

University of Utah

College of Pharmacy



Drug Regimen Review Center
Annual Report
July 2004 to June 2005

The University of Utah College of Pharmacy began operating the Drug Regimen Review Center (DRRC) in May 2002 to complete the requirements of a contract with Utah Medicaid. The contract supports the Utah Medicaid prescription drug program and the seven prescription limit. The emphasis of the program is to improve drug use in Medicaid patients, to reduce the number of prescriptions and drug cost in high utilizers of the Medicaid drug program, and to educate prescribers for top utilizers of the Utah Medicaid prescription drug program.

Each month, the top drug utilizers are reviewed by a team of clinically trained pharmacists. These reviews result in recommendations that are made to prescribers. These recommendations are described later in this report. Recommendations are transmitted in writing, are sent to all prescribers, and include a list of drugs dispensed during the month of review. The DRRC also provides information and consultation by telephone with prescribers and pharmacists.

Staff

The DRRC utilizes a staff of professionals to run the program including:

Pharmacists

Gary M. Oderda, Pharm.D., M.P.H.
Joanne LaFleur, Pharm.D.
CarrieAnn McBeth, Pharm.D.
Karen Gunning, Pharm.D.
Carin Steinvooort, Pharm.D.
Lynda Oderda, Pharm.D.

Data Management

Brian Oberg
Lisa Angelos
David Servatius

Mission

The mission of the DRRC is to review the drug therapy of Medicaid patients receiving more than seven prescriptions per month and to work with the individual prescribers to provide the safest and highest quality pharmacotherapy at the lowest cost possible.

Methodology

DRRC program methodology continues with no change from previous reports. We continue to build a cross-reference table of prescriber identification numbers, prescriber license numbers and DEA numbers that now contains 46,246 listings covering all known license addresses. We have also utilized this information to assist Utah Medicaid in preparing data and identifying prescribers as part of a contract with Comprehensive Neurosciences.

We continue to send letters to prescribers with recommendations for changes in drug therapy as appropriate. To date, we have sent 21,607 letters to 6,156 prescribers with recommendations concerning 5,684 Medicaid patients.

Overview

Utah Medicaid drug claim costs have increased over the past several years. The total increase in these costs from January 2002 to June 2005 has been approximately 64.3%. More recently, the total number of claims increased from 270,455 to 297,408 per month (10%) during the 12 month reporting period from July 2004 to June 2005 while drug costs increased from \$16,586,483 to \$ 19,306,245 per month (16%) during this same period.

Figures 1 and 2 show the total number of Medicaid pharmacy claims and the total cost of these claims for each month during the reporting period from July 2004 to June 2005, and Figure 3 shows the trend in total drug claim costs during the entire project period from January 2002 to June 2005.

