

# Program Outcomes

Evaluating, Measuring, and Identifying  
Patient Care Benefits and Cost Reduction

## Kansas Medical Assistance Programs Retrospective Drug Utilization Review Provider Education and Intervention Program

### State Fiscal Year 2011 Intervention Outcomes Reports

Prepared by Health Information Designs  
March 2012



[www.hidinc.com](http://www.hidinc.com)



## Executive Summary

This *Outcomes Assessment* report prepared for the Kansas Medical Assistance Programs shows the expected improvements in beneficiary health and cost savings from using retrospective drug utilization review and provider education to effect appropriate prescribing and utilization and, in turn, prevent adverse drug reactions and reduce costs in a targeted beneficiary population.

### Program Summary

In an effort to improve clinical outcomes and reduce drug expenditures as well as related health care costs, Kansas Medical Assistance Programs beneficiaries found to have a drug therapy issue based upon the intervention topics were identified, and educational intervention letters were mailed to their prescribers in State Fiscal Year (SFY) 2011. The selected beneficiaries were then evaluated 6 months after the prescriber letters were mailed to determine the impact of the intervention letters. This report is a summary of all interventions mailed in SFY 2011.

In SFY 2011 Intervention letters were mailed on five topics including: Utilization of Drugs with Abuse Potential in Patients with a History of Drug Abuse, Appropriate ADHD Treatment, Appropriate Narcotic Utilization, Increased Risk of Serotonin Syndrome, and Psychotropics in Children and Adolescents.

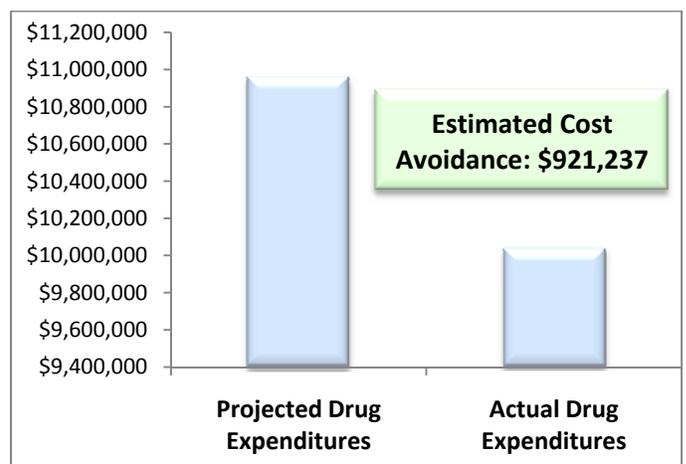
### Changes in Criteria Exceptions

For all intervention letters mailed in SFY 2011, at the 6-month evaluation post intervention, appropriate utilization was significantly improved in the target population. Six months after letters were mailed to the prescribers, 2,493 of the original 3,144 beneficiaries had at least one claim for any drug and could be evaluated. **Of those remaining 2,493 beneficiaries, 54.1% were found to no longer have the same therapy problem that their prescriber received a letter regarding.** Based on improved utilization, it is clinically probable that serious adverse outcomes were avoided, and overall drug utilization was significantly reduced.

PRE-Intervention	POST-Intervention		
Beneficiaries with Letter Mailed to Prescriber	Beneficiaries with Any Drug Claim	Beneficiaries with Same Criteria Exception	% Decrease in Criteria Exceptions
3,144	2,493	1,145	54.1%

### Cost Avoidance for Kansas Medical Assistance Programs

Actual drug expenditures for the post intervention period were compared to projected drug expenditures for all intervention letters mailed in SFY 2011. For the 6-month post-intervention period, actual drug expenditures for the intervention population were \$10,035,776 compared to the projected cost of \$10,957,013, **an estimated cost avoidance of \$921,237 for the 6 months following the mailing of intervention letters.**



## Background

Health Information Designs (HID), in coordination with HP Enterprise Services (HPES), currently performs retrospective drug utilization review (RetroDUR) for Kansas Medical Assistance Programs' fee-for-service population. The total number of unique beneficiaries enrolled in the traditional Medicaid fee-for-service population in State Fiscal Year (SFY) 2011 (July 1, 2010 – June 30, 2011) was 292,522, with an average of 158,846 beneficiaries per month. Prescription claims for approximately 51,000 beneficiaries were processed each month in SFY 2011.

