

Policy Evaluation: Metabolic Monitoring of Antipsychotics in Children

Purpose: In October 2012, Oregon implemented a RetroDUR policy to improve metabolic monitoring for pediatric Medicaid patients who are on an antipsychotic drug. Faxed reminders were sent to physicians regarding annual glucose monitoring for children on antipsychotic drugs without claims for metabolic monitoring in the previous 12 months.¹ Providers also received a report card which compared their monitoring rates to other providers in the state.¹ The purpose of this review is to examine the impact of this RetroDUR policy on rates of metabolic monitoring for children taking antipsychotics and to identify areas for potential policy change.

Research Questions:

1. After implementation of the RetroDUR, was there a change in the proportion of children on antipsychotics who received yearly glucose monitoring (blood glucose or hemoglobin A1c [HbA1c])?
2. After implementation of the RetroDUR, was there any change in monitoring of other metabolic laboratory parameters, including triglycerides or high density lipoprotein (HDL)?
3. Was there any change in the rate of new diabetes diagnoses after implementation of the RetroDUR?
4. Were there any subgroups of patients based on drug therapy (i.e. drug, dose, or duration), patient characteristics (i.e. age or mental health diagnosis), or prescriber characteristics (i.e. provider specialty) who receive more routine metabolic glucose monitoring?

Conclusions:

- After implementation of the RetroDUR, there was only a modest change in glucose monitoring (Figure 2). In the year following implementation of the policy, approximately 50.3% of patients lacked glucose monitoring compared to 54.1% of patients without monitoring before implementation of the policy (mean difference=4.2%).
- There was no difference in monitoring rate of other metabolic laboratory parameters or in the rate of new diabetes diagnoses before or after implementation of the RetroDUR.
- Rates of glucose monitoring in subgroup populations based on drug therapy, patient, or prescriber characteristics were also similar before and after implementation of the RetroDUR.

Recommendations:

- Because there was minimal change in metabolic monitoring rates detected after implementation of the RetroDUR, discontinue the policy.

Background:

Metabolic adverse effects including hyperglycemia, dyslipidemia, and weight gain are commonly associated with first- and second-generation antipsychotics. Second-generation antipsychotics carry labeling warnings from the U.S. Food and Drug Administration (FDA) for metabolic changes which may be associated with increased long-term risk for type 2 diabetes mellitus and cardiovascular and cerebrovascular diseases.^{1,2} In 2004, the American Diabetes Association (ADA) and American Psychiatric Association (APA) released a consensus statement that recommends periodic metabolic monitoring for all patients on antipsychotic medications.² Upon initiation or modification of an antipsychotic regimen, baseline assessments of personal and family history of obesity, weight or body mass index (BMI), waist circumference, blood pressure, fasting plasma glucose and fasting lipid profile are recommended.² Further evaluation of fasting plasma glucose is recommended at 12 weeks and annually thereafter.² Lipid assessment is recommended at 12 weeks followed by an assessment every 5 years. However, in children less than 10 years of age, there is no established criteria to define lipid abnormalities in young children, and as a result, lipid monitoring is not used regularly.³ In children, more frequent metabolic monitoring is recommended if weight gain exceeds the 90th percentile for BMI or waist circumference for their age.^{3,4} More frequent monitoring may also be necessary in patients at high risk for metabolic side effects or those who have worsening hyperglycemia or dyslipidemia while on therapy.²

However, despite these known risks, monitoring of metabolic adverse events remains low.^{5,6} Data from a large cohort of Medicaid patients in 2012 demonstrated that monitoring in pediatric patients on an antipsychotic was lower than rates for adults for glucose (OR 0.41, 95% CI 0.38 to 0.44) and lipids (OR 0.56, 95% CI 0.52 to 0.61).⁷ Similarly, in 2011, a large nationwide cohort (n=52,407) demonstrated that rates of glucose testing and HbA1c testing in pediatric patients (ages 5-18) after initiation of an antipsychotic was suboptimal with rates of 15.6% and 1.6%, respectively.⁸ In a population of pediatric Medicaid patients from California, Missouri and Oregon (n=5,370), 2 years following the release of the consensus guidelines, glucose screening was performed in only 31.6% of patients (95% CI 30.4% to 32.9%) and lipid testing was performed in 13.4% of patients (95% CI 12.5% to 14.4%).⁶ Overall, patients in Oregon were less likely to have glucose testing (adjusted odds ratio [AOR] 0.81, 95% CI 0.65 to 1.02) and lipid testing (AOR 0.57, 95% CI 0.42 to 0.77) performed compared to children in California.⁶

In an effort to increase monitoring rates, several states have implemented programs to evaluate physician monitoring of their pediatric patients on antipsychotic therapy. In 2009, one state mental health authority began an initiative to improve metabolic monitoring rates by conducting education for prescribers, initiating audits on metabolic monitoring, and providing feedback to mental health center leaders regarding their monitoring.⁹ Provider education included access to lectures by experts, discussions about improving monitoring, access to articles on antipsychotic monitoring, yearly data summaries on monitoring and prescribing practices, and quarterly letters describing the quality initiative.⁹ The program included 10 community mental health centers with over 15,000 patients.⁹ Data were collected on a random sample of 595 adults and 310 children over the course of 2 years.⁹ Rates of yearly monitoring for glucose, lipids, weight, and waist circumference varied significantly between centers but did not demonstrate an overall improvement over the course of the study.⁹ Another quality improvement program, conducted in the United Kingdom, utilized a yearly audit-based targeted screening program with feedback for providers regarding data on their relative and absolute performance compared to practice standards.¹⁰ Each individual mental health Trust participating in the program developed a local action plan.¹⁰ Resources provided to the centers included reference documents with information about testing results and resources for staff related to aspects of physical health, diet, exercise and smoking cessation.¹⁰ Data were collected from a sample of patients each year on monitoring of 4 parameters: blood pressure, obesity or BMI, plasma glucose and lipids.¹⁰ Over the course of the study, patients without monitoring for any of these parameters decreased from 46% to 14%.¹⁰ Rates of patients with documented monitoring of all 4 parameters increased from 11% to 34%.¹⁰ Patients with a known diagnosis of diabetes or dyslipidemia were more likely to have monitoring in all 4 categories.¹⁰

In October 2012, Oregon implemented a RetroDUR policy for metabolic monitoring in pediatric Medicaid patients who are on an antipsychotic drug. A detailed description of the program is available at the following website: <http://www.orpdl.org/drugs>.¹ The goal of this program is to improve monitoring rates in children taking an antipsychotic. For children on antipsychotic drugs without claims for metabolic monitoring in the previous 12 months, reminders were sent to physicians regarding annual glucose monitoring.¹ Providers also received a report card which compared their monitoring rates to other providers in the state.¹ The purpose of this review is to examine the impact of this RetroDUR policy on rates of metabolic monitoring for children taking antipsychotics and to identify areas for potential policy change.