Figure 1 – Total Medicaid Drug Claims by Month from July 2004 to June 2005

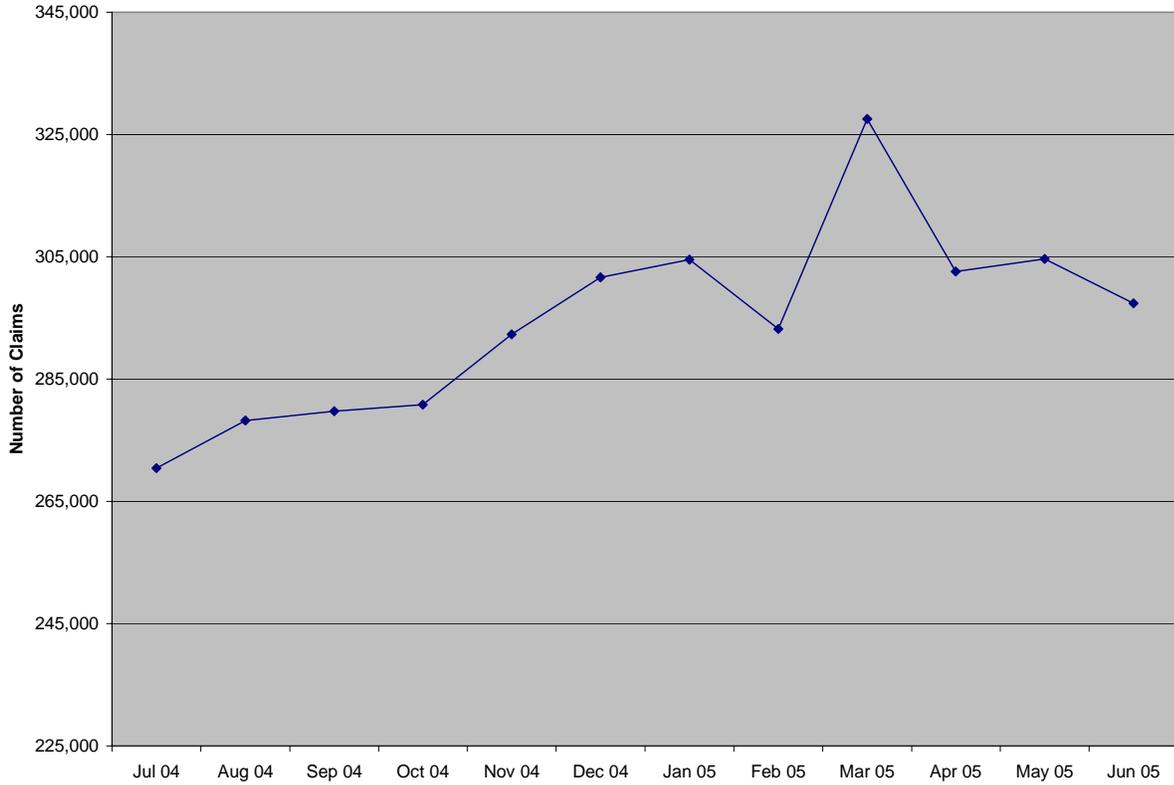


Figure 2 – Total Medicaid Drug Claim Costs by Month from July 2004 to June 2005

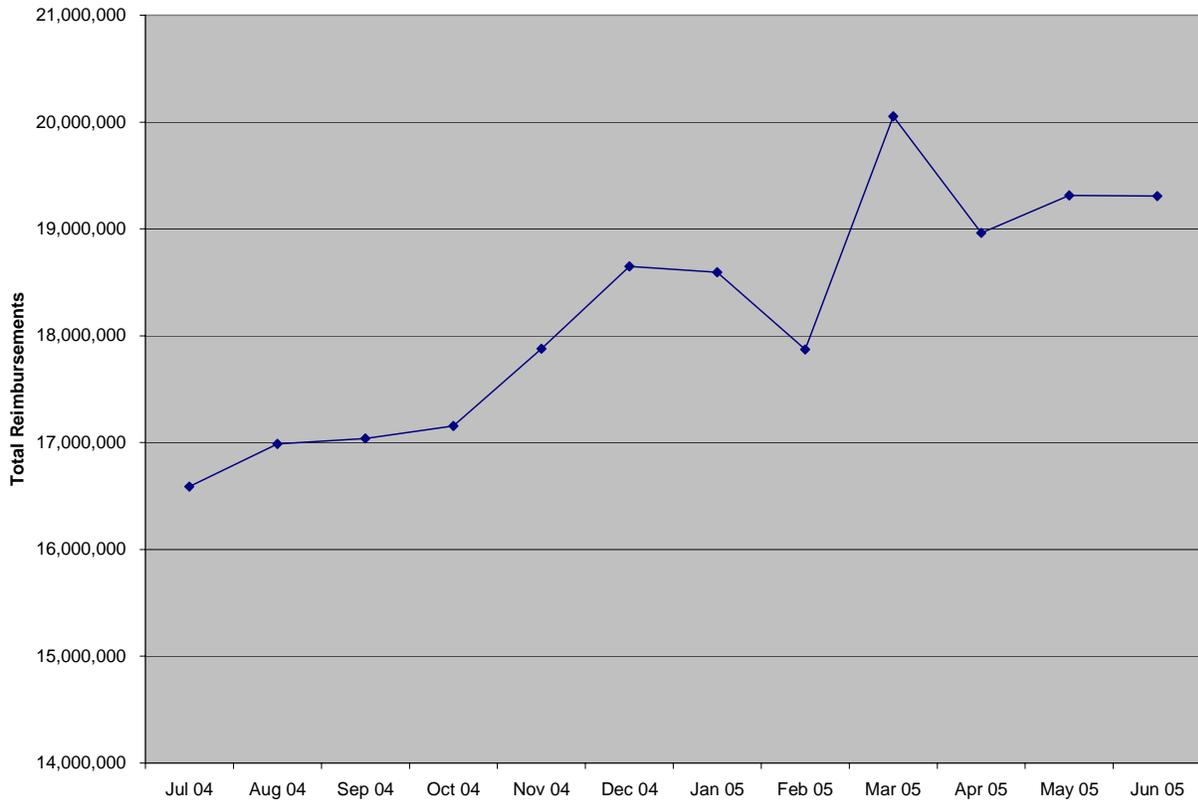
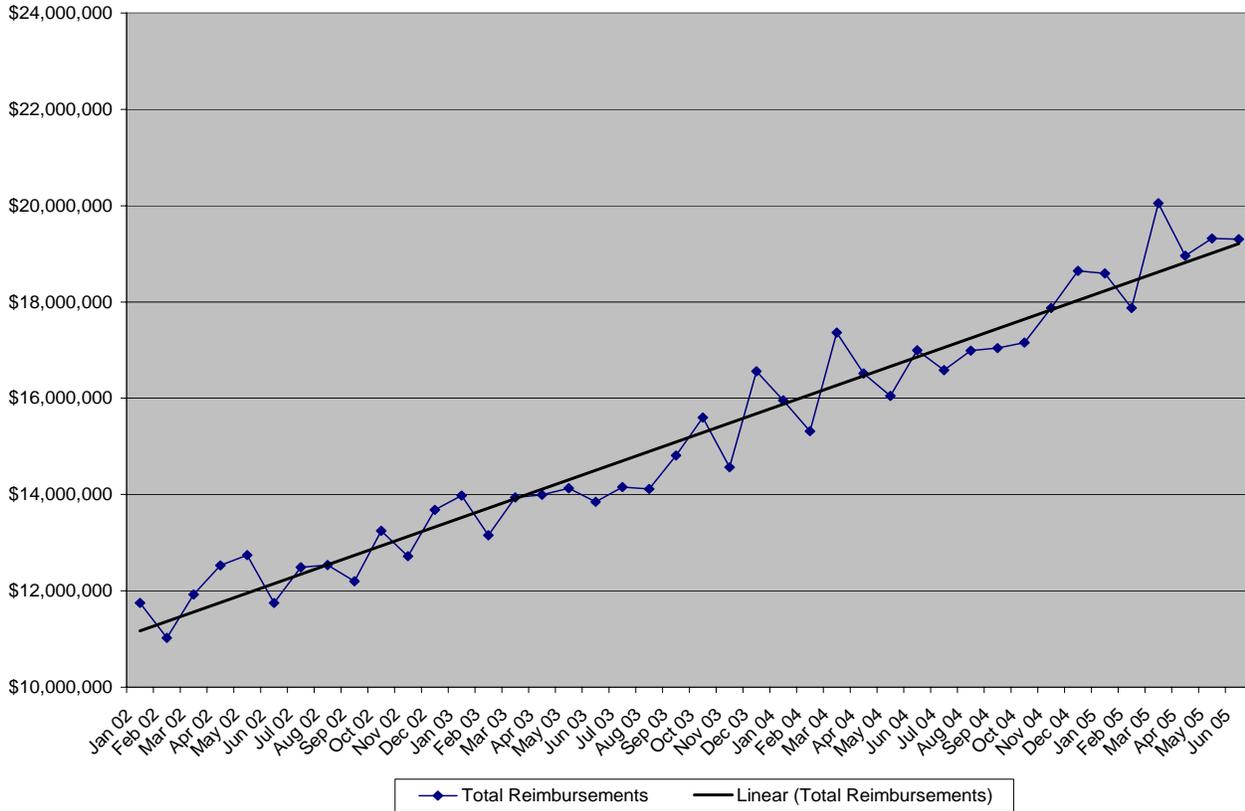


Figure 3 – Total Medicaid Drug Program Costs From January 2002 to June 2005

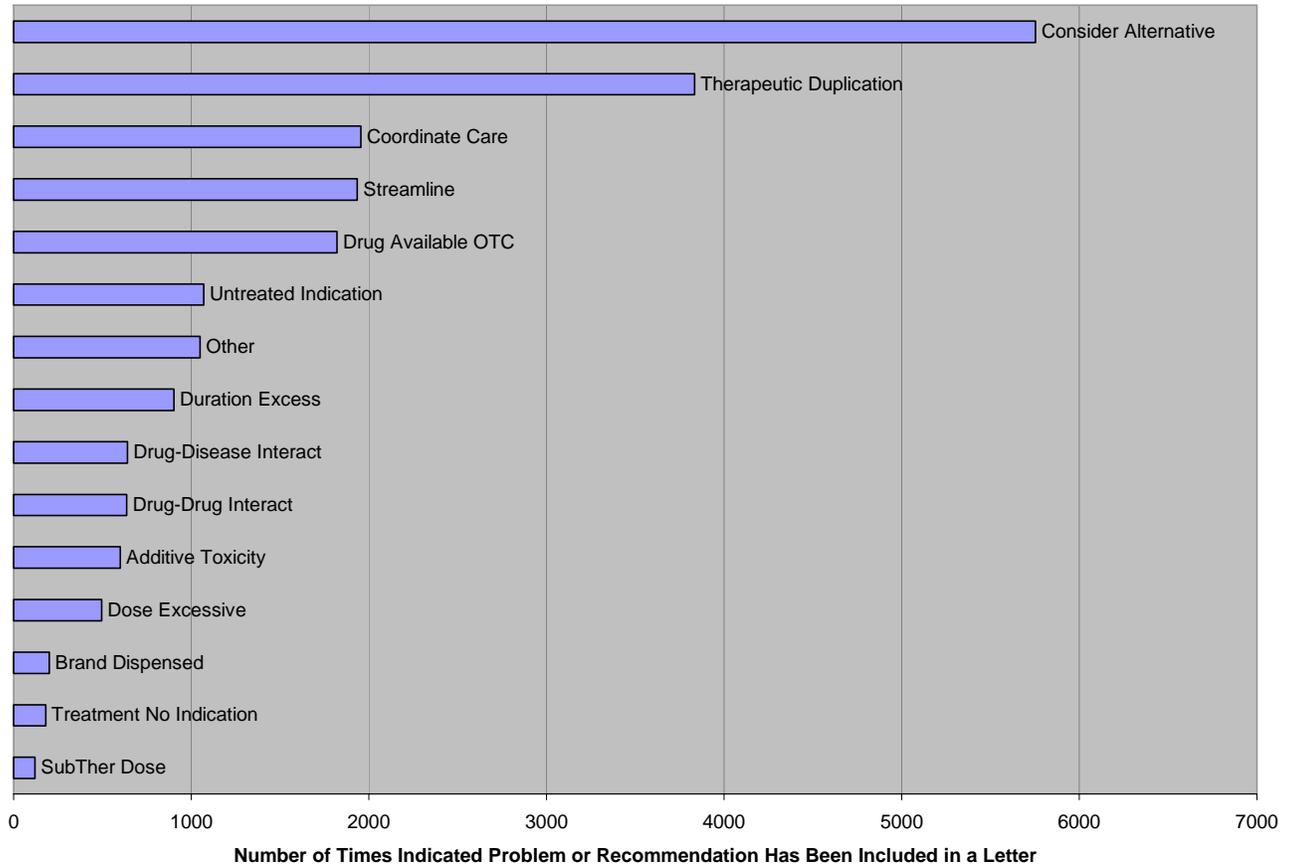


Additional Figures for each fiscal year from 2001 to present are included in the Appendix. Increases for the previous three fiscal years, as determined by the trend line, were 14.6% (July 2002 to June 2003), 19.2% (July 2003 to June 2004) and 18.2% (July 2004 to June 2005).

Program Summary

Figure 4 summarizes the drug related problems identified in the letters that have been sent to prescribers.

