Medicaid Outpatient Substance Abuse Treatment Benefit

Department of Health Care Policy and Financing

Performance Audit
November 2010

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State Auditor

November 18, 2010

Members of the Legislative Audit Committee:

This report contains the results of a performance audit of the Medicaid Outpatient Substance Abuse Treatment Benefit administered by the Department of Health Care Policy and Financing. The audit was conducted pursuant to Section 2-3-103, C.R.S., which authorizes the State Auditor to conduct audits of all departments, institutions, and agencies of state government, and Section 25.5-5-313(2)(a), C.R.S., which requires the State Auditor to "submit a report to the Legislative Audit Committee analyzing the costs and savings to the [Medicaid] medical assistance program of providing outpatient substance abuse treatment." The report presents our findings and conclusions.

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Medicaid Outpatient Substance Abuse Treatment Benefit

Purpose and Scope

Colorado's Medicaid Outpatient Substance Abuse Treatment Benefit (Substance Abuse Benefit) was implemented on July 1, 2006 to provide outpatient substance abuse and addiction treatment services to all individuals enrolled in Medicaid. The statute that established the Substance Abuse Benefit also requires the State Auditor to "submit a report to the Legislative Audit Committee analyzing the costs and savings to the [Medicaid] medical assistance program of providing outpatient substance abuse treatment" on or before January 1, 2011 [Section 25.5-5-313, C.R.S.]. Further, the statute specifies that if, by March 31, 2011, "the Legislative Audit Committee adopts a resolution finding that providing outpatient substance abuse treatment has resulted in an overall increase in costs to the medical assistance program" the Substance Abuse Benefit is repealed, effective July 1, 2011.

This report provides the results of our performance audit of the costs and savings to the Colorado Medicaid Program of providing the Substance Abuse Benefit. During the audit, we reviewed an analysis of Substance Abuse Benefit costs conducted by the Department of Health Care Policy and Financing (Department) and we conducted an independent review of the costs associated with the benefit by analyzing Medicaid and Department of Human Services, Division of Behavioral Health data. We interviewed staff at the Departments of Health Care Policy and Financing and Human Services and at a sample of substance abuse treatment providers. We also reviewed national and state substance abuse and addiction research. We contracted with Open Minds, a firm with expertise in publicly funded medical programs, substance abuse treatment, and medical cost-benefit analyses, for assistance in designing the research methodology for the audit and interpreting the results of our analysis. This audit did not assess the impact of the Substance Abuse Benefit on areas of the State's budget outside of Medicaid, nor did it evaluate the benefit's effectiveness, design, or operations.

Audit work was performed from March through October 2010 and was conducted in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. There are no recommendations in this report. We thank the

Departments of Health Care Policy and Financing and Human Services for their assistance during the audit.

Summary of Findings

Overall, we were able to determine that providing the Substance Abuse Benefit cost the State's Medicaid Program an additional $2.4 million for Fiscal Years 2007 through 2009, the first three years the Substance Abuse Benefit was in operation. Additionally, we were able to calculate that, for the clients who began receiving Substance Abuse Benefit services during Fiscal Years 2007 or 2008, medical costs declined from $18.6 million to $15.1 million, or by about $3.5 million. However, we were not able to determine whether the reduction in medical costs was **the direct result of, or "caused by,"** the Substance Abuse Benefit services provided to clients. State databases were not designed to collect the type of data needed to make this determination. Using the Medicaid claims data that were available, we analyzed trends in medical costs for Substance Abuse Benefit clients in several different ways. In general, we found that medical costs declined over the three-year period for most individuals who utilized the Substance Abuse Benefit. Although we were unable to conclude on the Substance Abuse Benefit's impact on participants' medical costs, according to our consultant, our results identified trends that are promising.

This report is divided into two sections. In the first section we provide an overview of substance abuse disorders and treatment in Colorado and summarize Colorado's Substance Abuse Benefit. In the second section we discuss our review of costs, savings, and trends in medical costs for benefit participants.

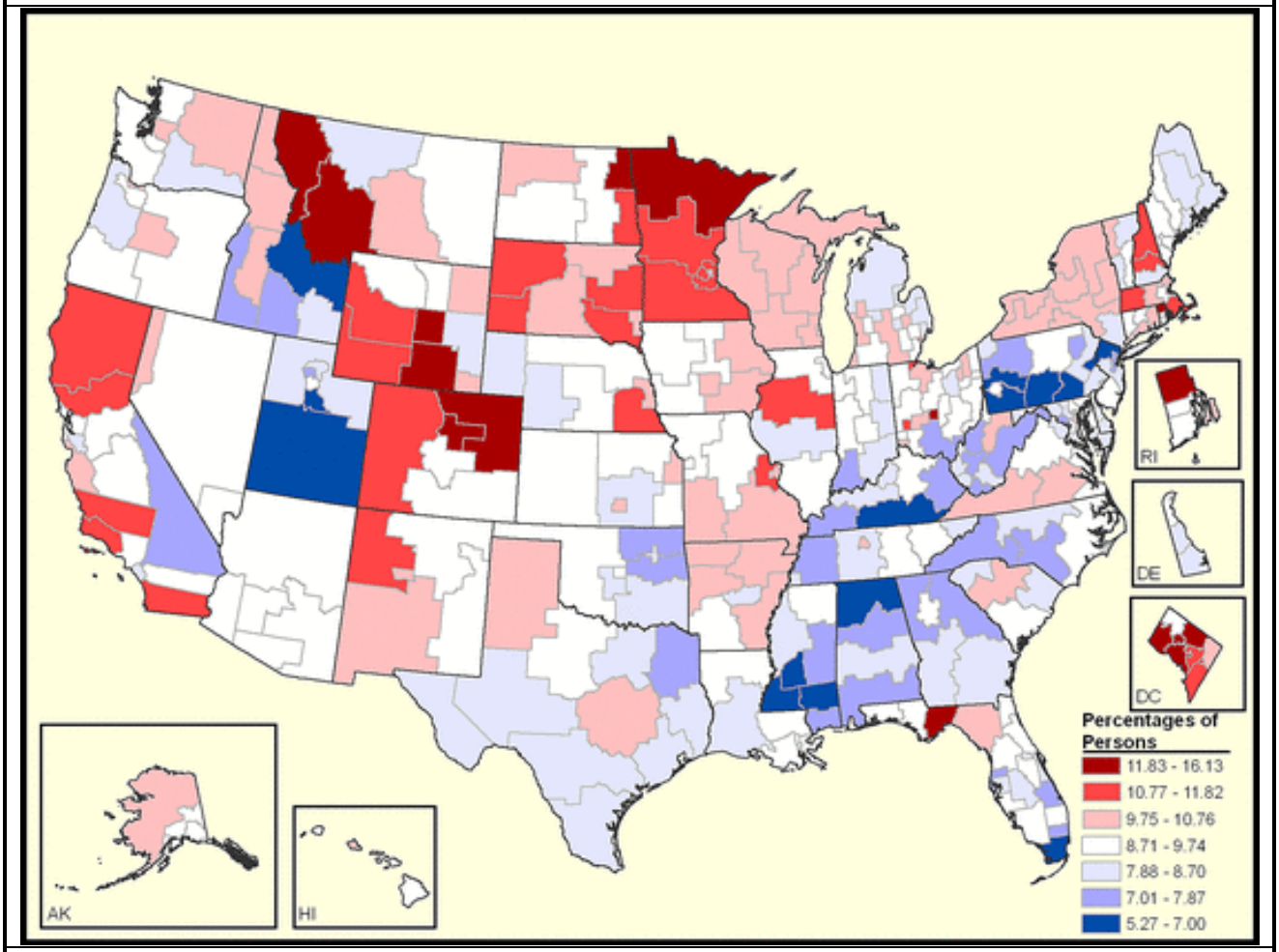
Overview of Substance Abuse in Colorado

The U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration (SAMHSA) estimated that in 2008 (the most recent data available) there were about 20.3 million adults nationwide with a substance abuse disorder. Substance abuse is a pattern of substance use that leads to a significant impairment in functioning and has negative consequences on the user's life. Addiction is a history of continual substance abuse. Substance abuse and addiction disorders are medical diagnoses and considered diseases. Throughout this report, we use the term "substance abuse disorder" to refer collectively to substance abuse and substance addiction disorders involving illicit drugs, such as marijuana or cocaine; prescription or over-the-counter medication; alcohol; or tobacco.