Methods:

This observational before-and-after analysis compared patients in a historical control group before the implementation of the RetroDUR from October 2011 to September 2012 to patients after implementation of the policy from October 2012 to September 2013. Patients included in the study were in the FFS population, 18 years of age or less, and had at least one paid pharmacy claim for an antipsychotic with a minimum 5 days' supply (identified as the index event). Included members could be enrolled in a Coordinated Care Organization (CCO), but were required to be enrolled in Medicaid for at least 75% of the time in the year prior to the index event. If a patient had multiple claims for an antipsychotic within this time frame, the index event was defined as the earliest paid pharmacy claim during this time with a minimum 5 days' supply. Antipsychotics included in the program are listed in Table A1 and include both first- and second-generation antipsychotic medications. With implementation of the RetroDUR policy, this index event would trigger a report sent to the provider if there was no claim for of metabolic monitoring within the previous 12 months. In order to examine the impact of this policy, information was collected on metabolic monitoring in the 12 months prior to the index event in the historical control and compared to metabolic monitoring rates after implementation of the policy. Metabolic monitoring in these patients was identified via CPT code (Table A2).

Patients were excluded from the study if they had Medicare part D coverage (identified via benefit packages BMM, BMD, MND, or MED) or a prior diagnosis of diabetes. Antipsychotics or formulations brought to market after implementation of the RetroDUR were not included in subgroup analyses. Diagnosis of diabetes was identified via pharmacy claims for diabetic medications in the 1 year prior to the index event or medical claims indicating a diabetes diagnosis in the 2 years prior to the index event. Pharmacy claims data included patients who received insulin or oral hypoglycemic/antihyperglycemics (with the exception of metformin) during 1 year prior to the index event.¹ See Table A3 for a list of included medications. Medical claims indicating a diabetes diagnosis included patients with at least 2 face-to-face encounters in an outpatient setting or non-acute inpatient setting, on different dates of service, with a diagnosis of diabetes or one face-to-face encounter in an acute inpatient or ED during the 2 years prior to the index event.¹ ICD codes used to identify diabetes diagnosis are listed in Table A4 and CPT codes for encounter data are listed in Table A5.

Data assessed at the index event included baseline demographics (age, gender and ethnicity), prescribing provider specialty, mental health diagnoses, and type of medication. Diagnoses were identified by ICD-9 and ICD-10 codes (Table A6) and assessed within 12 months before or 3 months after the index event. Provider specialty was identified using the National Provider Identifier (NPI) number and the associated taxonomy. Subgroup analyses included patients stratified by dose and duration of therapy. Duration of therapy was defined as the proportion of days covered (PDC) by at least 1 antipsychotic prescription over the course of 365 days. Short-term therapy corresponds to a PDC of 33% (120 days) or less, intermittent therapy corresponds to a PDC of 34-80% (121-292 days), and long-term therapy corresponds to a PDC greater than 80% (>293 days). Intermittent therapy may indicate therapy of medium duration or low adherence to continuously prescribed therapy. Additional subgroup analyses will include stratification by medication type, provider specialty, and diagnoses. Differences in dose were identified based on FDA approved doses. Medications prescribed above the maximum FDA approved dose were defined as high dose and medications within the FDA dosing range were classified as standard doses (See Table A2). Maximum approved doses for pediatric use are often dependent

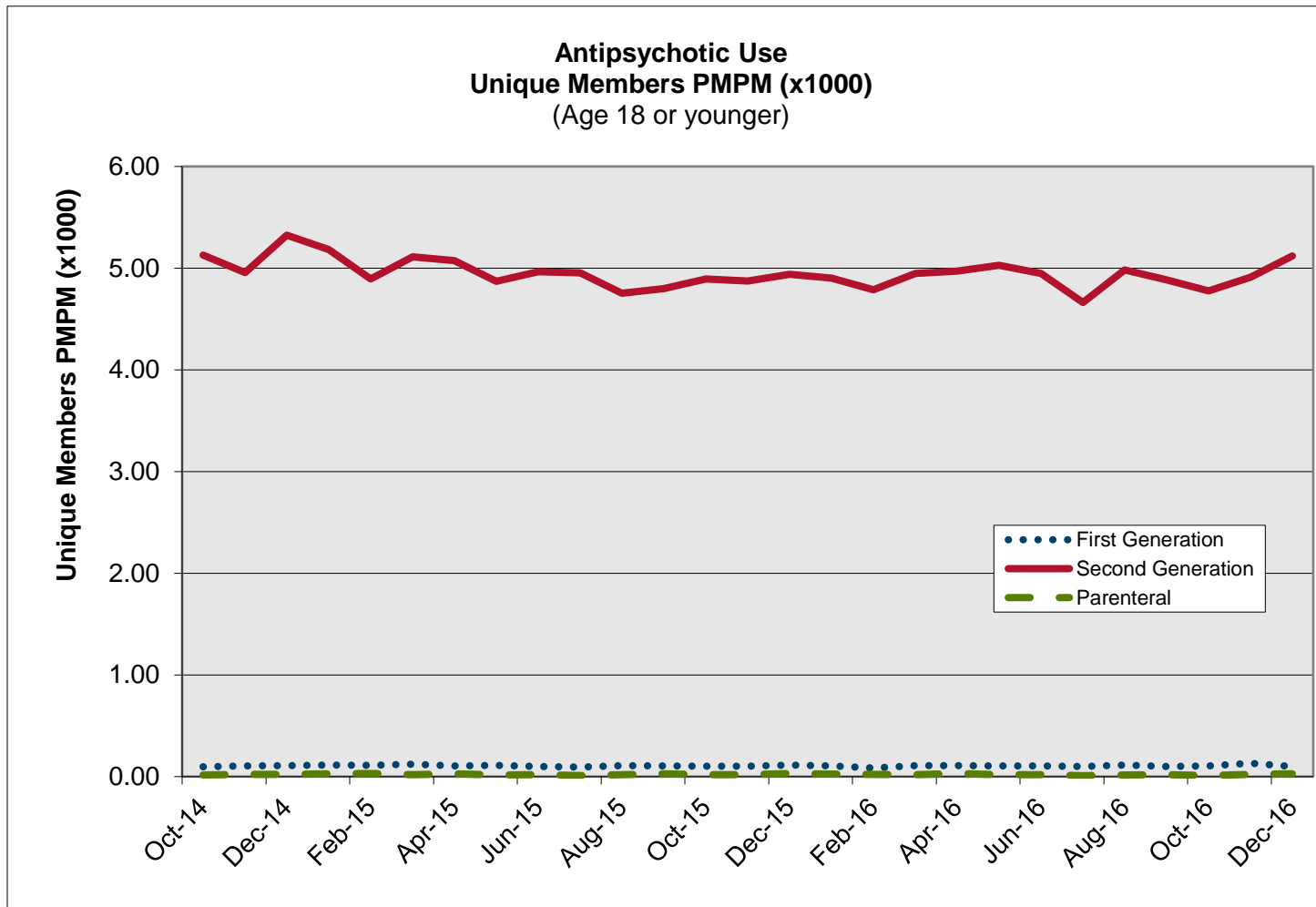
on weight, age of the child, or indication. In the case of indication-specific dosing, the highest approved for a particular age was used. If there is no established dose in pediatric patients, maximum adult doses are referenced.

Results:

Utilization

Figure 1 shows the recent utilization of antipsychotic medications by unique members from October 2014 through October 2016. Data is stratified by first generation antipsychotics, second generation antipsychotics, and parenteral antipsychotics. These medications are carve out medications and represent all pediatric members with FFS coverage regardless of CCO enrollment. Overall, use of second generation antipsychotics is more frequent than first generation or parenteral forms. Use of these medications over time has remained consistent.

Figure 1: Unique patient count of children (age ≤ 18 years) who utilized antipsychotics (PMPM) from October 2014 to present stratified by PDL class (first generation, second generation, and parenteral antipsychotics).



