

**Washington State  
Supplemental Security Income (SSI)  
Cost Offset Pilot Project**

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**2002 Progress Report**

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## Summary

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Supplemental Security Income (SSI) clients who received alcohol or drug abuse (AOD) treatment had much better outcomes than SSI clients who appeared to need treatment but did not get it. The outcomes included lower costs for medical care, state and community psychiatric hospitalizations, and nursing home services. In addition, among the SSI clients with recent criminal histories, those who received AOD treatment were less likely to be re-arrested or convicted than those who remained untreated. Entering AOD treatment, completing treatment, and staying in treatment for more than 90 days—the three different measures used to examine the effect of treatment—were associated with lower costs and a reduced chance of recidivism.

Between July 1997 and December 2001, 128,913 adults in Washington State received SSI benefits in one or more months. Of these clients, 20,952, or 16 percent, were identified as having a need for AOD treatment based on administrative records, which included medical diagnoses, treatment procedures, receipt of detoxification or AOD treatment, or arrests for drug- or alcohol-related offenses. Out of these 20,952 clients who needed AOD treatment, 10,380, or 50 percent, were in treatment programs at some time during the 54-month study period.

The **cost offsets** and **reductions in criminal justice recidivism** for those who **entered AOD treatment** compared to those who remained untreated were:

- **Lower medical costs: −\$311** per client per month
- **Lower state hospital expenses: −\$48** per client per month
- **Lower community psychiatric hospital costs: −\$16** per client per month
- **Higher community outpatient mental health service costs: + \$17** per client per month
- **Lower nursing home care costs: −\$56** per client per month
- **Reduced likelihood of arrest: −16%**
- **Reduced likelihood of convictions for any offense: −15%**
- **Reduced likelihood of felony convictions: −34%**

The increased community outpatient costs of \$17 per client per month for those who entered AOD treatment should be viewed favorably since these services are often incorporated into successful treatment plans for those who are dealing with chemical dependency and other related mental health issues. Furthermore, this slight increase in costs is clearly offset by savings elsewhere. In addition, the SSI clients cost **+ \$10 per person per month** for **detoxification** and **+ \$152 per person per month** for **AOD treatment**.

Table 1. Medical, Mental Health, and Nursing Home Cost Differences Associated with Receiving Alcohol or Drug Abuse (AOD) Treatment SSI Clients, July 1997 - December 2001

Source of Costs <sup>a</sup>	Treated (n=7,153) vs Untreated (n=8,881) per client per month		
	Entered AOD Tx (n = 7,153)	Index AOD Tx Episode	
		More than 90 days (n = 3,382)	Completed (n = 1,537)
Medical Costs	-\$311	-\$333	-\$380
Mental Health Costs			
State Hospital	-\$48	-\$61	-\$56
Community Psychiatric Hospital	-\$16	-\$24	-\$33
Community Outpatient Services	+\$17	+\$29	-- <sup>b</sup>
Nursing Home Costs	-\$56	-\$58	-\$65
<b>Reduction in Costs for Medical, Mental Health, and Selected Adult Services</b>	<b>-\$414</b>	<b>-\$447</b>	<b>-\$530</b>
Detoxification <sup>c</sup>	+\$10	+\$8	+\$12
Substance Abuse Treatment	+\$152	+\$147	+\$155
<b>Net Cost Offsets with AOD Costs</b>	<b>-\$252</b>	<b>-\$292</b>	<b>-\$363</b>

<sup>a</sup>Statistically significant results with p<.05 are shown.

<sup>b</sup>Not statistically significant coefficient of \$4.

<sup>c</sup>Includes detoxification in TARGET and in the Medicaid Management Information System (MMIS) that are recorded as alcohol-related (code=96) or other (code=98) medical claims; excludes detoxification costs in MMIS recorded as medical or mental health services.

The total **cost offset** of medical care, state and community psychiatric hospitalizations, and long-term care relative to the cost for providing AOD treatment and outpatient mental health services equals **-\$252 per person per month**.<sup>1</sup> If an additional 30 percent of the 10,572 untreated SSI clients in need of AOD treatment got it, the **annual cost savings** could amount to roughly **\$9.6 million**.

<sup>1</sup> This monthly cost savings figure is a conservative estimate since it does not include exceptionally large differences between the treated and untreated groups primarily in medical costs associated with the incident in which the client's need for AOD treatment is noted in his or her medical record. For methodological reasons discussed later in this report, these costs were excluded from regression equations.

While the preceding results were based on comparisons between those who entered AOD treatment and those who remained untreated, further analyses were conducted to examine the effects of completing treatment or of staying in treatment for more than 90 days. In each case, completing treatment or continuing in treatment for at least three months, resulted in even greater cost differences and lower rates of recidivism. For example, SSI clients who successfully **completed their first episode of AOD treatment** in the study period compared to those who needed treatment but did not get it experienced the following **cost savings and reductions in criminal justice recidivism**:

- **Lower medical costs: −\$380** per client per month
- **Lower state hospital costs: −\$56** per client per month
- **Lower community psychiatric hospital costs: −\$33** per client per month
- **Lower nursing home costs: −\$65** per client per month
- **Reduced likelihood of arrest: −43%**
- **Reduced likelihood of conviction for any type of offense: −38%**
- **Reduced likelihood of felony conviction: −48%**

Table 2. Criminal Justice Outcomes  
Associated with Receiving Alcohol or Drug Abuse Treatment  
SSI Clients, July 1997 - December 2001<sup>a</sup>

Criminal Justice Outcomes <sup>b</sup>	Entered AOD Tx	Index AOD Tx Episode	
		More than 90 days	Completed
Arrest	-16%	-30%	-43%
Any Conviction	-15%	-27%	-38%
Felony Conviction	-34%	-- <sup>c</sup>	-48%

<sup>a</sup>See Table 3 for the number of clients included in each of the criminal justice analyses.

<sup>b</sup>Statistically significant results with  $p < .05$  are shown.

<sup>c</sup>Not statistically significant.

Staying in AOD treatment for more than 90 days was also associated with significantly lower monthly per client costs compared to costs for those who remained untreated, as follow: −\$333 for medical care, −\$61 for state hospitalizations, −\$24 for community psychiatric hospitalizations, and −\$58 for nursing home care. Monthly per client community mental health outpatient costs were + \$29 higher for those who stayed in AOD treatment more than 90 days compared to those who needed AOD treatment but did not even begin to get it. Those with longer treatment periods also evidenced a lower risk

of recidivism by 30 percent for arrests and 27 percent for convictions for any type of offense, but no difference in likelihood of committing a felony, the least common form of criminal activity.

### **Final Report**

In the remaining months of this project, additional analyses will be conducted to examine the nature of the index event in which the need for AOD treatment is identified. In particular, that event is often a costly bout of medical care, usually a hospitalization, in which a diagnosis suggesting drug or alcohol dependence is recorded. More analysis of the administrative records is warranted to better understand the nature of that care and whether or not the particular incident and its attendant costs could have been avoided. Information in the administrative record prior to the index event will be examined to determine if there is any prior evidence that could lead professionals to avoid unnecessary hospitalizations or to identify a client's need for AOD treatment sooner.

Also, further investigation will be undertaken regarding deaths that occurred to SSI clients in the study period. Death rates for clients who needed AOD treatment but did not get it were higher than rates for those who received AOD treatment. Therefore, further analyses will be conducted to determine differences in age at death, timing relative to the index event, the nature of the medical care that preceded those deaths, and the underlying cause of death. Such analyses will help to explain the degree to which those deaths might have been prevented.

# ***1 Introduction***

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This report is an investigation of public service costs and criminal justice outcomes for recipients of Supplemental Security Income (SSI) in Washington State. Clients who received chemical dependency treatment had significantly lower monthly costs for medical care, mental health hospitalizations in both state and community facilities, and nursing home care compared to those who needed treatment but did not get it. Also, among SSI clients with recent arrest or conviction histories, the chance of being re-arrested or of being convicted for subsequent offenses was also significantly lower for those who entered treatment for their chemical dependency. Finally, successfully completing a treatment episode and staying in treatment over 90 days were associated with significant reductions in costs for services and the risk of engaging in criminal activity leading to arrest or conviction.

## **Context and Underlying Questions**

A growing body of research (Finigan 1996, Gerstein et al. 1994, Kohlenberg et al. 1999, Luchansky and Longhi 1997, Luxenberg et al. 1996, Holder and Hallan 1986, Holder and Blose 1986 and 1992) indicates that treatment for substance abuse may avert subsequent medical costs that might otherwise occur. This relationship has been found both for public clients and for those supported by private health insurance. Among clients of the Department of Social and Health Services (DSHS), recipients of SSI appeared to have the greatest potential for saving or averting costs if they were to receive substance abuse treatment (Kohlenberg et al. 1999; Estee and Nordlund 2001).