### **Beneficiary Identification and Prescriber Intervention**

In an effort to promote appropriate prescribing and utilization of medications, HID identified beneficiaries with drug therapy problems based upon each intervention topic and mailed educational letters to their prescribers. When more than one prescriber was attributed to pertinent claims on a patient profile, letters were mailed to all relevant prescribers. Informing prescribers of a patients' complete drug and diagnosis history, including medications prescribed by other providers, may reduce duplicate prescribing of medications.

While the intervention letter itself only addressed the intervention topics, HID included a patient profile with up to two additional alert messages regarding drug therapy issues and a 6-month history of drug claims and diagnoses along with the letter. Prescribers had the opportunity to review the entire beneficiary drug and diagnoses history, including medications prescribed by other providers, and make changes to therapies based upon this information. For this reason, whenever intervention letters are sent to prescribers, the impact on total drug utilization should be measured. Therefore, total drug utilization in the targeted population was evaluated for 6 months before and after intervention letters were mailed to determine any change in drug cost.

## Analysis Methodology

Each month HID evaluates Kansas Medical Assistance Programs pharmacy claims data against thousands of proprietary criteria. The criteria are developed and maintained by HID clinical pharmacists who review package insert updates as well as medical literature to develop the criteria.

### Beneficiary Selection

A total of 4,705 beneficiaries met the criteria for intervention letters. The drug history profile for each beneficiary was reviewed by a clinical pharmacist to determine if the beneficiary should be selected for intervention.

After beneficiaries were selected for intervention, educational intervention letters—along with a complete drug and diagnosis history profile listing all pharmacy and available diagnosis claims data for the past 6 months—were mailed to the appropriate prescribers. (Prior to mailing, generated letters undergo a quality assurance (QA) process. Some letters are not mailed due to various reasons, including missing or invalid prescriber addresses.)

	Beneficiaries Reviewed	Beneficiaries Selected for Intervention	Beneficiaries Actually Intervened	Letters Generated	Letters Deleted in QA Process	Letters Mailed
<b>Serotonin Syndrome</b>	935	741	677	1,017	159	858
<b>Appropriate Narcotics</b>	714	540	533	596	8	588
<b>ADHD</b>	1,032	609	554	637	59	578
<b>History of Abuse</b>	1,016	756	688	771	73	698
<b>Psychotropics &lt;18 years</b>	1,008	712	692	712	12	700
<b>Totals</b>	<b>4,705</b>	<b>3,358</b>	<b>3,144</b>	<b>3,733</b>	<b>311</b>	<b>3,422</b>

Once a beneficiary was selected for intervention, the criteria were suppressed by the DUR system for that beneficiary for 6 months.

### Prescriber Response Tabulation

The intervention letter and drug history profile included a response form, which allowed the prescriber to provide feedback and enabled HID to determine whether any action would be taken in response to the letter. The response form includes standard responses printed on the form that allow the prescriber to check a box for the response that best fits their intended action as well as space for written in comments from the prescriber.

The prescribers were encouraged to return the response forms using the self-addressed stamped envelope included with the intervention letter or via fax. HID tracked all response forms returned as well as all written-in comments from prescribers for evaluation. See the [Results](#) section for these numbers.

## Evaluation of Changes in Criteria Exceptions

In an effort to determine the impact of the intervention letters independent of prescriber responses, beneficiary claims were evaluated 6 months after letters were mailed. HID first determined how many of the initially-selected beneficiaries continued to have Medicaid benefits and still had active eligibility by determining how many had any claim for any drug in the last month of the post-intervention period. Following that, HID determined who still met the same criteria in the last month of the post-intervention period. See the [Results](#) section for these numbers.

## Estimated Cost Avoidance and Changes in Drug Utilization

To determine the impact of the intervention letters on overall drug expenditures, total drug utilization (claims for all drugs) in the targeted population was evaluated 6 months before and 6 months after intervention letters were mailed. HID then compared drug expenditures and utilization in the targeted population for the pre- and post- intervention time frames with a comparison group to determine the estimated impact of the intervention letters.