According to estimates prepared by SAMHSA in State Fiscal Year 2008, the rate of per capita substance abuse disorders in Colorado was higher than in any other

state. SAMHSA ranked Colorado first among the 50 states for individuals ages 12 years and older who had a substance abuse disorder in the past year. At that time, SAMHSA estimated that there were about 439,000 individuals in Colorado ages 12 years and older, or about 11 percent of the State's population, with a substance abuse disorder. Exhibit 1 shows SAMHSA's estimates of the distribution of substance abuse disorders in Colorado and the United States between Calendar Years 2006 and 2008 (the most recent data available).

Exhibit 1: Percent of Population with Substance Abuse Disorders by Sub-State Region[1]
Calendar Years 2006 Through 2008



Source: U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, National Survey on Drug Use and Health for Calendar Years 2006 through 2008.

[1] Percentages based on the annual averages of drug and alcohol abuse or addiction within the past year among individuals ages 12 years and older in Calendar Years 2006, 2007, and 2008.

The exhibit illustrates that in different regions of Colorado between about 8.7 percent and 16.1 percent of individuals ages 12 years and older had a drug- or alcohol-related substance abuse disorder between Calendar Years 2006 and 2008. The exhibit also shows that substance abuse disorders in Colorado are more prevalent in the Denver metropolitan area, northeastern Colorado, and the Western Slope.

According to the Division of Behavioral Health, about 38,600 of the estimated 439,000 individuals ages 12 years and older in Colorado with a substance abuse disorder received publicly and/or privately funded treatment in Fiscal Year 2009. This represents a treatment rate of about 9 percent for Colorado that year. Among the 38,600 individuals, about 17,500 (45 percent) entered some type of treatment program for their substance abuse disorder and the remaining 21,100 individuals (55 percent) were required by a court to enter a Driving Under the Influence (DUI) treatment program. However, the Division of Behavioral Health reports that it is common for clients to end treatment before it is complete or relapse after completing treatment. For example, in Fiscal Year 2009 about 56 percent of all individuals treated for substance abuse disorders in Colorado had received prior treatment, and nearly 20 percent of individuals who left treatment did so against their counselors' recommendations.

Publicly Funded Substance Abuse Treatment Options

Substance abuse treatment nationwide is largely funded with public dollars. Nationally, public funds account for about 65 percent of the total amount spent on substance abuse treatment and privately funded treatment programs account for the remaining 35 percent. In Colorado the two primary publicly funded substance abuse treatment options are through the State's Medicaid Program, which is overseen by the Department of Health Care Policy and Financing, and through the Division of Behavioral Health, within the Department of Human Services. The substance abuse treatment provided through the Medicaid Program is the subject of this report.

Medicaid (Title XIX of the Federal Social Security Act) is the federal- and state-funded program that provides medical coverage to low-income individuals, families, and persons with disabilities. In Colorado, the Department of Health Care Policy and Financing oversees the Medicaid Program, which is funded with 50 percent federal funds and 50 percent state general funds. However, in Fiscal Years 2009 and 2010 Colorado received additional federal funding through the American Recovery and Reinvestment Act, which temporarily increased the federal share of funding. For example, in Fiscal Year 2010 the federal share was 62 percent; the State's share was 38 percent. In Fiscal Year 2010 Colorado spent

about $3.9 billion in federal, state, and local funds to provide medical services to about 669,900 individuals enrolled in its Medicaid Program.

Federal law requires Medicaid to offer certain basic services to all enrollees, including physician and hospital services; laboratory and radiology services; federally qualified health center and rural health clinic services; family planning and supplies; transportation services; and pediatric, family nurse practitioner, and nurse midwife services. Although substance abuse treatment is optional under federal requirements, currently every state offers some type of publicly funded substance abuse treatment benefit through Medicaid. In Colorado individuals who qualify for Medicaid are automatically eligible to participate in the Substance Abuse Benefit, which is overseen by the Department of Health Care Policy and Financing. We discuss the Substance Abuse Benefit, which is the focus of this audit, in the following section.

In addition to Medicaid, the Department of Human Services operates a separate substance abuse treatment program, which is funded primarily through federal grants and state general fund dollars. Although this program is available to all Colorado residents, including Medicaid clients, priority is given to individuals who are involuntarily committed to substance abuse treatment by courts, as well as pregnant women, adult and adolescent injecting drug users, adult and adolescent women with dependent children, and adult and adolescent drug-dependent individuals who are infected with HIV/AIDS or tuberculosis. Medicaid clients can receive substance abuse treatment through the Department of Human Services' program concurrently with services received through the Medicaid Substance Abuse Benefit.

Overview of the Outpatient Substance Abuse Treatment Benefit

Prior to Fiscal Year 2007 the Colorado Medicaid Program offered substance abuse treatment on a limited basis to: (1) pregnant women and recent mothers, up to one year postpartum, and (2) clients who needed substance abuse treatment when it was medically necessary to treat another covered condition. In 2005 the General Assembly passed House Bill 05-1015, which amended the Colorado Medical Assistance Act, Section 25.5-5-202(1)(s)(I), C.R.S., and added the Substance Abuse Benefit as a basic service available to all Medicaid clients. According to the House Bill 05-1015 primary sponsor, the intent of offering this service was to access additional federal funding for substance abuse treatment for Coloradans and prevent some of the health-related costs to the State associated with substance abuse.

The Department of Health Care Policy and Financing implemented the Medicaid Substance Abuse Benefit on July 1, 2006. According to the Department, the purpose of the Substance Abuse Benefit is to offer a variety of therapeutic and supportive services intended to reduce Medicaid clients' dependence on drugs, alcohol, and tobacco; promote recovery for clients; and decrease the likelihood of relapse. The Department developed the structure of the Substance Abuse Benefit with input from the Department of Human Services, Division of Behavioral Health, which coordinates substance abuse treatment services statewide, licenses public and private treatment sites, develops treatment guidelines for licensed substance abuse treatment providers in the state, collects and maintains data, and provides education on substance abuse disorders in Colorado. The Department reports that it structured the Substance Abuse Benefit to be flexible in meeting the needs of Medicaid clients, as well as to be consistent with guidelines issued by the American Society of Addiction Medicine, which promulgates guidelines for clinicians to follow when diagnosing substance abuse disorders and determining a course of treatment. According to the guidelines, treatment professionals are to administer the least intensive and restrictive form of treatment that will still assist the client toward recovery.