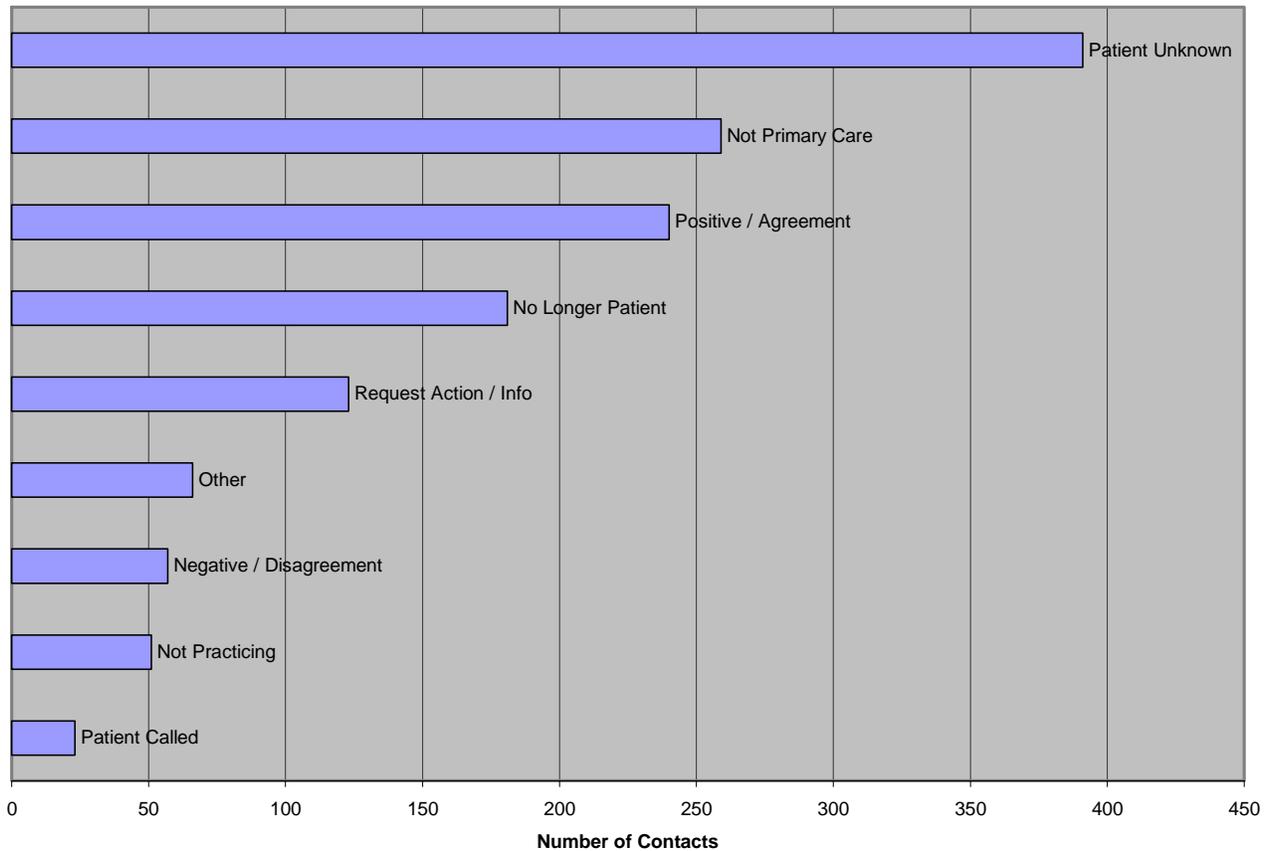
Figure 4 – Type of Drug Related Problems and Recommendations in Letters Sent to Prescribers



Recommendation categories outlined above are self-explanatory, although the top five categories do deserve further description. The most common recommendation was to Consider Alternative Therapy. This recommendation can be made for a number of reasons, including considering a less costly alternative. Therapeutic Duplication recommendations are made when the patient is taking multiple therapeutic agents for the same indication when there is generally no reason to include therapy with more than one agent. Coordinate Care relates to situations where it appears that multiple prescribers are ordering therapy for what appears to be the same illness, and streamline refers to considering changes in therapy to eliminate some of the drugs dispensed. As more drugs have moved to non-prescription (OTC) status, the DRRC has made recommendations for considering less costly OTC products when an OTC drug is available for the agent dispensed as a prescription agent, or if the patient could be treated with a different OTC agent rather than the agent prescribed.

Figure 5 summarizes the responses of the 1,176 prescribers who contacted the DRRC after receiving a letter.

Figure 5 – Types of Prescriber Responses to Letters Received



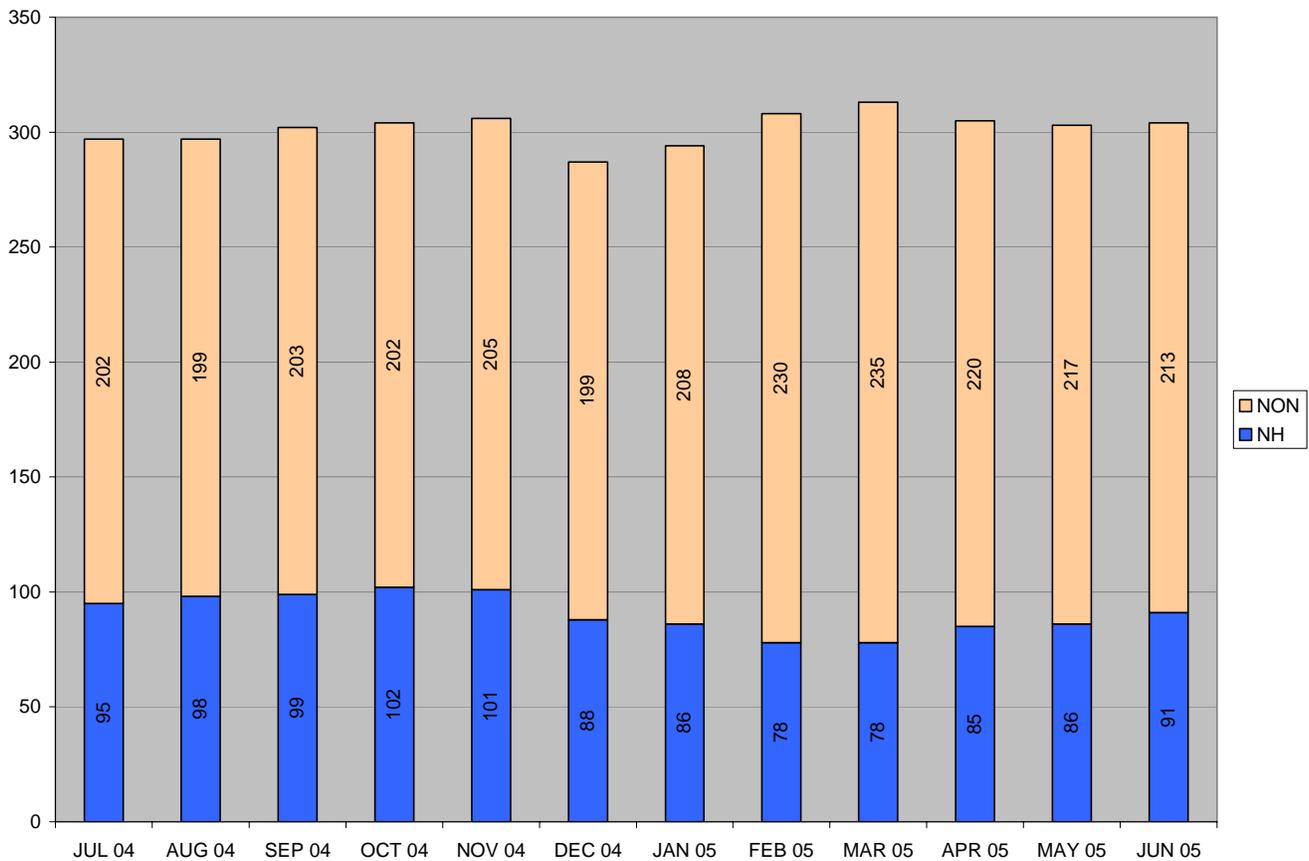
We have received a variety of comments from the prescribers, including both agreement with recommendations and some disagreement. We have also encountered some administrative problems such as pharmacy input error, incorrect addresses on file, and patients not being treated by the prescriber identified. As a result of verification procedures we have implemented, the incidence of these types of problems has gone down dramatically since the beginning of the program.

Demographics

The 3,620 patients reviewed from July 2004 to June 2005 were separated into cohorts based on the month they were reviewed.

Figure 6 summarizes the number of patients reviewed each month during this period, with the numbers of nursing home and ambulatory patients separated. The average was slightly over 300 per month. Approximately 30% of reviewed patients were nursing home patients.

