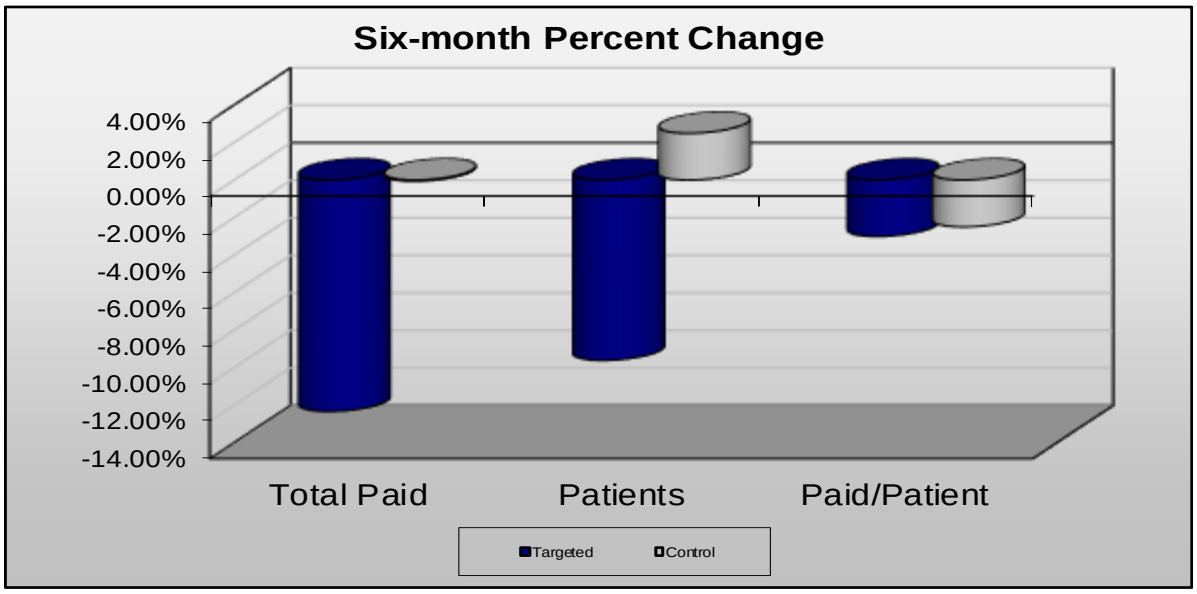
Major Depressive Disorder Management

Prepared for Texas Medicaid in May 2022

EXECUTIVE SUMMARY

Purpose of Intervention	To assist physicians in the optimization of antidepressant therapy. The American Psychiatric Association (APA) clinical practice guidelines for major depressive disorder provide the foundation for this proposal.[1] These guidelines, along with recently published major studies, provide performance indicators to reduce the variation in the use of antidepressants and maximize therapeutic benefits.

Intervention	Intervention Type	Population-based mailing
	Intervention Mailing Date	July 20, 2021
	Pre-intervention Period (Baseline)	February 2021 – July 2021
	Post-intervention Period (Post)	September 2021 – February 2022
	Number of Letters Mailed	635
	Number of Targeted Physicians	635



Savings Calculation

State Cost Savings Calculation:	
Targeted Group: Actual Antidepressant Management Drugs Average Cost Per Patient Per Month (Pre)	$20.04
% Change in Control Group from Pre to Post	-2.50%
Estimated Antidepressant Management Drugs Paid Amount Per Targeted Patient Per Month if No Inter	$19.54
Targeted Group: Antidepressant Management Drugs Cost Per Patient Per Month (Post)	$19.44
Estimated Cost Savings Per Patient Per Month	$0.10
Total Monthly Number of Targeted Panel Patients Served in Post Period	96,459
6-Month Total Savings	$9,645.90
6-Month State General Revenue Funds Savings	$3,859.32
12-Month Total State Savings	$7,718.65

BACKGROUND

Major depression, or major depressive disorder (MDD), is one of the most common mood disorders among young and middle-aged adults. A 2014 report by the Substance Abuse and Mental Health Services Administration (SAMHSA) estimated that 6.7% of all U.S. adults had at least one major depressive episode within the past year.[1] First-line treatment for MDD is usually an antidepressant medication and often prescribed by a patient's primary care physician.[3] Comparison of current treatment practices to recommended guidelines may reduce variability in quality of care and result in improved outcomes with decreased costs.