The comparison group consisted of fee-for-service beneficiaries who were identified using the same criteria, but whose prescribers did not receive an intervention letter because they did not hit the intervention criteria in the same month that intervention letters were mailed.

For a beneficiary to be included in the analysis for either the intervention or comparison groups, he or she had to have at least one claim for any drug in the month at the beginning of the pre-intervention period and the month at the end of the post-intervention period.

Estimated cost avoidance and projected drug expenditures were determined for the intervention group by using the percent change from pre-to post-intervention in both groups, using the following equations:

**Estimated Cost Avoidance = Intervention Group Pre-Intervention Cost X ((% Change Comparison Group - % Change Intervention Group)/100)**

**Projected Drug Expenditures = Estimated Cost Avoidance + Post-Intervention Drug Expenditures**

The same equations were used to determine the estimated claims avoided. See the [Results](#) section for changes in drug utilization and expenditures.

**Limitations**

One limitation resulted from the fact that no eligibility data was available to determine whether beneficiaries continued to be eligible for Medicaid for the full 6 months before and after intervention letters were mailed. Therefore, as a means to test for Medicaid eligibility when calculating cost avoidance, HID determined how many beneficiaries had any claim for any drug during the first month of the pre-intervention period and the last month of the post-intervention period. Those beneficiaries who did not have claims in both months were not included in the follow up analysis. It is possible that some patients may have been excluded from the follow up analysis who continued to have Medicaid eligibility but had no recent pharmacy claims.

A similar eligibility process was applied to the changes in criteria exceptions. Since the change in criteria exceptions only dealt with the month the letter was mailed and 6 months after the letter was mailed, drug claims during the month of the 6-month follow up were examined to determine eligibility.

The reduction in drug utilization and expenditures could be effected by multiple factors; it would be impossible to attribute the changes in utilization and expenditures to one thing—including the intervention letters. The comparison group is used to evaluate these factors, as many of them affect the entire Medicaid fee-for-service population. One factor that could possibly have changed the prescribing and utilization trends of controlled substances was the implementation of the Kansas Prescription Drug Monitoring Program, K-TRACS, in April 2011.

## Results

### Prescriber Responses to Intervention Letters

A total of 936 coded responses were received from prescribers who were sent an intervention letter in SFY 2011, for a response rate of 27.4%. Coded responses for each intervention are in the table below:

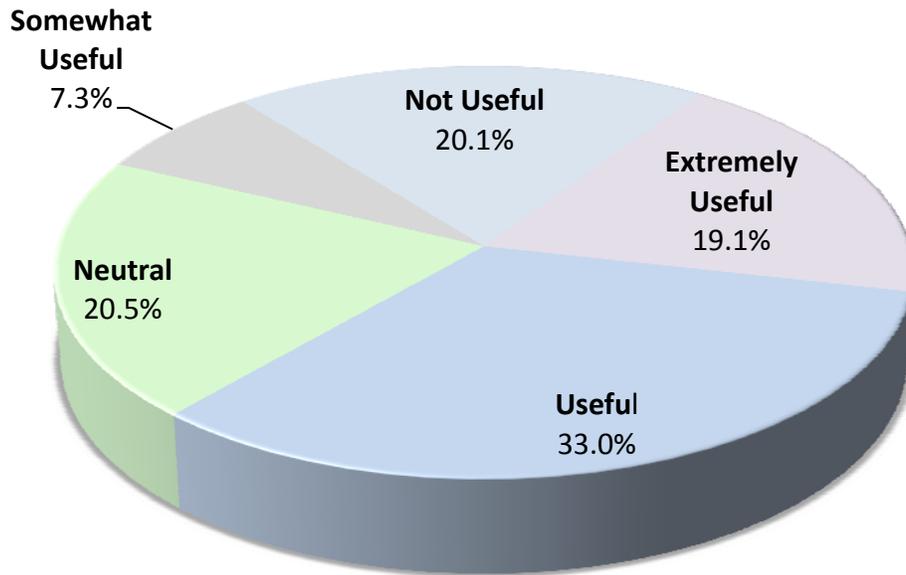
Response	Serotonin Syndrome	Appropriate Narcotics	ADHD	History of Abuse	Psychotropics <18 years	Total
Benefits of the drug outweigh the risk	53	6	26	8	12	105
Reviewed information and continuing therapy without change	67	78	97	87	101	430
Beneficiary no longer under this prescribers care	20	14	5	29	6	74
Prescriber will modify drug therapy	21	23	5	0	4	53
Beneficiary has not been seen recently	8	4	5	6	2	25
Prescriber unaware of other prescribers	7	4	0	4	0	15
Tried to modify drug therapy, beneficiary is non-cooperative	2	16	1	2	0	21
Beneficiary recently deceased	0	3	1	1	0	5
Beneficiary was never under this prescribers care	8	2	11	9	2	32
Has appointment to discuss therapy	11	29	4	11	4	59
Prescriber did not write prescription attributed to them	20	1	5	5	8	39
Tried to modify therapy, symptoms reoccurred	1	8	2	2	2	15
Prescribed medication while covering for other MD or in the ER	9	2	5	5	1	22
Response form returned blank	8	11	7	8	7	41
<b>Total Responses</b>	<b>235</b>	<b>201</b>	<b>174</b>	<b>177</b>	<b>149</b>	<b>936</b>
<b>Response Rate</b>	<b>27.4%</b>	<b>34.2%</b>	<b>30.1%</b>	<b>25.4%</b>	<b>21.3%</b>	<b>27.4%</b>