Figure 6 – Summary of Nursing Home and Ambulatory Patients Reviewed Each Month from July 2004 to June 2005



Demographics for these cohorts are displayed in Table 1 and include gender, average age, and the average number of prescriptions dispensed. Nursing home patients are not included in this table.

Table 1 – Cohort Demographics

Patients								
MONTH	Females				Males			
	Percent	Mean Age	Mean # Rx	Mean \$ Cost Per RX	Percent	Mean Age	Mean # Rx	Mean \$ Cost Per RX
Jul 04	81.7	54.1	19.3	\$62.69	18.3	52.9	19.1	\$63.20
Aug 04	78.4	54.1	17.9	\$60.97	21.6	49.3	18.3	\$72.66
Sep 04	78.3	53.4	17.5	\$60.74	21.7	52.9	17.2	\$74.30
Oct 04	72.3	54.0	16.9	\$62.35	27.7	52.8	17.1	\$76.99
Nov 04	72.7	53.8	18.1	\$57.92	27.3	54.1	17.5	\$70.10
Dec 04	75.9	52.3	21.5	\$62.61	24.1	55.0	21.2	\$70.52
Jan 05	75.0	50.8	17.8	\$65.30	25.0	48.9	18.2	\$80.15
Feb 05	79.6	48.8	16.5	\$65.64	20.4	51.1	17.1	\$78.67
Mar 05	82.1	53.8	18.2	\$61.48	17.9	50.5	17.9	\$70.15
Apr 05	80.5	51.9	16.3	\$57.97	19.5	49.8	16.5	\$84.39
May 05	72.4	54.1	18.1	\$61.85	27.6	55.5	17.9	\$75.19
Jun 05	72.3	51.4	16.6	\$61.54	27.7	51.8	15.8	\$67.55

Reviewed ambulatory patients during the reporting period were predominantly females in their 50s who filled on average between sixteen and eighteen prescriptions per month.

Program Trends

The following two figures show the number of patients exceeding seven prescriptions per month and the average number, and range, of the number of prescriptions for the reviewed cohorts. Approximately 8,000 or more patients filled seven prescriptions per month. The mean number of prescriptions that triggered review generally ranged from 15 to 20 while the maximum number for reviewed patients exceeded 35.

Figure 7 – Total Number of Ambulatory Medicaid Patients Exceeding Seven Prescriptions per Month between July 2004 and June 2005

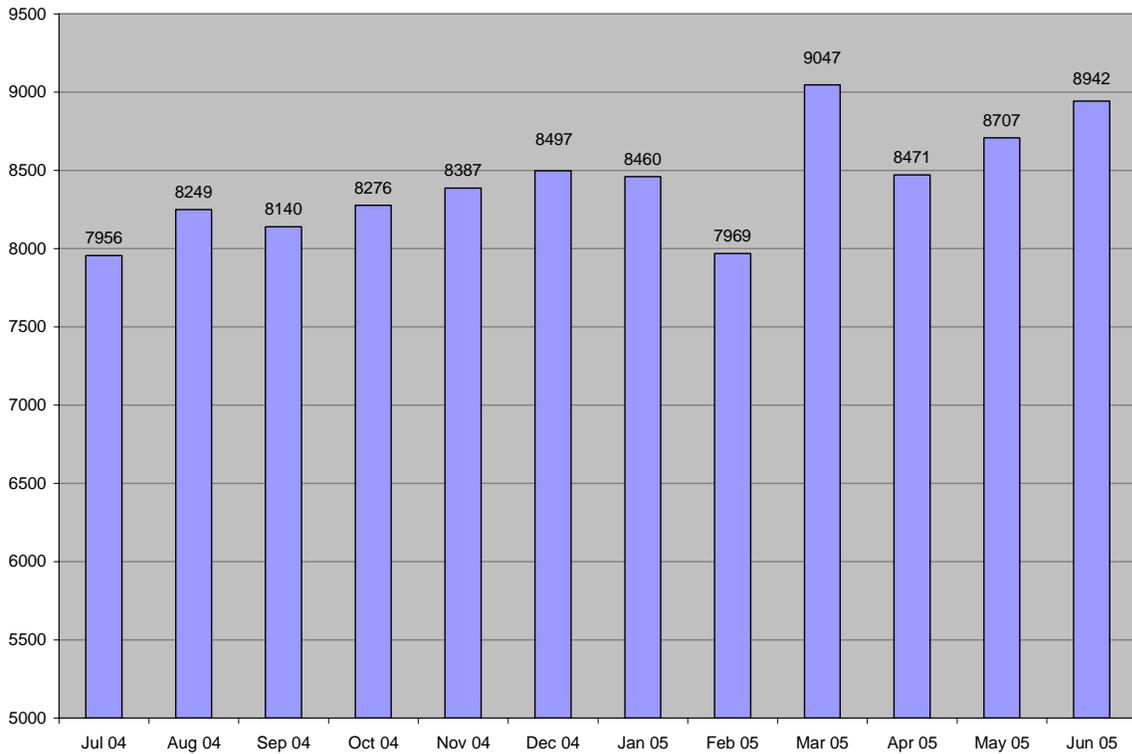
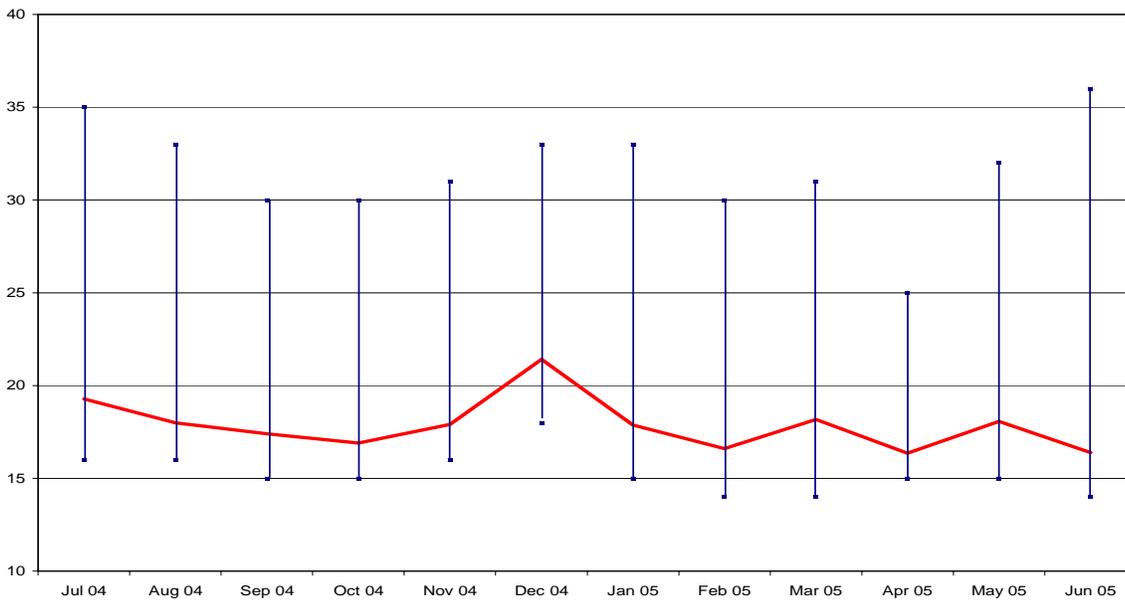


Figure 8 – Average Number of Prescriptions per Month per Reviewed Ambulatory Medicaid Patient, including Minimum and Maximum Number of Prescriptions per Review Group



Program Effectiveness

The DRRC’s two major goals are to improve pharmacotherapy for Medicaid patients and to reduce health care costs by decreasing the number of prescriptions and prescription cost. As the review process has matured, we have increased the number of telephone calls to providers to discuss drug related problems. Because of that, we have more information on the impact of our reviews. The following four patient presentations describe representative examples of the types of patients being reviewed, and the outcome of those reviews.

Patient 1

A 73 year old female patient’s drug regimen was reviewed for the month of March 2005. This patient had been filling prescriptions for both warfarin 10 mg tablets and 5 mg tablets, a total dose of 15 mg daily, for approximately 9 months. Then, she began receiving 4 mg tablets (#60) as well for a total daily dose of 23 mg of warfarin. She received this extremely high dose for two months. It was also noted that this patient had a history of GI bleeds per ICD-9 diagnosis codes. We contacted both the pharmacy and prescriber’s office by phone and determined that the intended dose was 8 mg of warfarin daily. In the letter that was sent other minor recommendations were also made (e.g. use of propoxyphene not recommended in older patients). As a result of this intervention, the patient was stabilized on the correct dose of warfarin, potentially preventing a serious adverse event such as a bleed.