Due to the considerable amount of potential savings of public funds, the SSI Cost Offset Pilot Project was established to provide more chemical dependency treatment among SSI clients. In the 1999-2001 biennium, \$2.5 million, including federal Title XIX match, was provided to pay for additional AOD treatment of SSI clients in 16 pilot counties. An additional \$2.9 million was appropriated for the 2001-2003 biennium due to preliminary results which showed significant medical cost offsets associated with receiving alcohol or drug abuse (AOD) treatment (Estee and Nordlund 2001). These additional funds were used to extend this project to a total of 30 counties. (See Appendix A for a project description and list of counties.)

An evaluation component of the project was established to determine whether or not receiving AOD treatment resulted in any differences in costs for providing publicly funded social and health services or in criminal justice outcomes among SSI recipients who were identified as needing such treatment. Need for treatment was determined based on several criteria which could be operationalized using existing administrative records, including Medicaid-paid claims data, AOD treatment and detoxification records, and criminal justice information systems.

## **Project Implementation**

When the SSI Cost Offset Pilot Project was implemented in November 1999, local referral sources (e.g., Regional Support Networks for mental health practitioners, physicians) were alerted to the availability of the project funds and local networks were encouraged to expand referrals for SSI clients in need of treatment. Also, the ADATSA assessment process was made available to SSI recipients. These efforts were intended to increase referrals of SSI clients for treatment and to improve the ease of getting them assessed so that they could be admitted more readily to available treatment programs. (For more detail, see “Appendix A. Project Implementation.”)

The SSI Cost Offset Pilot Project made additional funds available to provide treatment for SSI recipients in 16 counties in the 1999-2000 biennium and a total of 30 counties in the 2001-2003 biennium. Activities were undertaken at the county level to expand outpatient services and to strengthen the local process for assessing SSI clients’ needs and referring them for treatment. Analyses revealed that those who entered treatment after the pilot project began were similar to SSI clients admitted to treatment in the previous 34 months based on comparisons on demographic, socioeconomic, medical, mental health, and substance use characteristics.

## **Policy Questions**

This paper addresses the following questions:

- What are the differences in costs for medical, behavioral health, and nursing home care between SSI clients who receive chemical dependency treatment and those who need treatment but do not get it?
- To what extent do age, arrestee status, mortality, and eligibility status for Medicaid and Medicare affect medical cost differences associated with the receipt of chemical dependency treatment?
- Do clients who successfully complete an episode of AOD treatment, or who stay in AOD treatment longer have lower medical, behavioral health and nursing home care costs than those who need treatment but do not get it?
- Among clients with recent histories of arrests or convictions, is the chance of being re-arrested or re-convicted lower for those who enter AOD treatment, stay in treatment over 90 days, or successfully complete treatment compared to clients who appear to need AOD treatment but do not get it?



## 2 *Methods*

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### SSI Study Population

This study pertains to adults aged 18 years or older who were eligible for SSI benefits at any time from July 1998 through December 2001 and who had a record of receiving either medical care or AOD treatment at least once between July 1997 and December 2001. This initial cohort included 128,913 clients. Additional selection criteria were imposed for the various analyses that were conducted as a part of this study (1) to ensure that a minimum amount of time before and after seminal events occurred so that baselines and outcomes could be measured and (2) to select subpopulations who were most likely to experience outcomes of interest that tend to be rare in the population (e.g., likelihood of criminal justice involvement). The number of clients included in each set of analyses is shown in Table 3.

Table 3. Number of SSI Clients Included in Analyses

AOD Treatment Category	Number of SSI Clients in Analyses			
	Medical, Community Psych Hospital, Nursing Home Costs	State Hospital, Mental Health Community Outpatient Costs	Arrests	Convictions
<b>Adult SSI Clients in Study Period</b>	<b>128,913</b>			
No need for AOD Tx	107,961			
Need AOD Tx	20,952			
Untreated	10,572			
Entered AOD Treatment	10,380			
<b>SSI Clients in Regression Analyses</b>				
<b>Entered AOD Tx vs. Need for Tx</b>	<b>16,034</b>	<b>14,956</b>	<b>8,213</b>	<b>8,141</b>
Untreated	8,881	8,234	3,921	3,883
Entered AOD Treatment	7,153	6,722	4,292	4,258
<b>Length of AOD Index Tx Episode</b>	<b>7,153</b>	<b>6,722</b>	<b>3,046</b>	<b>3,026</b>
Less than or equal to 90 days	3,771	3,340	1,365	1,356
More than 90 days	3,382	3,382	1,681	1,670
<b>Ending Status AOD Index Tx Episode</b>	<b>7,153</b>	<b>6,722</b>	<b>3,046</b>	<b>3,026</b>
Not Completed	5,616	5,185	2,024	2,009
Completed	1,537	1,537	1,022	1,017

### *Determination of eligibility periods*

Due to the importance of the number of months of eligibility for receiving publicly funded medical care in calculating average monthly medical costs, care was exercised in determining the eligibility period. Clients were considered to be eligible for receiving publicly funded medical care in any month in which a client received SSI benefits, was Medicaid eligible according to the Medicaid Client Eligibility File as maintained by the Office of Financial Management, or had a Medicaid-paid claim. Months in which there were no Medicaid-paid claims were excluded if records from the Department of Corrections indicated that the client was incarcerated and, therefore, ineligible for publicly funded medical care during the month.<sup>2</sup>

Several additional criteria were used to select clients for particular analyses within this study. For the analyses of medical, mental health, and other social service costs, clients were required to have a minimum of one month of eligibility before and after an index event (defined below) relating to their need for or receipt of AOD treatment. This requirement was needed to establish baseline and outcome measures of costs. An additional restriction for the analyses of the State Hospital and Mental Health Community Outpatient costs occurred because mental health utilization data was not available from CSDB after fiscal year 2001. Therefore, the analyses were limited to clients whose need for treatment was identified before July 1, 2001.

In the analyses of criminal justice outcomes, clients were selected who had been arrested or convicted in the 24 months before their index event, so that outcomes reflect recidivism within this population. The criminal justice analyses also required that persons be alive during the minimum follow-up period—12 months for arrests and 18 months for convictions to allow additional time for the adjudication process. Clients who died during the follow-up period were excluded. In addition, clients who received methadone maintenance treatment were included in analyses of the effects of entering AOD treatment on criminal justice outcomes but were excluded from analyses of the effects of length of AOD treatment episode and completion status on criminal justice outcomes.

### **Data Sources**

Records from the following data sources were linked together by client, using personal identifiers, to provide a history of medical care and criminal justice involvement.

#### *Medicaid Management Information System (MMIS)*

The Medicaid Management Information System is maintained by the Medical Assistance Administration and contains detailed information on payments for fee-for-service medical care, including procedures, diagnoses, revenue codes, diagnosis related group hospitalization codes. In conjunction with other datasets, MMIS data was used to

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<sup>2</sup> Periods of incarceration are based on Department of Corrections' records but do not include periods of incarceration in local jails.

identify the need for AOD treatment and to measure AOD treatment episodes and detoxification. In addition, MMIS data was used to estimate costs for medical care, community psychiatric hospitalizations, nursing home care, detoxification, and AOD treatment.

#### *Treatment and Report Generation Tool (TARGET)*

The Treatment and Report Generation Tool records information on publicly funded treatment services for substance abusers in Washington State. TARGET has demographic, assessment, admission, treatment activity, and discharge data from treatment facilities across the state that was used to measure AOD treatment episodes, detoxification, and estimates of costs.

#### *Washington State Patrol Arrest Records*

Washington State Patrol (WSP) receives records of arrests from all jurisdictions across the state where the arrestee is fingerprinted. These are primarily felonies and gross misdemeanors. The records include date of arrest, the charge for which the individual was arrested, and personal identifiers. For this project, drug or alcohol-related charges were used to indicate that a client had need for AOD treatment. Appendix D lists the charges used to indicate need for treatment. In addition, WSP data was used in analyses of arrests in the chapter on criminal justice outcomes.