### Prescriber Feedback on Intervention Letters

In addition to being able to provide information about their course of action following receipt of the intervention letter, prescribers are also able to provide additional feedback on intervention letters. Out of the 936 coded responses received, 740 provided additional feedback. A total of 52.1% of feedback responses ranked the letters as 'Useful' or 'Extremely useful'. A chart showing the percentage of responses in each evaluation category is shown below:

	Serotonin Syndrome	Appropriate Narcotics	ADHD	History of Abuse	Psychotropics <18 years	Totals
<b>Extremely Useful</b>	41	43	19	23	15	141
<b>Useful</b>	78	56	37	38	35	244
<b>Neutral</b>	35	36	33	30	18	152
<b>Somewhat Useful</b>	13	11	5	14	11	54
<b>Not Useful</b>	22	24	36	29	38	149
<b>Total Responses</b>	<b>189</b>	<b>170</b>	<b>130</b>	<b>134</b>	<b>117</b>	<b>740</b>

### Prescriber Evaluations



### Changes in Criteria Exceptions

A total of 3,144 beneficiaries were selected for intervention. Six months after letters were mailed to the prescriber, 2,493 of the original 3,144 beneficiaries had at least one (1) claim for any drug and could be evaluated. Of those 2,493 beneficiaries, 1,145 (45.9%) were found to hit the same criteria in the follow up period, meaning they had the same therapy problem post-intervention that their prescriber received a letter regarding. **The remaining 1,348 beneficiaries (54.1%) were found to no longer have the same therapy problem that their prescriber received a letter regarding.**