Indicator #1: Medications for Depression Less than Six Months

The goal of acute phase treatment of depression, typically the first 6 to 12 weeks of treatment is remission of symptoms and improvement in quality of life. After achieving remission, a continuation phase of treatment is recommended to preserve remission and prevent relapse. The VA/DoD guidelines recommend continuation of the antidepressant at therapeutic dose for at least 6 months to decrease the risk of relapse. This indicator will target depressed patients with less than six months of continuous antidepressant therapy.[2]

Candidates (denominator):	All patients with a diagnosis of depression of depression in the past 2 years and receipt of an antidepressant in the past 180 days
Exception Criteria (numerator):	Candidates who were newly started on an antidepressant in the past 180 days but have no antidepressant therapy in the most recent 30 days.

Indicator #2: Medications for Depression Longer than Twelve Months for Single Episode Depression

Depression may be a chronic, recurring illness, but many individuals will have a single episode. After an individual with an initial, single depressive episode has achieved remission and completed the continuation phase of treatment, meta-analysis concluded longer duration of treatment (9 or 12 months) did not provide additional benefit. Therefore, the need for maintenance antidepressant therapy should be assessed.[2]

Candidates (denominator):	All patients with a diagnosis of depression, single episode in the past 2 years receiving an antidepressant in the past 30 days.
Exception Criteria (numerator):	Candidates with more than 12 months of antidepressant therapy for diagnosis of depression, single episode.

Indicator #3: Antidepressants in Children and Adolescents

Only two second generation antidepressants (escitalopram and fluoxetine) are FDA-approved for use in children and adolescents for depression.[4] Other agents may be effective in select patients but have not been adequately studied in this population to establish approval. There are still others

that have been studied and have not proven to be more effective than placebo. All antidepressants have a boxed warning related to their use in young people and the risk of suicide. Discontinuation of a medication that is effective in a given individual is not encouraged. However, when starting new young people on antidepressants, consideration of an FDA-approved medications is recommended.

Candidates (denominator):	Patients < 18 years of age, history of antidepressant use in the last 45 days, and history of depression in the last 2 years.
Exception Criteria (numerator):	History of an antidepressant in the last 45 days. Patients with a history of fluoxetine and/or escitalopram are excluded. Patients on bupropion with a diagnosis in the last 2 years of ADD/ADHD or conduct disorders are also excluded.

Indicator #4: Duplicate Antidepressant Therapy

Concurrent use of multiple antidepressants may occur for a number of reasons, both intended and unintended. Intended duplicate therapy may occur when a provider attempts to augment a partial response to the initial antidepressant by adding a second antidepressant instead of other adjunctive treatments like an atypical antipsychotic. Unintended duplicate therapy can result when there is a lack of coordination of care among multiple prescribers or patients misunderstand directions when changing therapy. Additive adverse effects and increased risk toxicity, especially involving the serotonin system, is possible when antidepressants with similar pharmacology are combined.[5,6]

Candidates (denominator):	All patients with history of antidepressant therapy in the most recent 90 days, and history of depression in the last 2 years.
Exception Criteria (numerator):	Candidates taking more than one serotonergic antidepressant concomitantly for longer than 35 of the past 60 days.

Indicator #5: Antidepressant Adherence

Patients who are non-adherent with prescribed antidepressant regimens are more likely to experience relapse or recurrence, have more frequent emergency and hospital visits, as well as increased depression and suicidal ideation severity.[7]

Candidates (denominator):	All patients with a diagnosis of depression in the past 2 years receiving an antidepressant in the past 135 days.
Exception Criteria (numerator):	Candidates who received <60 days supply of an antidepressant medication in a 90 day window will be deemed non-compliant. To eliminate from consideration patients who have stopped therapy and/or switched to another drug, patients who did not receive the implicated antidepressant in the 45-day periods before and after the 90-day window will be excluded from the analysis.