#### *Client Services Database (CSDB)*

Client Services Database consists of an ongoing record, updated monthly, of unduplicated individuals served by the Department of Social and Health Services (DSHS), the services they received, the time periods and locations for those services, and the costs (beginning with FY2001) associated with each service. Services are included from the following programs within DSHS: Aging and Adult Services, Division of Alcohol and Substance Abuse, Children's Administration, Division of Developmental Disabilities, Division of Vocational Rehabilitation, Economic Services Administration, Juvenile Rehabilitation Administration, Medical Assistance Administration, and Mental Health Division. For this report, CSDB data for FY1999 –FY2001 were used to identify clients eligible for SSI and to estimate costs for state hospitalizations and mental health community outpatient services. Furthermore, the linkage and unduplication of DSHS client identifiers was used as the basis for creating the unduplicated research file for this study.

#### *Mental Health Services Utilization*

A file for FY1998 was provided by the Mental Health Division which contained data on the use of mental health services (days or minutes of service) by month for each client. The types of service categories include days in state mental hospitals, days in community mental health hospitals, and minutes of community outpatient mental health services. These data were used in estimates of costs for state hospitalizations and community outpatient services.

### *Washington State Institute for Public Policy Criminal Recidivism database*

The Washington State Institute for Public Policy (WSIPP) has linked court case data obtained from the Washington State Administrative Office of the Courts (AOC) to create a person-based criminal history database. Conviction records from AOC pertain to all cases filed in each level of the state court system, including Juvenile Courts, District Courts and Superior Courts. Using the court data, WSIPP created a longitudinal record of an offender's criminal history by linking cases using defendants' personal identifiers (name, date of birth, social security number).

The Criminal Recidivism Database, updated quarterly by WSIPP, contains case-specific information, such as the date of an offense, the charge, and disposition, which was used in the analyses of convictions by type of offense in the chapter on criminal justice outcomes.

### **Need for Treatment**

SSI clients' need for AOD treatment was determined by the first administrative record of any of the following events or activities between July 1997 and December 2001:

- Medical records – Medical diagnoses (ICD-9CMs), DRGs, procedure codes (including detoxification), and revenue codes. *Source: MMIS (See Appendix C for list.)*
- Treatment records – Admissions to inpatient or outpatient AOD treatment and detoxification<sup>3</sup>. *Source: MMIS and TARGET*
- Arrest records – Arrests within Washington State for drug- or alcohol-related offenses for which the arrestee was fingerprinted and the record was sent to the Washington State Patrol. *Source: Washington State Patrol, (See Appendix D for list.)*

### **Comparison Groups**

Three groups were identified for analyses of cost offsets:

- Treated – SSI clients who received AOD treatment at any time between July 1997 and December 2001. Treatment modalities included inpatient residential stays, outpatient care, and methadone maintenance. In addition, we counted a client as treated if they received AOD counseling. Drug or alcohol detoxification is not counted as treatment.
- Untreated – SSI clients were classified as “untreated” if they needed treatment (as described in the section “Need for Treatment” above) but did not receive any publicly funded AOD treatment between July 1997 and December 2001. (Note: Clients who received detoxification but did not receive AOD inpatient or outpatient care were left in the “untreated” category.)

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<sup>3</sup> Excludes assessments for drug or alcohol problems that do not result in AOD treatment

- No Need – SSI clients who did not evidence a need for AOD treatment between July 1997 and December 2001 based on the criteria described above.

## **Treatment Variables**

### *Treatment Episodes*

Treatment episodes reflect ongoing continuous publicly funded care for substance abuse. One strength of using administrative records for evaluating substance abuse treatment outcomes for clients receiving publicly funded treatment is that those records typically contain complete or near complete treatment histories. Defining continuous care for substance abuse provides the ability to accurately determine when an intervention period begins and ends in order to distinguish an intervention period from an outcome period, and to measure the amount of treatment received in any given episode.

If a client had only one admission to treatment, then defining continuous care begins at the date of admission, and ends at discharge. When multiple admissions to treatment were involved, then a general rule was created that either linked those admissions into a single episode, or separated them into separate episodes. Based on previous research (Luchansky et al. 2000) treatment admissions were combined into a single treatment episode if readmission to treatment occurred less than 30 days after discharge from a previous admission. Treatment admissions where the time from the discharge date of the previous treatment to the admission date of the subsequent treatment was greater than 30 days were classified as separate episodes. AOD treatment records from both MMIS and TARGET were combined into treatment episodes as described above.

### *Methadone Treatment*

Since methadone treatment tends to occur over a protracted period of time and does not end with a status of “complete” as residential and outpatient AOD treatment often do, admissions to methadone treatment were not included in the treatment episodes described above. Clients who received methadone treatment were included in all cost analyses since those analyses compared clients who received AOD treatment to those who needed treatment but did not get it. In criminal justice analyses, however, the clients who received methadone treatment were included in analyses that compared entering treatment to remaining untreated but they were dropped from analyses examining the effects of length of treatment and treatment completion on criminal justice outcomes.

### *Index Episode*

The index episode was chosen as the first treatment episode that occurred during the study period. This provided the greatest amount of follow-up time for the criminal justice analyses. The index event was used to define several measures of AOD treatment.

### *Measures of treatment*

**Receipt of treatment** was defined as being admitted to treatment at any time during the study period.

**Treatment completion** was defined based on the completion status of the index episode. When a discharge from treatment is recorded in TARGET, the discharge status is recorded as well. This describes whether the client completed treatment (achieved treatment goals), left against advice, was discharged for rules violation, etc. MMIS records do not contain any information on discharge status. Therefore, a client was defined as having completed treatment if the discharge status of the last TARGET admission in an episode was "completed."

**Length of stay** was computed as the number of days from the admission date of the first treatment in an episode to the discharge date of the last treatment in the episode. Length of stay was dichotomized into less than or equal to 90 days and greater than 90 days.

### **How were before and after periods defined?**

To analyze differences in monthly medical and mental health costs between SSI clients who began AOD treatment and those who needed such treatment but did not get it, each client's months of eligibility for SSI benefits were divided into pre- and post-periods, as follows:

- **Treated** – The first date on which a client began treatment in the 54-month study period was used to delineate the before and after treatment initiation periods. Costs incurred during months in which a client was eligible for SSI benefits prior to the onset of the first treatment episode were counted as pre-event costs. Costs incurred in any month of SSI eligibility following the onset of CD treatment were counted as post-treatment initiation costs. Thus, if a client received medical care while receiving CD treatment, these costs were counted in the post-treatment initiation period.
- **Untreated who needed AOD treatment** – The first date in the 54-month study period on which a need for AOD treatment was identified was used to define the pre- and post-event periods. Specifically, the "before" period included all days in which a person was eligible for SSI before a need for AOD treatment was noted in their administrative record. The "after" period all subsequent days in which the person was eligible for SSI. The date on which the need for treatment was identified was not included in either the pre or post periods.<sup>4</sup>
- **No need** – The overall period between the first and last month in which the client was reported as eligible for SSI benefits during the 54-month study period was divided into two equal parts for each person.

### **Medical, Mental Health, Nursing Home, and AOD Treatment Costs**

Medical costs for SSI recipients are paid on a fee-for-service basis. Therefore, detailed records of their medical expenses were available from MMIS. The types of services for

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<sup>4</sup> See "Services and costs excluded from analyses" in the subsequent subsection of this chapter for further discussion.

which Medicaid-paid claims are recorded in MMIS include inpatient and outpatient hospitalizations, physician services, emergency room visits, prescription drugs, dental care, optical care, laboratory tests, medically required ambulance services, skilled nursing home care, stays in intermediate care facilities, and various other forms of medical services. To establish a baseline for examining costs before treatment, records from MMIS and TARGET were obtained for one year prior to the beginning of the eligibility period. Thus, medical costs and treatment expenditures were examined over 54 months: July 1997 through December 2001.<sup>5</sup>

MMIS, however, does not contain records of certain Medicaid-paid services which are paid for through other means, including the Social Services Payment System, Regional Support Networks for community mental health services, and disproportionate share payments to state mental hospitals. Types of services for which payment records are not in MMIS include: state psychiatric hospitalizations, community outpatient mental health care, and AOD treatment in certain facilities. Costs for these services were estimated as described below.

### *Medical Costs*

Medical costs were based on Medicaid-paid claims recorded in MMIS that were limited to those expenses administered by the Medical Assistance Administration (MAA) of DSHS.<sup>6</sup> These included the following major types of services: inpatient hospitalizations, outpatient hospitalizations, physicians, other providers, prescription drugs, emergency room visits, durable medical equipment, transportation, and various other services associated with providing medical care for each SSI recipient.

Other expenditures not included were for services administered and budgeted through other DSHS programs such as Aging and Adult Services, the Mental Health Division, and the Division of Alcohol and Substance Abuse. Examples of excluded Medicaid-paid services are nursing home care, community psychiatric hospitalizations, and alcohol or drug detoxification. These expenditures were analyzed separately. Furthermore, the costs for providing AOD treatment were **not** included in regression equations of medical cost differences between the treated and untreated groups in the pre- and post-periods.

