Treatment patterns of adult Medicaid patients diagnosed with schizophrenia during 2015-2023

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Background

Schizophrenia is a debilitating mental health condition typically characterized by hallucinations, delusions, and disorganized thinking and behavior. There is no cure for schizophrenia, but many antipsychotic therapies are approved for its treatment. These treatments are generally grouped into a category of first-generation antipsychotics (FGAs or “typical” antipsychotics) and second-generation antipsychotics (SGAs or “atypical” antipsychotics). SGAs act on dopamine and serotonin receptors and are generally considered the preferred treatment versus the older FGAs which primarily target only the dopamine receptors. Some SGAs also work in part by modulating the glutamate receptor pathway. Some antipsychotics are indicated for conditions other than schizophrenia, such as bipolar disorder and major depressive disorder. Antipsychotics are typically taken as daily oral tablets/capsules, but some FGAs and SGAs have long-acting injectable (LAI) formulations which require administration ranging from once every 2 weeks to once every 6 months. Antipsychotic LAIs have shown to improve medication adherence, persistence and disease-related outcomes compared with oral antipsychotics (1-6).

Methods

A cohort of patients diagnosed with schizophrenia and treated with antipsychotics were identified from the Merative Marketscan Medicaid database during January 2015 through December 2023. Patients were indexed on the first observed diagnosis for schizophrenia or on the first fill date for an antipsychotic followed by a schizophrenia diagnosis within 90 days. Patients were required to have ≥365 days of pre-index and post-index observation to capture characteristics and treatment patterns, respectively. Patients had at least one claim for an antipsychotic during the 365-day post-index period. All patients were 18 years or older on index with no prior antipsychotic use in the previous 365 days.

Drug eras were constructed for each individual antipsychotic and formulation (oral vs. LAI). Class-level drug eras were also constructed: oral SGAs, oral FGAs, LAI SGAs, and LAI FGAs. Treatment patterns were assessed at the individual ingredient and class levels. At least 15 days of overlapping drug eras were used to define concomitant use, otherwise it was labeled as a switch. Lines of therapy were constructed according to the sequence of treatments received. Receipt of any ingredient or formulation not part of the current treatment regimen – either a switch or an add-on – was considered a new treatment line.

The study was conducted using ATLAS (v2.15) modules for concept set creation, cohort creation, characterization, and cohort pathways.

Results

21,305 patients with schizophrenia receiving antipsychotic treatment during the 365-day post-index period were identified. Nearly half (49.8%) received exactly one treatment, 21% received exactly two lines of therapy, and the remainder received 3 or more treatment lines during the one-year follow-up. Receipt of an oral SGA alone was the overwhelming choice for first-line

therapy accounting for 82% of patients, with oral FGAs alone (7%) and SGA LAIs alone (5%) far behind (Figure 1a). When examining at the level of ingredient and formulation, patterns became much more complex (**Figure 1b).** Risperidone was the most common first-line treatment. Quetiapine and aripiprazole were the most common options in all lines after the first. Paliperidone was the only LAI as a top 5 treatment option (beginning in 2nd line), becoming the 2nd most common treatment in later lines (**Table 1)**.

Conclusions

The treatment paths of patients with schizophrenia are complex and heterogeneous. While SGAs dominate the treatment landscape in oral and LAI forms, the individual ingredients used vary widely with high rates of switching and adding between multiple therapies. There is a clear unmet need for the ability to identify a treatment that is most likely to be safe, effective, and lead to the best adherence for an individual patient. Further understanding which medications have the highest probability of success, and getting patients on those drugs sooner, is necessary to more effectively manage schizophrenia.

Figure 1a. Sunburst plot of class-level treatment patterns, classified by antipsychotic generation (FGA, SGA) and formulation (oral, LAI)