During the first three years the Substance Abuse Benefit was in place, Fiscal Years 2007 through 2009, the benefit served 5,200 Medicaid clients. This figure represents the total number of unduplicated clients who utilized Substance Abuse Benefit services over the three-year period. The Department does not require Medicaid clients to be diagnosed with a substance abuse disorder to participate in the Substance Abuse Benefit. The benefit offers a range of optional services that are available to all Medicaid clients on an outpatient-only basis. Although the benefit limits the amount of services a client may receive within a fiscal year, the benefit does not limit the number of years that a client may receive services. Outpatient, or non-residential, treatment is more common than inpatient residential treatment and is generally for individuals who have less intensive treatment needs or who cannot afford inpatient treatment. Outpatient treatment typically includes individual and group therapy and participation in self-help groups, such as Alcoholics Anonymous. State regulations, 10 CCR 2505-10, Section 8.746.4, require the Substance Abuse Benefit to include the following treatment and supportive services:

- **Substance abuse assessment** – An evaluation to determine the client's level of drug, alcohol, or tobacco abuse or dependence and comprehensive treatment needs. Medicaid covers up to three assessments per client per fiscal year. From Fiscal Year 2007 to 2009, about 1,870 of the 5,200 benefit clients (about 36 percent) received an assessment.

- **Individual and family therapy** – Therapeutic substance abuse counseling services with one client or family per session; family therapy must be directly related to the client's substance abuse treatment. Medicaid covers

up to 25 one-hour individual and family therapy sessions per client per fiscal year. From Fiscal Year 2007 to 2009, about 1,650 of the 5,200 benefit clients (about 32 percent) received individual and family therapy.

- **Group therapy** – Therapeutic substance abuse counseling sessions with more than one client for up to three hours. Medicaid covers up to 36 group therapy sessions per client per fiscal year. From Fiscal Year 2007 to 2009, about 2,280 of the 5,200 benefit clients (about 44 percent) received group therapy.

- **Alcohol and/or drug screening** – The testing of urine for the presence of alcohol and/or drugs and a counseling session with the client to discuss the results. Medicaid covers up to 36 screenings per client per fiscal year. From Fiscal Year 2007 to 2009, about 1,790 of the 5,200 benefit clients (about 34 percent) received screenings.

- **Social and ambulatory detoxification** – Services aimed at managing acute intoxication and withdrawal for clients whose symptoms are severe enough to require 24-hour supervision and care but who do not require hospitalization. Although not considered substance abuse treatment, detoxification may be necessary for treatment to begin. Detoxification includes clearing the toxins from the client, monitoring by treatment staff, and in some cases administering medication to assist clients through withdrawal safely. Medicaid covers up to seven 24-hour detoxification sessions per client per fiscal year. From Fiscal Year 2007 to 2009, about 1,900 of the 5,200 benefit clients (about 37 percent) received detoxification services.

- **Case management** – Medically necessary treatment planning and coordination with other medical services provided to the client. Medicaid covers up to 36 case management sessions per client per fiscal year. From Fiscal Year 2007 to 2009, about 1,170 of the 5,200 benefit clients (about 23 percent) received case management.

The Substance Abuse Benefit's service delivery structure allows those Medicaid clients who choose to participate in the benefit the option of using some or all of the services available through the benefit; clients are not required to use any of the services. For example, clients may receive an assessment to determine if they have a substance abuse disorder, or may receive substance detoxification, without receiving any therapy. From Fiscal Year 2007 to 2009, about 56 percent (2,890 of 5,200) of Substance Abuse Benefit clients received therapy treatment; the remaining 44 percent (2,310 of 5,200) of clients received assessments, screenings, detoxification, and/or case management only.

In Colorado substance abuse treatment facilities and practitioners must be licensed by the Department of Human Services' Division of Behavioral Health to provide substance abuse treatment, and they must be approved by the Department of Health Care Policy and Financing to provide Medicaid Substance Abuse Benefit services. There are about 120 Medicaid-approved substance abuse providers, including hospital outpatient programs, substance abuse treatment facilities, and community mental health centers.

The Department of Health Care Policy and Financing's payment structure for the Substance Abuse Benefit requires service providers to bill claims to the benefit through the Department's Medicaid Management Information System (MMIS). The Department establishes the reimbursement rate for each type of service and reimburses providers on a fee-for-service basis. This means providers are paid for each individual service they provide, as opposed to being paid an agreed-upon fixed amount per client, as under a capitated managed care payment plan. Most other states (about 34 states) structure their Medicaid substance abuse benefits in a fee-for-service format similar to Colorado's.

Characteristics of Substance Abuse Benefit Clients

The typical demographic profile for Substance Abuse Benefit clients is significantly different from most other Medicaid clients. As shown in the following exhibit, the majority (74 percent) of Substance Abuse Benefit clients are low-income and disabled adults 21 years of age and over. In contrast, the majority (58 percent) of other Medicaid clients are children under 21 years of age.

Exhibit 2: Comparison of Demographics for Substance Abuse Benefit Clients and the Total Medicaid Population

Substance Abuse Benefit Clients[1]		Total Medicaid Population[2]	
Demographic Characteristic	**Percentage of Population**	**Demographic Characteristic**	**Percentage of Population**
Low-Income Adults	43%	Low-Income Adults	20%
Disabled Adults	31%	Disabled Adults	13%
Children under 21 years[3]	24%	Children under 21 years[3]	58%
Other[4]	2%	Other[4]	9%

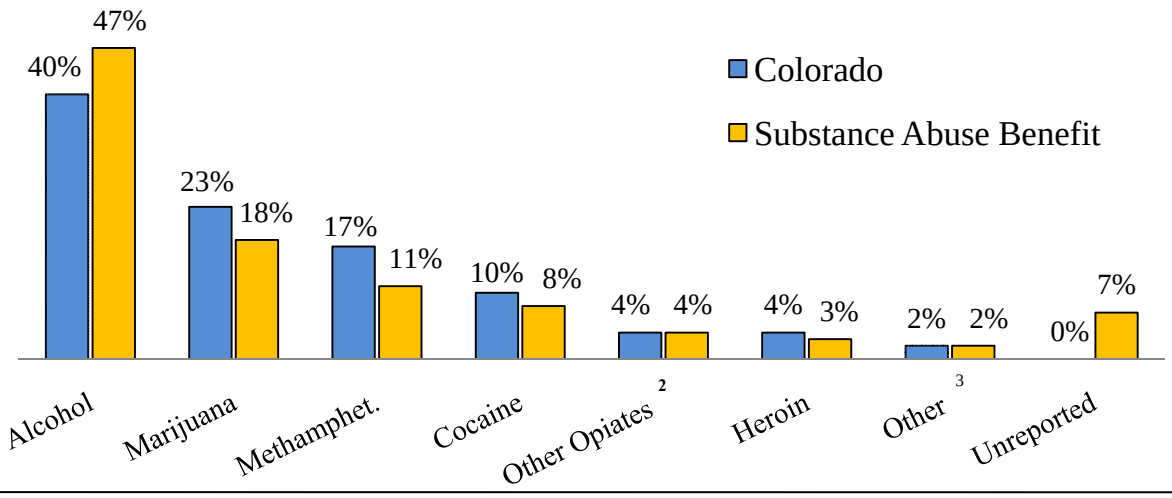
Source: Office of the State Auditor analysis of data provided by the Department of Health Care Policy and Financing.
[1]Demographics for Substance Abuse Benefit clients are based on total unique clients served in Fiscal Years 2007 to 2009.
[2]Demographics for the Total Medicaid Population are based on the average monthly client population for Fiscal Year 2009.
[3]Includes all individuals in foster care.
[4]Includes adults in the Prenatal, Baby Care Program, Breast and Cervical Cancer Program, and Non-categorical Refugee Assistance eligibility categories; individuals eligible under multiple categories; and adults eligible under Medicaid expansion. None of the clients that utilized the Substance Abuse Benefit were in the Non-categorical Refugee Assistance eligibility category.

In addition, according to SAMHSA, Medicaid clients with substance abuse disorders have higher rates of chronic conditions, such as cancer, cardiovascular disease, and diabetes, compared with other Medicaid clients. Further, Substance Abuse Benefit clients typically have higher Medicaid costs compared with other Medicaid clients. We provide additional demographic information on Substance Abuse Benefit clients in Appendix A.