Patient 2

A 52 year old male patient’s drug regimen was reviewed for the month of June 2004. This patient received 30 prescriptions from 5 prescribers during the month at a cost of \$1842. In a letter to each of his prescribers, we addressed several issues. This patient had been receiving long-term treatment with two beta-blockers (atenolol, metoprolol) prescribed by two providers, two thiazide-like diuretics (hydrochlorothiazide, metolazone) prescribed by two providers, and three antidepressants (bupropion, trazodone, and amitriptyline). He had also been receiving 3700 mg of metformin daily, a dose 50% higher than the maximum recommended dose which put him at increased risk of serious adverse effects such as lactic acidosis. We also recommended that the Zyprexa he was receiving be dosed as one 10 mg tablet daily rather than the two 5 mg tablets he had been receiving which would save costs and help to consolidate his drug therapy. One month after the receipt of the letters, this patient was stabilized on one beta-blocker, one thiazide diuretic, and an appropriate dose of metformin. Two months

following the receipt of the letters additional changes were made. Two of the antidepressants (amitriptyline and bupropion) were discontinued.

Patient 3

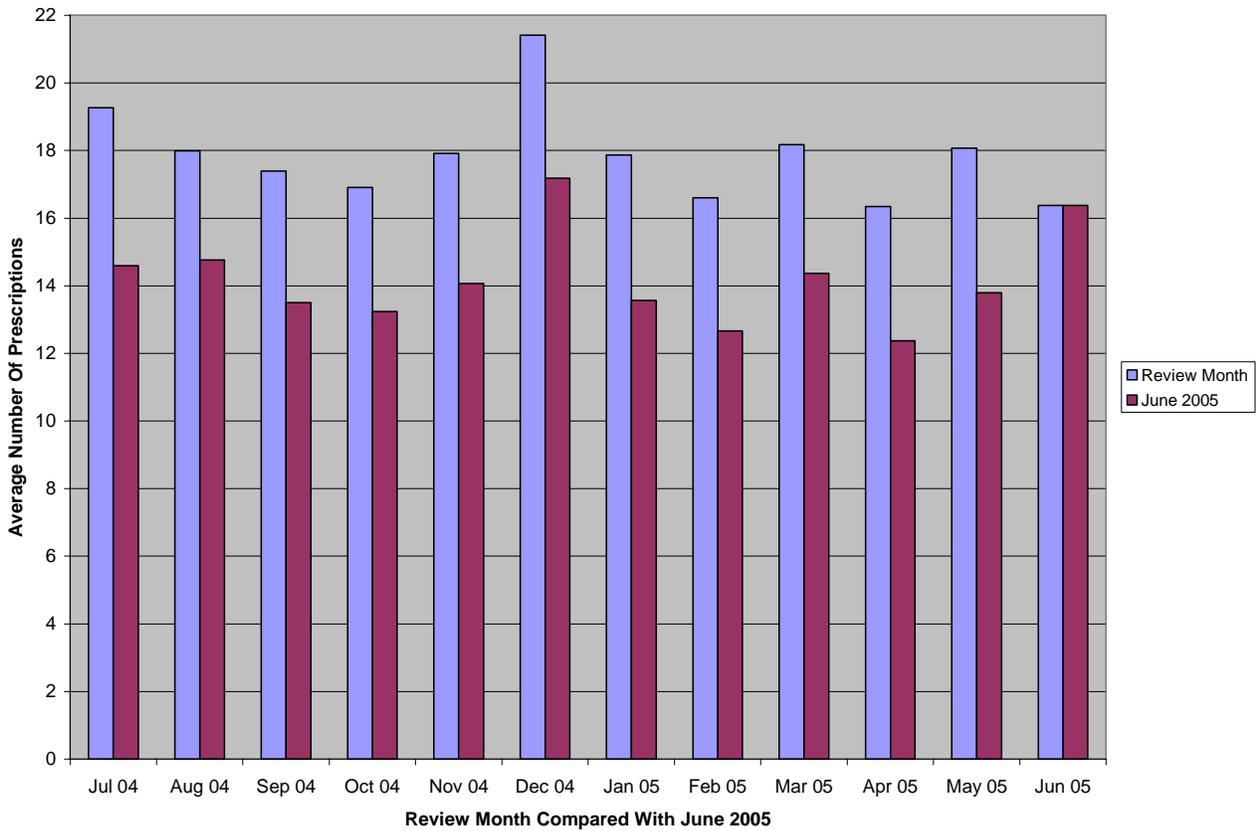
A 61 year old female patient's drug regimen was reviewed for the month of July 2005. Several issues were identified and were addressed in a letter to her prescribers. We recommended that Aciphex be changed to Prilosec OTC, an equally effective yet much less costly proton-pump inhibitor. We also recommended that she be changed from a brand-name angiotensin II receptor blocker (ARB), Atacand, to an ACE-inhibitor with a generic available. This patient had been receiving long-term treatment with guaifenesin/pseudoephedrine, which is often dosed short-term in an acute condition, and we recommended that it be discontinued if possible. We also recommended that she receive 50 blood glucose test strips per month rather than the 100 she had been receiving since she was being treated with oral diabetes medications. Her primary care provider called to inform us that each of the recommended changes to her drug regimen would be made. This should result in a cost-savings of approximately \$200 each month.

Patient 4

A 43 year old male patient's drug regimen was reviewed for the month of May 2005. This patient received 17 prescriptions from 6 different prescribers during the month at a cost of \$991.21. His prescriptions included three statins (Zocor, Lipitor, lovastatin), each from a different prescriber, in addition to other cardiovascular medications (two strengths of warfarin, two strengths of potassium, two strengths of metoprolol, two strengths of furosemide, aspirin, and lisinopril) from three different prescribers. He also received lorazepam from three prescribers. A letter was sent to each of the providers. We were subsequently contacted by a pharmacist at one of the clinics where we had sent the letter. This pharmacist called the other providers and discovered that this patient did not have a primary care provider and was primarily receiving treatment from ER physicians. Each physician would prescribe medications indicated in a post-myocardial infarction patient, and the patient would continue to fill all prescriptions unaware that they were duplicative. This patient was subsequently admitted to a nursing home.

Figure 9 shows the average number of prescriptions per reviewed patient for each month from July 2004 to June 2005, compared to the average number of prescriptions per patient for the same cohort in June 2005. The average number of prescriptions per reviewed patient has decreased over the course of the year from 19.3 to 16.4 prescriptions per month. The number of prescriptions dispensed has decreased for all review cohorts. No change was seen for June 2005 since this report only covers data through June 2005.

Figure 9 – Average Number of Prescriptions for Reviewed Cohort in Review Month and Compared to June 2005



We have tracked drug cost reimbursements to the review cohorts for the remainder of the reporting year following the month they were reviewed. Decreases in drug costs for these reviewed patients were substantial.

The review month was used as the baseline amount for comparison. Costs were compared for the baseline amount with the amount for June 2005. For example, costs in June 2005 and October 2004 were compared for patients reviewed during October 2004. Cost savings were calculated only for patients reviewed from July 2004 to June 2005. Additional cost savings for patients reviewed before July 2004 are not included, nor are additional savings that would be expected after June 2005 for patients included in this report. Overall cost savings were calculated in three ways using different assumptions for baseline costs. The most conservative assumption is that their drug costs would remain constant from the month of their review. This was used as a base case analysis. Given this assumption, a cost savings of \$4,635,876 was realized. It is unlikely that these high-utilizing patients would have no increase in costs during a period of time when significant increases in costs were being seen across the program. Cost savings were also calculated assuming that baseline costs would increase at a 10% and a 15% annual rate without intervention. Overall cost savings are shown in Table 2.

Table 2 – Cost Savings

	No Baseline Increase	10% Annual Increase	15% Annual Increase
Cost Savings	\$4,635,876	\$6,941,851	\$8,094,839

Supporting tables for the cost savings calculations are shown in the Appendix.