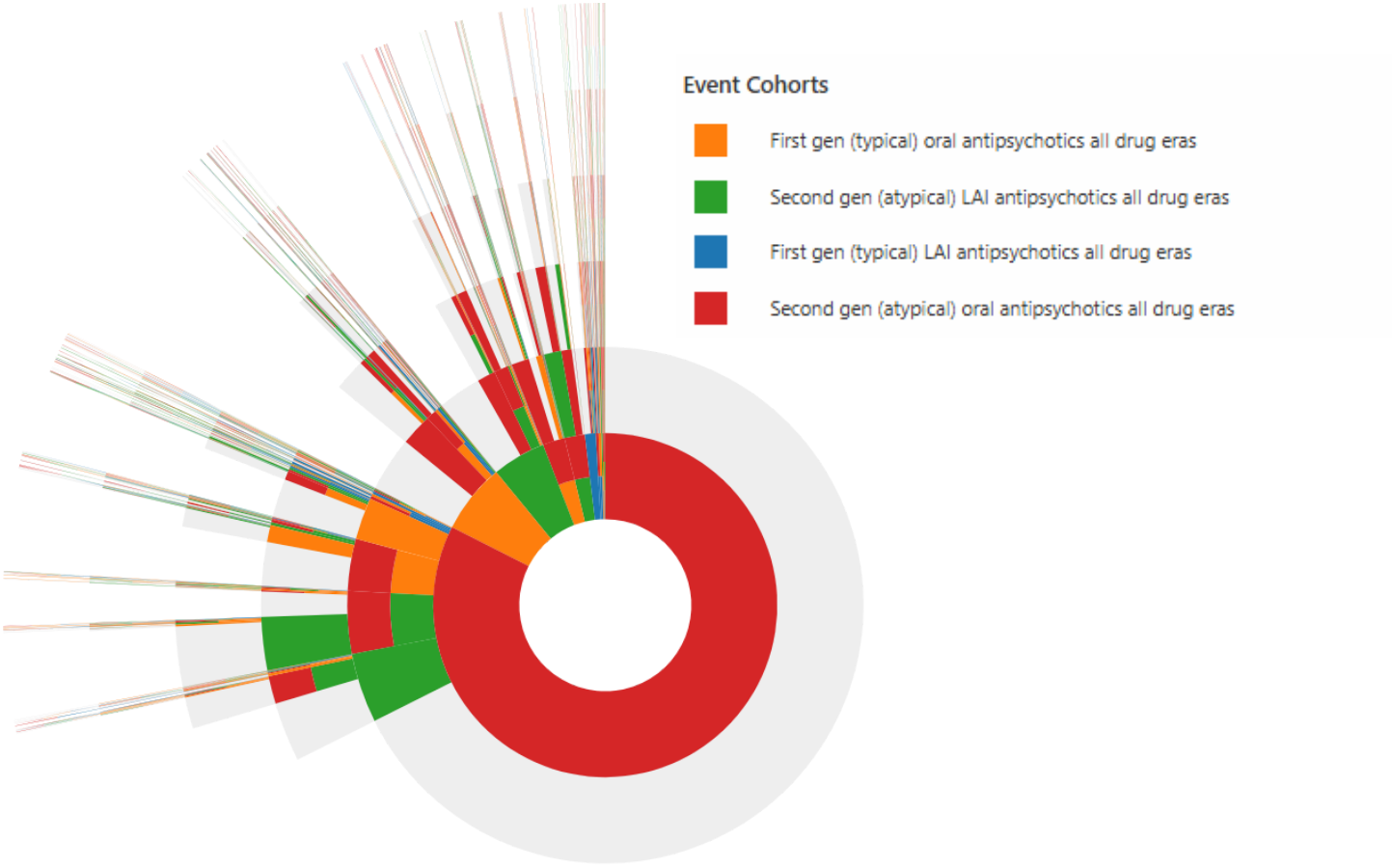

Figure 1b. Sunburst plot of ingredient-level treatment patterns, classified by antipsychotic ingredient and formulation (oral, LAI)

