

# Reducing psychiatric care intensity: Choice of antipsychotic matters

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## Background

- Management of schizophrenia (SCZ) cost \$156 billion in 2013 (\$37.7 billion in direct costs)<sup>1</sup>
- Medication choice affects costs<sup>2,3</sup>; and while the APA recommends oral atypical antipsychotics (OAs) in the treatment of SCZ, it does not provide guidance on which to use<sup>4</sup>
- The intensity of service use, as reflected in psychiatric costs, may be an indication of OAA effectiveness
- The OAA brexpiprazole, approved in 2015 for SCZ, was associated with lower cost and less healthcare utilization than some other OAs in an economic model;<sup>5</sup> however, real-world data are lacking

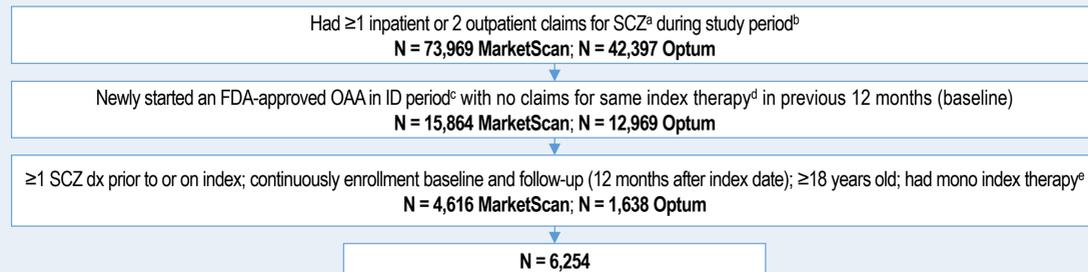
## Objective

To examine psychiatric care intensity by comparing psychiatric costs in adult patients with SCZ newly treated with brexpiprazole vs. other OAs

## Methods

- Retrospective cohort study using: 1. Truven Health MarketScan® Commercial (C), Medicare Supplemental (MS), and Multi-State Medicaid (M) Databases\*; and 2. De-identified Optum® Clinformatics® Datamart
- Patient identification (**Figure 1**):

Figure 1. Patient identification



Dx: diagnosis; ID: identification; SCZ: schizophrenia. <sup>a</sup> ICD-9-CM: 295.xx, excluding 295.4x and 295.7x; or ICD-10-CM: F20x, excluding F20.81x. <sup>b</sup> 7/1/14-9/30/17 for MarketScan C/MS and Optum; 7/1/14-6/30/17 for MarketScan M. <sup>c</sup> 7/1/15-9/30/16 MarketScan C/MS, and Optum; 7/1/15-6/30/16 for MarketScan M. <sup>d</sup> Index date defined as date of first OAA claim; index therapy as OAA used on this date. <sup>e</sup> 2 random duplicates each removed from both databases, and 462 who initiated clozapine, asenapine, loxapine, iloperidone, or cariprazine due to small sample.

- Outcome measures:
  - We examined a variety of cost components, but in this poster, only presented psychiatric care costs (defined as inpatient and outpatient service costs with primary diagnosis of mental health,<sup>†</sup> excludes outpatient pharmacy costs)
- Statistical analysis:
  - Linear regression model
  - Initial covariates included baseline demographic and clinical characteristic, medication use, and healthcare utilization; final models included statistically significant (p<0.05) covariates
  - Costs inflated to Y2017 USD using the medial care component of the Consumer Price Index
  - Data transformations and analyses performed using SAS® version 9.4

\*MarketScan is a registered trademark of Truven Health Analytics, part of the IBM Watson Health business. <sup>†</sup> Claims with primary diagnosis of any mental disorder (ICD-9-CM: 290.xx-311.xx; ICD-10-CM: F01.xx-F99.xx)

- The final study sample consisted of 6,254 patients with SCZ (**Table 1**)