Additional Analyses

Additional analyses are underway to more systematically evaluate the economic impact of the DRRC process. We are consulting with Dr. Thurston to determine the best method to evaluate the economic impact of the review process. It is difficult to evaluate the impact of reviews by just looking at the reviewed cohorts since you can't assume that reviewed patients would remain the same if they weren't reviewed. This is also complicated by the change in prescription volume and charges from month to month. The current plan is to select a control group from high utilizers who have not been reviewed and compare their costs with the cohorts of reviewed patients. The results of this analysis will be distributed as an addendum to this report when the analyses are completed.

Appendix – Savings Calculations Tables

Note: Each of the following tables compares cost for the month the cohort was reviewed with June, 2005, the last month in the fiscal year. The three sets of tables vary the assumption of what increase would be seen in the review patients if they had not been reviewed, starting with 0%, but also showing 10% and 15%.

TOTAL FOR ALL REVIEWED PATIENTS - NO INCREASE IN COSTS ASSUMED

	Jul 04	Aug 04	Sep 04	Oct 04	Nov 04	Dec 04	Jan 05	Feb 05	Mar 05	Apr 05	May 05	Jun 05	TOTAL PROJECTED	SAVINGS	
Jul 04	368,425	314,237	313,049	281,932	297,944	287,655	283,089	247,854	284,268	257,228	263,052	286,210	3,484,943	4,421,095	936,152
Aug 04		322,524	270,921	264,347	266,115	264,464	257,480	240,549	257,121	245,709	260,148	248,287	2,897,665	3,547,768	650,103
Sep 04			317,199	246,165	267,975	271,692	245,830	235,886	269,757	232,024	234,945	222,895	2,544,367	3,171,986	627,619
Oct 04				344,256	282,998	281,842	271,254	253,955	267,484	254,114	254,995	242,845	2,453,743	3,098,307	644,563
Nov 04					338,748	295,155	290,277	246,860	280,877	258,074	267,878	258,028	2,235,898	2,709,987	474,088
Dec 04						411,152	374,444	345,779	365,144	336,272	327,689	328,391	2,488,871	2,878,065	389,193
Jan 05							358,920	282,601	312,450	293,381	305,624	285,844	1,838,820	2,153,519	314,700
Feb 05								348,803	300,466	274,557	285,584	277,052	1,486,463	1,744,016	257,553
Mar 05									366,231	313,121	320,952	313,437	1,313,741	1,464,925	151,185
Apr 05										339,626	295,748	278,319	913,693	1,018,879	105,186
May 05											367,099	281,566	648,665	734,197	85,533
Jun 05												351,833			
													22,306,868	26,942,743	4,635,876

AVERAGE PER PATIENT

	Jul 04	Aug 04	Sep 04	Oct 04	Nov 04	Dec 04	Jan 05	Feb 05	Mar 05	Apr 05	May 05	Jun 05	TOTAL	PROJECTED	SAVINGS
Jul 04	1,240	1,058	1,054	949	1,003	969	953	835	957	866	886	964	11,734	14,886	3,152
Aug 04		1,086	912	890	896	890	867	810	866	827	876	836	9,756	11,945	2,189
Sep 04			1,050	815	887	900	814	781	893	768	778	738	8,425	10,503	2,078
Oct 04				1,132	931	927	892	835	880	836	839	799	8,072	10,192	2,120
Nov 04					1,107	965	949	807	918	843	875	843	7,307	8,856	1,549
Dec 04						1,433	1,305	1,205	1,272	1,172	1,142	1,144	8,672	10,028	1,356
Jan 05							1,221	961	1,063	998	1,040	972	6,254	7,325	1,070
Feb 05								1,132	976	891	927	900	4,826	5,662	836
Mar 05									1,170	1,000	1,025	1,001	4,197	4,680	483
Apr 05										1,114	970	913	2,996	3,341	345
May 05											1,212	929	2,141	2,423	282
Jun 05												1,157			
													74,380	89,842	15,462

TOTAL FOR ALL REVIEWED PATIENTS - 10% INCREASE IN COSTS ASSUMED

	Jul 04	Aug 04	Sep 04	Oct 04	Nov 04	Dec 04	Jan 05	Feb 05	Mar 05	Apr 05	May 05	Jun 05	TOTAL PROJECTED	SAVINGS	
Jul 04	368,425	314,237	313,049	281,932	297,944	287,655	283,089	247,854	284,268	257,228	263,052	286,210	3,484,943	4,826,362	1,341,419
Aug 04		322,524	270,921	264,347	266,115	264,464	257,480	240,549	257,121	245,709	260,148	248,287	2,897,665	3,870,293	972,628
Sep 04			317,199	246,165	267,975	271,692	245,830	235,886	269,757	232,024	234,945	222,895	2,544,367	3,457,464	913,098
Oct 04				344,256	282,998	281,842	271,254	253,955	267,484	254,114	254,995	242,845	2,453,743	3,373,712	919,968
Nov 04					338,748	295,155	290,277	246,860	280,877	258,074	267,878	258,028	2,235,898	2,947,111	711,212
Dec 04						411,152	374,444	345,779	365,144	336,272	327,689	328,391	2,488,871	3,124,756	635,885
Jan 05							358,920	282,601	312,450	293,381	305,624	285,844	1,838,820	2,332,979	494,159
Feb 05								348,803	300,466	274,557	285,584	277,052	1,486,463	1,883,537	397,074
Mar 05									366,231	313,121	320,952	313,437	1,313,741	1,574,795	261,054
Apr 05										339,626	295,748	278,319	913,693	1,086,804	173,111
May 05											367,099	281,566	648,665	770,907	122,242
Jun 05												351,833			
													22,306,868	29,248,719	6,941,851

AVERAGE PER PATIENT

	Jul 04	Aug 04	Sep 04	Oct 04	Nov 04	Dec 04	Jan 05	Feb 05	Mar 05	Apr 05	May 05	Jun 05	TOTAL PROJECTED	SAVINGS	
Jul 04	1,240	1,058	1,054	949	1,003	969	953	835	957	866	886	964	11,734	16,250	4,517
Aug 04		1,086	912	890	896	890	867	810	866	827	876	836	9,756	13,031	3,275
Sep 04			1,050	815	887	900	814	781	893	768	778	738	8,425	11,449	3,024
Oct 04				1,132	931	927	892	835	880	836	839	799	8,072	11,098	3,026
Nov 04					1,107	965	949	807	918	843	875	843	7,307	9,631	2,324
Dec 04						1,433	1,305	1,205	1,272	1,172	1,142	1,144	8,672	10,888	2,216
Jan 05							1,221	961	1,063	998	1,040	972	6,254	7,935	1,681
Feb 05								1,132	976	891	927	900	4,826	6,115	1,289
Mar 05									1,170	1,000	1,025	1,001	4,197	5,031	834
Apr 05										1,114	970	913	2,996	3,563	568
May 05											1,212	929	2,141	2,544	403
Jun 05												1,157			
													74,380	97,536	23,156