Indicator #6: Antidepressant Dose Consolidation

Many antidepressants have a half-life that is long enough to allow for once a day dosing or are available in sustained-release dosage forms designed for once daily dosing. Using a single dosage unit given once a day whenever possible may improve compliance.[7]

Candidates (denominator):	All patients over 18 years of age receiving an antidepressant in the past 180 days that is appropriate for dose consolidation.
Exception Criteria (numerator):	Candidates taking two dosage units per day of an identified antidepressant when a single dose per day of the same amount is possible.

METHODOLOGY

In July 2021, all physicians treating patients with any of the aforementioned drug-related problems were identified. Based on the distribution of patients/physician, the minimum patient/month threshold was set at greater than two patients (i.e., physicians with three or more patients having a drug-related problem received the mailing). Providers were mailed the intervention materials on July 20, 2021.

Operational definitions:

Targeted Group – physicians treating three or more patients with any of the aforementioned drug-related problem(s) and who received mailed intervention materials *(Section 1.e.1.A Exhibit A of the Agreed Modifications to the RFP and Contractor Proposal).*

Control Group - physicians treating patients taking an intervention-related drug but did not receive mailed intervention materials *(Section 1.e.1.A Exhibit A of the Agreed Modifications to the RFP and Contractor Proposal).*

Intervention Drugs – Antidepressant Therapy Agents

Pre Intervention Time Period – February 2021 through July 2021

Post Intervention Time Period – September 2021 through February 2022

Total Paid 6-month pre and post – total drug costs can be defined as the total amount of paid intervention-related drug claims for the above time periods for the prescribers in the control and target groups. The target group consisted of those prescribers who had prescribed intervention-related drug therapy to more than two Medicaid patients. The control group consisted of all other prescribers who prescribed intervention-related drug therapy agents in the designated time periods *(Sections 1.e.1. and 1.e.2 Exhibit A of the Agreed Modifications to the RFP and Contractor Proposal).*

Average Number of Panel Patients per Month - during the 6-month pre and post time periods, the number of unique Medicaid patients with a drug claim submitted using a respective provider number was captured each month. Medicaid patients that did not have a drug claim were not counted in the prescriber's panel. The monthly numbers were summed then divided by six to calculate the monthly average. For example, in Table 3, the physician (with provider number AB123456) had an average of 12 patients with at least one drug claim per month. If a patient had two different claims in June, they would be counted as one patient. By evaluating all patients seen by a specific physician, changes in prescribing patterns can be evaluated on existing and

new patients *(Sections 1.e.1. and 1.e.2 Exhibit A of the Agreed Modifications to the RFP and Contractor Proposal).*

Table 3: Average Number of Panel Patients per Month

Provider Number	Month #	Number of Unique Patients with a Drug Claim
AB123456	1	10
	2	10
	3	10
	4	12
	5	13
	6	17
Total		72
Average Number of Panel Patients per Month		12

Average Cost/Patient per Month – this was calculated by dividing the total dollars paid for drug claims during the analysis time period by the total number of Medicaid panel patients during the respective time period. For example, in the targeted group post analysis; there were 96,459 patients who had a drug claim during the six-month review period. The total amount of dollars paid for drug claims for these patients during the post analysis was $1,875,021. Dividing these two numbers ($1,875,021/96,459) yields an average cost per patient of $19.44 *(Sections 1.e.1. and 1.e.2 Exhibit A of the Agreed Modifications to the RFP and Contractor Proposal).*

$$\text{Average Cost/Patient/per Month} = \frac{\text{Total Amount Paid for Antidepressant Therapy Drugs}}{\text{Average number of Panel Patients per Month}} / (\text{\# Months})$$

Total State Savings *(Sections 1.e.3 and 1.e.4 Exhibit A of the Agreed Modifications to the RFP and Contractor Proposal)***:**

