

Rural ambulatory care pharmacists providing in-clinic and home visit services improve adherence to long-acting injectable antipsychotics

Heng “Helen” Chang, PharmD, BCPS¹

Laura Michelle Vaughn, PharmD, BCACP, BC-ADM, CDCES²

Danica Liu, PharmD³

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Abstract

Patients with schizophrenia often experience symptoms such as poor insight and disorganized thought, which limit their ability to seek and receive care consistently. In rural settings, systemic factors, including limited resources and transportation, further contribute to difficulties in health care access. Long-acting injectable antipsychotics (LAIs) can improve medication adherence and reduce hospitalizations from relapse. Opportunities exist for pharmacists to provide individualized care and improved health care access. The pilot service took place in ambulatory care clinics and home care settings. Pharmacists performed weekly reviews of patients with active orders for LAIs, coordinated care with nonadherent patients, and offered follow-up appointments in the Patient Centered Medical Home (PCMH). For patients unable to be reached, outreach pharmacists provided psychiatric assessment and LAI medication administration at home visits. There were 10 patients with LAI prescriptions in the past year selected for review. The period reviewed was 90 days before and after start of service. Pharmacist interventions resulted in 4 patients reestablished with care who were previously lost to follow-up. The percentage of days covered by LAI fills increased from an average 26% to 67% of days covered ($P = .06$). Total emergency room visits related to mental health episodes decreased from 11 to 2 visits ($P = .03$). Four patients who did not have metabolic lab monitoring in more than 1 year received lab monitoring as indicated. PCMH pharmacy services, including home visits by outreach pharmacists, may improve access and bridge care gaps for patients on LAIs by providing community-based services in addition to traditional clinic-based care.

Keywords: LAI antipsychotics, outreach, CMM, community, rural, schizophrenia, adherence, barriers, access, innovative, long-acting injectable

¹ (Corresponding author) Clinical Pharmacist, Whiteriver Indian Hospital, Whiteriver, Arizona, helenchang33@gmail.com, ORCID: <https://orcid.org/0000-0002-1081-9613>; ² Clinical Pharmacist, Whiteriver Indian Hospital, Whiteriver, Arizona, ORCID: <https://orcid.org/0000-0003-0350-4805>; ³ Clinical Pharmacist, Whiteriver Indian Hospital, Whiteriver, Arizona, ORCID: <https://orcid.org/0009-0000-4801-563X>

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Background

Features of schizophrenia, such as poor insight and disorganized thought, impact ability to seek and receive care consistently.

These challenges are exacerbated in rural settings where systemic factors, including limited resources and transportation, add barriers to health care access.¹ For patients with schizophrenia, long-acting injectable (LAI) antipsychotics can improve medication adherence and reduce hospitalizations from relapse.²⁻⁴ Recent reviews of pharmacist-administered LAIs in community and outpatient clinic settings found evidence of improved adherence and access and also identified gaps in the literature, including description of specific procedures and effects on socioeconomically disadvantaged communities. Studies reviewed by Murphy et al and Black et al highlight opportunities for LAI administration by community pharmacists and a need for more published information to support widespread implementation.^{5,6} Two publications describe



practices led by Board-Certified Psychiatric Pharmacists.^{7,8} To our knowledge, our study is the first description of LAIs administered at rural home visits by ambulatory care pharmacists.

Description of Practice

This innovative practice took place at a rural Indian Health Service Hospital System in Arizona, which services the health care needs of 17 000 tribal members. Locally, mental health services are available through 2 part-time telehealth psychiatrists, 2 full-time onsite mental health nurse practitioners, and referral-based tribally operated counseling services outside of our hospital system. Patient Centered Medical Home (PCMH) pharmacists conducted the pilot service in the clinic and in the field at home visits. The PCMH team has 12 clinical pharmacists sharing 6 full-time equivalents (FTEs) of clinic and outreach staffing. The 4 PMCH clinic teams include primary care providers (physicians, nurse practitioners, and physician assistants), nurses, health technicians, dieticians, physical therapists, behavioral health providers, and pharmacists. The PCMH pharmacists provide clinical services including chronic disease management, health promotion, vaccinations, health screenings, and education. The PCMH pharmacy team typically conducts more than 300 scheduled clinical encounters per month plus walk-in encounters and team visits with primary care providers. Though the practice is holistic, the most common conditions managed by the pharmacists are endocrine (diabetes and comorbidities, thyroid conditions), cardiovascular (hypertension, heart failure), renal/genitourinary (chronic kidney disease), behavioral health (depression, anxiety), and health maintenance (vaccinations, routine screenings). PCMH pharmacists practice on-site in the PCMH clinics, via telehealth, or with the pharmacy outreach team in the field. The pharmacy outreach team includes 2 PCMH pharmacist FTEs and 5 pharmacy technician FTEs. The pharmacy outreach team facilitates clinical services in the community setting at patients' homes or at a medical mobile unit. PCMH pharmacists have broad prescriptive authority to provide comprehensive chronic disease management under a collaborative practice agreement (CPA). PCMH pharmacists are authorized to start, stop, or change medication therapy for any chronic condition, including psychiatric disorders. The CPA also grants the authority to order and interpret laboratory tests and the ability to place referrals for other services offered by the health system and tribal partners. PCMH pharmacists must be board-certified by the board of pharmacist specialties in pharmacotherapy or ambulatory care and complete initial and annual competency reviews. In addition to this, the 3 pharmacist investigators who led this pilot service underwent training for psychiatric care before project implementation through attendance of American Association of Psychiatric Pharmacy training events, direct observation and mentorship by local mental health providers, and additional self-study.