While Substance Abuse Benefit clients have a different demographic profile from the total Medicaid population, benefit clients have similar demographics to other individuals in Colorado who have received substance abuse treatment outside of Medicaid. The primary difference between these two groups is that most Substance Abuse Benefit clients are female, while most of the individuals receiving substance abuse treatment outside of Medicaid are male. However, most individuals in both groups are white and have a median age of about 30 years. Further, about one-half of the individuals in both groups have been diagnosed with and/or received treatment for a mental health disorder.

In addition, the types of primary substances abused by Substance Abuse Benefit clients are consistent with the primary substances abused by other individuals in Colorado who received substance abuse treatment outside of Medicaid. Alcohol and marijuana are the most common substances abused by both groups of individuals, followed by methamphetamine. Exhibit 3 shows the primary substances abused in Colorado as a whole, compared with those abused by Substance Abuse Benefit clients.

Exhibit 3: Primary Substances Abused by Individuals Treated in Colorado and in the Substance Abuse Benefit[1]



Source: Office of the State Auditor analysis of data provided by the Department of Health Care Policy and Financing and the Department of Human Services, Division of Behavioral Health.

[1] Colorado figures are based on the primary substances abused as reported by all individuals treated for substance abuse disorders in Fiscal Year 2009, including individuals treated by the Substance Abuse Benefit. Substance Abuse Benefit figures are based on the 5,200 Medicaid recipients who utilized benefit services in Fiscal Years 2007 through 2009.

[2] Includes opiates other than heroin, such as methadone, morphine, hydrocodone, and codeine.

[3] Includes all other drugs including depressants such as barbiturates, tranquilizers, and other sedatives/hypnotics; stimulants and amphetamines other than cocaine; club drug hallucinogens such as ecstasy; and over-the-counter drugs, inhalants, and steroids.

According to the Division of Behavioral Health, Coloradans with substance abuse disorders use their primary drug for an average of 15 years before seeking treatment. Further, a significant number of individuals with substance abuse disorders abuse two or more substances, such as drugs and alcohol. Both in Colorado and within the Substance Abuse Benefit, approximately 40 percent of individuals treated reported abusing multiple substances. Within the Substance Abuse Benefit about 6 percent of the clients reported abusing tobacco in addition to drugs and/or alcohol.

Future of Substance Abuse Treatment and Medicaid

While all states offer publicly funded substance abuse treatment programs to those who qualify, many private insurers do not cover substance abuse treatment. As a result, cost can be a barrier to treatment for individuals with substance abuse disorders who do not qualify for publicly funded programs and who must pay for treatment with their own funds. The federal Patient Protection and Affordable Care Act of 2010 (Act) requires, among other things, that all private and public

health care insurance plans, including state Medicaid programs, offer substance abuse treatment beginning in Federal Fiscal Year 2014, which should improve access to treatment. The Act cited substance abuse treatment as one of the "essential health benefits" that all health plans are required to offer. The U.S. Secretary of Health and Human Services is charged with developing rules defining the types of substance abuse treatment that should be provided. As of November 2010 no rule or draft rule was available. Until January 2014 substance abuse treatment will remain an optional service that states may provide under Medicaid.

Impact of the Outpatient Substance Abuse Treatment Benefit on Medicaid

As discussed previously, the Department of Health Care Policy and Financing implemented the Substance Abuse Benefit in Fiscal Year 2007 to expand substance abuse treatment for drugs, alcohol, and tobacco to all Medicaid clients. When the General Assembly established the Substance Abuse Benefit in statute, it included a provision requiring the State Auditor to analyze the costs and savings to the Medicaid medical assistance program of providing outpatient substance abuse treatment [Section 25.5-5-313, C.R.S.]. We contracted with Open Minds, a national medical consulting firm, for assistance in designing our methodology and interpreting the results of our analysis. Open Minds has extensive expertise in publicly funded medical programs, Colorado's Medicaid Program, substance abuse treatment, and medical cost-benefit analyses.

Our analysis was focused on two principal areas, as required by statute. We reviewed: (1) the costs to the Medicaid Program of providing the Substance Abuse Benefit in Fiscal Years 2007 through 2009, the first three years of the benefit; and (2) the savings to Medicaid of providing the Substance Abuse Benefit. Our analyses and conclusions are described in the following sections.

Substance Abuse Benefit Costs

We reviewed the total cost to the Medicaid Program of providing the Substance Abuse Benefit between Fiscal Years 2007 and 2009. We defined "Substance Abuse Benefit costs" as total benefit claims costs for the 5,200 clients who received services through the benefit during Fiscal Years 2007 through 2009 (the most recent data available at the time of the audit), as well as the administrative costs incurred by the Department for overseeing the benefit during this same period. These costs represent the additional costs to the Medicaid Program of implementing and providing the new Substance Abuse Benefit.

Overall, we found that the cost of providing Substance Abuse Benefit services to the 5,200 Medicaid clients during the first three years the benefit was in operation totaled about $2.4 million, or an average of about $464 per client, as shown in Exhibit 4 below. This included nearly $2.3 million in claims costs and about $150,000 in administrative expenses. The Department has allocated 0.5 FTE to administer the Substance Abuse Benefit.

Exhibit 4: Outpatient Substance Abuse Treatment Benefit Costs
Fiscal Years 2007 Through 2009

2007		2008	2009	Percent Change 2007-2009	Totals 2007-2009
Benefit Client Count	1,233	2,214	2,941	139%	5,200[1]
Benefit Claims	$403,400	$707,500	$1,151,900	186%	$2,262,800
Benefit Administrative Expenses[2]	$79,500	$35,100	$35,100	-56%	$149,700
Total Benefit Costs	$482,900	$742,600	$1,187,000	146%	$2,412,500
Average Annual Cost Per Client	$392	$335	$404	3%	$464[3]

Source: Office of the State Auditor analysis of data provided by the Department of Health Care Policy and Financing.

[1] Some clients were served in more than one year. This figure represents the total number of unduplicated clients who utilized Substance Abuse Benefit services over the three-year period from Fiscal Year 2007 through 2009.

[2] Includes Substance Abuse Benefit operating expenditures, the salaries and benefits for 0.5 FTE overseeing the benefit, and one-time costs associated with revising the Medicaid Management Information System (MMIS) when the Department implemented the benefit in Fiscal Year 2007.

[3] The average annual cost per client is based on the 5,200 unique clients served by the benefit from Fiscal Year 2007 through 2009; some clients were served in multiple years.

According to the Department, utilization of Substance Abuse Benefit services and benefit costs increased significantly from Fiscal Year 2007 to 2009 due to greater client awareness of the benefit and an increase in the number of substance abuse treatment providers serving Medicaid clients. Some of these clients also received benefit services in multiple years during the three-year period. The Substance Abuse Benefit is a relatively small benefit compared with the State's Medicaid Program, in terms of the number of clients served and total expenditures. The 5,200 Medicaid clients served by the Substance Abuse Benefit during Fiscal Years 2007 through 2009 represent less than 1 percent of all Medicaid clients. Further, the cost of the benefit to serve the 5,200 recipients was less than 0.1 percent of total Medicaid spending for the three-year period. Exhibit C-1 in Appendix C shows total claims costs for all of the 5,200 clients who utilized Substance Abuse Benefit services during Fiscal Years 2007 through 2009 and

separates the clients based on the year that they began receiving Substance Abuse Benefit services.