### *Nursing Home Costs*

Nursing home costs were limited to Medicaid-paid claims recorded in MMIS. Nursing home care and related expenses are administered by the Aging and Disabilities Services Administration.

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<sup>5</sup> Since the MMIS extraction occurred in May 2001, payment records were considered sufficiently complete through December 2000 to be used for analysis purposes. Since medical payment records tend to lag and those submitted and paid soon after treatment may not be equally representative of all clients, Medicaid claims for services provided after December 2000 were excluded from these analyses.

<sup>6</sup> MAA-only Medicaid-paid claims were selected by using MMIS category of service codes 01-85 and 97 which represent the DSHS budget program category for MAA (080).

### *Mental Health Costs*

Mental health costs were based on several sources of data: MMIS, CSDB, and the file of monthly utilization of mental health services provided directly by the Mental Health Division. Costs associated with three categories of mental health services were analyzed separately: community mental health hospitalizations, state mental health hospitalizations, and community outpatient services.

Costs for community mental health hospitalizations were based on Medicaid-paid claims in MMIS. These costs include claims for the hospital stays, as well as other services (e.g. psychiatric provider services) associated with these hospital stays, which are administered by the Mental Health Division. The method for identifying these hospitalizations and related services were based on a set of criteria obtained from the MHD and which are described in Appendix E.

For FY2001 actual expenditures were available for hospitalizations in state mental hospitals and for community outpatient services and these costs were used. Because only utilization data (days or minutes of service) is available for state hospitalizations and community outpatient mental health services prior to FY2001, costs for these two types of service were estimated from the CSDB and the utilization file obtained from MHD. The number of hospital days or minutes of service in the before and after periods were multiplied by appropriate rates for FY2001 to estimate total costs in the before and after periods for these two categories of service. Using FY2001 rates approximates the constant dollar analysis used with the costs obtained from MMIS.

### *AOD Treatment and Detoxification Costs*

In general, all publicly funded treatment services are supposed to be recorded in TARGET. However, some episodes, particularly AOD treatment in hospitals, are not recorded in TARGET but are recorded in MMIS. Outpatient treatment, however, is usually recorded in both systems. Therefore, individual treatment periods were matched across the two systems and costs were taken from MMIS rather than estimated from TARGET whenever overlap was found. This method avoids double counting of costs where treatment is recorded in both systems.

Treatment for drug and alcohol dependence provided through certain facilities is paid by contract rather than on a fee-for-service basis through Medicaid. Specifically, facilities classified as Institutions for Mental Disease (IMD) are contracted to provide AOD treatment to publicly supported clients. Payments are made through contractual arrangements managed by county drug and alcohol coordinators. Records of treatment provided by these facilities were obtained from the Division of Alcohol and Substance Abuse (DASA) Treatment Assessment Report Generation Tool (TARGET), which has detailed service information, but no data on costs. Therefore, the costs associated with treatment recorded in TARGET were estimated using unit costs provided by DASA (see Appendix B).



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### *Services and Costs Excluded from Cost Analyses*

When the need for AOD treatment was identified through a medical event (e.g., hospitalization, ER visit, etc.), the costs associated with that event were removed from the medical costs for that client used in analyses. This exclusion was considered methodologically necessary since the medical event in which the need for AOD treatment is identified represents what is called in experimental terms, the “treatment effect.” That is, this event is the point at which the medical profession has recognized the client’s alcohol or drug-related medical problem. It is not properly considered part of either the “pre” or “post” event period. Rather, this medical incident is the dividing point between these periods. As such, the medical costs associated with this point should not be included in either the before or after costs.

### *Adjustments for Inflation*

Since analyses were going to examine change in costs over time, expenses were adjusted to account for changes in the cost of living between June 1997 and December 2001. In particular, each month’s expenses were adjusted using the state’s consumer price index (CPI) so that costs are expressed in constant December 2001 dollars. It is possible that medical costs may have risen faster than the overall CPI. Therefore, changes in average monthly medical costs of the SSI recipients who had no need for AOD treatment can be used as a baseline for comparisons of changes shown for the treated and untreated groups.

### *Monthly Average Costs*

Monthly averages were computed by dividing total costs in the pre- and post-event periods for the various cost variables by the number of months the client was eligible for Medicaid under SSI in each period.

### **Criminal Justice Analyses**

Two sets of analyses examined the effect of AOD treatment on criminal justice history. The first set, which could be called a “treatment initiation analysis,” looked at the effect of entering treatment on risk of re-arrest or conviction for a criminal offense following the index AOD treatment episode compared to not entering treatment. The second set of analyses, which could be labeled “episode analyses,” looked at the risk of re-arrest or conviction for a criminal offense among those receiving treatment where those completing treatment or remaining in treatment more than 90 days were compared to those not completing treatment or remaining in treatment less than or equal to 90 days.

Criteria for inclusion in these analyses differed somewhat from the cost analyses. As a result, the number of SSI clients included in the criminal justice analyses differed from the number used in the cost analyses (see Table 3 above). Analyses were also limited to clients who had been arrested or convicted of an offense that had been committed in the 24 months prior to identification of need for treatment or the onset of AOD treatment. Proportional hazards regression analyses were used to measure the risk of re-arrest or

conviction during a follow-up period of 12 months after an index event. For the untreated group, the follow-up period began with the date of identification of need for AOD treatment. For the treated clients, the follow-up period began with the first admission date of the first treatment episode in the study period for the initiation analyses. For the analyses of treatment completion or length of treatment (“episode analyses”), the follow-up period was after the end of the index treatment episode.

In each criminal justice analysis, the client needed to be alive at the end of the follow-up period so that each client could have the same length of time in which to have an opportunity to be arrested or to commit an offense. Analyses of convictions required an additional six months for the adjudication process. Therefore, clients who died within 12 months of the index event (i.e., identification of need for treatment, first date of treatment, or end of the first treatment episode) were dropped from analyses of arrests, and clients who died within 18 months of the index event were dropped from analyses of convictions.

### **3 *Characteristics of SSI Clients***

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#### **Need for AOD Treatment**

Of 128,913 adults who received SSI benefits, 20,952, or 16 percent, appeared to need AOD treatment based on at least one administrative indicator recorded between July 1997 and December 2001—roughly one out of every six SSI clients.

The use of administrative records (e.g., medical claims, treatment records, arrests) to indicate need for AOD treatment is sensitive to the passage of time, with the need-for-treatment rates over longer time periods approaching lifetime indicators of need. Therefore, annual need-for-treatment rates for SSI recipients was 8 percent in each year from FY1998 through FY2001 compared to the overall four-year rate of 16 percent.<sup>7</sup>

#### **Receipt of AOD Treatment**

Of the 20,952 SSI recipients aged 18 or older who needed AOD treatment, 10,380, or 50 percent, were in treatment at some time during the study period from July 1997 through December 2001 (see Table 4). The treatment penetration rate for the 54-month study period is consistent with the annual rates found in each of four fiscal years spanned by this study which were: 52 percent in FY1998, 50 percent in both FY1999 and FY2000, and 49 percent in FY2001, with the overall rate for the four fiscal years of 50 percent.<sup>8</sup>

About 50 percent of both men and women began treatment at least once between July 1997 and December 2001. Similarly, about 50 percent of both Hispanics and whites who needed AOD treatment in this period got it. African Americans and Native Americans were somewhat more likely to have started treatment: 55 percent and 53 percent, respectively, while Asians were somewhat less likely: only 45 percent.

SSI recipients under 45 years of age in need of AOD treatment were much more likely to have started treatment (54 percent) than were those aged 45 or older (41 percent).

Of the 1,346 SSI recipients who died by December 31, 2001 and who had had an indication of need for AOD treatment in their administrative records, only 33 percent had begun to get treatment at some point before their death during the 54-month study period.

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<sup>7</sup>In FY1992 the need-for-treatment rate among SSI clients aged 18 to 64 was 9 percent (Kohlenberg et al. 1999); rates for this age group in more recent years were slightly higher: 11 percent in FY1998 and FY1999 and 10 percent in FY2000 and FY2001. The higher rates occurred in the recent period even though Kohlenberg et al. (1999) used assessments for substance abuse or dependence as an additional indicator of need for treatment as those used in the current study.

<sup>8</sup> The treatment penetration rate in FY1992 for SSI recipients aged 18 to 64 (Kohlenberg et al. 1999) was 47 percent; while in recent years this rate was slightly higher (52 percent in FY1998, 50 percent in FY1999, 51 percent in FY2000, and 49 percent in FY2001).