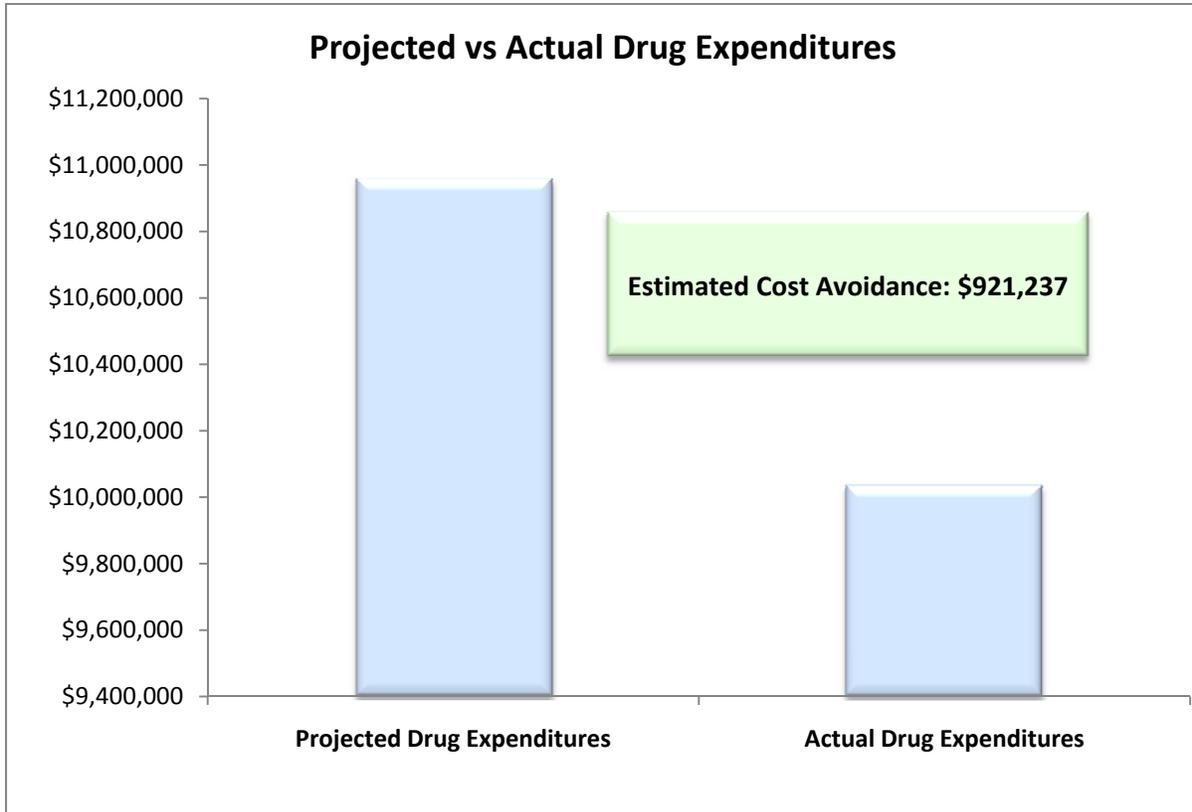
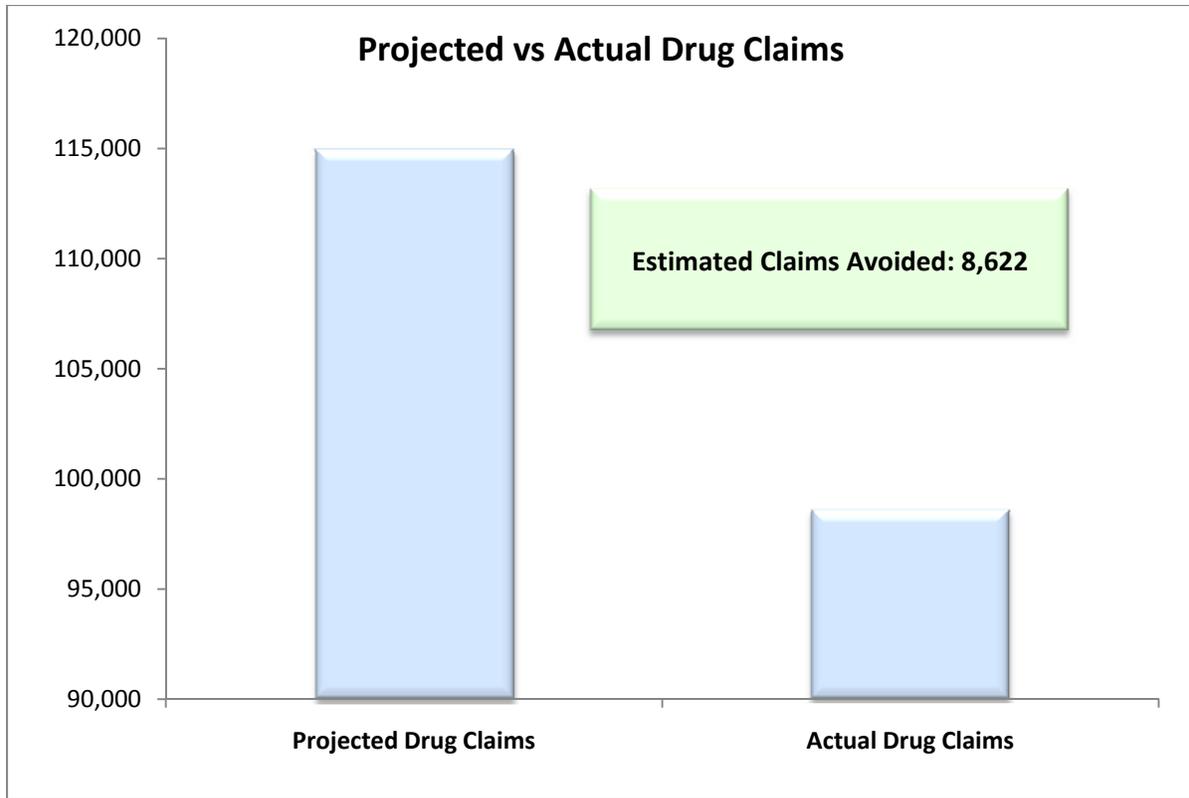
	PRE-Intervention	POST-Intervention		
	Beneficiaries with Letter Mailed to Prescriber	Beneficiaries with Any Drug Claim	Beneficiaries with Same Criteria Exception	% Decrease in Criteria Exceptions
Serotonin Syndrome	677	595	326	45.2%
Appropriate Narcotics	533	441	164	62.8%
ADHD	554	415	189	54.5%
History of Abuse	688	482	111	77.0%
Psychotropics <18 years	692	560	355	36.6%
	<b>3,144</b>	<b>2,493</b>	<b>1,145</b>	<b>54.1%</b>