Patient demographics

Table 1 shows demographics of Medicaid members with a claim for an antipsychotic in the year prior to and following implementation of the RetroDUR. There was a total of 4132 patients with an index event in the year before implementation of the RetroDUR and 3838 patients in the following year. Patient demographics were similar in both groups. The mean age was approximately 13 years, 33% were female, and 63-65% of the population was white. Based on the proportion of days covered, 42-45% of patients were taking antipsychotics long-term and 33% of patients were taking antipsychotics intermittently. Less than 5% of the population received prescriptions for antipsychotics at doses greater than the maximum amount recommended by the FDA. The most common diagnoses for these patients are listed in Table 2. The majority of patients had multiple mental health diagnoses.

Evaluation of Monitoring Rates

After implementation of the RetroDUR, there was only a modest change in glucose monitoring (Figure 2). In the year following implementation of the policy, approximately 50.3% of patients lacked glucose monitoring compared to 54.1% of patients without monitoring before implementation of the policy (mean difference=4.2%). Similarly, there was no apparent change in the rates of newly diagnosed diabetes over time or in monitoring of lipid parameters (Figure 2). To evaluate changes in glucose monitoring for specific subpopulations claims were stratified by drug therapy (i.e. drug, dose, or duration), patient characteristics (i.e. age or mental health diagnosis), or prescriber characteristics (i.e. provider specialty). For the majority of subgroups rates were similar before and after implementation of the RetroDUR (Tables 1-4).

Prior studies indicate that interventions including academic detailing and education for providers may increase metabolic monitoring rates for patients on antipsychotics. However, in our patient population, monitoring rates were only slightly improved upon initiation of this RetroDUR. The policy included yearly reminders sent to physicians about pediatric patients whose claims history indicated they did not have metabolic monitoring within 1 year. The reminder included information about recommended standards of care and compared their monitoring rates to other providers in the state. Other types of interventions may have a greater potential to influence monitoring rates in this population. More intensive academic detailing, provider education, and audits may provide limited improvement. However, the costs of intensive and detailed interventions must be weighed against their potential benefit.

Figure 2. Change in glucose monitoring, lipid monitoring, and rates of newly diagnosed type 2 diabetes over time, described as the percent of patients without monitoring within 12 months after an antipsychotic claim. Patients with dual eligibility and prior evidence of diabetes were excluded.

Change in Monitoring and Rate of Type 2 Diabetes Diagnoses in the 12 Months Following an Antipsychotic Pharmacy Claim

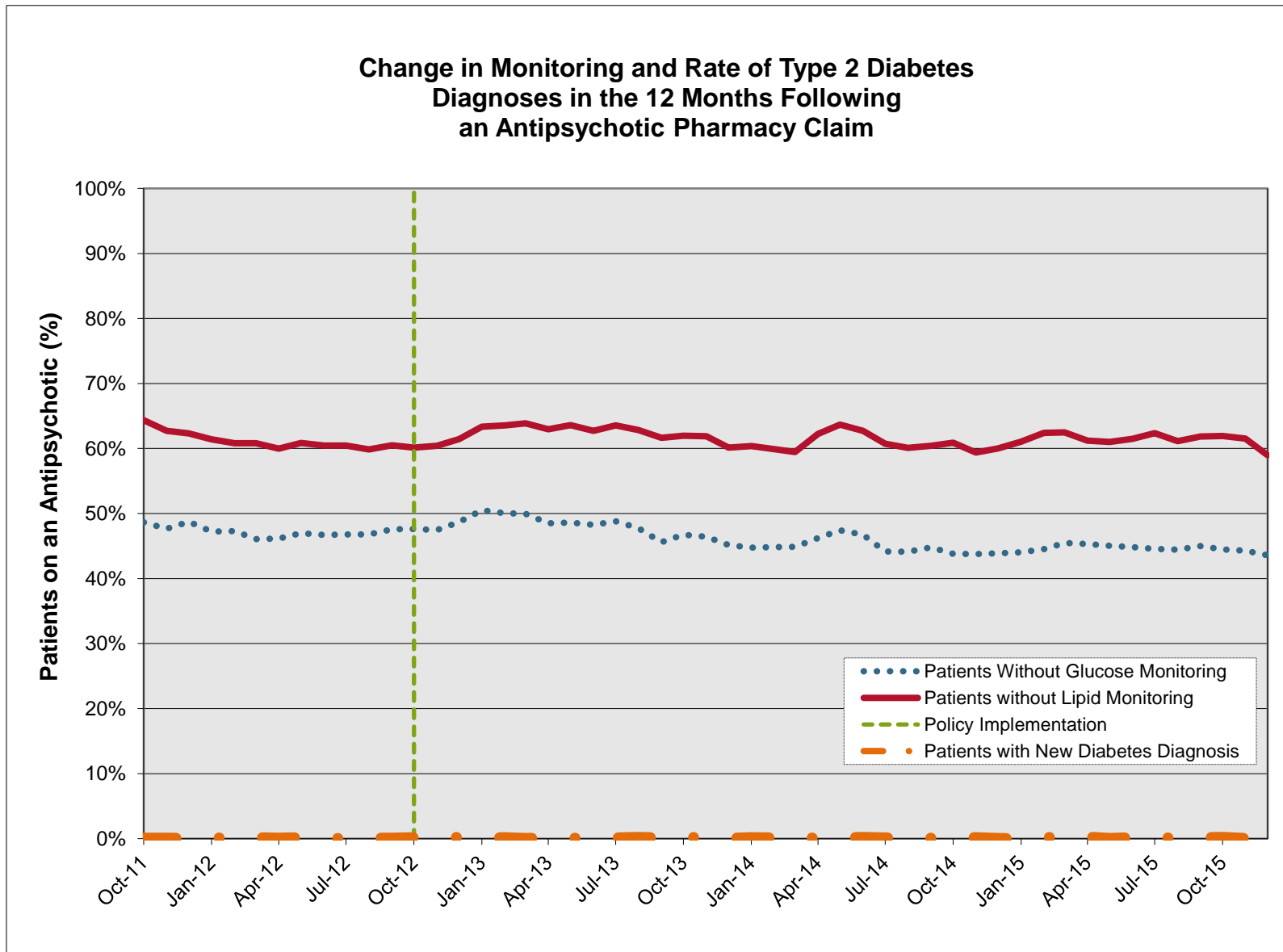


Table 1. Subgroup analysis of glucose or HbA1c monitoring rates categorized by baseline demographics.

	Before Program				After Program				Change in Monitoring Rates
	Population Characteristics		Population Without Monitoring		Population Characteristics		Population Without Monitoring		
	N=	4,132	2,237	54.1%	3,838	1,929	50.3%	4.2%	
Mean age (range)	12.7	(1-18)	11.9	(1-18)	12.8	(2-18)	12.1	(3-18)	
0-5	143	3.5%	114	79.7%	114	3.0%	81	71.1%	8.7%
6-9	802	19.4%	535	66.7%	708	18.4%	470	66.4%	0.3%
10-15	2,002	48.5%	1,100	54.9%	1,936	50.4%	939	48.5%	6.4%
16-18	1,185	28.7%	488	41.2%	1,080	28.1%	439	40.6%	0.5%
Female	1,353	32.7%	643	47.5%	1,266	33.0%	564	44.5%	3.0%
White	2,698	65.3%	1,481	54.9%	2,423	63.1%	1,229	50.7%	4.2%
Duration									
Short-term (PDC <33%)	905	21.9%	521	57.6%	881	23.0%	470	53.3%	4.2%
Intermittent (PDC 33-80%)	1,357	32.8%	763	56.2%	1,282	33.4%	693	54.1%	2.2%
Long-term (PDC >80%)	1,870	45.3%	953	51.0%	1,675	43.6%	766	45.7%	5.2%
High dose (> maximum FDA approved dose)	177	4.3%	85	48.0%	182	4.7%	75	41.2%	6.8%

Note: Max dose and age range calculations taken on index claim only

Table 2. Subgroup analysis of glucose or HbA1c monitoring rates categorized by diagnosis. Patients may have more than one diagnoses.