Table 1. Baseline characteristics, N = 6,254

	Aripiprazole	Brexpiprazole	Lurasidone	Olanzapine	Paliperidone	Quetiapine	Risperidone	Ziprasidone	P Value
N (%)	786 (12.6%)	176 (2.8%)	523 (8.4%)	1,264 (20.2%)	453 (7.2%)	1,234 (19.7%)	1,427 (22.8%)	391 (6.3%)	
Age, year, mean (SD)	43.2 (17.0)	39.5 (14.3)	42.7 (15.5)	44.5 (16.8)	41.2 (15.1)	46.9 (16.8)	45.1 (17.2)	42.2 (14.6)	<0.001
Female	363 (46.2)	93 (52.8)	278 (53.2)	563 (44.5)	184(40.6)	592 (48.0)	628 (44.0)	197 (50.4)	<0.001
Psychiatric comorbidities <sup>a</sup>	619 (78.8)	139 (79.0)	422 (80.7)	1,028 (81.3)	358 (79.0)	1,029 (83.4)	1,151 (80.7)	342 (87.5)	0.007
Any baseline inpatient hospitalization	440 (56.0)	80 (45.5)	274 (52.4)	808 (63.9)	236 (52.1)	680 (55.1)	889 (62.3)	221 (56.5)	<0.001
Non-index anti-psychotic medications	585 (74.4)	168 (95.5)	427 (81.6)	851 (67.3)	404 (89.2)	816 (66.1)	803 (56.3)	297 (76.0)	<0.001
Psychiatric medications <sup>b</sup>	581 (73.9)	164 (93.2)	453 (86.6)	915 (72.4)	364 (80.4)	925 (75.0)	891 (62.4)	300 (76.7)	<0.001

Data presented as n (%) unless otherwise indicated. <sup>a</sup> Bipolar disorder, depression, anxiety, personality disorder, or substance abuse disorders. <sup>b</sup> Mood stabilizer, antidepressants, anti-anxiety medications, sedatives or hypnotics.

- Cost differed significantly across the comparison groups (p<0.001)
  - Brexpiprazole users had lowest mean (SD) unadjusted annual psychiatric care costs [\$13,888 (\$29,968)], including lowest unadjusted mean (SD) psychiatric inpatient costs [\$9,218 (\$26,551)]
- Controlling for baseline differences, brexpiprazole users had lowest annual mean psychiatric care costs (**Table 2**)
- Annual psychiatric care for brexpiprazole users was \$7,438 [95% confidence interval (CI): \$1892-\$2985; p=0.009] less than care for paliperidone users, and \$6,590 (\$1527-\$11,653; p=0.011) less than care for olanzapine users (**Figure 2**)

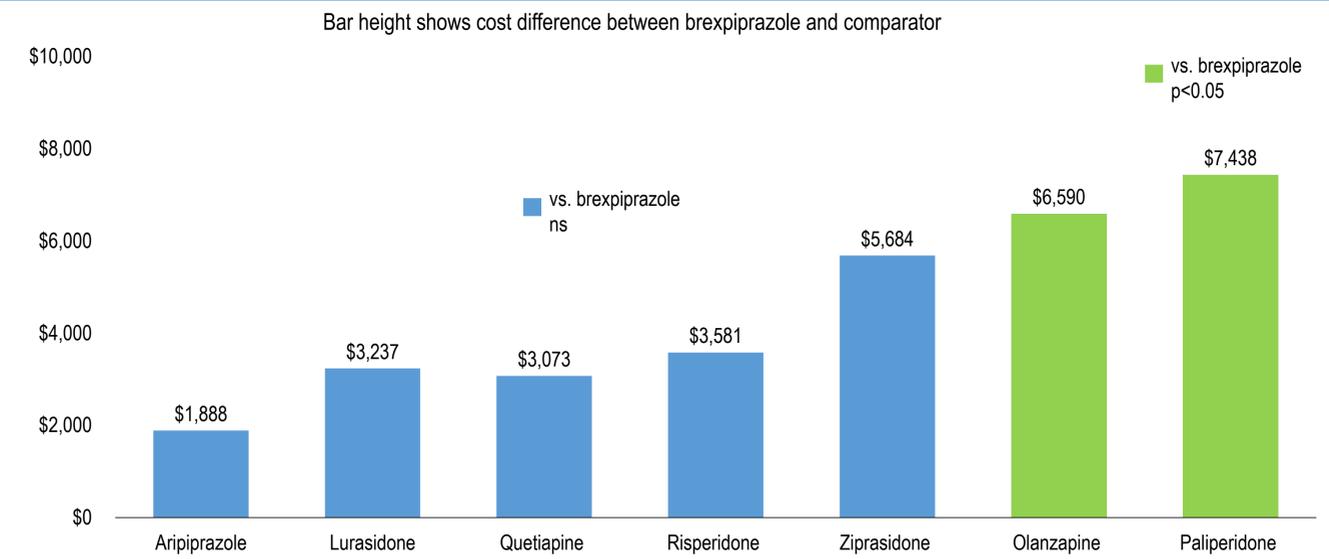
Table 2. Adjusted linear regression model results – annual psychiatric care costs<sup>b</sup>