- Intervention Average Cost Savings per Month - the percent change seen in the control group was applied to the intervention group baseline Average Cost per Patient per Month. This amount represents the estimated Amount Paid per Targeted Physician per Patient in the absence of the intervention (i.e., Estimated Paid Amount). The Estimated Paid Amount per Patient per Month was then subtracted from the actual Intervention Target Group Average Cost per Patient per Month to estimate the Average Cost Savings per Patient per Month.
- 6-Month Total Savings - the Intervention Average Cost Savings per Patient per Month was multiplied by the total number of targeted patients served over the 6-month time frame.
- 6-Month State General Revenue Funds Savings= 6-Month Total State Savings X 0.4001.
- Total State Savings = 6-Month State General Revenue Funds Savings X 2.

RESULTS

Population-based intervention

A total of 635 physicians were targeted and received intervention materials. Table 4 compares the 6-month total amount paid for antidepressant therapy drugs, the total number of patients in each physician's panel per month, and the average cost per patient for the targeted and control groups during the six-month pre and post periods. When comparing the pre-Average Cost per Patient per Month between the targeted and control groups, the cost was approximately $1 lower for the targeted group. This difference may be due to such factors as the targeted group having more patients prescribed intervention-related drugs per physician or that associated average intervention-related drug costs are inherently higher in the targeted group.

The target group saw a 12.33% decrease in the amount paid for intervention-related drugs while the control group saw a 0.07% decrease. Additionally, the average number of monthly patients for the physician's panel decreased 9.62% for the targeted group and increased 2.49% for the control group. To control for changes in case load variance (i.e., the change in the number of panel patients) between the two groups, the average cost per patient was also calculated. Total amount paid and number of panel patient trends led to a 3.01% decrease in average cost per patient per month in the targeted group and a 2.50% decrease for the control group.

Table 4: Six-Month Trends for Overall Targeted vs Control Group

Group	Depression Management Drugs -- Six Months Total Paid Pre/Post			Average Number of Panel Patients per Month			Depression Management Drugs Average Cost per Patient per Month		
	Pre	Post	Change	Pre	Post	Change	Pre	Post	Change
Targeted	$2,138,843	$1,875,021	-12.33%	17,787	16,077	-9.62%	$20.04	$19.44	-3.01%
Control	$11,913,578	$11,905,560	-0.07%	95,839	98,229	2.49%	$20.72	$20.20	-2.50%

Table 5 shows the Intervention Average Cost Savings per Patient per Month and the savings calculations. Had the intervention not been mailed, the targeted pre average cost per patient per month would have decreased 2.50% from $20.04 to $19.54. The net difference between the actual and estimated average cost/patient for the targeted group was $0.10. Based on 96,459 targeted patients served per month during the six-month post period, the six-month Total Savings and Total State Savings are $9,645.90 and $3,859.32 respectively. Over a twelve-month period, the Total State Savings is $7,718.65.

Table 5: Overall Intervention Average Cost Savings

State Cost Savings Calculation:	
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Table 6 shows the changes in the clinical indicators based on the intervention. The overall change in indicators is a decrease of 27.8%.

Clinical Indicators	Target		
	Baseline	Feb-2022	% Change
Medications for Depression Less than Six Months	198	149	-24.7%
Medications for Depression Longer than Twelve Months for Single Episode Depression	39	27	-30.8%
Antidepressants in Children and Adolescents (*excluding fluoxetine ages 8-18 years & escitalopram ages 12-17 years)	37	21	-43.2%
Antidepressant Adherence	172	125	-27.3%
Antidepressant Dose Consolidation	4	3	-25.0%
Total	450	325	-27.8%

CONCLUSIONS

This population-based intervention was successful in encouraging appropriate use of bipolar management therapy drugs and providing prescribers with educational tools to better communicate with their patients' issues regarding appropriate treatment. This resulted in an economic impact on Texas Medicaid's pharmacy program expenditures, with a calculated twelve-month overall savings of $19,291.80 and savings to the state of $7,718.65 and a decrease in clinical indications of 27.8%.

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