Substance Abuse Benefit Savings

While assessing the costs of the Substance Abuse Benefit is fairly straightforward, assessing "the savings to the [Medicaid] medical assistance program of providing outpatient substance abuse treatment" is more complex. For the purpose of our audit, we have defined "savings to the Medicaid Program" as the amount invested in Substance Abuse Benefit services less the reduction in medical costs **directly resulting from, or "caused by,"** those Substance Abuse Benefit services. As previously noted, we were able to determine that about $2.4 million was invested in Substance Abuse Benefit services and administrative costs during Fiscal Years 2007 through 2009. Additionally, we were able to calculate that medical costs for clients who began receiving Substance Abuse Benefit services during Fiscal Years 2007 or 2008 declined from $18.6 million to $15.1 million, or by about $3.5 million. We display our comparison of Substance Abuse Benefit costs with medical costs for benefit participants in Appendix B. To calculate medical costs, we included claims costs for the following Medicaid services: dental, emergency room, inpatient hospitalization, other outpatient, physician, pharmacy, mental health, laboratory, and capitated claims. We excluded claims for nursing homes, home and community based long-term care, durable medical equipment, and transportation services because the Substance Abuse Benefit is unlikely to affect the underlying medical conditions that caused clients to require these services. However, we were not able to determine whether the reduction in medical costs was **the direct resu lt of, or "caused by,"** Substance Abuse Benefit services provided to clients. In order to determine whether the reduction in medical costs was "caused by" Substance Abuse Benefit services, we would need longitudinal data on medical costs from a control group of Medicaid clients with diagnoses and demographics similar to those of the Substance Abuse Program clients and who did not receive Substance Abuse Benefit services. Additionally, research suggests that we would need data on other factors that contribute to changes in medical costs, such as genetics, lifestyle, personal motivation, and care and treatment outside of Medicaid for both the clients who participated in the Substance Abuse Benefit as well as a control group. These data were not available from state databases, including those maintained by the Departments of Health Care Policy and Financing and Human Services. These state databases were designed to collect basic demographic, eligibility, service, and claims data for payment, treatment, and reporting purposes, and not to collect data on underlying factors impacting clients' medical costs for research or experimental studies.

Since data are not available to determine whether changes in medical costs were "caused by" Substance Abuse Benefit services, we analyzed the data that were

available to identify trends in Medicaid costs for Substance Abuse Benefit clients. Specifically, we analyzed Fiscal Years 2007 through 2009 Medicaid claims data for the 1,233 Substance Abuse Benefit clients who began the benefit in Fiscal Year 2007 because the most years of data were available for these individuals. Some of these clients were enrolled in Medicaid continuously during the three-year period, others were enrolled in Medicaid off and on during the three years reviewed, and some left Medicaid altogether. The purpose of this review was to measure changes in the clients' costs after receiving services through the benefit. We also compared trends in medical claims costs for these 1,233 clients with trends in claims costs for the Medicaid population who did not participate in the Substance Abuse Benefit. The purpose of this comparison was to determine how the trends in medical claims costs for the Substance Abuse Benefit population compared with trends for the overall Medicaid population. We present our analyses of cost trends in the following sections.

Cost Trends

The following three sections include separate analyses of cost trends during Fiscal Years 2007 through 2009 for the 1,233 Substance Abuse Benefit clients who began using the benefit in Fiscal Year 2007. The analyses in the first section show cost trends for each year the clients received services through Medicaid during the three-year period and compare these cost trends with trends in the same medical costs over the same three years for the Medicaid population who did not participate in the Substance Abuse Benefit. The second section shows cost trends for the Substance Abuse Benefit clients based on the type of services the clients received through the benefit. The third section shows cost trends for a subset of the Substance Abuse Benefit clients who were continuously enrolled in Medicaid for the three-year period. We describe each of these analyses below.

I. Client Costs Based on Clients Who Received Services at Some Point During the Three Years Reviewed

In this section we used two approaches for evaluating cost trends: (1) a conservative approach, which analyzed the trends in costs of only those clients who remained enrolled in Medicaid and utilized services during each of the three years reviewed, and (2) a less conservative approach, which measured changes in costs of both the clients who remained in Medicaid, at least off and on, during the three years, and those who left Medicaid altogether. Under the conservative approach, the Medicaid costs for clients who utilized the Substance Abuse Benefit increased at a lower rate compared with the overall Medicaid population over the three-year period reviewed. Under the less conservative approach, Medicaid costs declined at a higher rate for most clients who utilized the Substance Abuse Benefit compared with the overall Medicaid population. According to our consultant, the results of both approaches (Exhibits 5 and 6) show promising

trends, since Substance Abuse Benefit clients' costs either increased at a lower rate or declined at a greater rate than the overall Medicaid population. The Department's preliminary analysis of cost trends for clients receiving services through the benefit identified similar results. However, neither we nor the Department were able to determine whether the Substance Abuse Benefit caused these declines in clients' costs or whether Medicaid experienced any savings as a result of providing the Substance Abuse Benefit.

Conservative Approach

Under the conservative approach we analyzed the trends in costs for those clients who remained enrolled in Medicaid and utilized services at some point during each of the three years reviewed. These clients were not necessarily enrolled in Medicaid continuously for the three-year period (see Section III for analysis that isolates continuously enrolled clients). This approach averaged the cost per client per year based on the clients served and does not account for clients who may have gained employment and left Medicaid. In other words, this approach does not reflect the cost savings achieved when clients leave the Medicaid Program.

Exhibit 5 compares trends in medical costs for the 1,233 clients who began utilizing the Substance Abuse Benefit in Fiscal Year 2007 with the costs of all other clients who received services through Medicaid in Fiscal Year 2007. The top half of the exhibit shows the trends for Substance Abuse Benefit clients' medical costs, which include benefit and other medical claims, during Fiscal Years 2007 through 2009. The bottom half of the exhibit shows the trends in medical costs for the non-benefit Medicaid clients. Overall, Exhibit 5 shows that the medical costs of Substance Abuse Benefit clients increased at a lower rate than the medical costs of the general Medicaid population. Although the average annual cost per client increased for both Substance Abuse Benefit clients and other Medicaid clients, the rate of increase was significantly lower (1 percent) for the Substance Abuse Benefit clients compared with the Medicaid population (19 percent).

Exhibit 5: Comparison of Medicaid Cost Trends for Substance Abuse Benefit Clients and the Medicaid Population
Fiscal Years 2007 Through 2009

	2007	2008	2009	Percent Change 2007-2009
Benefit Clients Who Began in 2007 and Received Medicaid Services in 2008 and 2009[1]	**1,233**	**1,074**	**895**	**-27%**
Benefit Claims	$403,400	$174,600	$111,100	-72%
Other Medical Claims[2]	$7,862,100	$6,330,900	$5,951,800	-24%
Total Benefit and Other Medical Claims	$8,265,500	$6,505,500	$6,062,900	-27%
Average Annual Cost Per Client	**$6,700**	**$6,060**	**$6,770**	**1%**
Medicaid Clients Served in 2007 Who Received Medicaid Services in 2008 and 2009[3]	**623,164**	**496,941**	**425,758**	**-32%**
Medical Claims[2] (In Billions)	$1.39	$1.20	$1.13	-19%
Average Annual Cost per Client	**$2,230**	**$2,410**	**$2,650**	**19%**

Source: Office of the State Auditor analysis of Medicaid claims data provided by the Department of Health Care Policy and Financing.

[1]This client count figure represents the total number of clients who began utilizing the Substance Abuse Benefit in Fiscal Year 2007 and who were served by Medicaid at some point during Fiscal Years 2008 and 2009. Most of these clients were not enrolled in Medicaid continuously from 2007 through 2009.

[2]Includes dental, emergency room, inpatient hospitalization, other outpatient, physician, pharmacy, mental health, laboratory, and capitated claims. Claims for home and community-based services, nursing home services, transportation, and durable medical equipment are not included.

