

Pharmacist-led telemental health transitions of care clinic improves antidepressant medication continuity posthospitalization

Monica Barrett, PharmD¹
Sarah Ward, PharmD, BCPP²
Michelle Colvard, PharmD, BCPP³

How to cite: Barrett M, Ward S, Colvard M. Pharmacist-led telemental health transitions of care clinic improves antidepressant medication continuity posthospitalization. *Ment Health Clin* [Internet]. 2020;10(6):381-4. DOI: 10.9740/mhc.2020.11.381.

Abstract

A pharmacist-led telemental health transitions of care clinic was created at a Veterans Affairs Medical Center to improve continuity of psychiatric medication therapy following discharge from an acute psychiatric hospitalization. This was a single-center, multi-site, retrospective cohort study (historical cohort). The primary study objective was to determine the impact of a post-discharge pharmacist-led telemental health transitions of care clinic on improving antidepressant adherence rates after an acute psychiatric hospitalization. Secondary objectives included evaluation of rates of readmission to psychiatric hospitals, time to first mental health provider follow-up, and characterization of various pharmacist interventions made during the clinic visit. Pilot study results support that a pharmacist-led telemental health transitions of care clinic can improve antidepressant adherence after psychiatric hospital discharge and reduce time to postdischarge follow-up with a mental health provider. Patients enrolled in the clinic were more likely to maintain a medication possession ratio >0.8 within 90 days of discharge when compared to a historical control (100% vs 43%, $P = .035$). The clinic also improved time to first mental health provider follow-up as seen by a statistically significant improvement in the number of patients seen within 14 days of discharge by a mental health provider (100% vs 43%, $P = .035$). Results highlight the valuable role of psychiatric pharmacists in delivery of transitions of care services and support the expansion of current roles to improve outcomes after psychiatric hospitalizations.

Keywords: telehealth, telemental health, transitions of care, medication adherence, mental health, postdischarge

¹ (Corresponding author) PGY-2 Psychiatric Pharmacy Resident, Veterans Affairs Tennessee Valley Healthcare System, Nashville, Tennessee, monica.barrett@va.gov, ORCID: <https://orcid.org/0000-0001-7762-9606>; ² Clinical Pharmacy Specialist, Veterans Affairs Tennessee Valley Healthcare System, Chattanooga, Tennessee, ORCID: <https://orcid.org/0000-0002-4355-6370>; ³ Clinical Pharmacy Specialist, Veterans Affairs Tennessee Valley Healthcare System, Nashville, Tennessee, ORCID: <https://orcid.org/0000-0002-5718-5013>

Disclosures: No conflicts of interest or financial disclosures.

Background

Psychotropic medication adherence is a vital factor in successful treatment for patients with psychiatric comor-

bidities. Previous studies^{1,2} have found that medication adherence was poor among patients with depression and that suicide rates were increased following a psychiatric hospitalization. Enhanced postdischarge services are needed in this high-risk patient population.

Previous efforts to improve the transition from inpatient to outpatient medication management have been described.³⁻⁹ To minimize travel burden, which is a frequent barrier to care, telehealth is becoming increasingly popular and can improve attendance at post-discharge appointments.⁷ Strategies by pharmacists to improve outcomes after hospitalization have included more comprehensive discharge counseling, improving commu-



nication with outpatient physicians, and implementation of transitions of care (TOC) clinics. Few studies have described pharmacist-led TOC services for mental health populations¹⁰⁻¹²; however, psychiatric pharmacists are uniquely trained and positioned to address medication-related issues leading to nonadherence. Access and quality of these TOC services may be further strengthened using telehealth services.

A pharmacist-led telemental health TOC clinic was developed at a Veterans Affairs Medical Center to improve continuity of care with a focus on psychiatric medication therapy adherence following discharge from an acute psychiatric hospitalization. Pilot analysis aimed to determine the impact of this innovative practice on antidepressant medication adherence rates, psychiatric hospital readmission rates, and time to first mental health (MH) provider follow-up.