	Before Program				After Program				Change in Monitoring Rates
	Population Characteristics		Population Without Monitoring		Population Characteristics		Population Without Monitoring		
	N=	4,132	2,237	54.1%	3,838	1,929	50.3%	4.2%	
ADHD	4,190	101.4%	2,358	56.3%	3,905	101.7%	1,947	49.9%	6.4%
Adjustment and Acute Reactions	3,096	74.9%	1,535	49.6%	2,698	70.3%	1,273	47.2%	2.4%
Affective Disorders, Excluding Bipolar	3,252	78.7%	1,376	42.3%	3,429	89.3%	1,385	40.4%	1.9%
Autism Spectrum Disorders	1,025	24.8%	539	52.6%	1,287	33.5%	646	50.2%	2.4%
Bipolar	213	5.2%	60	28.2%	205	5.3%	56	27.3%	0.9%
Developmental Disorders	1,384	33.5%	733	53.0%	1,269	33.1%	599	47.2%	5.8%

Disruptive Behavior Disorders	1,457	35.3%	702	48.2%	1,390	36.2%	608	43.7%	4.4%
Other Mental Health Diagnosis	973	23.5%	291	29.9%	1,121	29.2%	329	29.3%	0.6%
Other Psychotic Disorders	3,040	73.6%	1,273	41.9%	2,972	77.4%	1,176	39.6%	2.3%
Personality Disorders	223	5.4%	77	34.5%	347	9.0%	123	35.4%	-0.9%
PTSD	2,139	51.8%	933	43.6%	2,012	52.4%	744	37.0%	6.6%
Schizophrenia	338	8.2%	94	27.8%	308	8.0%	107	34.7%	-6.9%
Sleep Disorders	285	6.9%	159	55.8%	309	8.1%	154	49.8%	6.0%

Table 3. Subgroup analysis of glucose or HbA1c monitoring rates categorized by medications.

	Before Program				After Program				Change in Monitoring Rates
	Population Characteristics		Population Without Monitoring		Population Characteristics		Population Without Monitoring		
N=	4,132		2,237 54.1%		3,838		1,929 50.3%		4.2%
Antipsychotics, 1st Gen	31	0.8%	14	45.2%	47	1.2%	18	38.3%	6.9%
Antipsychotics, 2nd Gen									
ARIPRAZOLE	1,299	31.4%	635	48.9%	1,178	30.7%	532	45.2%	3.7%
OLANZAPINE	223	5.4%	82	36.8%	249	6.5%	85	34.1%	2.6%
QUETIAPINE FUMARATE	569	13.8%	259	45.5%	455	11.9%	208	45.7%	-0.2%
RISPERIDONE	1,808	43.8%	1,172	64.8%	1,710	44.6%	1,004	58.7%	6.1%
ZIPRASIDONE HCL	147	3.6%	54	36.7%	126	3.3%	51	40.5%	-3.7%
OTHER	51	1.2%	19	37.3%	65	1.7%	25	38.5%	-1.2%
Antipsychotics, Parenteral	4	0.1%	2	50.0%	8	0.2%	6	75.0%	-25.0%

Table 4. Provider specialty subgroup analyses of glucose or HbA1c monitoring rates after implementation of the RetroDUR.

	Before Program				After Program				Change in Monitoring Rates
	Population Characteristics		Population Without Monitoring		Population Characteristics		Population Without Monitoring		
N=	4,132		2,237 54.1%		3,838		1,929 50.3%		4.2%
Physician-psychiatric/neurology	1,584	38.3%	728	46.0%	1,449	37.8%	672	46.4%	-0.4%
NP-psychiatry/mental health	306	7.4%	173	56.5%	398	10.4%	178	44.7%	11.8%
Physician-family medicine	207	5.0%	126	60.9%	206	5.4%	110	53.4%	7.5%
NP-family	92	2.2%	53	57.6%	70	1.8%	33	47.1%	10.5%

Facility-mental health/pediatric	21	0.5%	12	57.1%	65	1.7%	32	49.2%	7.9%
Facility-mental health	5	0.1%	1	20.0%	6	0.2%	1	16.7%	3.3%
Other	138	3.3%	83	60.1%	142	3.7%	84	59.2%	1.0%
Unavailable	1,779	43.1%	1,061	59.6%	1,502	39.1%	819	54.5%	5.1%

Limitations:

Several limitations exist as a result of the retrospective nature of this study. First, data is based on claims history which may not accurately reflect true patient diagnoses or correlate with actual medication adherence. Use of proportion of days covered attempts to estimate the frequency which a patient takes a prescription, but accuracy of this method has not been validated. Second, provider specialization was identified using the National Provider Identifier (NPI) number and the associated taxonomy which may be inaccurate, out-of-date, or incomplete for some providers. The retrospective nature of the study also does not allow for potential unknown confounders which may influence results of the analysis. Potential confounders include changes in the population over time or changes in the general monitoring patterns of providers. It is unclear whether the small change observed after implementation of the policy was a result of the policy or simply a gradual change in practice over time. Estimates of maximum pediatric dose were made based on approved FDA dosing. However, many antipsychotics don't have data supporting dose in pediatric patients. If data are available, doses are often based on weight or age. If pediatric dosing data was lacking, the maximum adult dose was used which may not be appropriate for all children and may result in overestimated maximum doses.

References:

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Table A1: Antipsychotics included in the RetroDUR grouped by PDL class. If pediatric dosing was unavailable, maximum dose in adults was used.

Medication	Maximum FDA approved dose
1st Generation	
- Chlorpromazine HCl	500 mg/day
- Fluphenazine HCl	40 mg/day
- Haloperidol	15 mg/day
- Haloperidol lactate	15 mg/day
- Loxapine	250 mg/day
- Loxapine succinate	250 mg/day
- Perphenazine	8 mg/day
- Pimozide	10 mg/day
- Thioridazine HCl	800 mg/day
- Thiothixene	60 mg/day
- Trifluoperazine HCl	15 mg/day 40 mg/day
2nd Generation	
- Asenapine maleate	20 mg/day
- Aripiprazole	20 mg/day
- Brexpiprazole	4 mg/day
- Cariprazine HCl	6 mg/day
- Clozapine	900 mg/day
- Iloperidone	24 mg/day
- Lurasidone HCl	80 mg/day
- Olanzapine	20 mg/day
- Paliperidone	12 mg/day
- Quetiapine fumarate	800 mg/day
- Risperidone	3 mg/day
- Ziprasidone	160 mg/day
Parenteral Antipsychotics	
- Aripiprazole	30 mg/day, 400 mg/month
- Aripiprazole lauroxil	882 mg/month
- Chlorpromazine HCl	40 mg/day (Age <5 years), 75 mg/day (Age 5-12 years), 500 mg/day (Age > 12 years)
- Fluphenazine decanoate	100 mg/month
- Fluphenazine HCl	10 mg/day