Table 4. Treatment Rates by Selected Characteristics  
SSI Clients, July 1997 - December 2001

	Treated		Untreated		Total Clients in need of CD Treatment
	Clients	Rate <sup>a</sup>	Clients	Rate <sup>a</sup>	
<b>Total</b>	<b>10,380</b>	<b>50</b>	<b>10,572</b>	<b>50</b>	<b>20,952</b>
Gender					
Female	4,458	50	4,420	50	8,878
Male	5,922	49	6,152	51	12,074
Race/Ethnicity					
African American	1,317	55	1,083	45	2,400
Asian	120	45	148	55	268
Native American	627	53	560	47	1,187
Hispanic	353	51	342	49	695
White	7,594	49	7,959	51	15,553
Other	369	43	480	57	849
Age					
<b>Younger</b>	<b>7,215</b>	<b>54</b>	<b>6,036</b>	<b>46</b>	<b>13,251</b>
18-24	832	46	971	54	1,803
25-44	6,383	56	5,065	44	11,448
<b>Older</b>	<b>3,165</b>	<b>41</b>	<b>4,536</b>	<b>59</b>	<b>7,701</b>
45-64	3,064	42	4,160	58	7,224
65+	101	21	376	79	477
Died by 12/31/01					
No	9,933	51	9,673	49	19,606
Yes	447	33	899	67	1,346

<sup>a</sup>Rates equal the percent of treated (or untreated) clients out of the total number of clients in need of treatment within each demographic category (e.g., female, African American, etc.). The rate for treated clients is called the "treatment penetration rate."

### Demographic Characteristics

SSI recipients who needed treatment for chemical dependency had higher proportions who were male, white, or under the age of 45 than SSI clients who did not seem to have any need for AOD treatment. (See Table 5.)

Over half of both the treated and untreated groups were males (57 and 58 percent, respectively), and roughly three-quarters of the two groups were white (73 and 75 percent, respectively). The next largest racial/ethnic group was African American which

represented 13 percent of the treated group and 10 percent of the untreated group. Native American was the next largest category with six and five percent of the two groups, respectively. Hispanics represented three percent of each group while Asians only one percent.<sup>9</sup>

SSI recipients who got AOD treatment were younger than those who appeared to need treatment but did not get it. Over two-thirds (69 percent) of the treated were under the age of 45 while just over half (57 percent) of the untreated were under 45. Only one percent of the treated group was 65 years of age or older, while four percent of the untreated fell in this older group.

The crude death rate was highest (9 percent) among those who need AOD treatment but did not get it. In comparison, four percent of those who were in AOD treatment during the study period had died by the end of December 2001.

The 107,961 SSI clients who had no administrative indicator of need for AOD treatment are quite distinct from those SSI clients who appear to need AOD treatment. Compared to clients who needed such treatment, the remainder of the SSI clients are more likely to be female (62 percent), have a lower proportion of persons who were white (69 percent), considerably more persons of Asian descent (11 percent),<sup>10</sup> and are generally older (only 36 percent under age 45 and 27 percent aged 65 or more). The death rate for the SSI clients who did not need AOD treatment was seven percent, which was higher than the rate of four percent for those who received AOD treatment but lower than the nine percent study period death rate for those who needed treatment but did not get it.

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<sup>9</sup> This racial/ethnic classification is based on DSHS records stored in the Client Services Database. It represents a mutually exclusive classification in which Hispanic Origin is given precedence over other categories. Unlike the 2000 U.S. Census and more recent classifications that DSHS now uses, this categorization fails to account for persons with more than one race.

<sup>10</sup> The higher proportion of general SSI clients of Asian descent may reflect the use of SSI for aging immigrants who have not been employed long enough in the United State to be eligible for social security benefits.

Table 5. Demographic Characteristics of Comparison Groups  
Treated, Untreated, and No Need for AOD Treatment  
SSI Clients, July 1997 - December 2001

	Treated		Untreated		No Need <sup>a</sup>	
	Clients	Percent <sup>b</sup>	Clients	Percent <sup>b</sup>	Clients	Percent <sup>b</sup>
<b>Total</b>	<b>10,380</b>	<b>100</b>	<b>10,572</b>	<b>100</b>	<b>107,961</b>	<b>100</b>
Gender						
Female	4,458	43	4,420	42	66,560	62
Male	5,922	57	6,152	58	41,400	38
Race/Ethnicity						
African American	1,317	13	1,083	10	6,220	6
Asian	120	1	148	1	11,877	11
Native American	627	6	560	5	2,338	2
Hispanic	353	3	342	3	4,519	4
White	7,594	73	7,959	75	73,967	69
Other	369	4	480	5	9,040	8
Age						
18-24	832	8	971	9	8,309	8
25-44	6,383	61	5,065	48	31,037	29
45-64	3,064	30	4,160	39	39,391	36
65+	101	1	376	4	29,224	27
Died by 12/31/01						
No	9,933	96	9,673	91	100,746	93
Yes	447	4	899	9	7,215	7

<sup>a</sup>Total includes one client with unknown gender.

<sup>b</sup>Percents for each demographic characteristic are calculated within each column based on the total clients in each of the three separate comparison groups (treated, untreated, no need).

### Episodes of AOD Treatment

Of the clients who received AOD treatment, 59 percent had only one episode of treatment, using the method described in the preceding chapter in which relatively continuous periods of treatment with gaps in care of less than 30 days are identified. Another 22 percent had two episodes or relatively continuous periods of AOD treatment, nine percent had three episodes, and nine percent had four or more episodes of AOD treatment during the 54-month study period.

## 4 *Medical Costs*

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To ensure that there was an opportunity to incur medical expenses both before and after the need for treatment was identified, clients were included in the analyses only if they had at least one month of SSI eligibility in both the before and after periods. Out of the 20,952 SSI recipients who needed AOD treatment during the study period, 16,034 (77 percent) were included in the cost offset analyses because they met the eligibility criteria. In the treated group, 7,153 (69 percent of the 10,380 treated clients) met the inclusion criteria, and in the untreated group, 8,881 (84 percent of the 10,572 untreated) met the criteria. A lower proportion of the treated group met the criteria because more of this group was in AOD treatment at the onset of the study period or on their first day of SSI eligibility. For such clients, there were zero months of eligibility in the pre-treatment period.

The numbers of months included in the pre- and post-periods, as represented by means, standard deviations, minimum, and maximum values, are shown in Table 6. The pre-event period was 18 months for the SSI clients who began AOD treatment and 19 months for those who needed AOD treatment but did not get it. Conversely, the average follow-up period was slightly longer for the treated group than for the untreated group: 27 months versus 25 months. Standard deviations, minimum, and maximum number of months were about the same for both groups.

Table 6. Number of Months in Pre- and Post-Event Periods  
for SSI Clients in Medical Cost Analyses  
July 1997 - December 2001

	Entered Treatment (n = 7,153)		Untreated (n = 8,881)		No Need (n = 107,961)	
	Pre	Post	Pre	Post	Pre	Post
<b>Average Months</b>	<b>18</b>	<b>27</b>	<b>19</b>	<b>25</b>	<b>22</b>	<b>21</b>
Standard Deviation	14	15	14	15	8	8
Minimum	1	1	1	1	0.45	0.55
Maximum	53	53	53	53	27	27

For those who had no need for AOD treatment, their period of eligibility was divided into two equal parts for each client, which averaged 22 months in the first half and 21 months in the second half of the potential 54-month period.

### **Medical Costs in the Pre- and Post-Index Event Periods**

Average medical costs differed between the three groups in the pre- and post-event periods. The medical costs for the group that did not need AOD treatment increased from approximately \$424 in the first half of each client's eligibility span to \$488 in the latter

half, an increase of \$64 per person per month. Since these figures are in constant December 2001 dollars, this increase suggests a growth in medical expenses due to either general worsening of these SSI clients' medical conditions over time or rises in medical costs over and above inflation.