TOTAL FOR ALL REVIEWED PATIENTS - 15% INCREASE IN COSTS ASSUMED

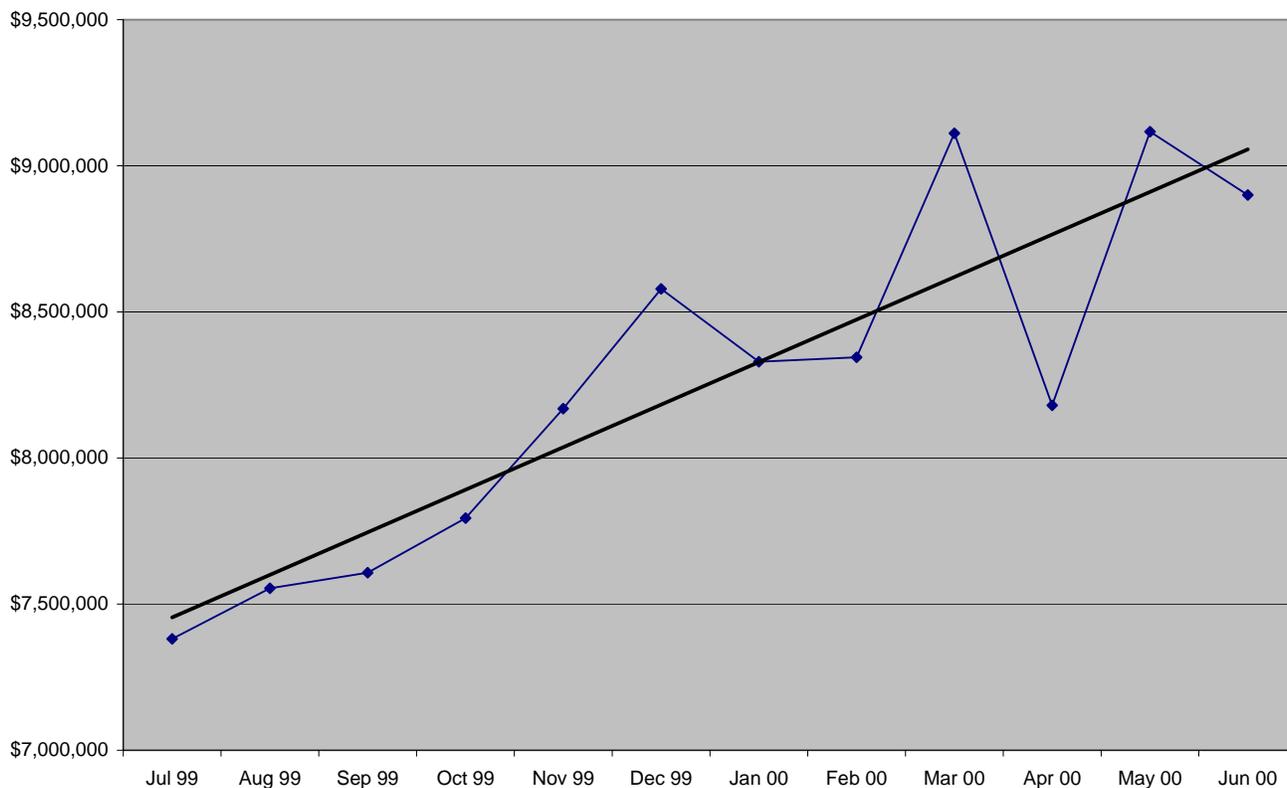
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Jul 04	368,425	314,237	313,049	281,932	297,944	287,655	283,089	247,854	284,268	257,228	263,052	286,210	3,484,943	5,028,995	1,544,053
Aug 04		322,524	270,921	264,347	266,115	264,464	257,480	240,549	257,121	245,709	260,148	248,287	2,897,665	4,031,555	1,133,890
Sep 04			317,199	246,165	267,975	271,692	245,830	235,886	269,757	232,024	234,945	222,895	2,544,367	3,600,204	1,055,837
Oct 04				344,256	282,998	281,842	271,254	253,955	267,484	254,114	254,995	242,845	2,453,743	3,511,414	1,057,671
Nov 04					338,748	295,155	290,277	246,860	280,877	258,074	267,878	258,028	2,235,898	3,065,672	829,774
Dec 04						411,152	374,444	345,779	365,144	336,272	327,689	328,391	2,488,871	3,248,102	759,230
Jan 05							358,920	282,601	312,450	293,381	305,624	285,844	1,838,820	2,422,709	583,889
Feb 05								348,803	300,466	274,557	285,584	277,052	1,486,463	1,953,298	466,835
Mar 05									366,231	313,121	320,952	313,437	1,313,741	1,629,730	315,989
Apr 05										339,626	295,748	278,319	913,693	1,120,767	207,074
May 05											367,099	281,566	648,665	789,262	140,597
Jun 05												351,833			
													22,306,868	30,401,707	8,094,839

AVERAGE PER PATIENT

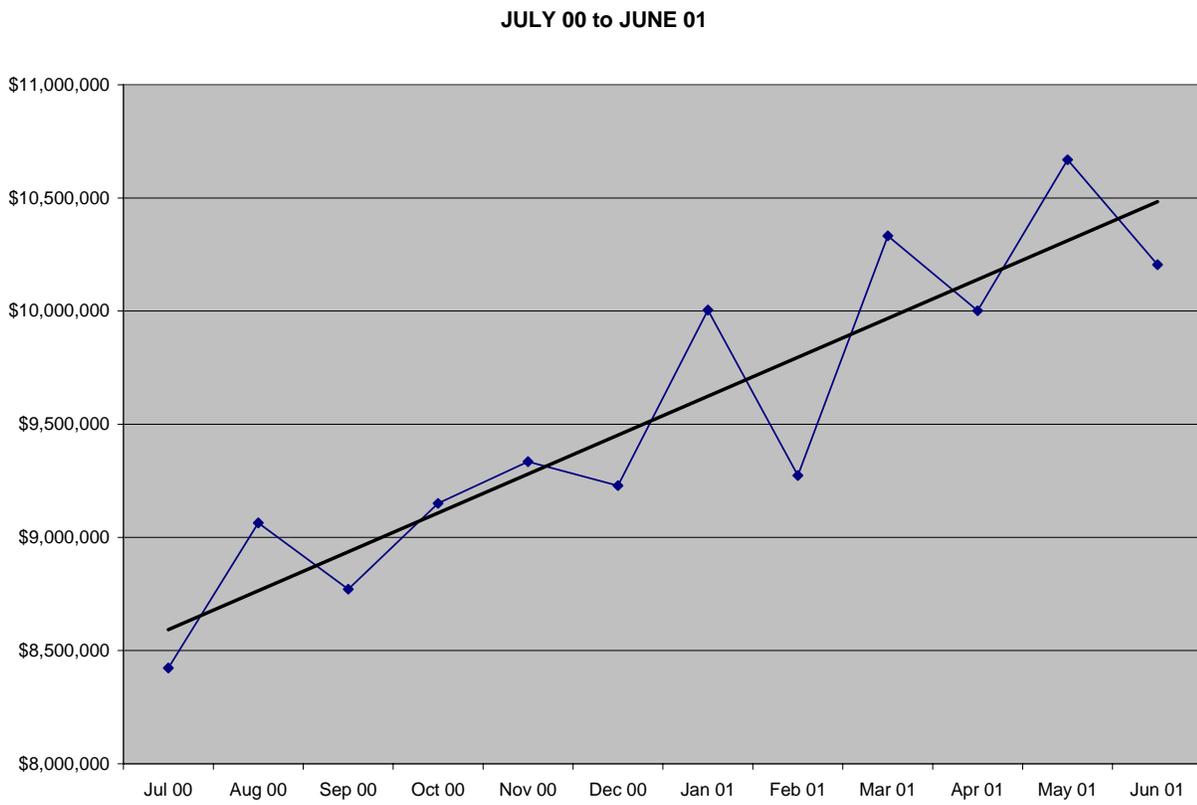
	Jul 04	Aug 04	Sep 04	Oct 04	Nov 04	Dec 04	Jan 05	Feb 05	Mar 05	Apr 05	May 05	Jun 05	TOTAL PROJECTED	SAVINGS	
Jul 04	1,240	1,058	1,054	949	1,003	969	953	835	957	866	886	964	11,734	16,933	5,199
Aug 04		1,086	912	890	896	890	867	810	866	827	876	836	9,756	13,574	3,818
Sep 04			1,050	815	887	900	814	781	893	768	778	738	8,425	11,921	3,496
Oct 04				1,132	931	927	892	835	880	836	839	799	8,072	11,551	3,479
Nov 04					1,107	965	949	807	918	843	875	843	7,307	10,019	2,712
Dec 04						1,433	1,305	1,205	1,272	1,172	1,142	1,144	8,672	11,317	2,645
Jan 05							1,221	961	1,063	998	1,040	972	6,254	8,241	1,986
Feb 05								1,132	976	891	927	900	4,826	6,342	1,516
Mar 05									1,170	1,000	1,025	1,001	4,197	5,207	1,010
Apr 05										1,114	970	913	2,996	3,675	679
May 05											1,212	929	2,141	2,605	464
Jun 05												1,157			
													74,380	101,383	27,003