- Haloperidol Decanoate	450 mg/month
- Haloperidol lactate	20 mg/day
- Olanzapine	30 mg/day
- Olanzapine pamoate	300 mg every 2 weeks, 405 mg/month
- Paliperidone palmitate	234 mg/month
- Risperidone microspheres	50 mg every 2 weeks
- Ziprasidone mesylate	40 mg/day
Miscellaneous Classes	
- Molindone HCl	225 mg/day
- Olanzapine/fluoxetine	12/50 mg/day
- Perphenazine/amitriptyline	12 mg/day perphenazine
- Prochlorperazine	25 mg/day

Table A2. CPT codes used to identify metabolic screening

Description	CPT
Glucose tests	80047 basic metabolic panel w/calcium, ionized 80048 basic metabolic panel w/calcium, total 80050 general health panel 80053 comprehensive metabolic panel 80069 renal function panel 82947 glucose assay 82948 reagent strip/blood glucose 82950 glucose test 82951 glucose tolerance test 82952 glucose tolerance test –added samples 82962 glucose test (home use)
HbA1c	83036 A1c 83037 A1c home use
Lipid tests	84478 triglycerides 82465 serum cholesterol 80061 lipid panel 83718 direct lipoprotein (HDL) 83704 lipoprotein bld, by NMR 83701 lipoprotein bld, high resolution fractionation 83700 lipoprotein bld, electrophoretic 83721 LDL cholesterol 83719 blood lipoprotein (VLDL)

Table A3. Diabetic medications included in the RetroDUR to evaluate diagnosis of diabetes mellitus

DPP-4 inhibitors
- SITAGLIPTIN PHOS/METFORMIN HCL

<ul style="list-style-type: none"> - SITAGLIPTIN PHOSPHATE - ALOGLIPTIN BENZ/METFORMIN HCL - ALOGLIPTIN BENZ/PIOGLITAZONE - ALOGLIPTIN BENZOATE - LINAGLIPTIN - LINAGLIPTIN/METFORMIN HCL - SAXAGLIPTIN HCL - SAXAGLIPTIN HCL/METFORMIN HCL - SITAGLIPTIN PHOS/METFORMIN HCL
<p>GLP-1 receptor agonists</p> <ul style="list-style-type: none"> - EXENATIDE - ALBIGLUTIDE - DULAGLUTIDE - EXENATIDE MICROSPHERES - LIRAGLUTIDE
<p>Insulins</p> <ul style="list-style-type: none"> - INSULIN ASPART - INSULIN ASPART PROT/INSULN ASP - INSULIN DETEMIR - INSULIN GLARGINE,HUM.REC.ANLOG - INSULIN LISPRO - INSULIN LISPRO PROTAMIN/LISPRO - INSULIN NPH HUM/REG INSULIN HM - INSULIN NPH HUMAN ISOPHANE - INSULIN REGULAR, HUMAN - INSULIN ZINC HUMAN RECOMBINANT - INSULIN DEGLUDEC - INSULIN DETEMIR - INSULIN GLARGINE,HUM.REC.ANLOG - INSULIN GLULISINE
<p>SGLT-2 Inhibitors</p> <ul style="list-style-type: none"> - CANAGLIFLOZIN - CANAGLIFLOZIN/METFORMIN HCL - DAPAGLIFLOZIN PROPANEDIOL - DAPAGLIFLOZIN/METFORMIN HCL - EMPAGLIFLOZIN - EMPAGLIFLOZIN/LINAGLIPTIN - EMPAGLIFLOZIN/METFORMIN HCL
<p>Sulfonylureas</p> <ul style="list-style-type: none"> - GLIMEPIRIDE - GLIPIZIDE - GLYBURIDE - CHLORPROPAMIDE - GLYBURIDE,MICRONIZED - TOLAZAMIDE - TOLBUTAMIDE

Thiazolidinediones
- PIOGLITAZONE HCL
- PIOGLITAZONE HCL/GLIMEPIRIDE
- PIOGLITAZONE HCL/METFORMIN HCL
- ROSIGLITAZONE MALEATE
Miscellaneous Antidiabetic Agents
- ACARBOSE
- GLIPIZIDE/METFORMIN HCL
- GLYBURIDE/METFORMIN HCL
- MIGLITOL
- NATEGLINIDE
- PRAMLINTIDE ACETATE
- REPAGLINIDE
- REPAGLINIDE/METFORMIN HCL

Table A4. ICD codes to identify diabetes

Category	ICD Version	Code	Description
Diabetes Mellitus	9	357.2	Polyneuropathy in diabetes
Diabetes Mellitus	9	250.x	Diabetes mellitus
Diabetes Mellitus	9	249.x	Secondary diabetes mellitus
Diabetes Mellitus	9	790.2x	Abnormal glucose
Diabetes Mellitus	9	648.0x	Diabetes mellitus complicating pregnancy childbirth or the puerperium
Diabetes Mellitus	9	648.8x	Abnormal glucose tolerance of mother complicating pregnancy childbirth or the puerperium
Diabetes Mellitus	9	362.0x	Diabetic retinopathy
Diabetes Mellitus	10	E09.x	Drug or chemical induced diabetes mellitus
Diabetes Mellitus	10	E11.x	Type 2 diabetes mellitus
Diabetes Mellitus	10	E13.x	Other specified diabetes mellitus
Diabetes Mellitus	10	O24.x	Diabetes mellitus in pregnancy, childbirth and the puerperium (Type 1 and 2)

Table A5. Claim/encounter data used to identify visit type

Description	CPT code	UB Revenue
Outpatient visit	99201-99205, 99211-99215, 99217-99220, 99241-99245, 99341-99345, 99347-99350, 99384-99387, 99394-99397, 99401-99404, 99411, 99412, 99420, 99429, 99455, 99456	051x, 0520-0523, 0526-0529, 057x-059x, 082x-085x, 088x, 0982, 0983
Nonacute inpatient visit	99304-99310, 99315, 99316, 99318, 99324-99328, 99334-99337	0118, 0128, 0138, 0148, 0158, 019x, 0524, 0525, 055x, 066x
Acute inpatient visit	99221-99223, 99231-99233, 99238, 99239, 99251-99255, 99291	010x, 0110-0114, 0119, 0120-0124, 0129, 0130-0134, 0139, 0140-0144, 0149, 0150-0154, 0159, 016x, 020x, 021x, 072x, 080x, 0987
ED visit	99281-99285	045x, 0981

Table A6. Diagnosis codes used to identify mental health disorders.