Practice Description

Patients were referred to the pharmacist-led telemental health TOC clinic after screening by the inpatient psychiatric pharmacist responsible for discharge medication counseling. Patients were eligible for clinic referral if they were prescribed a new antidepressant during psychiatric hospitalization or were deemed to be high risk for antidepressant nonadherence, due to previous history of medication nonadherence, by a psychiatric pharmacist. A psychiatric pharmacy resident conducted all clinic appointments under the supervision of a board-certified psychiatric pharmacist. The TOC clinic used Veterans Affairs Video Connect¹³ to conduct a 1-time telehealth appointment to the patient's home. Thus, patients were required to have reliable access and means for a telehealth appointment, which included a smart phone, computer, or tablet with camera and microphone abilities as well as reliable internet access. Patients were excluded if they were discharged to another facility (eg, nursing home, assisted living facility, group home, or rehabilitation program). Eligible patients were provided instructions on use of telehealth software and were scheduled for an appointment prior to discharge. Appointment times were offered with a goal of intervention within 3 days of discharge; however, later scheduling was permitted based on patient availability. During the pilot period, typically one to two 20-minute appointments were scheduled per week. A member of the telemental health team contacted patients for a test call prior to the appointment to troubleshoot connectivity issues.

The focus of the telemental health TOC clinic visit was to improve antidepressant adherence following an acute psychiatric hospitalization. During the appointment, the clinic pharmacist reviewed key medication changes made

TABLE 1: Baseline characteristics of the study, N = 7

Characteristic	Transitions of Care Cohort	Historical Cohort	P Value
Age, y (SD)	45 (16)	50(16)	.5331
Sex, n (%)			
Male	6 (86)	6 (86)	1
Female	1 (14)	1 (14)	1
Race, n (%)			
White	7 (100)	5 (71)	.4615
African American	0 (0)	2 (29)	.4615
Average No. of medication changes (SD)	2.7 (1.25)	2.86 (1.57)	.8541

during psychiatric hospitalization and assessed patient adherence. The clinic pharmacist identified and resolved any barriers to medication adherence, including medication supply issues by facilitating refill requests or prescribing refills via scope of practice. The clinic pharmacist provided education on antidepressant medications including indication, common as well as serious side effects, and time to effect. Strategies to improve medication adherence such as use of alarms, medication organizers, and processes to obtain refills were discussed. Lastly, the clinic pharmacist provided reminders of upcoming appointments and coordinated care by rescheduling appointments or making specialty care referrals as needed.

Impact on Patient Specific Outcomes

A pilot analysis was completed to include patients participating in the pharmacist-led telemental health TOC clinic from initiation on November 1, 2019 through January 8, 2020. A historical cohort discharged prior to clinic initiation August 1, 2019 through October 31, 2019 was randomly selected from a sample of patients meeting inclusion and exclusion criteria for clinic enrollment (with the exception of telehealth access or means as this was unable to be assessed via chart review). Baseline characteristics including age, sex, and race were similar between groups (Table 1). The average number of psychotropic medication changes, including new or discontinued psychotropic medications and dose adjustments, made during the psychiatric hospitalization was also similar (Table 1).

Descriptive statistics were used to present baseline characteristics between groups. Continuous and categorical variables were analyzed using *t* tests and 1-tailed Fisher exact tests, respectively. To evaluate the primary objective, a go-day medication possession ratio (MPR) was calculated for each patient following discharge by

TABLE 2: Primary and secondary endpoints of the study, N = 7

Endpoint	Transitions of Care Cohort, n (%)	Historical Cohort, n (%)	P Value
Medication possession ratio >0.8 within 90 d	7 (100)	3 (43)	.035
Psychiatric hospital readmission within 90 d	0 (0)	1 (17)	.5
Seen within 7 d of discharge by MH provider	6 (86)	3 (43)	.13
Seen within 14 d of discharge by MH provider	7 (100)	3 (43)	.035

MH = mental health.

dividing the sum of days' supply for all fills in the time period by the number of days in the time period. A cut-off of 0.8 was defined as the threshold for medication adherence.^{1,14-16}