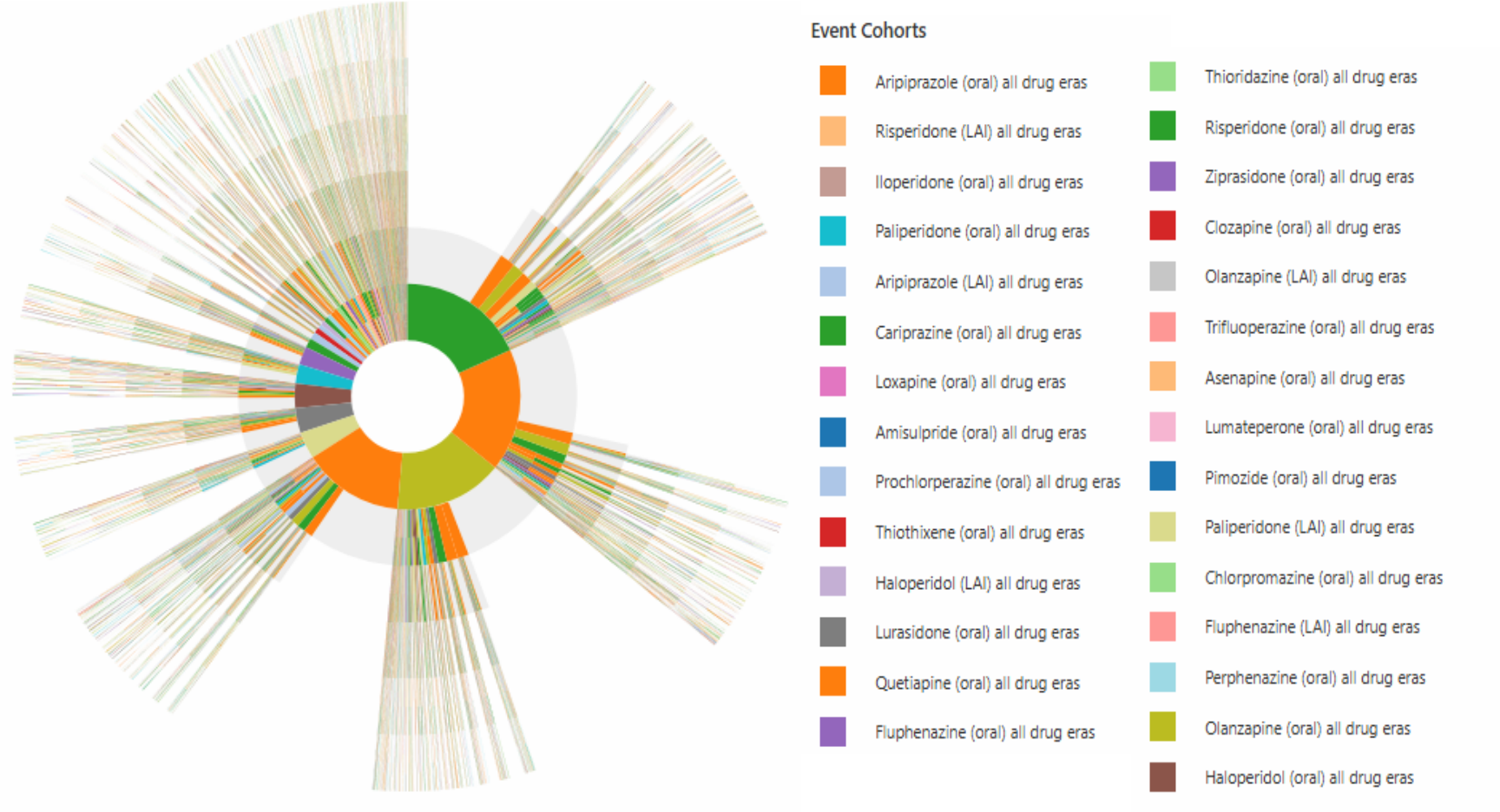

Table 1. Top 5 most common antipsychotics present during each line of therapy

Treatment line	Medication	Rank within Tx line	Person count	Percent of Tx line	Percent of treated
1	Risperidone (oral)	1	5,678	21.3%	21.3%
1	Quetiapine (oral)	2	5,627	21.1%	21.1%
1	Olanzapine (oral)	3	4,970	18.6%	18.6%
1	Aripiprazole (oral)	4	4,532	17.0%	17.0%
1	Haloperidol (oral)	5	1,447	5.4%	5.4%
2	Quetiapine (oral)	1	2,936	11.0%	21.9%
2	Aripiprazole (oral)	2	2,765	10.4%	20.6%
2	Olanzapine (oral)	3	2,492	9.3%	18.6%
2	Risperidone (oral)	4	2,400	9.0%	17.9%
2	Paliperidone (LAI)	5	1,371	5.1%	10.2%
3	Quetiapine (oral)	1	1,575	5.9%	20.4%
3	Aripiprazole (oral)	2	1,527	5.7%	19.8%
3	Olanzapine (oral)	3	1,374	5.1%	17.8%
3	Risperidone (oral)	4	1,153	4.3%	14.9%
3	Paliperidone (LAI)	5	1,071	4.0%	13.9%
4	Aripiprazole (oral)	1	866	3.2%	20.1%
4	Quetiapine (oral)	2	831	3.1%	19.2%
4	Olanzapine (oral)	3	731	2.7%	16.9%
4	Paliperidone (LAI)	4	699	2.6%	16.2%
4	Risperidone (oral)	5	618	2.3%	14.3%
5	Aripiprazole (oral)	1	499	1.9%	19.4%
5	Paliperidone (LAI)	2	478	1.8%	18.5%
5	Quetiapine (oral)	3	468	1.8%	18.2%
5	Olanzapine (oral)	4	463	1.7%	18.0%
5	Risperidone (oral)	5	333	1.3%	12.9%
6	Quetiapine (oral)	1	307	1.2%	19.7%
6	Paliperidone (LAI)	2	286	1.1%	18.4%
6	Olanzapine (oral)	3	282	1.1%	18.1%
6	Aripiprazole (oral)	4	256	1.0%	16.5%
6	Risperidone (oral)	5	220	0.8%	14.1%

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