Category	ICD-9 Code	Description
ADHD	3140	Attention deficit disorder of childhood
ADHD	31400	Attention deficit disorder without mention of hyperactivity
ADHD	31401	Attention deficit disorder with hyperactivity
ADHD	3149	Unspecified hyperkinetic syndrome
Adjustment and Acute Reactions	308	Acute reaction to stress
Adjustment and Acute Reactions	3080	Predominant disturbance of emotions
Adjustment and Acute Reactions	3081	Predominant disturbance of consciousness
Adjustment and Acute Reactions	3082	Predominant psychomotor disturbance
Adjustment and Acute Reactions	3083	Other acute reactions to stress
Adjustment and Acute Reactions	30830	DSM other acute reactions to stress
Adjustment and Acute Reactions	3084	Mixed disorders as reaction to stress
Adjustment and Acute Reactions	3089	Unspecified acute reaction to stress
Adjustment and Acute Reactions	309	Adjustment reaction
Adjustment and Acute Reactions	3090	Adjustment disorder with depressed mood
Adjustment and Acute Reactions	30900	DSM brief depressive reaction
Adjustment and Acute Reactions	3091	Prolonged depressive reaction
Adjustment and Acute Reactions	3092	Predominant disturbance other emotions as adjustment reaction
Adjustment and Acute Reactions	30921	Separation anxiety disorder
Adjustment and Acute Reactions	30922	Emancipation disorder of adolescence and early adult life
Adjustment and Acute Reactions	30923	Specific academic or work inhibition
Adjustment and Acute Reactions	30924	Adjustment disorder with anxiety
Adjustment and Acute Reactions	30928	Adjustment disorder with mixed anxiety and depressed mood
Adjustment and Acute Reactions	30929	Other adjustment reactions with predominant disturbance of other emotions
Adjustment and Acute Reactions	3093	Adjustment disorder with disturbance of conduct
Adjustment and Acute Reactions	30930	DSM adjustment reaction disorder
Adjustment and Acute Reactions	3094	Adjustment disorder with mixed disturbance of emotions and conduct
Adjustment and Acute Reactions	30940	DSM adjustment reaction disorder
Adjustment and Acute Reactions	3098	Other specified adjustment reactions
Adjustment and Acute Reactions	30982	Adjustment reaction with physical symptoms
Adjustment and Acute Reactions	30983	Adjustment reaction with withdrawal
Adjustment and Acute Reactions	30989	Other specified adjustment reactions
Adjustment and Acute Reactions	3099	Unspecified adjustment reaction
Adjustment and Acute Reactions	30990	DSM unspecified adjustment reaction
Adjustment and Acute Reactions	313	Disturbance emotions specific to childhood & adolescence
Adjustment and Acute Reactions	3130	Overanxious disorder specific to childhood & adolescence
Adjustment and Acute Reactions	31300	DSM overanxious disorder of childhood & adolescence
Adjustment and Acute Reactions	3131	Misery and unhappiness disorder specific to childhood and adolescence
Adjustment and Acute Reactions	3132	Sensitivity shyness & social withdrawal disorder
Adjustment and Acute Reactions	31321	Shyness disorder of childhood
Adjustment and Acute Reactions	31322	Introverted disorder of childhood
Adjustment and Acute Reactions	31323	Selective mutism

Adjustment and Acute Reactions	3133	Relationship problems specific to childhood and adolescence
Adjustment and Acute Reactions	3138	Other/mixed emotional disturb child/adolescence
Adjustment and Acute Reactions	31381	Oppositional defiant disorder
Adjustment and Acute Reactions	31382	Identity disorder of childhood or adolescence
Adjustment and Acute Reactions	31383	Academic underachievement disorder of childhood or adolescence
Adjustment and Acute Reactions	31389	Other emotional disturbances of childhood or adolescence
Adjustment and Acute Reactions	3139	Unspecified emotional disturbance of childhood or adolescence
Affective Disorders, Excluding Bipolar	2962	Major depressive disorder single episode
Affective Disorders, Excluding Bipolar	29620	Major depressive affective disorder, single episode, unspecified
Affective Disorders, Excluding Bipolar	29621	Major depressive affective disorder, single episode, mild
Affective Disorders, Excluding Bipolar	29622	Major depressive affective disorder, single episode, moderate
Affective Disorders, Excluding Bipolar	29623	Major depressive affective disorder, single episode, severe, without mention of psychotic behavior
Affective Disorders, Excluding Bipolar	29624	Major depressive affective disorder, single episode, severe, specified as with psychotic behavior
Affective Disorders, Excluding Bipolar	29625	Major depressive affective disorder, single episode, in partial or unspecified remission
Affective Disorders, Excluding Bipolar	29626	Major depressive affective disorder, single episode, in full remission
Affective Disorders, Excluding Bipolar	2963	Major depressive disorder recurrent episode
Affective Disorders, Excluding Bipolar	29630	Major depressive affective disorder, recurrent episode, unspecified
Affective Disorders, Excluding Bipolar	29631	Major depressive affective disorder, recurrent episode, mild
Affective Disorders, Excluding Bipolar	29632	Major depressive affective disorder, recurrent episode, moderate
Affective Disorders, Excluding Bipolar	29633	Major depressive affective disorder, recurrent episode, severe, without mention of psychotic behavior
Affective Disorders, Excluding Bipolar	29634	Major depressive affective disorder, recurrent episode, severe, specified as with psychotic behavior
Affective Disorders, Excluding Bipolar	29635	Major depressive affective disorder, recurrent episode, in partial or unspecified remission
Affective Disorders, Excluding Bipolar	29636	Major depressive affective disorder, recurrent episode, in full remission
Affective Disorders, Excluding Bipolar	2980	Depressive type psychosis
Affective Disorders, Excluding Bipolar	30000	Anxiety state, unspecified
Affective Disorders, Excluding Bipolar	30001	Panic disorder without agoraphobia
Affective Disorders, Excluding Bipolar	30002	Generalized anxiety disorder
Affective Disorders, Excluding Bipolar	30009	Other anxiety states
Affective Disorders, Excluding Bipolar	3004	Dysthymic disorder
Affective Disorders, Excluding Bipolar	30040	DSM neurotic depression
Affective Disorders, Excluding Bipolar	30113	Cyclothymic disorder
Affective Disorders, Excluding Bipolar	311	Depressive disorder, not elsewhere classified
Autism Spectrum Disorders	2990	Autistic disorder
Autism Spectrum Disorders	29900	Autistic disorder, current or active state
Autism Spectrum Disorders	29901	Autistic disorder, residual state
Bipolar	2960	Bipolar I disorder single manic episode
Bipolar	2961	Manic disorder, recurrent episode
Bipolar	2964	Bipolar I disorder most recent episode manic
Bipolar	2965	Bipolar I disorder most recent episode depressed
Bipolar	2966	Bipolar I disorder most recent episode mixed
Bipolar	2967	Bipolar I disorder, most recent episode (or current) unspecified
Bipolar	2968	Other and unspecified bipolar disorders
Developmental Disorders	315	Specific delays in development
Developmental Disorders	3150	Specific developmental reading disorder