Primary and secondary endpoints are summarized for all patients in the clinic (N = 7) and historical control (N = 7; Table 2). Significantly more patients seen in the clinic had a 90-day MPR >0.8 (100% vs 43%, $P = .035$). More patients enrolled in the clinic were seen by a MH provider within 7 days (86% vs 43%, $P = .13$) and 14 days of discharge (100% vs 43%, $P = .035$). Of note, 3 patients (43%) in the historical cohort were not seen by a MH provider after 90 days of discharge. Clinic interventions included identifying nonadherence (n = 1, 14%), resolving barriers to medication adherence (n = 2, 29%), assisting with medication supply issues (n = 2, 29%), and addressing medication-related concerns such as side effect management, administration concerns, and a drug-drug interaction (n = 5, 71%).

Discussion

Pilot results show statistically and clinically significant improvement in 90-day antidepressant adherence and 14-day postdischarge MH follow-up for patients seen in the pharmacist-led telemental health TOC clinic compared to a historical control. Follow-up by a MH provider within 7 days was not statistically significant, although the small sample size likely limited the ability to detect a difference. All patients in the clinic arm (N = 7) were seen within 14 days of discharge. This improved engagement with MH follow-up is clinically meaningful, as lack of attendance at postdischarge appointments has been reported to increase risks of disease relapse, disengagement with care, self-harm, medication nonadherence, and psychiatric rehospitalization.¹⁷⁻²⁰ Although not statistically significant, no patients seen in the clinic were readmitted to an acute psychiatric unit during the study time frame compared to 1 patient in the historical cohort.

Limitations of this study should be considered. One limitation is the use of MPR as a surrogate marker for

medication adherence. While there is a potential that patients had prescriptions filled yet were not actually taking the medication, MPR is a widely used tool for evaluating medication adherence.^{1,14-16} There was also potential for selection bias as patients engaging in the clinic versus those who declined participation may have been more likely to be adherent at baseline. Differences in access to telehealth means may be correlated with medication adherence. The small sample size is another limitation and thus the feasibility of this service with increased demands needs to be further evaluated. However, the aim of this pilot study was to determine the effectiveness of this service and highlight the impact of this pharmacist-led service.

This report adds to the growing literature supporting both pharmacist-led TOC clinics and telemental health interventions to improve quality and access to care. Furthermore, it is among the first to combine the two modalities within the mental health population. Brearly et al⁷ described implementation of a pilot telehealth clinic in which a psychiatric pharmacist provided medication management services following psychiatric hospitalization as part of a multidisciplinary team including a clinical psychologist, registered nurse, and psychology technician. Rehospitalization rates and time to first MH postdischarge appointment were improved. While Brearly et al⁷ provided weekly interventions until the patient established care with outpatient mental health services, the practice described here demonstrates that a pharmacist-led TOC service providing a brief, one-time intervention focused on medication adherence may also improve psychiatric postdischarge outcomes. The limited time and provider resources required for the one-time intervention makes this practice feasible to replicate. Telehealth offers a convenient option for patients to be seen quickly after hospital discharge, which can subsequently improve outcomes.²⁰ Telehealth technologies used in this clinic also allowed for visual evaluation of home medication supply which improved pharmacist ability to identify nonadherence and provide targeted discussion to the patient. Of note, telehealth staff were valuable in ensuring technology issues were resolved prior to clinic appointment. Close coordination with telehealth coordinators would be prudent in future clinic creations using tele-

health technologies. For sites where telehealth may not be accessible, telephone TOC clinics may offer a reasonable alternative.

Conclusion

This study adds to the available literature on TOC clinics within the MH setting as well as the benefits of using telemental health to improve access. Promising preliminary results support continuation and potential replication of pharmacist-led telemental health TOC services to promote postdischarge medication adherence and MH care engagement. This innovative practice highlights the role of psychiatric pharmacists in improving access and outcomes after psychiatric hospitalizations. Future studies are warranted to evaluate outcomes with additional psychiatric medication classes and for a larger patient group.