[3]This client count figure represents the total number of clients served by Medicaid in Fiscal Year 2007 who also received Medicaid services at some point during Fiscal Years 2008 and 2009. Most of these clients were not enrolled in Medicaid continuously from 2007 through 2009. These clients did not utilize the Substance Abuse Benefit in Fiscal Years 2007, 2008, or 2009.

Less Conservative Approach

Under the less conservative approach we analyzed the trends in costs for clients who remained in Medicaid, at least off and on, during the three years reviewed as well as for those clients who left Medicaid altogether during this time. This approach calculates the average cost per client for the 1,233 Substance Abuse Benefit clients over the three-year period reviewed and accounts for the reduction in medical costs experienced by the Medicaid Program when clients leave Medicaid, even if clients leave for reasons unrelated to the Substance Abuse Benefit. In other words, this approach reflects the cost savings achieved when clients leave the Medicaid Program.

Exhibit 6 compares trends in medical costs for the 1,233 clients who began utilizing the Substance Abuse Benefit in Fiscal Year 2007 with the costs of all other Medicaid clients who received services through Medicaid in Fiscal Year

2007. The top half of the exhibit shows the trends for Substance Abuse Benefit clients' medical costs, which include benefit and other medical claims, during Fiscal Years 2007 through 2009. The bottom half of the exhibit shows the trends in medical costs for the non-benefit Medicaid clients. Overall, Exhibit 6 shows that the medical costs of Substance Abuse Benefit clients decreased at a higher rate than the medical costs of the general Medicaid population. Although the average annual cost per client declined for both Substance Abuse Benefit clients and other Medicaid clients, the rate of decrease was significantly higher (27 percent) for the Substance Abuse Benefit clients compared with the Medicaid population (19 percent).

Exhibit 6: Comparison of Medicaid Cost Trends for Substance Abuse Benefit Clients and the Medicaid Population
Clients Served in Fiscal Year 2007

	2007	2008	2009	Percent Change 2007-2009
Clients Who Began the Substance Abuse Benefit in 2007[1]	**1,233**			
Benefit Claims	$403,400	$174,600	$111,100	-72%
Other Medical Claims[2]	$7,862,100	$6,330,900	$5,951,800	-24%
Total Benefit and Other Medical Claims	$8,265,500	$6,505,500	$6,062,900	-27%
Average Annual Cost Per Client	**$6,700**	**$5,280**	**$4,920**	**-27%**
Medicaid Clients Served in 2007[3]	**623,164**			
Medical Claims[2] (In Billions)	$1.39	$1.20	$1.13	-19%
Average Annual Cost per Client	**$2,230**	**$1,930**	**1,810**	**-19%**

Source: Office of the State Auditor analysis of Medicaid claims data provided by the Department of Health Care Policy and Financing.

[1]This client count figure represents the total number of clients who began utilizing the Substance Abuse Benefit in Fiscal Year 2007. These clients may or may not have utilized the benefit in Fiscal Years 2008 and 2009.

[2]Includes dental, emergency room, inpatient hospitalization, other outpatient, physician, pharmacy, mental health, laboratory, and capitated claims. Claims for home and community-based services, nursing home services, transportation, and durable medical equipment are not included.

[3]This client count figure represents the total number of clients served by Medicaid in Fiscal Year 2007 who did not utilize the Substance Abuse Benefit. These clients may or may not have received Medicaid services in Fiscal Years 2008 and 2009.

According to our consultant, a number of factors may have contributed to the changes in clients' medical costs shown in Exhibits 5 and 6. As discussed previously, these factors include clients' genetics, lifestyle, personal motivation, and care and treatment outside of Medicaid. However, we were unable to determine the extent to which any these factors or the Substance Abuse Benefit contributed to these changes.

In addition, both Exhibits 5 and 6 show that the average annual cost per client for Substance Abuse Benefit clients is significantly higher each year than the average annual cost per client for the rest of the Medicaid population. The difference in average costs may exist because the demographics of these two groups differ significantly. As shown previously in Exhibit 2, the Substance Abuse Benefit clients are primarily adults, many of whom have disabilities; in contrast, the general Medicaid population is primarily children. In addition, according to SAMHSA, Medicaid recipients who have substance abuse disorders typically have more conditions that are chronic and utilize more costly services compared with other Medicaid recipients.

II. Client Costs Based on Type of Benefit Services Received

In this section we reviewed cost trends for Substance Abuse Benefit clients based on the type of benefit services they received. As discussed previously, the Medicaid clients who choose to participate in the Substance Abuse Benefit have the option of using some or all of the services available through the benefit; clients are not required to use any specific services, including therapy. From Fiscal Year 2007 to 2009 about 56 percent of Substance Abuse Benefit clients received therapy treatment; the remaining 44 percent of clients received detoxification and supportive services, such as case management, assessments, and screenings.

Some research suggests that therapy treatment, such as individual and group therapy, reduces Medicaid clients' medical costs because these services are more likely to improve clients' overall health compared with non-treatment services, such as detoxification. Therefore, in Exhibit 7 we separate the 1,233 Substance Abuse Benefit clients into two groups, those who chose to receive therapy treatment (individual, group, and/or family) through the benefit and those who did not receive therapy and only received detoxification, case management, assessments, and/or screenings. According to our consultant, the group that only received detoxification, case management, assessments, and/or screenings serves as a proxy control group, allowing a comparison of costs for clients who received no treatment with clients who received therapy treatment. Similar to the analysis in Exhibit 6, this analysis also captures the reduction in medical costs experienced by the Medicaid Program when clients leave Medicaid, even if clients leave for reasons unrelated to the Substance Abuse Benefit.

Exhibit 7: Comparison of Medicaid Cost Trends for Substance Abuse Benefit Clients Receiving Therapy and Not Receiving Therapy[1]
Clients Who Began the Substance Abuse Benefit in Fiscal Year 2007

	2007	2008	2009	Percent Change 2007-2009
Clients Who Received Therapy[1]	**620**			
Benefit Claims	$248,900	$119,500	$72,400	-71%
Other Medical Claims[2]	$4,091,700	$3,143,500	$2,924,100	-29%
Total Benefit and Other Medical Claims	$4,340,600	$3,263,000	$2,996,500	-31%
Average Annual Cost Per Client	**$7,000**	**$5,260**	**$4,830**	**-31%**
Clients Who Did Not Receive Therapy[1]	**613**			
Benefit Claims	$154,500	$55,000	$38,800	-75%
Other Medical Claims[2]	$3,770,400	$3,187,400	$3,027,700	-20%
Total Benefit and Other Medical Claims	$3,924,900	$3,242,400	$3,066,500	-22%
Average Annual Cost Per Client	**$6,400**	**$5,290**	**$5,000**	**-22%**

Source: Office of the State Auditor analysis of Medicaid claims data provided by the Department of Health Care Policy and Financing.

[1]Therapy clients include those who received any type of therapy treatment while utilizing the Substance Abuse Benefit. Clients who did not receive therapy through the benefit received non-therapy services that included assessments, screenings, case management, and/or detoxification.

[2]Includes dental, emergency room, inpatient hospitalization, other outpatient, physician, pharmacy, mental health, laboratory, and capitated claims. Claims for home and community-based services, nursing home services, transportation, and durable medical equipment are not included.

Exhibit 7 shows the total medical costs for clients who received therapy services decreased at a greater rate (about 31 percent) than medical costs for clients who did not receive therapy services (about 22 percent). Exhibit 7 provides some insight into how different services offered through the Substance Abuse Benefit may affect a client's medical costs. However, we were not able to determine whether the clients who did not receive therapy should have received it, nor whether the clients who received therapy completed the full course of treatment prescribed by their service provider. Further, we were not able to determine whether the Substance Abuse Benefit caused the greater rate of decrease in clients' costs.