Developmental Disorders	31500	Developmental reading disorder, unspecified
Developmental Disorders	31501	Alexia
Developmental Disorders	31502	Developmental dyslexia
Developmental Disorders	31509	Other specific developmental reading disorder
Developmental Disorders	3151	Mathematics disorder
Developmental Disorders	31510	DSM specific arithmetic disorder
Developmental Disorders	3152	Other specific developmental learning difficulties
Developmental Disorders	3153	Developmental speech or language disorder
Developmental Disorders	31531	Expressive language disorder
Developmental Disorders	31532	Mixed receptive-expressive language disorder
Developmental Disorders	31534	Speech and language developmental delay due to hearing loss
Developmental Disorders	31535	Childhood onset fluency disorder
Developmental Disorders	31539	Other developmental speech or language disorder
Developmental Disorders	3154	Developmental coordination disorder
Developmental Disorders	3155	Mixed development disorder
Developmental Disorders	31550	DSM mixed specific develop dis
Developmental Disorders	3158	Other specified delays in development
Developmental Disorders	3159	Unspecified delay in development
Developmental Disorders	31590	DSM unspecified delays in development
Developmental Disorders	316	Psychic factors associated with diseases classified elsewhere
Developmental Disorders	3160	Psychic factors associated with diseases classified elsewhere
Developmental Disorders	31600	DSM psychic factors associated with diseases classified elsewhere
Developmental Disorders	317	Mild intellectual disabilities
Developmental Disorders	318	Other specified mental retardation
Developmental Disorders	3180	Moderate intellectual disabilities
Developmental Disorders	31800	DSM moderate mental retardation
Developmental Disorders	3181	Severe intellectual disabilities
Developmental Disorders	31810	DSM severe mental retardation
Developmental Disorders	3182	Profound intellectual disabilities
Developmental Disorders	31820	DSM profound mental retardation
Developmental Disorders	319	Unspecified intellectual disabilities
Disruptive Behavior Disorders	3120	Undersocialized conduct disorder aggressive type
Disruptive Behavior Disorders	31200	Undersocialized conduct disorder, aggressive type, unspecified
Disruptive Behavior Disorders	31201	Undersocialized conduct disorder, aggressive type, mild
Disruptive Behavior Disorders	31202	Undersocialized conduct disorder, aggressive type, moderate
Disruptive Behavior Disorders	31203	Undersocialized conduct disorder, aggressive type, severe
Disruptive Behavior Disorders	3121	Undersocialized conduct disorder unaggressive
Disruptive Behavior Disorders	31210	Undersocialized conduct disorder, unaggressive type, unspecified
Disruptive Behavior Disorders	31211	Undersocialized conduct disorder, unaggressive type, mild
Disruptive Behavior Disorders	31212	Undersocialized conduct disorder, unaggressive type, moderate
Disruptive Behavior Disorders	31213	Undersocialized conduct disorder, unaggressive type, severe
Disruptive Behavior Disorders	3122	Socialized conduct disorder
Disruptive Behavior Disorders	31220	Socialized conduct disorder, unspecified
Disruptive Behavior Disorders	31221	Socialized conduct disorder, mild

Disruptive Behavior Disorders	31222	Socialized conduct disorder, moderate
Disruptive Behavior Disorders	31223	Socialized conduct disorder, severe
Disruptive Behavior Disorders	3123	Disorders of impulse control NEC
Disruptive Behavior Disorders	31230	Impulse control disorder, unspecified
Disruptive Behavior Disorders	31231	Pathological gambling
Disruptive Behavior Disorders	31232	Kleptomania
Disruptive Behavior Disorders	31233	Pyromania
Disruptive Behavior Disorders	31234	Intermittent explosive disorder
Disruptive Behavior Disorders	31235	Isolated explosive disorder
Disruptive Behavior Disorders	31239	Other disorders of impulse control
Disruptive Behavior Disorders	3124	Mixed disturbance of conduct and emotions
Disruptive Behavior Disorders	3128	Other specified disturbances of conduct NEC
Disruptive Behavior Disorders	31281	Conduct disorder, childhood onset type
Disruptive Behavior Disorders	31282	Conduct disorder, adolescent onset type
Disruptive Behavior Disorders	31289	Other conduct disorder
Disruptive Behavior Disorders	3129	Unspecified disturbance of conduct
Disruptive Behavior Disorders	V40	Mental and behavioral problems
Disruptive Behavior Disorders	V403	Other behavioral problems
Disruptive Behavior Disorders	V4039	Other specified behavioral problem
Disruptive Behavior Disorders	V409	Unspecified mental or behavioral problem
Other Mental Health Diagnosis	2930	Delirium due to conditions classified elsewhere
Other Mental Health Diagnosis	2931	Subacute delirium
Other Mental Health Diagnosis	3003	Obsessive-compulsive disorders
Other Mental Health Diagnosis	30081	Somatization disorder
Other Mental Health Diagnosis	30082	Undifferentiated somatoform disorder
Other Mental Health Diagnosis	3009	Unspecified nonpsychotic mental disorder
Other Mental Health Diagnosis	3014	Obsessive-compulsive personality disorder
Other Mental Health Diagnosis	306	Physiological malfunction arise from mental factors
Other Mental Health Diagnosis	3060	Musculoskeletal malfunction arising from mental factors
Other Mental Health Diagnosis	3061	Respiratory malfunction arising from mental factors
Other Mental Health Diagnosis	3062	Cardiovascular malfunction arising from mental factors
Other Mental Health Diagnosis	3063	Skin disorder arising from mental factors
Other Mental Health Diagnosis	3064	Gastrointestinal malfunction arising from mental factors
Other Mental Health Diagnosis	3066	Endocrine disorder arising from mental factors
Other Mental Health Diagnosis	3067	Disorder of organs of special sense arising from mental factors
Other Mental Health Diagnosis	3068	Other specified psychophysiological malfunction
Other Mental Health Diagnosis	3069	Unspecified psychophysiological malfunction
Other Mental Health Diagnosis	3071	Anorexia nervosa
Other Mental Health Diagnosis	30751	Bulimia nervosa
Other Mental Health Diagnosis	3077	Encopresis
Other Mental Health Diagnosis	V6284	Suicidal ideation
Other Psychotic Disorders	2938	Other spec transient mental d/o due conditions classified elsewhere
Other Psychotic Disorders	29381	Psychotic disorder with delusions in conditions classified elsewhere
Other Psychotic Disorders	29382	Psychotic disorder with hallucinations in conditions classified elsewhere

Other Psychotic Disorders	29383	Mood disorder in conditions classified elsewhere
Other Psychotic Disorders	29384	Anxiety disorder in conditions classified elsewhere
Other Psychotic Disorders	29389	Other specified transient mental disorders due to conditions classified elsewhere, other
Other Psychotic Disorders	2969	Other and unspecified episodic mood disorder
Other Psychotic Disorders	29690	Unspecified episodic mood disorder
Other Psychotic Disorders	29699	Other specified episodic mood disorder
Other Psychotic Disorders	2971	Delusional disorder
Other Psychotic Disorders	2973	Shared psychotic disorder
Other Psychotic Disorders	2978	Other specified paranoid states
Other Psychotic Disorders	2979	Unspecified paranoid state
Other Psychotic Disorders	2981	Excitatory type psychosis
Other Psychotic Disorders	2983	Acute paranoid reaction
Other Psychotic Disorders	2988	Other and unspecified reactive psychosis
Other Psychotic Disorders	2989	Unspecified psychosis
Other Psychotic Disorders	29890	DSM unspecified atypical psychosis
Other Psychotic Disorders	29910	Childhood disintegrative disorder, current or active state
Other Psychotic Disorders	2998	Other spec pervasive developmental disorders
Other Psychotic Disorders	29980	Other specified pervasive developmental disorders, current or active state
Other Psychotic Disorders	29981	Other specified pervasive developmental disorders, residual state
Other Psychotic Disorders	29990	Unspecified pervasive developmental disorder, current or active state
Other Psychotic Disorders	29991	Unspecified pervasive developmental disorder, residual state
Other Psychotic Disorders	3108	Other nonpsychotic mental disorder following organic brain damage
Other Psychotic Disorders	3109	Unspecified nonpsychotic mental disorder following organic brain damage
Personality Disorders	3010	Paranoid personality disorder
Personality Disorders	30110	Affective personality disorder, unspecified
Personality Disorders	30112	Chronic depressive personality disorder
Personality Disorders	3013	Explosive personality disorder
Personality Disorders	30150	Histrionic personality disorder, unspecified
Personality Disorders	30159	Other histrionic personality disorder
Personality Disorders	3016	Dependent personality disorder
Personality Disorders	3017	Antisocial personality disorder
Personality Disorders	3018	Other personality disorders
Personality Disorders	30181	Narcissistic personality disorder
Personality Disorders	30182	Avoidant personality disorder
Personality Disorders	30183	Borderline personality disorder
Personality Disorders	30184	Passive-aggressive personality
Personality Disorders	30189	Other personality disorders
Personality Disorders	3019	Unspecified personality disorder
PTSD	30981	Posttraumatic stress disorder
Schizophrenia	295	Schizophrenic disorders
Schizophrenia	2950	Simple type schizophrenia
Schizophrenia	29500	Simple type schizophrenia, unspecified
Schizophrenia	29501	Simple type schizophrenia, subchronic
Schizophrenia	29502	Simple type schizophrenia, chronic

