

## ASSESSING THE IMPACT OF LONG-ACTING INJECTABLE (LAI) ON PSYCHIATRIC TREATMENT OUTCOMES AMONG MEDICAID BENEFICIARIES

Summary Prepared by the Office of Data Analytics Division of Analytics

**Partner University:** University of Kentucky  
**College/School:** College of Nursing  
**Principal Investigator:** Dr. Chizimuzo Okoli

### What is Known on This Topic?

Oral antipsychotic medications are effective in treating schizophrenia. However, medication adherence is a challenge for effective symptom management. Non-adherence to antipsychotic medications increases the risks of hospitalizations and costs associated healthcare resource utilization. Long-acting injectable antipsychotics (LAIs) are designed to improve medication adherence.

### What Did this Project Do?

This study sought to assess the frequency of LAI use among Medicaid beneficiaries in Kentucky, examine the comparative effectiveness of LAIs, and observe LAIs effect on patient engagement in community health services.

### What Could Medicaid Do with These Conclusions?

Increasing access to LAIs can improve medication adherence, symptom remission and social functioning, hospitalizations, emergency department visits, and medical care costs. Therefore, policymakers may consider improving coverage for LAIs, removing prior authorizations for LAIs, and/or reducing site of care classification for Medicaid recipients.

### Introduction

Schizophrenia affects more than 20 million people worldwide<sup>1</sup>. Though antipsychotic medications may effectively manage symptoms of schizophrenia, people diagnosed with schizophrenia have about 26.5% to 58.8% non-adherence rates to antipsychotic medication<sup>2</sup>. This has resulted in increased risk of rehospitalization, symptom recurrence, poor quality of life and higher healthcare costs associated with treating schizophrenia symptoms<sup>3</sup>.

Therefore, understanding factors that affect medication adherence among people diagnosed with schizophrenia is critical to guide tailored strategies to enhance medication adherence.

Proper prescription of treatment is a key strategy to enhance medication adherence. Two modalities of antipsychotic medications for schizophrenia include long-acting injectable (LAI) and oral antipsychotics. LAI antipsychotics can significantly reduce remission, non-adherence, rehospitalizations and healthcare costs. Thus, it is important to understand the effectiveness of LAIs among Medicaid populations with schizophrenia in Kentucky. Study findings will inform decisions for the use of LAIs and other oral antipsychotics for treatment of people living with schizophrenia who are Medicaid beneficiaries.



### Project Methods & Results

This study was conducted using three distinct methodologies:

1. A systematic review and meta-analysis to examine the impact of LAI antipsychotic compared with oral antipsychotic medications among patients with schizophrenia.
2. Examine retrospective Kentucky Medicaid data to assess the frequency of LAI use and the comparative effectiveness of LAIs compared to oral antipsychotics on specific indicators of recovery.
3. Examine retrospective data among patients receiving LAIs during admission as compared to oral antipsychotics on engagement in community mental health services after discharge.

### Systemic Review / Meta-analysis

A total of 75 cohort studies (with or without experimental and quasi-experimental designs) and 43 pre-post studies met inclusion criteria after searching for studies indexed in the PsycInfo, CINAHL, PubMed, and Scopus databases. Among the cohort and pre-post studies, 12 (16%) and 3 (6.9%), respectively used data from Medicaid beneficiaries.

## ASSESSING THE IMPACT OF LONG-ACTING INJECTABLE (LAI) ON PSYCHIATRIC TREATMENT OUTCOMES AMONG MEDICAID BENEFICIARIES

### *Medicaid Data Analysis*

This study used de-identified Kentucky State Medicaid data with a total of 905,289 records in the period between January 1, 2015, to December 31, 2017. Records obtained met the following inclusion criteria: (1)  $\geq 18$  years old at their first pharmacy claim, and (2) had at least two pharmacy/medical claims for oral or LAI with a diagnosis of schizophrenia or schizoaffective disorder. Excluded records were those for which there were irregular prescribing pattern, a simultaneous use of an oral and LAI, or a long duration of use of an LAI before switching to an oral (n=38). All healthcare costs, ER visits and outpatient visits were compared between LAI and oral Medicaid beneficiaries by two sample t-tests. All healthcare costs were compared by t-test between metro and non-metro areas.

