the current practice, stigma, and lack of interest or education.[12,13]

Physician-pharmacist collaborative practice models (PPCPM) help decrease these barriers, increase access to treatment, and retain patients in treatment programs.[14,15] Pharmacists must take a collaborative role to support X-waivered providers because they are not currently eligible for X-waiver certification.[16] After review of the literature, it appears that programs integrating pharmacists into MOUD services are not routine in practice, and literature showing specific benefits added to patient care provided by pharmacists is lacking. The purpose of this quality improvement initiative was to develop and implement a PPCPM for management of patients with OUD on buprenorphine/naloxone to minimize provider burden, expand access to treatment, and enhance overall patient care.

Methods

A PPCPM for management of patients with OUD on buprenorphine/naloxone was piloted at the Clement J. Zablocki Veterans Affairs Medical Center outpatient SUD clinic. The collaborating physician was a board-certified psychiatrist with a fellowship in addiction psychiatry. The pharmacist was completing a PGY-2 residency in psychiatric pharmacy, had a scope of practice in MH, and completed the Drug Addiction Treatment Act of 2000 X-waiver training.

The pilot project was trialed from October 18, 2019, to March 6, 2020. Approximately 4 hours per week was dedicated to PPCPM appointments. Patients were included if they were being treated with buprenorphine/naloxone under the care of the addiction psychiatrist and had appointments scheduled during the allotted clinic time. The pharmacist saw the patient first in a shared appointment and then provided a warm handoff to the psychiatrist. Visits were billed both by the physician and pharmacist according to International Classification of Diseases-10[17] and current procedural terminology codes.[18] However, per VA operational policy, only the service with the highest amount billed was paid in cases in which multiple services were billed on the same day. Initially, the appointment time was divided equally between the pharmacist and psychiatrist but gradually transitioned to a pharmacist-led appointment with brief staffing with the psychiatrist at the end. A medical support assistant was responsible for ordering urine drug screens (UDS) and checking the state PDMP.

The pharmacist functioned under the scope outlined in the facility care-coordination agreement. Pharmacist responsibilities included review of UDS and PDMP results documented in the EHR, assessment of stability on current buprenorphine/naloxone treatment, naloxone prescribing and education, medication reconciliation, and assessment and management of comorbid MH conditions. The psychiatrist was responsible for reviewing information collected by the pharmacist during the patient appointment, collecting any additional information after staffing the case, and prescribing any medications as appropriate.

Descriptive data was collected over the course of the pilot, and matching data from a selected afternoon of psychiatrist-only appointments was collected over the same time course. Data collected included baseline demographic characteristics of patients, buprenorphine doses, UDS results, changes to concurrent MH medications, naloxone prescriptions, service referrals, adherence issues identified and addressed, and medication reconciliation interventions. Psychiatrist time saved through PPCPM appointments was calculated using an estimated 75% of time saved per appointment based on comparison of the average amount of time spent with patients in PPCPM versus non-PPCPM appointments.

Results

Twenty-five unique patients were seen in the PPCPM over a total of 44 appointments. An estimated 33 hours of psychiatrist time was saved using this model.

TABLE 1: Comparison of baseline characteristics

Appointment Type	No. Patients	No. Appointments	Average Age, y	Male (%)	White (%)	History of Opioid-Related Overdose	MH Diagnosis (%)[a]	Concurrent MH Medications (%)
Psychiatrist-only	25	36	47	24 (96)	18 (72)	3 (12)	23 (92)	18 (72)
Physician-pharmacist collaborative practice model	25	44	49	24 (96)	16 (64)	6 (24)	24 (96)	16 (64)

MH = mental health.

[a]MH diagnosis includes anxiety, ADHD, bipolar disorder, depression, insomnia, PTSD, and schizophrenia.

Table 1 summarizes baseline demographic characteristics of patients seen in the PPCPM and the matching group of patients seen in psychiatrist-only appointments. Overall baseline demographic and clinical characteristics were similar between groups. More patients in the PPCPM had a history of opioid-related overdose compared to psychiatrist-only appointments (24% vs 12%). Table 2 summarizes data regarding buprenorphine/naloxone treatment, UDS results, MH medication interventions, and other supportive services.

Average initial and end doses of buprenorphine were similar between patients seen in psychiatrist-only appointments and patients seen in the PPCPM (19.7 ± 9.8 mg and 19.6 ± 9.7 mg vs 20.6 ± 8.3 mg and 20.8 ± 7.1 mg, respectively). The number of buprenorphine/naloxone dose changes, number of changes to other MH medications, and number of new naloxone prescriptions were also similar between the 2 groups.

UDS were drawn in 89% of psychiatrist-only appointments compared to 98% of PPCPM appointments. Percentage of UDS positive for opioids and other illicit substances was similar between psychiatrist-only and PPCPM appointments. Buprenorphine was not detected in 16% of UDS from psychiatrist-only appointments compared to 9% of UDS in PPCPM appointments.

Forty-three percent of patients seen in the PPCPM were referred for outside services compared with 28% of patients seen in psychiatrist-only appointments (Table 2). These service referrals included tobacco-cessation treatment, metabolic syndrome clinic, primary care, specialty clinics, substance use support groups, psychotherapy, social work services, and whole health programs.