Schizophrenia	29503	Simple type schizophrenia, subchronic with acute exacerbation
Schizophrenia	29504	Simple type schizophrenia, chronic with acute exacerbation
Schizophrenia	29505	Simple type schizophrenia, in remission
Schizophrenia	2951	Disorganized type schizophrenia
Schizophrenia	29510	Disorganized type schizophrenia, unspecified
Schizophrenia	29511	Disorganized type schizophrenia, subchronic
Schizophrenia	29512	Disorganized type schizophrenia, chronic
Schizophrenia	29513	Disorganized type schizophrenia, subchronic with acute exacerbation
Schizophrenia	29514	Disorganized type schizophrenia, chronic with acute exacerbation
Schizophrenia	29515	Disorganized type schizophrenia, in remission
Schizophrenia	2952	Catatonic type schizophrenia
Schizophrenia	29520	Catatonic type schizophrenia, unspecified
Schizophrenia	29521	Catatonic type schizophrenia, subchronic
Schizophrenia	29522	Catatonic type schizophrenia, chronic
Schizophrenia	29523	Catatonic type schizophrenia, subchronic with acute exacerbation
Schizophrenia	29524	Catatonic type schizophrenia, chronic with acute exacerbation
Schizophrenia	29525	Catatonic type schizophrenia, in remission
Schizophrenia	2953	Paranoid type schizophrenia
Schizophrenia	29530	Paranoid type schizophrenia, unspecified
Schizophrenia	29531	Paranoid type schizophrenia, subchronic
Schizophrenia	29532	Paranoid type schizophrenia, chronic
Schizophrenia	29533	Paranoid type schizophrenia, subchronic with acute exacerbation
Schizophrenia	29534	Paranoid type schizophrenia, chronic with acute exacerbation
Schizophrenia	29535	Paranoid type schizophrenia, in remission
Schizophrenia	2954	Schizophreniform disorder
Schizophrenia	29540	Schizophreniform disorder, unspecified
Schizophrenia	29541	Schizophreniform disorder, subchronic
Schizophrenia	29542	Schizophreniform disorder, chronic
Schizophrenia	29543	Schizophreniform disorder, subchronic with acute exacerbation
Schizophrenia	29544	Schizophreniform disorder, chronic with acute exacerbation
Schizophrenia	29545	Schizophreniform disorder, in remission
Schizophrenia	2955	Latent schizophrenia
Schizophrenia	29550	Latent schizophrenia, unspecified
Schizophrenia	29551	Latent schizophrenia, subchronic
Schizophrenia	29552	Latent schizophrenia, chronic
Schizophrenia	29553	Latent schizophrenia, subchronic with acute exacerbation
Schizophrenia	29554	Latent schizophrenia, chronic with acute exacerbation
Schizophrenia	29555	Latent schizophrenia, in remission
Schizophrenia	2956	Schizophrenic disorders residual type
Schizophrenia	29560	Schizophrenic disorders, residual type, unspecified
Schizophrenia	29561	Schizophrenic disorders, residual type, subchronic
Schizophrenia	29562	Schizophrenic disorders, residual type, chronic
Schizophrenia	29563	Schizophrenic disorders, residual type, subchronic with acute exacerbation
Schizophrenia	29564	Schizophrenic disorders, residual type, chronic with acute exacerbation

Schizophrenia	29565	Schizophrenic disorders, residual type, in remission
Schizophrenia	2957	Schizoaffective disorder
Schizophrenia	29570	Schizoaffective disorder, unspecified
Schizophrenia	29571	Schizoaffective disorder, subchronic
Schizophrenia	29572	Schizoaffective disorder, chronic
Schizophrenia	29573	Schizoaffective disorder, subchronic with acute exacerbation
Schizophrenia	29574	Schizoaffective disorder, chronic with acute exacerbation
Schizophrenia	29575	Schizoaffective disorder, in remission
Schizophrenia	2958	Other specified types of schizophrenia
Schizophrenia	29580	Other specified types of schizophrenia, unspecified
Schizophrenia	29581	Other specified types of schizophrenia, subchronic
Schizophrenia	29582	Other specified types of schizophrenia, chronic
Schizophrenia	29583	Other specified types of schizophrenia, subchronic with acute exacerbation
Schizophrenia	29584	Other specified types of schizophrenia, chronic with acute exacerbation
Schizophrenia	29585	Other specified types of schizophrenia, in remission
Schizophrenia	2959	Unspecified schizophrenia
Schizophrenia	29590	Unspecified schizophrenia, unspecified
Schizophrenia	29591	Unspecified schizophrenia, subchronic
Schizophrenia	29592	Unspecified schizophrenia, chronic
Schizophrenia	29593	Unspecified schizophrenia, subchronic with acute exacerbation
Schizophrenia	29594	Unspecified schizophrenia, chronic with acute exacerbation
Schizophrenia	29595	Unspecified schizophrenia, in remission
Sleep Disorders	3074	Specific disorders of sleep of nonorganic origin
Sleep Disorders	30740	Nonorganic sleep disorder, unspecified
Sleep Disorders	30741	Transient disorder of initiating or maintaining sleep
Sleep Disorders	30742	Persistent disorder of initiating or maintaining sleep
Sleep Disorders	30745	Circadian rhythm sleep disorder of nonorganic origin
Sleep Disorders	30746	Sleep arousal disorder
Sleep Disorders	30747	Other dysfunctions of sleep stages or arousal from sleep
Sleep Disorders	30748	Repetitive intrusions of sleep
Sleep Disorders	30749	Other specific disorders of sleep of nonorganic origin
Sleep Disorders	327	Organic sleep disorders
Sleep Disorders	3270	Organic disorders initiating & maintaining sleep
Sleep Disorders	32730	Circadian rhythm sleep disorder, unspecified
Sleep Disorders	32731	Circadian rhythm sleep disorder, delayed sleep phase type
Sleep Disorders	32732	Circadian rhythm sleep disorder, advanced sleep phase type
Sleep Disorders	32733	Circadian rhythm sleep disorder, irregular sleep-wake type
Sleep Disorders	32734	Circadian rhythm sleep disorder, free-running type
Sleep Disorders	32735	Circadian rhythm sleep disorder, jet lag type
Sleep Disorders	32737	Circadian rhythm sleep disorder in conditions classified elsewhere
Sleep Disorders	32739	Other circadian rhythm sleep disorder
Sleep Disorders	7805	Sleep disturbances
Sleep Disorders	78050	Sleep disturbance, unspecified
Sleep Disorders	V694	Lack of adequate sleep