Table 7. Average Medical Costs in Pre- and Post-Event Periods  
for SSI Clients in Medical Cost Analyses  
July 1997 - December 2001

	Entered Treatment (n = 7,153)		Untreated (n = 8,881)		No Need (n = 107,961)	
	Pre	Post	Pre	Post	Pre	Post
<b>Average Medical Costs</b>	<b>\$459</b>	<b>\$615</b>	<b>\$615</b>	<b>\$1,013</b>	<b>\$424</b>	<b>\$488</b>
Standard Deviation	\$1,151	\$1,260	\$1,866	\$2,439	\$1,426	\$1,318
Maximum	\$50,609	\$26,603	\$77,732	\$52,187	\$182,418	\$100,000

For those who entered AOD treatment, their monthly medical costs averaged \$459 before their need for treatment was identified while their medical costs averaged \$615 afterwards, an increase of \$156. The untreated group, which needed but did not receive AOD treatment, had higher costs overall and a more substantial increase in medical costs. Their average monthly medical costs increased from \$615 before their need for treatment was identified to \$1,013 afterwards, a rise of \$398.<sup>11</sup>

Before their AOD treatment began, the treated group cost \$459 per month, on average, compared to \$615 for those who remained untreated, a statistically significant difference of \$156 ( $p < .0001$ ). This finding indicates that the untreated group differs from the outset from the treated group in their use of medical services. To account for these differences, medical costs in the pre-event periods for each group—before treatment began for the treated group and before the need for treatment was identified for the untreated group—were included in the regression equation to estimate the contribution of AOD treatment on subsequent medical cost differentials.

After their AOD treatment was initiated, medical costs for those who entered AOD treatment averaged \$615 per month compared to \$1,013 for the medical expenses of the untreated group, an unadjusted difference of \$398. A regression equation was developed to estimate the cost differences between these two groups once the contribution of demographic characteristics and prior medical costs are taken into account.

<sup>11</sup> Medical costs associated with the index event in which the need for treatment was identified (e.g., by diagnosis, procedure, etc.) are excluded from these average pre- and post-event costs.



### **Effect of Entering AOD treatment on Medical Costs**

Average monthly MAA medical costs for those who entered AOD treatment were \$311 less per month than the medical costs of SSI clients who needed but did not receive AOD treatment.

The results of the regression equation used to determine the degree to which medical costs differed between the treated and untreated groups are shown in Table 8. In addition to analyzing the effects of entering AOD treatment, the equation included differences in average monthly medical costs in the pre-event period for clients who entered AOD treatment and those who remained untreated and several demographic variables (gender, age, and race/ethnicity).

The variables that contributed significantly to explaining medical cost differences between the treated and untreated groups were: gender, age, prior medical costs, and initiation of AOD treatment. The contribution of these variables to medical expenses were:

- gender – female SSI recipient cost \$101 more on average per client per month than males,
- age – SSI recipients in younger age groups cost less on average per month than those who were older:
  - people who were 18 to 29 years of age cost \$374 less on average per client per month than those aged 45 years or older,
  - people who were 30 to 44 years of age cost \$240 less on average per client per month than those aged 45 years or older,
- prior medical costs – higher medical costs before a need for treatment was identified were associated with higher costs (32 cents per dollar per month) afterwards when AOD treatment, age, sex, and race were taken into account,
- initiation of AOD treatment – average monthly medical expenses of those who began AOD treatment were \$311 less per client per month than the medical costs of those who needed AOD treatment but did not get it.

Table 8. Medical Cost Differences  
Associated with Entering AOD Treatment  
SSI Clients, July 1997 - December 2001

Independent Variables <sup>a</sup>	Medical Cost Differences per client per month	Standard Error
<b>SSI Clients in Analyses</b>	<b>16,034</b>	
Entered AOD Treatment	7,153	
Untreated	8,881	
Intercept	\$919	\$32
Female (compared to Male)	\$101	\$31
Age 18-29 (compared to 45+)	-\$374	\$44
Age 30-44 (compared to 45+)	-\$240	\$34
Prior Medical Costs	\$0.32	\$0.01
<b>Entered AOD Treatment</b>	<b>-\$311</b>	<b>\$31</b>

<sup>a</sup>Statistically significant results with  $p < .05$  are shown. Non-significant coefficients for other variables included in the regression equation are not shown: African American, Asian, Hispanic, Native American, and Other (compared to White).

### Differences between Subgroups in Medical Cost Offsets Associated with Entering AOD Treatment

The differences in medical costs that are associated with the initiation of AOD treatment are not uniformly distributed among the SSI recipients in need of such treatment. Specifically, the medical cost differences are higher among older SSI recipients, people who die in the follow-up period, those who were not arrested for drug- or alcohol-related offenses, and those who were only eligible for Medicaid (and not Medicare). Cost differences for each of these subgroups are shown in Table 9.

Among older SSI recipients (aged 45 and over), entering AOD treatment was associated with lower medical costs of \$493 per client per month compared to medical costs for those in this age category who needed treatment but did not get it. This cost offset was still statistically significant among the two younger age groups considered, but resulted in somewhat lower monthly cost differences: – \$239 for the youngest group of adults (18-29 years) and – \$205 for those aged 30 to 44 years. This finding, however, does not

negate the potential long-term savings of successfully treating younger people who are chemically dependent. It suggests instead that among those who need treatment but do not get it, medical conditions may worsen with age and cause considerable expense if the person's AOD problems are left untreated.

Table 9. Medical Cost Differences Associated with Entering AOD Treatment Subgroups by Age, Mortality, Arrests, and Medicaid/Medicare Eligibility SSI Clients, July 1997 - December 2001

Subgroups	Number of Clients		Medical Cost Differences <sup>a</sup> per client per month
	Entered Treatment	Untreated	
<b>SSI Clients in Analyses</b>	<b>7,153</b>	<b>8,881</b>	<b>-\$311</b>
Age Groups			
18-29	1,430	1,446	-\$239
30-44	3,672	3,628	-\$205
45+	2,051	3,807	-\$493
Mortality Status as of December 31, 2001			
Alive	6,891	8,145	-\$147
Deceased	262	736	-\$1,704
Recent Arrest History			
Alcohol or Drug Arrest	1,883	1,953	\$86
No Alcohol or Drug Arrest	5,069	6,257	-\$413
Medicaid/Medicare Eligibility			
Dual Eligible	2,113	2,429	-\$126
Medicaid Only	5,040	6,452	-\$377

<sup>a</sup>Statistically significant results with  $p < .05$  are shown; the coefficients represent the adjusted average monthly per person difference in costs for clients in each AOD treatment status compared to costs for those who needed treatment but did not get it.

<sup>b</sup>The Index Treatment Episode is the first episode of AOD treatment in the study period; an episode may consist of a single admission to treatment or multiple admissions with no more than 30 days between separate treatments.

<sup>c</sup>Ending status is the discharge of the last admission within the AOD Index Tx Episode.

Among the highest cost differentials occur among SSI clients who die by the end of the study period. Of the 998 clients who died, 262 clients (26 percent) had started AOD treatment before they died. The 736 clients (74 percent) who died after their need for AOD treatment had been identified but before they had started such treatment cost, on average, \$1,704 more per person per month than those who died after starting AOD treatment. This medical cost difference may reflect the more advanced nature of illness

that the untreated clients endured. Indeed, the untreated clients were somewhat older—52 years on average—when they died, compared to clients who had entered AOD treatment who were about 48 years old at death. Further analyses of the causes of deaths, co-occurring mental illness, medical diagnoses, and the types of medical costs prior to death will be needed to understand more fully the possible reasons for the large medical cost differential between these two groups. For example, other research has shown that death rates of patients discharged from mental hospitals with alcohol or drug diagnoses or co-occurring diagnoses (mental illness and chemical dependency) are 50 percent higher than those for patients with mental illness alone (Maynard and Cox 2003).

The majority (15,036) of the SSI clients, however, were still alive by December 31, 2001, the end of the study period. For this group of clients, the medical costs for those who entered AOD treatment were \$147 lower per client per month than the costs for those who needed AOD treatment but did not get it.

Nearly one out of four of the SSI recipients who were identified as needing treatment and who were included in the medical cost analyses had been arrested for a drug- or alcohol-related offense between July 1997 and December 2001. Of the 3,836 arrestees, 49 percent received treatment for their chemical dependency.<sup>12</sup> Among these arrestees medical costs were somewhat higher (\$86 per person per month) once they began receiving treatment for their chemical dependency, compared to those who had been arrested but had not begun AOD treatment.

The clients who were arrested for a drug- or alcohol-related offense can be further divided into two subgroups: 2,610 clients whose need for treatment was identified by such an arrest and 1,226 clients whose need for treatment was identified through a medical incident, detoxification, or AOD treatment that occurred some time before they were arrested for the drug- or alcohol-related crime. Of the 2,610 whose need was identified based on the arrest, 38 percent received treatment and their medical costs were + \$115 higher once they began AOD treatment compared to those who remained untreated. Of the 1,226 clients who were arrested after their need for treatment was identified through a medical, detoxification, or AOD treatment record, a much higher proportion—72 percent—received AOD treatment but their subsequent medical costs were not statistically different from those of clients who did not enter treatment (regression coefficient of – \$35 was not statistically significant).