Exhibit C-2 in Appendix C shows the medical costs for these 1,233 clients based upon the clients' substance abuse disorder (alcohol, drug, or polysubstance) upon admission to the Substance Abuse Benefit.

III. Client Costs Based on Continuous Enrollment in Medicaid

Finally, in this section we reviewed cost trends for a subset of the populations analyzed above: those who were continuously enrolled in the Medicaid Program for 36 months from Fiscal Years 2007 through 2009. This analysis shows that the costs of longer-term clients are higher than the costs of the average Substance Abuse Benefit and Medicaid clients, who are typically enrolled in Medicaid for less than 10 continuous months and cease enrollment from one fiscal year to the next. Only 419 of the 1,233 (34 percent) Substance Abuse Benefit clients who began the Substance Abuse Benefit in Fiscal Year 2007 were enrolled in Medicaid for 36 continuous months through the end of Fiscal Year 2009. Exhibit 8 isolates the medical costs for these 419 clients and shows the trends in medical costs for the 136,608 other Medicaid recipients who were enrolled continuously for the same 36 months. On average, these 419 clients were older (median age of about 41) and had a higher rate of disabilities (about 67 percent) compared with other Substance Abuse Benefit and Medicaid clients.

Exhibit 8: Comparison of Medicaid Cost Trends for Substance Abuse Benefit Clients and the Medicaid Population
Clients Continuously Enrolled in Medicaid for 36 Months

	2007	2008	2009	Percent Change 2007-2009
Clients Who Began the Benefit in 2007 and Were Continuously Enrolled	**419**			
Benefit Claims	$149,200	$87,300	$64,800	-57%
Other Medical Claims[1]	$3,121,300	$2,977,900	$3,449,200	11%
Total Benefit and Other Medical Claims	$3,270,500	$3,065,200	$3,514,000	7%
Average Annual Cost Per Client	**$7,810**	**$7,320**	**$8,390**	**7%**
Medicaid Clients Served in 2007 and Were Continuously Enrolled	**136,608**			
Medical Claims[1]	$510,818,000	$526,057,900	$571,762,700	12%
Average Annual Cost per Client	**$3,740**	**$3,850**	**$4,190**	**12%**

Source: Office of the State Auditor analysis of Medicaid claims data provided by the Department of Health Care Policy and Financing.

[1]Includes dental, emergency room, inpatient hospitalization, other outpatient, physician, pharmacy, mental health, laboratory, and capitated claims. Claims for home and community-based services, nursing home services, transportation, and durable medical equipment are not included.

As shown in Exhibit 8, both Substance Abuse Benefit clients and other Medicaid clients enrolled in Medicaid for 36 continuous months had an increase in medical costs over the three-year period. However, Substance Abuse Benefit clients costs increased at a lower rate, 7 percent, compared with the costs for other Medicaid clients, which increased by 12 percent. In comparison, the trends in Exhibit 6 showed that medical costs declined for the Substance Abuse Benefit clients who began the benefit in Fiscal Year 2007; these clients were enrolled in Medicaid for an average of about 10 months. The longer-term clients also had higher annual average costs per client compared with the rest of the Substance Abuse Benefit and Medicaid clients. For example, the average annual cost per client for these longer-term Medicaid clients, about $8,390 in Fiscal Year 2009 (as shown in Exhibit 8), was nearly double the average annual cost of about $4,920 for more typical Substance Abuse Benefit clients who remained in Medicaid only about 10 months (as shown in Exhibit 6).

According to Department representatives and our consultant, the difference in costs between the clients enrolled in Medicaid for 36 months and the clients enrolled for shorter periods may be due to the fact that the longer-term clients were older and had higher rates of disabilities compared with the rest of the

clients. Our consultant also suggested that Medicaid clients who remain enrolled for longer periods of time tend to have more chronic or complex medical conditions, the costs of which are less likely to be influenced by substance abuse disorder treatment.

In summary, according to our consultant, the trends in medical costs for clients who utilized the Medicaid Substance Abuse Benefit are promising and indicate that the benefit may have a positive impact. However, we could not determine from available data whether the services provided to Medicaid clients through the Substance Abuse Benefit caused the trends identified during the audit. Therefore, we were unable to conclude on whether the Substance Abuse Benefit has resulted in a cost savings to the State's Medicaid Program.

We make no recommendations in this area.

APPENDICES

Appendix A

Exhibit A-1: Medicaid Outpatient Substance Abuse Treatment Benefit Client[1] Demographics Compared with the Medicaid Population[2]

	Benefit Clients[1]	Medicaid Population[2]
Clients Served	5,200	603,400
Gender		
Male	39%	41%
Female	61%	59%
Age		
Under 21 years	23%	63%
21 to 59 years	73%	27%
60 years and older	4%	10%
Race/Ethnicity		
White	53%	25%
Hispanic	29%	32%
African American	6%	6%
American Indian	3%	1%
Other[3]	2%	3%
Unknown/Unreported	7%	33%
Eligibility Category[4]		
Categorically Eligible Low-Income Adults (AFDC-A)	41%	11%
Disabled Individuals up to age 59 (AND/AB-SSI)	29%	12%
Eligible Children, including Foster Care	24%	58%
Adults 65 and Older (OAP-A)[5]	2%	9%
Baby Care Program (BC) Women	1%	2%
Disabled Adults 60 to 64 (OAP-B-SSI)	2%	1%
Other[6]	<1%	7%
Received Mental Health Services	54%	10%

Source: Medicaid data provided by the Department of Health Care Policy and Financing and Drug and Alcohol Coordinated Data System (DACODS) data provided by the Department of Human Services.

[1]Substance Abuse Benefit client demographics are based on all individuals served by the benefit from Fiscal Year 2007 through 2009.

[2]Medicaid Population demographics are based on all individuals served by Medicaid in Fiscal Year 2009.

[3]Includes Asian, Native Hawaiian, and Other Pacific Islander.

[4]Eligibility category for Medicaid Population is based on average monthly client population for Fiscal Year 2009. Eligibility category for Benefit Clients is based on unique clients for Fiscal Years 2007 to 2009.

[5]Includes individuals in the OAP State Only eligibility category.

[6]Includes individuals in the following categories: Prenatal, Breast and Cervical Cancer Program for Women (BCCP); Non-categorical Refugee Assistance; adults eligible under Medicaid expansion; and individuals who were eligible for multiple categories during the year. None of the clients that utilized the Substance Abuse Benefit were in the Non-categorical Refugee Assistance eligibility category.

Exhibit A-2: Medicaid Outpatient Substance Abuse Treatment Benefit Client Geographic Distribution
Fiscal Years 2007 Through 2009