### Total Drug Utilization and Estimated Cost Avoidance in Targeted Population

For the intervention and comparison group beneficiaries who had claims for any drug during the beginning of the pre-intervention and end of the post-intervention periods, HID evaluated total drug expenditures and claims for the 6 months prior to, and 6 months after, letters were mailed <sup>1</sup>.

	Serotonin Syndrome	Appropriate Narcotics	ADHD	History of Abuse	Psychotropics <18 years	Totals
Number of Intervention Group Beneficiaries	531	436	389	453	516	2,325
Number of Comparison Group Beneficiaries	476	418	341	416	369	2,020
Projected Intervention Group Post-Intervention Cost	\$3,216,266	\$2,311,162	\$1,270,426	\$2,129,424	\$2,029,735	\$10,957,013
Estimated Cost Avoidance	\$244,955	\$291,551	\$55,246	\$115,442	\$214,043	\$921,237
Projected Intervention Group Post-Intervention Claims	37,611	28,366	13,153	20,815	15,032	114,978
Estimated Claims Avoided	2,827	2,331	1,136	1,054	1,273	8,622

<sup>1</sup> Calculation amounts may vary slightly due to rounding



## Results Discussion

Within the targeted beneficiary population, improvements in utilization of drug therapies were noted. All drug claims data and some diagnosis data is available for analysis. Any diagnosis data available is processed along with the pharmacy claims data to provide as complete a drug and diagnosis history as possible for each beneficiary. Medical data that includes the cost associated with hospitalization, doctor visits, and emergency room visits is not analyzed as part of the RetroDUR program. However, it is suspected by reducing therapy problems—including inappropriate use of drugs and increased risk for drug interactions—other medical associated costs due to adverse drug reactions, drug abuse, and diversion would be reduced in addition to the reduction in drug expenditures.

## Conclusion

The prescribing and utilization of drugs improved after intervention letters were mailed to prescribers for targeted beneficiaries. For beneficiaries with data available for follow up 6 months after letters were mailed, 54.1% of them no longer met the same criteria. Claims data for 6 months before and after intervention letters were mailed was evaluated and compared, showing a cost avoidance of drug expenditures of over \$921,237 in the 6-month time period following the mailing of the intervention letters.

Claims data for 6 months before and after intervention letters were mailed was evaluated and compared, showing a cost avoidance of drug expenditures of over \$921,237 in the 6-month time period following the mailing of the intervention letters.

Prescribers were encouraged to return response forms to indicate their intended action following the receipt of the intervention letter and patient profile. The overall response rate for SFY 2011 was 27.4%; 936 response forms indicating the prescriber's intended action were returned, and 740 feedback forms were returned. Prescriber feedback showed 52.1% of the feedback responses ranked the intervention letters as 'Extremely Useful' or 'Useful'.