### *Community Mental Health Services Engagement Analysis*

Chart records data collection was completed for patients with schizophrenia admitted to a Kentucky inpatient psychiatric hospital between 2018-2019. Eligibility requirements were patient records of those who were: 1) admitted for more than 3 days, 2) prescribed an antipsychotic medication (either LAI or Oral antipsychotic) by time of discharge, and 3) with a diagnosis of schizophrenia spectrum disorder at admission. Chi-square analyses were used to assess the differences in the proportions of those readmitted at 30-days, 180-days, 1-year, and 2-years by type of antipsychotic medication (LAI vs. Oral). Finally, a hierarchical logistic regression analysis was used to examine factors associated with readmission within the 2-year analysis point.

### *Systemic Review & Meta-analysis*

Compared to orals, LAIs improved symptom remission and social functioning, and decreased rehospitalizations, emergency room visits, and medical care costs. However, the two modalities did not differ in decreasing outpatient visits or pharmacy costs. In addition, pooled effects of the cohort studies showed a reduction in the emergency department visits and increased pharmacy costs among LAI users relative to oral users. In addition, meta-analysis of pre-post studies demonstrated that switching from an oral modality to LAI significantly improved symptoms remission and social functioning and reduced re-hospitalizations.

### *Medicaid Data Analysis*

Participants were evenly distributed between metro and non-metro, mostly male and white non-Hispanic, and 44 years of age on average. There was no significant difference between the proportion of Medicaid beneficiaries taking LAIs who lived in metro and non-metro areas. There were no other significant differences between Medicaid beneficiaries taking LAI and oral antipsychotics in age, gender, or ethnicity. There were no significant

differences between LAI and oral patients in those with  $\geq 80\%$  PDC. Likewise, there were no significant differences between metro and non-metro areas in  $>80\%$  PDC. Overall, Medicaid beneficiaries on LAIs had significantly higher mean pharmacy costs than oral patients. When assessed by urban versus rural residence, rural residents had higher inpatient and outpatient costs, but lower pharmacy costs compared to urban residents. However, these differences were not statistically significant. There were no significant differences between LAI and oral patients in the mean number of outpatient visits or ER visits.

### *Community Mental Health Services Engagement Analysis*

Among those readmitted at 30-days, 180-days, 1-year, and 2-years, a lower proportion (albeit not statistically significantly different) received LAIs at discharge compared to orals. In hierarchical regression analysis, older age was significantly associated with greater readmission. With respect to medication, compared to first-generation orals, second-generation LAI use was associated with a lower likelihood of readmission during two-year periods.

## Conclusion

These findings highlighted that, compared to patients on oral antipsychotic medications, patients on LAI are more likely to adhere to treatment, have improved symptoms, and experience lower rates of rehospitalizations, emergency department visits, and medical costs. Although LAIs had higher pharmacy costs compared to oral medications, these costs may be offset by the reduction in overall healthcare utilization. With the limitations inherent in the nature of the data, these findings suggest that KY Medicaid beneficiaries may not be adequately provided with the opportunity to receive LAI antipsychotic medications as compared to orals. These results have policy implications. Medicaid's pharmacy program may consider reducing the barriers to accessing this class of drug. It may be cost-effective to make LAI's more accessible to beneficiaries.

## References

1. Charlson FJ, Ferrari AJ, Santomauro DF, et al. Global Epidemiology and Burden of Schizophrenia: Findings From the Global Burden of Disease Study 2016. *Schizophr Bull.* 2018;44(6):1195-1203. doi:10.1093/schbul/sby058
2. Higashi K, Medic G, Littlewood KJ, Diez T, Granström O, De Hert M. Medication adherence in schizophrenia: factors influencing adherence and consequences of nonadherence, a systematic literature review. *Ther Adv Psychopharmacol.* 2013;3(4):200-218. doi:10.1177/2045125312474019
3. Barbosa WB, de Oliveira Costa J, Lovato Pires de Lemos L, et al. Costs in the treatment of schizophrenia in adults receiving atypical antipsychotics: an eleven-year cohort in Brazil. *Applied Health Economics and Health Policy.* 2018;16(5):697-709. doi:10.1007/s40258-018-0408-4