County[1]	Cases	Percent of Total Cases	County Population as Percent of Total State Population	County[1]	Cases	Percent of Total Cases[2]	County Population as Percent of Total State Population[2]
Adams	619	11.9%	8.7%	Garfield	15	0.3%	1.1%
Pueblo	527	10.1%	3.1%	Gunnison	15	0.3%	0.3%
Weld	507	9.8%	5.0%	La Plata	15	0.3%	1.0%
El Paso	502	9.7%	11.9%	Rio Grande	14	0.3%	0.2%
Jefferson	456	8.8%	10.8%	Chaffee	10	0.2%	0.3%
Larimer	363	7.0%	5.9%	Phillips	10	0.2%	0.1%
Denver	346	6.7%	12.2%	Baca	7	0.1%	0.1%
Arapahoe	341	6.6%	11.3%	Lincoln	7	0.1%	0.1%
Fremont	219	4.2%	1.0%	Moffat	7	0.1%	0.3%
Alamosa	191	3.7%	0.3%	Huerfano	6	0.1%	0.1%
Mesa	188	3.6%	2.9%	Boulder	4	0.1%	6.0%
Las Animas	95	1.8%	0.3%	Crowley	3	0.1%	0.1%
Logan	73	1.4%	0.4%	Douglas	3	0.1%	5.7%
Montrose	70	1.3%	0.8%	Routt	3	0.1%	0.5%
Montezuma	62	1.2%	0.5%	Yuma	3	0.1%	0.2%
Morgan	41	0.8%	0.6%	Rio Blanco	2	0.0%	0.1%
Delta	33	0.6%	0.6%	Sedgwick	2	0.0%	0.0%
Prowers	25	0.5%	0.3%	Washington	2	0.0%	0.1%
Otero	23	0.4%	0.4%	Jackson	1	0.0%	0.0%
Bent	20	0.4%	0.1%	Kit Carson	1	0.0%	0.2%
Elbert	16	0.3%	0.5%	Teller	1	0.0%	0.4%
Unknown or Unreported					352	6.8%	N/A
TOTAL					**5,200**	**100.0%**	**94.7%[1]**

Source: Office of the State Auditor analysis of Drug and Alcohol Coordinated Data System (DACODS) data provided by the Department of Human Services, Division of Behavioral Health.

[1]Counties that are not listed in the exhibit were not represented in the Substance Abuse Benefit client population.

[2]Some values round to less than 0.1.

Appendix B

Exhibit B-1: Comparison of Substance Abuse Benefit Costs and Changes in Benefit Clients' Medical Costs
Fiscal Years 2007 Through 2009

	2007	2008	2009	Decrease in Medical Costs
Benefit Clients' Other Medical Costs[1]				
Other Medical Claims for Clients Who Began the Benefit in 2007	$7,862,100	$6,330,900	$5,951,800	$1,910,300
Other Medical Claims for Clients Who Began the Benefit in 2008		$10,756,300	$9,162,100	$1,594,200
Total Decrease in Medicaid Costs[2]				**$3,504,500**
Total Benefit Costs[3]	$482,900	$742,600	$1,187,000	**$2,412,500**
Excess of *Decrease in Medicaid Costs* over *Benefit Costs*				**$1,092,000**

Source: Office of the State Auditor analysis of data provided by the Department of Health Care Policy and Financing.

[1]Includes dental, emergency room, inpatient hospitalization, other outpatient, physician, pharmacy, mental health, laboratory, and capitated claims. Claims for home and community-based services, nursing home services, transportation, and durable medical equipment are not included.

[2]The medical costs of clients who began receiving Substance Abuse Benefit services in either Fiscal Year 2007 or 2008 totaled about $18.6 million ($7,862,100 + $10,756,300) in the year the clients began the benefit. Medical costs for these clients totaled about $15.1 million ($5,951,800 + $9,162,100) in Fiscal Year 2009.

[3]Includes Substance Abuse Benefit claims for services provided to all benefit participants and benefit administrative expenses during Fiscal Years 2007 through 2009.

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Appendix C

Exhibit C-1: Medicaid Costs by Year Clients Began Utilizing the Substance Abuse Benefit
Fiscal Years 2007 Through 2009

	2007	2008	2009	Percent Change
Clients Who Began in 2007	**1,233 Clients**			
Benefit Claims	$403,400	$174,600	$111,100	-72%
Other Medical Claims[1]	$7,862,100	$6,330,900	$5,951,800	-24%
Total Benefit and Other Medical Claims	$8,265,500	$6,505,500	$6,062,900	
Average Annual Cost Per Client	$6,700	$5,280	$4,920	-27%
Clients Who Began in 2008		**1,775 Clients**		
Benefit Claims		$532,900	$268,400	-50%
Other Medical Claims[1]		$10,756,300	$9,162,100	-15%
Total Benefit and Other Medical Claims		$11,289,200	$9,430,500	
Average Annual Cost Per Client		$6,360	$5,310	-17%
Clients Who Began in 2009			**2,192 Clients**	
Benefit Claims			$772,400	
Other Medical Claims[1]			$10,819,000	
Total Benefit and Other Medical Claims			$11,591,400	
Average Annual Cost Per Client			$5,290	NA
Total	**5,200 Clients**			
Benefit Claims	$403,400	$707,500	$1,151,900	186%
Other Medical Claims[1]	$7,862,100	$17,087,200	$25,932,900	230%
Total Benefit and Other Medical Claims	$8,265,500	$17,794,700	$27,084,800	228%
Overall Average Annual Cost Per Client[2]	$6,700	$5,920	$5,210	-22%

Source: Office of the State Auditor analysis of Medicaid claims data provided by the Department of Health Care Policy and Financing.

[1] Includes dental, emergency room, inpatient hospitalization, other outpatient, physician, pharmacy, mental health, laboratory, and capitated claims. Claims for home and community-based services, nursing home services, transportation, and durable medical equipment are not included.

[2] In Fiscal Year 2007 the overall average is based on 1,233 clients; in Fiscal Year 2008 the overall average is based on 3,008 clients; and in Fiscal Year 2009 the overall average is based on 5,200 clients.

Exhibit C-2: Medicaid Costs by Substance Abuse Diagnosis[1]
Clients Who Began the Substance Abuse Benefit in Fiscal Year 2007

	2007	2008	2009	Percent Change 2007-2009
Alcohol Diagnosis Only		**330**		
Benefit Claims	$94,100	$36,700	$24,200	-74%
Other Medical Claims[2]	$1,863,300	$1,406,600	$1,654,800	-11%
Total Benefit and Other Medical Claims	$1,957,400	$1,443,300	$1,679,000	
Average Annual Cost Per Client	$5,930	$4,370	$5,090	-14%
Single Drug Diagnosis[3]		**131**		
Benefit Claims	$44,300	$13,100	$3,800	-91%
Other Medical Claims[2]	$944,100	$739,200	$625,700	-34%
Total Benefit and Other Medical Claims	$988,400	$752,300	$629,500	
Average Annual Cost Per Client	$7,550	$5,740	$4,810	-36%
Polysubstance Diagnosis[4]		**495**		
Benefit Claims	$180,500	$82,400	$42,800	-76%
Other Medical Claims[2]	$3,321,800	$2,797,700	$2,605,500	-22%
Total Benefit and Other Medical Claims	$3,502,300	$2,880,100	$2,648,300	
Average Annual Cost Per Client	$7,080	$5,820	$5,350	-24%
No Diagnosis Reported		**277**		
Benefit Claims	$84,500	$42,400	$40,300	-52%
Other Medical Claims[2]	$1,732,900	$1,387,400	$1,065,800	-38%
Total Benefit and Other Medical Claims	$1,817,400	$1,429,800	$1,106,100	
Average Annual Cost Per Client	$6,560	$5,160	$3,990	-39%

Source: Office of the State Auditor analysis of Medicaid data provided by the Department of Health Care Policy and Financing and Drug and Alcohol Coordinated Data System (DACODS) data provided by the Department of Human Services, Division of Behavioral Health.

[1] Clients can only have either drug use or alcohol use as their primary substance abuse diagnosis in the DACODS system. Tobacco use is considered a secondary or tertiary diagnosis.

[2] Includes dental, emergency room, inpatient hospitalization, other outpatient, physician, pharmacy, mental health, laboratory, and capitated claims. Claims for home and community-based services, nursing home services, transportation, and durable medical equipment are not included.

[3] Includes diagnoses involving the use of a single type of drug such as an amphetamine, a barbiturate, cocaine, cannabis, an opioid, a sedative, an inhalant, a prescription drug, or a nonprescription drug.

[4] Includes diagnoses involving the use of two or more types of drugs or both alcohol and drugs.

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