	Adjusted Mean (95% CI)
Index treatment	P=0.002; df=7
Aripiprazole	\$14,008 (11779 - 16236)
Brexpiprazole	\$12,119 (7381 - 16857)
Lurasidone	\$15,356 (12617 - 18095)
Olanzapine	\$18,709 (16952 - 20466)
Paliperidone	\$19,558 (16604 - 22512)
Quetiapine	\$15,192 (13410 - 16975)
Risperidone	\$15,700 (14030 - 17371)
Ziprasidone	\$17,803 (14642 - 20964)

Final model covariates (p<0.05): age, Charlson Comorbidity Index, any psychiatric comorbidities, hyperlipidemia, index treatment, and any baseline ED visit, inpatient hospitalization, and non-index antipsychotic medications. <sup>a</sup> Claims with primary diagnosis of any mental disorder (ICD-9-CM: 290.xx-311.xx; ICD-10-CM: F01.xx-F99.xx). <sup>b</sup> Total inpatient and outpatient psychiatric service costs, excludes outpatient pharmacy costs.

## Results

Figure 2. Adjusted difference in annual psychiatric care costs<sup>a</sup> between brexpiprazole and other OAs



ns: not significant (p≥0.05). <sup>a</sup> Claims with primary diagnosis of any mental disorder (ICD-9-CM: 290.xx-311.xx; ICD-10-CM: F01.xx-F99.xx). <sup>b</sup> Total inpatient and outpatient psychiatric service costs, excludes outpatient pharmacy costs.

## Conclusion

- Brexpiprazole initiators had lower annual psychiatric care costs than paliperidone and olanzapine initiators; this may indicate lower intensity of psychiatric care
- Choice of OAA may affect healthcare costs in schizophrenia
- Costs for branded drugs are substantially higher than costs for generics; this may impact overall costs
- Payers may want to assess differences within their own data when making formulary decisions, as medication costs can differ across plans
- Limitations
  - Claims are meant for reimbursement, not research, so misclassification is possible. Additionally, claims indicate a prescription was filled, not necessarily that the medication was taken (or taken as prescribed)
  - We controlled for observable demographic and clinical differences, but due to data limitations were unable to control for the unobservable clinical factors that may account for group differences
  - Future studies with a larger sample size of brexpiprazole users are warranted

## References

1. Cloutier M, et al. *J Clin Psychiatry*. 2016;77(6):764-771. 2. Joyce AT, et al. *Am J Manag Care*. 2005;11(8 Suppl):S254-261. 3. Lin J, et al. *J Behav Health Serv Res*. 2013;40(3):355-366. 4. Lehman AF, et al. *Am J Psychiatry*. 2004;161(2 Suppl):1-56. 5. Aigbogun MS, et al. *Clin Outcomes Res*. 2018;10:443-456.

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