Among the 11,326 SSI recipients who had **not** been arrested for drug or alcohol-related offenses during the study period, those who received AOD treatment had significantly lower medical costs once that treatment began (–\$413 per client per month) compared to those who did not enter AOD treatment.

Significant medical cost differences associated with beginning AOD treatment were found for SSI clients who were eligible for either Medicaid alone or for both Medicaid

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<sup>12</sup> Of the 3,836 arrestees included in the medical cost analyses, 1,284 (33 percent) were identified as needing AOD treatment based on an arrest record alone; the remainder met one or more medical criteria of need.

and Medicare (called “dual eligibles”). Average monthly medical cost differences associated with AOD treatment were much higher for the Medicaid only clients (\$377 per person per month) than for the dual eligible clients (\$126 per person per month), but both amounts are statistically significant. The difference in these average monthly costs reflect the fact that the medical costs for the Medicaid-only clients in these analyses include the full spectrum of medical care from doctors’ visits to hospitalizations, while the costs for the dual eligible clients includes only the portion of medical care borne by Medicaid—mostly just their prescription drug costs.<sup>13</sup>

### **Effect of Completion Status and Length of AOD Treatment and on Medical Costs**

Two factors in AOD treatment tended to be associated with lower medical costs: ending a treatment episode with a successful status of “completed” and remaining in treatment for a longer continuous period. As shown in Table 10, completing the index AOD treatment episode resulted in the greatest medical cost difference compared to the untreated group. Specifically, 21 percent of the 7,153 SSI clients who entered AOD treatment completed their first episode of treatment successfully. The medical care expenses for those who completed the AOD treatment episode were \$380 lower than the cost of medical care for those who needed AOD treatment but remained untreated.

Length of treatment episodes also affected subsequent medical costs. After AOD treatment began, medical costs were – \$333 lower for the SSI clients who stayed in treatment over 90 days compared to the medical costs of the untreated group that occurred after their need for treatment was identified. In contrast, clients who entered treatment but stayed in for 90 days or less had lower medical costs of – \$291 compared to costs for the untreated clients.

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<sup>13</sup> Medicaid also pays for nursing home care, which is analyzed separately in a subsequent section.

Table 10. Medical Cost Differences  
 Associated with Receiving AOD Treatment  
 by Length and Completion of AOD Index Treatment Episode  
 SSI Clients, July 1997 - December 2001

Receipt of AOD Treatment	Medical Cost Differences <sup>a</sup> per client per month	Standard Error
<b>Treated vs Untreated SSI Clients</b>	<b>-\$311</b>	<b>\$31</b>
Length of AOD Index Tx Episode <sup>b</sup>		
Less than or equal to 90 days	-\$291	\$38
More than 90 days	-\$333	\$39
Ending Status of AOD Index Tx Episode <sup>c</sup>		
Not Completed	-\$292	\$33
Completed	-\$380	\$53

<sup>a</sup>Statistically significant results with  $p < .05$  are shown; the coefficients represent the adjusted average monthly per person difference in costs for clients in each AOD treatment status compared to costs for those who needed treatment but did not get it.

<sup>b</sup>The Index Treatment Episode is the first episode of AOD treatment in the study period; an episode may consist of a single admission to treatment or multiple admissions with no more than 30 days between separate treatments.

<sup>c</sup>Ending status is the discharge of the last admission within the AOD Index Tx Episode.

## 5 *Mental Health Costs*

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### **Effect of Entering AOD Treatment on Mental Health Costs**

Costs for state hospital care and community psychiatric hospitalizations were significantly lower after SSI clients entered AOD treatment compared to costs that occurred after a need for AOD treatment was identified but left untreated. Specifically, average monthly state hospital costs were \$48 lower per person per month after AOD treatment began, and community hospital costs were \$16 lower, as shown in Table 11. Thus, getting an SSI client who appears to have chemical dependency into AOD treatment appears to lower subsequent mental health costs by averting hospitalizations.

Costs for community outpatient services rose after a client entered AOD treatment compared to costs for clients who needed AOD treatment but did not get it. The monthly increase in outpatient services averaged \$17 per person. This increase should be viewed favorably since outpatient mental health services are often included as part of the successful treatment regimen for those who begin to address their chemical dependency problems by entering AOD treatment. Furthermore, the increase in costs for community outpatient services is more than offset by the total avoided mental health costs associated with state and community psychiatric hospitalizations.

Several other variables included in the regression equations to account for their relationship to mental health costs were found to have significant effects, as follows:

- females had lower costs (-\$34) for state hospitalizations but higher costs (+\$17) for using community outpatient services than males and no difference in their costs for community psychiatric hospitalizations
- younger SSI clients in both the 18-29 and 30-44 year age categories had higher costs for all three types of mental health services than did those aged 45 and over (see Table 11 for details)
- prior costs for mental health services were associated with subsequently higher costs for each type of service once AOD treatment began or a need for AOD treatment was identified, with an increase of 26 cents for each dollar spent on state hospitalizations, 19 cents per dollar for community psychiatric hospitalizations, and 65 cents per dollar of outpatient services
- racial or ethnic background was not associated with differential mental health costs for the most part with the exception of per person monthly costs for community outpatient services which were \$117 higher for Asians and \$59 higher for Native Americans compared to costs for whites.

Table 11. Mental Health Costs Associated with Entering AOD Treatment  
SSI Clients, July 1997 - December 2001

Independent Variables <sup>a</sup>	Mental Health Cost Differences per client per month	Standard Error
<b>State Institutions<sup>b</sup></b>		
<b>SSI Clients in Analyses</b>	<b>14,956</b>	
Entered AOD Treatment	6,722	
Untreated	8,234	
Intercept	\$70	\$9
Female (compared to Male)	-\$34	\$9
Age 18-29 (compared to 45+)	\$84	\$13
Age 30-44 (compared to 45+)	\$24	\$10
Prior State Hospital Costs	\$0.26	\$0.01
<b>Entered AOD Treatment</b>	<b>-\$48</b>	<b>\$9</b>
<b>Community Psychiatric Hospitalizations</b>		
<b>SSI Clients in Analyses</b>	<b>16,034</b>	
Entered AOD Treatment	7,153	
Untreated	8,881	
Intercept	\$30	\$4
Age 18-29 (compared to 45+)	\$29	\$6
Age 30-44 (compared to 45+)	\$12	\$5
Prior Com. Psy. Hosp. Costs	\$0.19	\$0.01
<b>Entered AOD Treatment</b>	<b>-\$16</b>	<b>\$4</b>
<b>Community Outpatient Services<sup>b</sup></b>		
<b>SSI Clients in Analyses</b>	<b>14,956</b>	
Entered AOD Treatment	6,722	
Untreated	8,234	
Intercept	\$60	\$7
Female (compared to Male)	\$17	\$7
Age 18-29 (compared to 45+)	\$79	\$10
Age 30-44 (compared to 45+)	\$41	\$8
Asian (compared to White)	\$117	\$31
Native Amer. (compared to White)	-\$59	\$15
Prior Com. Outpatient Costs	\$0.65	\$0.01
<b>Entered AOD Treatment</b>	<b>\$17</b>	<b>\$7</b>

<sup>a</sup>Statistically significant results with  $p < .05$  are shown. Non-significant coefficients for other variables included in the regression equations are not shown: African American, Asian, Hispanic, Native American, and/or Other (compared to White), depending on type of mental health service.

<sup>b</sup>State hospital and community outpatient service costs are only for FY1998-2001. Excludes 1,078 clients who began AOD treatment or whose need for treatment was identified after FY01 (June 30, 2001).



Table 12. Mental Health Costs  
by Length and Completion of AOD Index Treatment Episode  
SSI Recipients, July 1997 - December 2001

Independent Variables <sup>a</sup>	Average Monthly Mental Health Costs	Standard Error
<b>State Institutions</b>		
Length of AOD Index Tx Episode <sup>c</sup>		
Less than or equal to 90 days	-\$35	\$11
More than 90 days	-\$61	\$11
Ending Status of AOD Index Tx Episode <sup>d</sup>		
Not Completed	-\$46	\$10
Completed	-\$56	\$15
<b>Community Psychiatric Hospitalizations</b>		
Length of AOD Index Tx Episode <sup>c</sup>		
Less than or equal to 90 days	-- <sup>b</sup>	
More than 90 days	-\$24	\$5
Ending Status of AOD Index Tx Episode <sup>d</sup>		
Not Completed	-\$11	\$5
Completed	-\$33	\$7
<b>Community Outpatient Services</b>		
Length of AOD Index Tx Episode <sup>c</sup>		
Less than or equal to 90 days	-- <sup>b</sup>	
More than 90 days	\$29	\$9
Ending Status of AOD Index Tx Episode <sup>d</sup>		
Not Completed	\$21	\$8
Completed	-- <sup>b</sup>	

<sup>a</sup>Statistically significant results with  $p < .05$  are shown; the coefficients represent the adjusted average monthly per person difference in costs for clients in each AOD treatment status compared to costs for those who needed treatment but did not get it.