Sixty percent of patients seen in the PPCPM were identified to have MOUD adherence issues compared to 8% of patients seen in psychiatrist-only appointments (Table 2). Adherence issues were defined as taking either more or fewer daily doses of buprenorphine than prescribed. Every adherence issue was addressed in both the PPCPM and psychiatrist-only appointments. Adherence interventions included documentation of how a patient was taking buprenorphine/naloxone if taking differently than prescribed, provision of adherence counseling and interventions (eg, alarms, pill boxes), and instructions to change dose intervals of buprenorphine/naloxone as appropriate. Medication reconciliation was performed in every PPCPM appointment with provision of appropriate follow-up interventions (Table 2). Medication reconciliation interventions included discontinuation of

TABLE 2: Comparison of interventions between psychiatrist-only and physician-pharmacist collaborative practice model (PPCPM) appointments

	Appointment Type	
	Psychiatrist Only	PPCPM
BUP treatment		
Average initial dose (mg/d)	19.7 (±9.8)	20.6 (±8.3)
Average end dose (mg/d)	19.6 (±9.7)	20.8 (±7.1)
Dosage range (mg/d)	1-32	6-32
Dose changes (%)[a]	4 (11)	4 (9)
Urine drug screening results		
Samples collected[a]	32 (89)	43 (98)
(–) BUP[b]	5 (16)	4 (9)
(+) Opioid[b]	3 (9)	3 (7)
(+) Illicit substance (noncannabinoid, nonopioid)[b]	3 (9)	3 (7)
Other MH medication interventions		
Changes to MH medications (%)[a]	11 (31)	11 (25)
Naloxone prescriptions (%)[a]	5 (14)	8 (18)
Other supportive services		
Service referrals (%)[a]	10 (28)	19 (43)
MOUD adherence issues addressed (%)[c]	2 (8)	15 (60)
Medication reconciliation interventions (%)[a]	0 (0)	21 (48)

BUP = buprenorphine; MH = mental health.

[a]Per total number of patient appointments.

[b]Per total number of urine drug screens drawn.

[c]Per total number of patients.

medications patients were no longer taking, documentation of new medications in the EHR, and request for renewal of medications.

Discussion

Interventions regarding buprenorphine/naloxone treatment, UDS results, changes to MH medications, and naloxone prescribing were comparable between patients seen in the PPCPM and those seen in psychiatrist-only appointments. This supports using a PPCPM for provision of MOUD as it allows for a similar level of care with similar outcomes while saving psychiatrist time, thus enabling increased access to care.

Pharmacist involvement enhanced several aspects of patient care. In the PPCPM appointments, a larger percentage of patients was identified to be taking buprenorphine/naloxone differently than prescribed (60% vs 8%). This suggests that many adherence issues are either unidentified or undocumented in psychiatrist-only appointments. This is significant as MOUD nonadherence is associated with reduced retention in office-based outpatient treatment programs, increased drug diversion, and increased risk of relapse and overdose.[19-23] In addition, UDS were ordered more frequently in PPCPM appointments compared with psychiatrist-only appointments, allowing for more consistent monitoring of adherence to treatment. The PPCPM allowed for close attention to MOUD adherence, which is vital in the effort to reduce risks associated with nonadherence.

Other unique interventions provided in PPCPM appointments included medication reconciliation interventions, which were not addressed in psychiatrist-only appointments. Referrals for other services were also higher in the PPCPM appointments. Pharmacist-led medication reviews in the outpatient setting have favorable outcomes regarding medication adherence, control of chronic disease states, appropriateness of medication, and medication/health care costs.[24] The holistic approach of the PPCPM in regard to medication reconciliation and service referral is promising for improving health outcomes outside of the SUD specialty.

Results of this quality improvement initiative are subject to several limitations. All conclusions drawn from descriptive data rely on clinical inference. Direct causality to outcomes data cannot be drawn as the sample was not randomized. All data collected is subject to information bias as the accuracy of data was dependent on the documentation in the EHR. Findings have limited generalizability due to the small sample size, predominantly male and middle-aged Caucasian population, and single-center study design.

Barriers encountered included psychiatrist availability for planning, implementation and appropriate delineation of pharmacist versus psychiatrist roles regarding patient care, medication prescribing, documentation, and billing. Efforts to have regularly scheduled planning meetings prior to implementation and throughout the first weeks of the pilot to establish and review responsibilities would help address these barriers. Patients saw both the physician and pharmacist at each collaborative visit due to the need for development of trust between the psychiatrist and pharmacist and the short time frame of the pilot. However, this model shows promise for transitioning to independent pharmacist-led appointments, which would allow for patients to alternate between seeing the pharmacist and psychiatrist, thus expanding capacity of one individual X-waivered provider's clinic capacity.

This pilot project lays the foundation for future initiatives of using pharmacists as physician-extenders for provision of MOUD. This model could be expanded into other areas, including general psychiatry, primary care, and emergency departments. Although provision of MOUD in the primary care setting offers easier access to treatment and decreased costs, availability is limited by lack of institutional support, lack of prescribing physicians, and lack of expertise.[25,26] Emergency department–based buprenorphine induction programs are an effective method for maintaining patients on MOUD but are also underutilized.[27] Pharmacist integration into primary care clinics and emergency departments through a PPCPM are potential avenues to address reported barriers and improve access to MOUD.

Conclusion

Implementation of a PPCPM allowed for provision of a similar level of care regarding MOUD and MH-related medication management while saving psychiatrist time. Other enhancements to patient care provided through pharmacist intervention included more frequent collection of UDS, identification and management of MOUD adherence issues, referral for other services, and medication reconciliation interventions.

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