Project investigators performed weekly reviews of patients with active orders for LAIs, reached out via telephone to coordinate care with nonadherent patients, and offered follow-up appointments with the pharmacist within the PCMH clinics. When patients could not be reached by telephone or were unable to secure transportation for clinic appointments to receive LAI injections, outreach pharmacists administered LAI medications in the home visit setting. During home visits, pharmacists completed a psychiatric assessment, including evaluation of positive and negative symptoms of the patient's psychiatric disorder, social functioning, potential for suicidality, and presence of behavioral challenges or substance use. In addition to psychiatric evaluation, pharmacists addressed other chronic conditions, new complaints, and health maintenance reminders if applicable. During initial visits with the pharmacist, patients were given appointments to reestablish care with psychiatry providers and offered referrals to counseling services. A summary of the workflow and interventions made by pharmacists can be seen in the Figure.

Methods

The pilot service occurred between August 2022 and November 2022. We conducted a review using iCare Software Version 2.9.1 to identify all patients prescribed LAIs in the previous year from August 2021 to August 2022. Ten patients were identified with LAI orders from the previous year and were included in the review. Data were collected for these 10 patients from 90 days before and after beginning pilot services. Outcomes evaluated included adherence, behavioral health-related emergency room (ER) utilization, and completion of recommended metabolic laboratory monitoring. Adherence to medication was defined as last LAI administration within 2 weeks of the recommended schedule measured prior to initiation of service and at 90 days after service start. Adherence was also evaluated using the percentage of days covered (PDC) by medication fills, defined as unique total days with medication coverage divided by total days in the measurement period.⁵ Stata version 6.1 was used for the statistical analysis.

Results

Ten patients had at least 1 order for LAIs in the year prior to start of service (August 2021 to August 2022) and were included in the review. They were prescribed the following LAIs: haloperidol (3), paliperidone (5), and aripiprazole (2). None of the LAI orders were discontinued due to adverse safety events, adverse drug effects, or patient preference. Pharmacist interventions resulted in 4 patients reestablished with care who were previously lost to follow-up as defined by no contact with facility for longer than 90 days. The number of patients adherent to their medication regimen increased from 3 to 8 after the intervention as defined by administration within 2 weeks of the expected schedule. The average adherence measure PDC by LAI fills increased from 26% to 67%