Prescription Costs July 1999 to June 2002

JULY 99 to JUNE 00

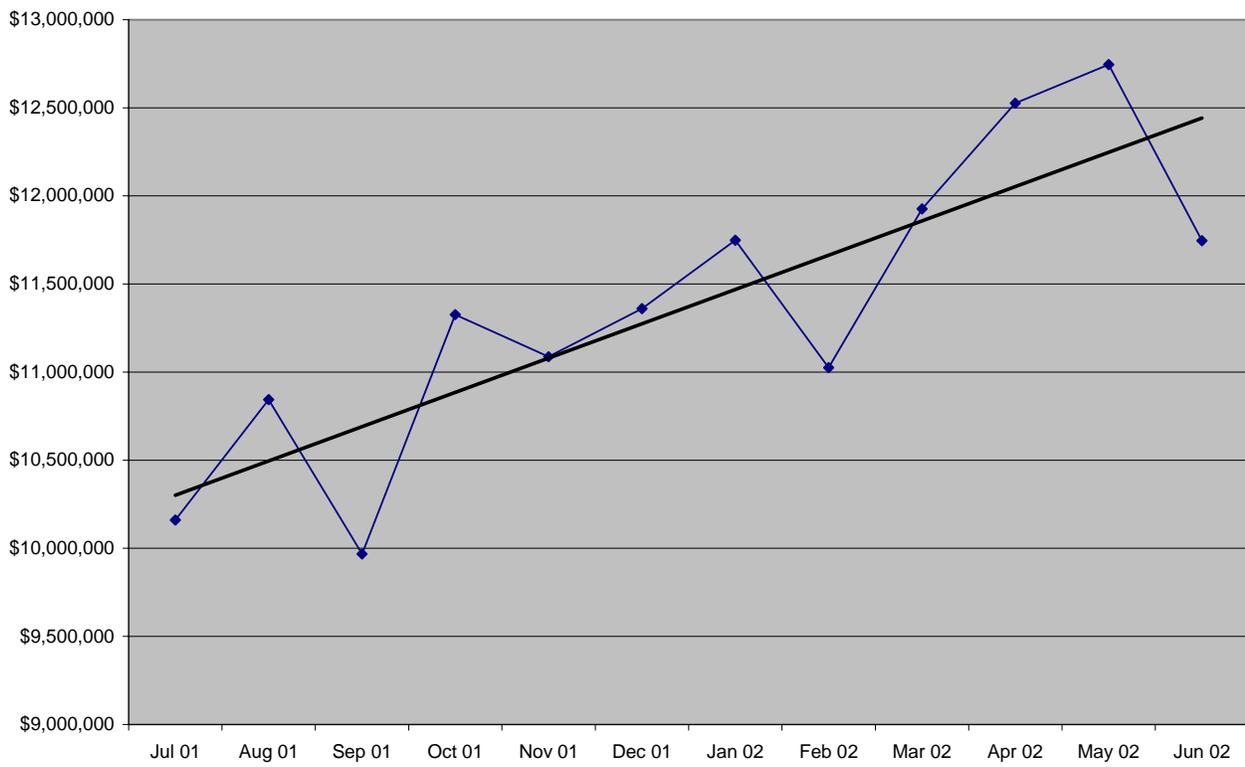


Prescription Costs July 2000 to June 2001



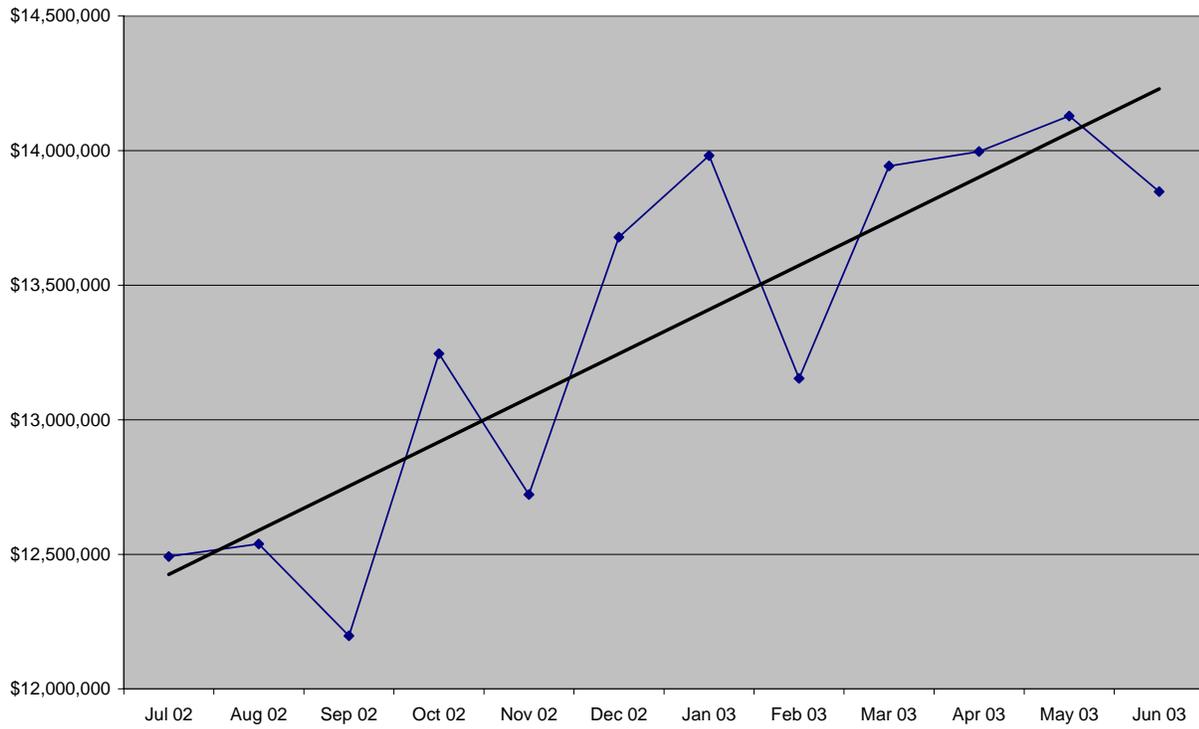
Prescription Costs July 2001 to June 2002

JULY 01 to JUNE 02



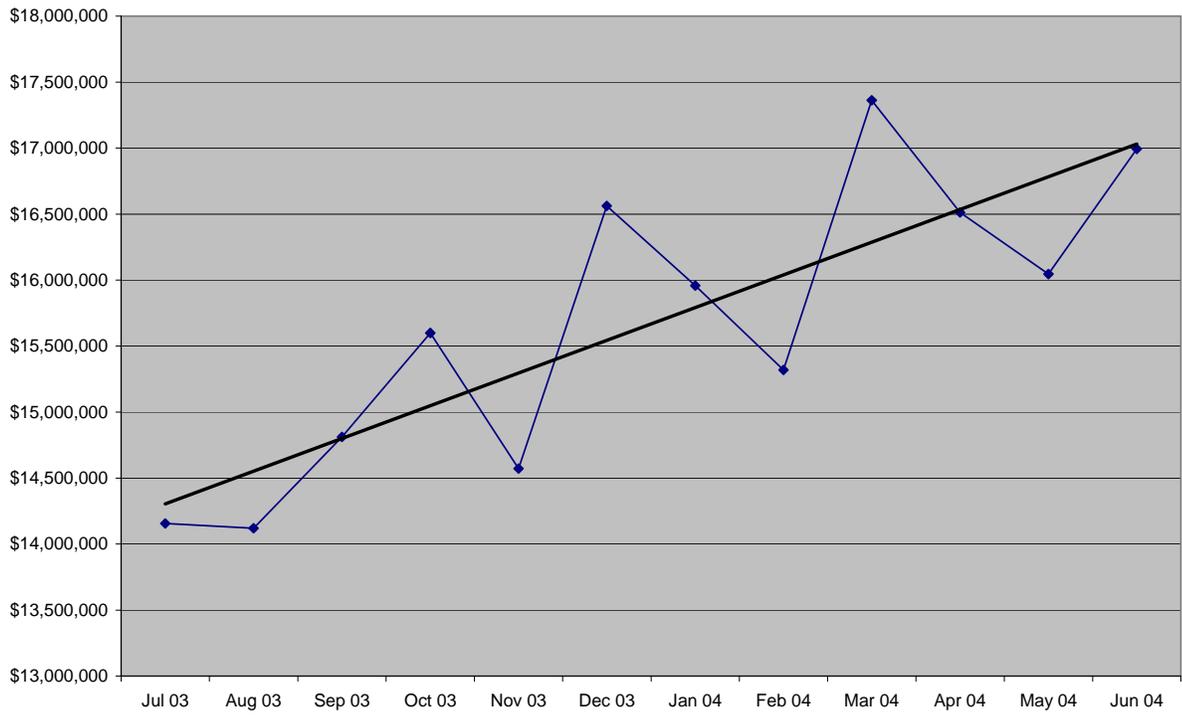
Prescription Costs July 2002 to June 2003

JULY 02 to JUNE 03



Prescription Costs July 2003 to June 2004

JULY 03 to JUNE 04



Prescription Costs July 2004 to June 2005

JULY 04 to JUNE 05