References

1. Zivin K, Ganoczy D, Pfeiffer PN, Miller EM, Valenstein M. Antidepressant adherence after psychiatric hospitalization among va patients with depression. *Adm Policy Ment Health*. 2009;36(6):406-15. DOI: [10.1007/s10488-009-0230-2](https://doi.org/10.1007/s10488-009-0230-2). PubMed PMID: [19609666](https://pubmed.ncbi.nlm.nih.gov/19609666/); PubMed Central PMCID: [PMC2941212](https://pubmed.ncbi.nlm.nih.gov/PMC2941212/).
2. Valenstein M, Kim HM, Ganoczy D, McCarthy JF, Zivin K, Austin KL, et al. Higher-risk periods for suicide among VA patients receiving depression treatment: prioritizing suicide prevention efforts. *J Affect Disord*. 2009;112(1-3):50-8. DOI: [10.1016/j.jad.2008.08.020](https://doi.org/10.1016/j.jad.2008.08.020). PubMed PMID: [18945495](https://pubmed.ncbi.nlm.nih.gov/18945495/); PubMed Central PMCID: [PMC2909461](https://pubmed.ncbi.nlm.nih.gov/PMC2909461/).
3. Coleman EA, Parry C, Chalmers S, Min S-J. The care transitions intervention. *Arch Intern Med*. 2006;166(17):1822-8. DOI: [10.1001/archinte.166.17.1822](https://doi.org/10.1001/archinte.166.17.1822). PubMed PMID: [17000937](https://pubmed.ncbi.nlm.nih.gov/17000937/).
4. Fernandes V, Flak E. Safe and effective prescribing practices at the point of discharge from an inpatient psychiatry unit. *J Psychiatr Pract*. 2012;18(1):12-9. DOI: [10.1097/01.pra.0000410983.08229.do](https://doi.org/10.1097/01.pra.0000410983.08229.do). PubMed PMID: [22261979](https://pubmed.ncbi.nlm.nih.gov/22261979/).
5. Cua YM, Kripalani S. Medication use in the transition from hospital to home. *Ann Acad Med Singap*. 2008;37(2):136-6. PubMed PMID: [18327350](https://pubmed.ncbi.nlm.nih.gov/18327350/).
6. Ensing HT, Stuijt CCM, van den Bemt BJB, van Dooren AA, Karapinar-Carkit F, Koster ES, et al. Identifying the optimal role for pharmacists in care transitions: a systematic review. *J Manag Care Spec Pharm*. 2015;21(8):614-36. DOI: [10.18553/jmcp.2015.21.8.614](https://doi.org/10.18553/jmcp.2015.21.8.614). PubMed PMID: [26233535](https://pubmed.ncbi.nlm.nih.gov/26233535/).
7. Brearly TW, Goodman CS, Haynes C, McDermott K, Rowland JA. Improvement of postinpatient psychiatric follow-up for veterans using telehealth. *Am J Health Syst Pharm*. 2020;77(4):288-94. DOI: [10.1093/ajhp/zxz314](https://doi.org/10.1093/ajhp/zxz314). PubMed PMID: [32031208](https://pubmed.ncbi.nlm.nih.gov/32031208/).
8. Bradley B, Deines S. Targeting transitions of care-Role of the pharmacist in a federally qualified health center. *Ment Health Clin [Internet]*. 2014;4(6):283-6. DOI: [10.9740/mhc.n207349](https://doi.org/10.9740/mhc.n207349).
9. Phatak A, Prusi R, Ward B, Hansen LO, Williams MV, Vetter E, et al. Impact of pharmacist involvement in the transitional care of high-risk patients through medication reconciliation, medication education, and postdischarge call-backs (IPITCH Study). *J Hosp Med*. 2015;11(1):39-44. DOI: [10.1002/jhm.2493](https://doi.org/10.1002/jhm.2493). PubMed PMID: [26434752](https://pubmed.ncbi.nlm.nih.gov/26434752/).
10. Newman D, Haight R, Hoeft D. Implementation and impact of pharmacist led medication reconciliation and patient education at discharge from an inpatient behavioral health unit. *Ment Health Clin [Internet]*. 2013;3(1):24-7. DOI: [10.9740/mhc.n161412](https://doi.org/10.9740/mhc.n161412).