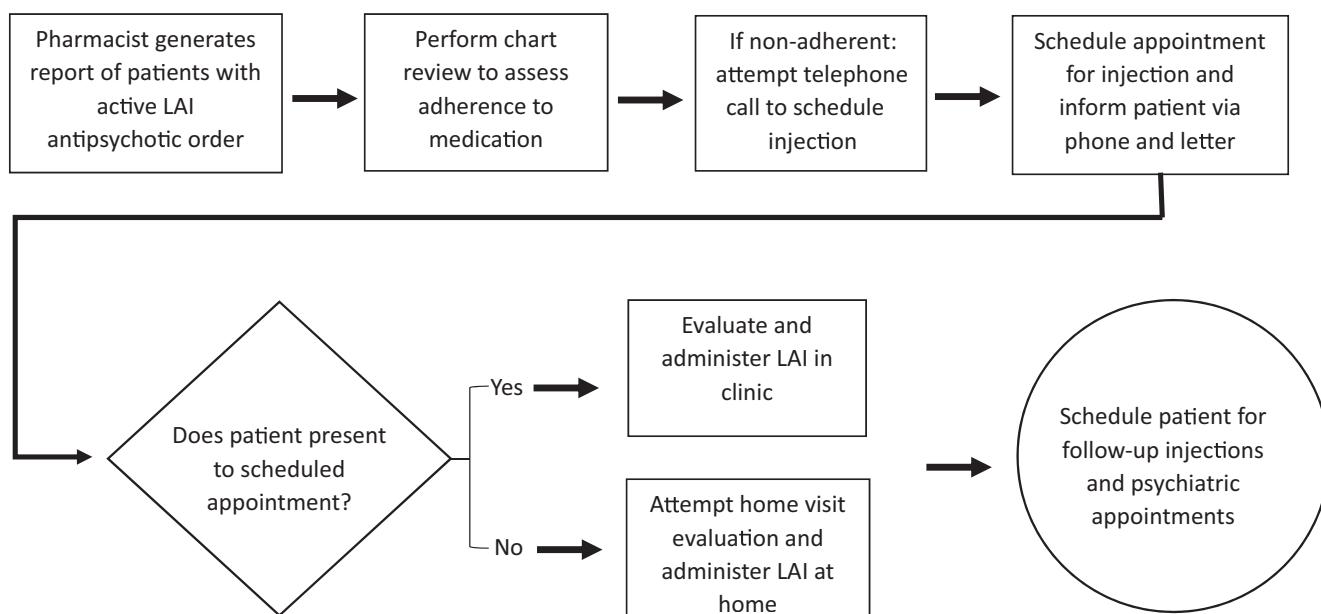


FIGURE: Workflow of interventions made by outreach pharmacists

($P = .06$). Total ER visits related to mental health exacerbation decreased from 11 to 2 visits ($P = .03$). Four patients who did not have metabolic lab monitoring in more than 1 year received lab monitoring as recommended. One patient with an extensive history of ER use for routine health needs received evaluation and a care plan implemented by a psychiatrist during an interdisciplinary home visit with the PCMH team. A summary of results can be seen in the Table.

Discussion

This project, although limited by a small number of patients, revealed the importance of repeated follow-up for patients on LAIs, especially after a missed appointment for medication administration. It demonstrated how pharmacist intervention can increase adherence to LAIs. Outreach to patients in their homes allowed engagement with care despite barriers common in persons with schizophrenia, such as lack of insight or time management, and barriers specific to a rural setting, such as lack of transportation. Anecdotally, both caregivers

and psychiatric providers provided feedback and were appreciative of the enhanced follow-up and care provided.

Challenges encountered included pharmacist comfort with psychiatric care, patient mental status at home visits, coordinating care with family members, and achieving continuity with facilities outside the hospital system, such as Department of Corrections (DOC) and inpatient psychiatric hospitals. Though some pharmacists were initially unfamiliar with LAI administration and psychiatric assessments, this improved with experience and time observing nursing staff and other mental health providers on-site. Due to nonadherence to antipsychotic regimens, patients often displayed an array of symptoms, such as visual hallucinations, delusions, and paranoia during home visits, which made obtaining consent and performing complete patient evaluations challenging. Such behaviors could also generate personal discomfort in the health care professionals conducting the visits. When patients were alone at home, it was necessary to contact family or household members to aid with coordination of care into appointments or to repeat the home visit with a caregiver

TABLE: Performance before and after intervention, measure of association, and p -value by measure

| Outcome ($n = 10$) | 90 Days Before Intervention | 90 Days After Intervention | Measure of Association (95% CI) | p -Value |
|---------------------------------------|-----------------------------|----------------------------|--------------------------------------|--------------------|
| Adherent (Y/N) | 30% | 80% | Odds ratio = 5 (0.56, 236.49) | N/A ^a |
| Proportion of days covered by LAIs | 26% | 67% | Mean difference = 0.37 (−0.02, 0.77) | .06 ^{b,c} |
| Number of ER visits | 11 | 2 | Mean difference = −0.9 (−1.61, 0.19) | .03 ^c |
| Lab monitoring in previous year (Y/N) | 10% | 80% | Odds ratio = N/A ^d | N/A ^a |

^aSample size smaller than necessary to apply McNemar test.

^bPaired t -test, Student t .

^cWilcoxon signed-rank test.

^dOdds ratio = 5/0, unable to report due to zero denominator.

present. Achieving continuity with facilities outside of the hospital system was challenging particularly when patients received inpatient psychiatric services as the nearest facility is more than 150 miles away or when in custody of the DOC as the local DOC facility provides no medical services and relies on short-staffed correctional officers to accompany patients to medical appointments. Through this project, pharmacists made connections with outside psychiatric facilities and assisted transitions of care case management postdischarge. Additionally, outreach pharmacists forged a relationship with the local DOC facility and conducted patient visits and drug administration on-site to remove barriers to care.

Given the success of the project and positive feedback from the PCMH team and local mental health providers in the first 3 months after initiation, the service will be continued with regular reviews conducted by the pharmacy outreach team. To support expansion of these services, the annual clinical pharmacist competency was updated to include training and demonstrating competency in LAI administration. Because positive relationships were built between pharmacists and primary care providers and psychiatrists, there is increased comfort among the providers in transitioning patients off oral dosage forms, prescribing LAIs, and delegating the pharmacist to conduct monitoring and follow-up. We believe clinical pharmacists can contribute their expertise as medication and disease state experts to support a need for high-level care in people on LAI antipsychotics. Overall, this was a valuable service for a vulnerable patient population and would be beneficial if adopted by pharmacists widely.

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