

## **Attachment 1: Analysis of atypical antipsychotic drugs**

### **GOALS:**

- To analyze the use of these agents as monotherapy at low doses
- To develop potential targets for a letter intervention

### **METHODS:**

All claims for the atypical antipsychotic drugs (aripiprazole, clozapine, olanzapine, quetiapine, risperidone, and ziprasidone) were extracted for Jan 2006 through March 2006. Data were aggregated to produce the daily dose by patient.

A query was run to select patients on only one atypical antipsychotic drug at doses below those normally used to treat schizophrenia, psychoses, or bipolar disease. The following doses were used:

- Abilify (aripiprazole)-less than 10 mg/day
- clozapine-less than 200 mg/day
- Geodon (ziprasidone)-less than 80 mg/day
- Risperdal (risperidone)-less than 2 mg/day
- Seroquel (quetiapine)-less than 300 mg/day
- Zyprexa (olanzapine)-5 mg or less per day

### **PRELIMINARY RESULTS:**

A table of the aggregated data is attached.

A summary of the findings includes:

- Almost seventy-five percent of patients on these drugs were on monotherapy
- Over 50 percent of patients on monotherapy are on low doses of atypical antipsychotics
- Over 75 percent of patients on Seroquel are on low doses, followed by Geodon, and Risperdal

The analysis suggests that there are a considerable number of prescriptions written for these drugs at doses below that recommended for the treatment of psychoses or bipolar disease. Possible reasons for this would include patients who are susceptible to these drugs and have adequate treatment at low doses, the use of these drugs for other non-approved indications, or inadequate treatment of the psychosis.

<b>DRUG</b>	<b>Count IDs in low dose</b>	<b>Count of unique patients on low dose monotherapy</b>	<b>Count of all patients on agent alone or in combo</b>	<b>Count of all patients on single agent</b>	<b>% pts on monotherapy (E/D)</b>	<b>% of patients on monotherapy at low dose (C/E)</b>
Abilify	966	805	2697	1852	68.67%	43.5%
Clozapine	87	82	389	259	66.58%	31.7%
Geodon	577	457	1157	730	63.09%	62.6%
Seroquel	2438	2225	3938	2951	74.94%	75.4%
Risperdal	2122	1983	4393	3619	82.38%	54.8%
Zyprexa	513	479	1736	1308	75.35%	36.6%
<b>TOTAL</b>	<b>6703</b>	<b>6031</b>	<b>14310</b>	<b>10719</b>	<b>74.91%</b>	<b>56.3%</b>

### **PROPOSAL:**

Develop an intervention modeled after the anti-epileptic drug intervention.

- Aggregate claims for patients meeting low dose criteria by prescriber
- Get aggregated costs by prescriber
- Rank order prescribers by dollars associated with claims meeting the low dose criteria
- Develop an intervention letter to prescribers about these agents
- Include patients recent claims and costs for patients associated with prescribers

## METHODOLOGY

The DUR Board approved the proposal. Using paid pharmacy claims data with dates of service between 6/1/2006 and 9/30/2006, the average daily dose for all Medicaid patients taking a single atypical antipsychotic drug was calculated. Patients taking daily doses of these drugs below the doses listed above for the treatment of schizophrenia or bipolar disease (FDA approved indications) were selected for the intervention.

Patients were then aggregated by prescriber and the top 100 prescribers ranked by number of prescriptions were targeted for an intervention letter. The intervention was mailed in November 2006.

After the intervention, paid pharmacy claims were extracted for the patient/doctor pair included in the intervention group for dates of service 12/1/2006 through March 31, 2006.

As a comparison group, a group of prescribers ranked in the next 100 was used. Claims were extracted for similar time periods for patients meeting the same monotherapy criteria.

## RESULTS

### Demographic results:

A total of 12, 653 Medicaid patients were taking atypical antipsychotics. The breakdown of patients by the number of drugs is:

Number of drugs	Pt count	Overall percentage
1	10818	85.50%
2	1707	13.49%
3	119	0.94%
4	9	0.07%

Of the total 10,818 patients were on monotherapy. Overall 49.5% of those patients were on low doses as defined for the study. The breakdown by drug of patients on monotherapy is:

Drug	Used as monotherapy (Count)	On low dose	% of drug on low dose
ARIPIPRAZOLE	1853	659	35.6%
CLOZAPINE	241	33	13.7%
OLANZAPINE	1133	326	28.8%
QUETIAPINE	3037	2076	68.4%
RISPERIDONE	3722	1970	52.9%
ZIPRASIDONE	832	289	34.7%
	10818	5353	49.5%

Over 50% of the use of Seroquel (quetiapine) and Risperdal (risperidone) was as low dose monotherapy. Few patients on monotherapy with clozapine received low doses. Of the remaining drugs, roughly one-third of the prescriptions were for low dose monotherapy.

An additional analysis of the data compared age cohorts and the use of low dose atypical antipsychotics. Over 50% of the low dose monotherapy was prescribed in patients less than 18 years old, and 30% was in patients less than 13 years old.

### **Pre/Post Comparison of Intervention and Comparison Groups**

The numbers of prescriptions and the total amount paid for the prescriptions was compared for 4 months before the intervention with 4 months post intervention. The same methodology for selection of patients in the intervention group was used in a comparison group of the next 100 ranking prescribers. The tabulated results are:

	<b>RXs pre</b>	<b>Amt paid pre</b>	<b>RXs post</b>	<b>Amt paid post</b>	<b>Δ post-pre RXs</b>	<b>Δ post-pre \$</b>	<b>% change RXs</b>	<b>%change \$</b>
<b>Intervention group</b>	6926	\$1,183,882.30	3082	\$507,114.02	-3844	-\$676,768.28	-55.50%	-57.2%
<b>Non intervention group</b>	2065	\$313,401.12	2096	\$390,025.82	31	\$76,624.70	1.50%	24.4%