11. Abraham O, Myers MN, Brothers AL, Montgomery J, Norman BA, Fabian T. Assessing need for pharmacist involvement to improve care coordination for patients on LAI antipsychotics transitioning from hospital to home: a work system approach. *Res Social Adm Pharm*. 2017;13(5):1004-13. DOI: [10.1016/j.sapharm.2017.02.006](https://doi.org/10.1016/j.sapharm.2017.02.006). PubMed PMID: [28811014](https://pubmed.ncbi.nlm.nih.gov/28811014/).
12. Tillman F III, Greenberg J, Liu I, Khalid S, McGuire N, Harris SC. Assessment of pharmacy-driven transitional interventions in hospitalized patients with psychiatric disorders. *J Am Pharm Assoc (2003)*. 2020;60(1):22-30. DOI: [10.1016/j.japh.2019.09.024](https://doi.org/10.1016/j.japh.2019.09.024). PubMed PMID: [31859220](https://pubmed.ncbi.nlm.nih.gov/31859220/).
13. US Department of Veterans Affairs. VA Video Connect; 2020 [cited 2020 Apr 10]. Available from: <https://mobile.va.gov/app/va-video-connect>.
14. Cantrell CR, Eaddy MT, Shah MB, Regan TS, Sokol MC. Methods for evaluating patient adherence to antidepressant therapy. *Med Care*. 2006;44(4):300-3. DOI: [10.1097/01.mlr.0000204287.82701.9b](https://doi.org/10.1097/01.mlr.0000204287.82701.9b). PubMed PMID: [16565629](https://pubmed.ncbi.nlm.nih.gov/16565629/).
15. Jones LE, Turvey C, Carney-Doebbeling C. Inadequate follow-up care for depression and its impact on antidepressant treatment duration among veterans with and without diabetes mellitus in the Veterans Health Administration. *Gen Hosp Psychiatry*. 2006;28(6):465-74. DOI: [10.1016/j.genhosppsy.2006.08.002](https://doi.org/10.1016/j.genhosppsy.2006.08.002). PubMed PMID: [17088161](https://pubmed.ncbi.nlm.nih.gov/17088161/).
16. Sikka R, Xia F, Aubert RE. Estimating medication persistency using administrative claims data. *Am J Manag Care*. 2005;11(7):449-57. PubMed PMID: [16044982](https://pubmed.ncbi.nlm.nih.gov/16044982/).
17. Nelson EA, Maruish ME, Axler JL. Effects of discharge planning and compliance with outpatient appointments on readmission rates. *Psychiatr Serv*. 2000;51(7):885-9. DOI: [10.1176/appi.ps.51.7.885](https://doi.org/10.1176/appi.ps.51.7.885). PubMed PMID: [10875952](https://pubmed.ncbi.nlm.nih.gov/10875952/).
18. Huff ED. Outpatient utilization patterns and quality outcomes after first acute episode of mental health hospitalization. *Eval Health Prof*. 2000;23(4):441-56. DOI: [10.1177/01632780022034714](https://doi.org/10.1177/01632780022034714). PubMed PMID: [11139870](https://pubmed.ncbi.nlm.nih.gov/11139870/).
19. Marino L, Wissow LS, Davis M, Abrams MT, Dixon LB, Slade EP. Predictors of outpatient mental health clinic follow-up after hospitalization among Medicaid-enrolled young adults. *Early Interv Psychiatry*. 2015;10(6):468-75. DOI: [10.1111/eip.12206](https://doi.org/10.1111/eip.12206). PubMed PMID: [25639939](https://pubmed.ncbi.nlm.nih.gov/25639939/); PubMed Central PMCID: [PMC4861685](https://pubmed.ncbi.nlm.nih.gov/PMC4861685/).
20. Mitchell AJ, Selmes T. Why don't patients attend their appointments? Maintaining engagement with psychiatric services. *Adv Psychiatr Treat*. 2007;13(6):423-34. DOI: [10.1192/apt.bp.106.003202](https://doi.org/10.1192/apt.bp.106.003202).