<sup>b</sup>Not statistically significant.

<sup>c</sup>The Index Treatment Episode is the first episode of AOD treatment in the study period; an episode may consist of a single admission to treatment or multiple admissions with no more than 30 days between separate treatments.

<sup>d</sup>Ending status is the discharge of the last admission within the AOD Index Tx Episode.

### **Effect of Length of AOD Treatment and Completion Status on Mental Health Costs**

Completing AOD treatment resulted in significant mental health hospital cost savings compared to remaining untreated for both state hospital care (– \$56) and community psychiatric hospitalizations (– \$33). Completing AOD treatment, however, had no effect on outpatient mental health costs (results non-significant). Entering but not completing AOD treatment also resulted in significantly lower state and community psychiatric hospital costs (– \$46 and – \$11, respectively) compared to remaining untreated, but the cost savings were not as great as those associated with completing AOD treatment. Community outpatient costs were + \$21 higher for clients who entered AOD treatment but did not complete it compared to costs for these services among the untreated SSI clients once their need for AOD treatment was identified.

Compared to SSI clients who remained untreated despite apparent need for AOD treatment, the SSI clients who remained in AOD treatment for more than 90 days had significantly lower average monthly costs for state hospital stays (– \$61) and for community psychiatric hospitalizations (– \$24). The costs for community outpatient services, however, were higher for those who stayed in treatment more than 90 days (+ \$29). Staying in AOD treatment for less than 90 days was associated with lower costs only for state hospital care (– \$35).

## 6 *Nursing Home Costs*

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### Effect of Entering AOD Treatment on Nursing Home and Adult Day Health Costs

Costs for nursing home care, a Medicaid-paid service administered by the DSHS Aging and Disability Services Administration (ADSA), were \$56 lower on average per person per month for SSI clients who entered AOD treatment compared to costs for these services among those who needed AOD treatment but did not get it. Nursing home costs accounted for 40 percent of the expenditures administered by ADSA for the 16,034 clients who needed AOD treatment and were included in these cost analyses.<sup>14</sup>

Table 13. Nursing Home Cost Differences<sup>a</sup>  
Associated with Entering AOD Treatment  
SSI Clients, July 1997 - December 2001

Independent Variables <sup>b</sup>	Nursing Home Cost Differences per client per month	Standard Error
<b>SSI Clients in Analyses</b>	<b>16,034</b>	
Entered AOD Treatment	7,153	
Untreated	8,881	
Intercept	\$117	\$6
Age 18-29 (compared to 45+)	-\$84	\$8
Age 30-44 (compared to 45+)	-\$67	\$6
Prior Adult Services Costs	\$0.47	\$0.01
<b>Entered AOD Treatment</b>	<b>-\$56</b>	<b>\$6</b>

<sup>a</sup>Costs for nursing home care equal 40 percent of expenditures for Medicaid-paid services for the SSI clients in need of AOD treatment which are administered by Aging and Adult Services of the Aging and Disability Services Administration.

<sup>b</sup>Statistically significant results with  $p < .05$  are shown. Non-significant coefficients for other variables included in the regression equation are not shown: female (compared to male) and African American, Asian, Hispanic, Native American, and Other (compared to White).

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<sup>14</sup> Costs for other Medicaid-paid services administered by Aging and Disability Services Administration were not examined in the present study.

Several other variables included in the regression equation as statistical controls were significantly related to nursing home care costs. In particular, the younger a client was, the less of these services they used, and incurring costs for these services in the pre-index event period were associated with higher subsequent use. One's gender, race, or ethnicity was not associated with how much nursing home care one received.

### Effect of Length of AOD Treatment and Completion Status on Nursing Home Costs

Completing AOD treatment or staying in treatment longer afforded a slight increase in the average monthly savings for nursing home care. The difference in average monthly nursing home costs between those receiving AOD treatment and those who remained untreated was slightly higher among for the SSI clients who completed the AOD treatment episode (– \$65) or who stayed in AOD treatment for more than 90 days (– \$59) compared to either those who did not complete treatment or stayed less than 90 days (– \$53 for each of these later groups).

Table 14. Nursing Home Costs  
by Length and Completion of AOD Index Treatment Episode  
SSI Clients, July 1997 - December 2001

Independent Variables <sup>a</sup>	Nursing Home Cost Differences per client per month	Standard Error
Length of AOD Index Tx Episode <sup>b</sup>		
Less than or equal to 90 days	-\$53	\$7
More than 90 days	-\$59	\$7
Ending Status of AOD Index Tx Episode <sup>c</sup>		
Not Completed	-\$53	\$6
Completed	-\$65	\$10

<sup>a</sup>Statistically significant results with  $p < .05$  are shown.

<sup>b</sup>The Index Treatment Episode is the first episode of AOD treatment in the study period; an episode may consist of a single admission to treatment or multiple admissions with no more than 30 days between separate treatments.

<sup>c</sup>Ending status is the discharge for the last admission within the AOD Index Tx Episode.

## 7 *Criminal Justice Outcomes*

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### **Method for Analyzing Criminal Justice Outcomes**

Two different approaches are used to present the analyses of criminal justice outcomes. First, proportional hazards regression equations were used to analyze the chance that SSI recipients in need of AOD treatment would be re-arrested, or would commit an offense that resulted in a conviction, on any given day in the 12 months following an admission to treatment (treated group) or the identification of need for AOD treatment (untreated group). Proportional hazards regression analysis is a survival analysis technique that examines the influence of treatment variables and covariates on two important events, first, the occurrence of an outcome event (e.g., an arrest or a conviction) and, second, the length of time between the onset of treatment or the identification of need for treatment and the outcome event. Thus, in proportional hazards regression, a hazard is the chance that an event (e.g., an arrest) will happen in some specific interval of time. The second approach is to present descriptive statistics of unadjusted arrest and conviction rates. These analyses provide an easy way to see how changes in the hazards of re-arrest or conviction are manifested in the observed rates of re-arrest and conviction.

Analyses were limited to 8,743 SSI clients who had a record of an arrest or a conviction in the two years prior to the index event (i.e., initiation of AOD treatment for the treated group or the indicator of need for AOD treatment for the untreated group). Also, analyses were limited to clients who were alive 12 months after the index event for arrests and 18 months after the index event for convictions (to allow an additional six months for adjudication), and, therefore, excluded clients who died in these follow-up periods. Thus, for analyses that examined the effects of entering AOD treatment on criminal justice outcomes 8,213 SSI clients were included in analyses of arrests (4,292 in the treated group and 3,921 in the untreated) and 8,141 were included in the conviction analyses (4,258 in the treated and 3,883 in the untreated).

### **Effect of Entering AOD Treatment on the Likelihood of Re-arrests or Convictions**

The hazard (or likelihood) of being arrested in the follow-up period was significantly lower, – 16 percent, for clients who entered AOD treatment than for those who remained untreated. Similarly, the likelihood of a conviction for any type of offense was lowered by 15 percent, and for a felony conviction by 34 percent. Thus, entering AOD treatment lowered the risks of re-arrest or conviction while the effects of several other variables included as covariates in the equation (i.e., being young, male, or African American tended to increase the risks), as shown in Table 15. Being Native American was associated with a 50 percent lower risk of a felony conviction in the follow-up period compared to the risks for whites.

Table 15. Percent Change in Risk<sup>a</sup> of Criminal Justice Outcomes Associated with Entering AOD Treatment for SSI Clients with Prior Arrests or Convictions

Independent Variables <sup>b</sup>	Criminal Justice Outcome		
	Arrest <sup>c</sup>	Any Conviction <sup>d</sup>	Felony Conviction <sup>d</sup>
<b>SSI Clients in Analyses</b>	<b>8,213</b>	<b>8,141</b>	<b>8,141</b>
Age 18-29 (compared to 45+)	86%	99%	166%
Age 30-44 (compared to 45+)	51%	55%	116%
Male (compared to Female)	60%	36%	86%
African American (compared to White)	51%	19%	92%
Native American (compared to White)			-50%
<b>Entered AOD Treatment</b>	<b>-16%</b>	<b>-15%</b>	<b>-34%</b>

<sup>a</sup>Percent change in risk was measured by proportional hazards regression analysis.

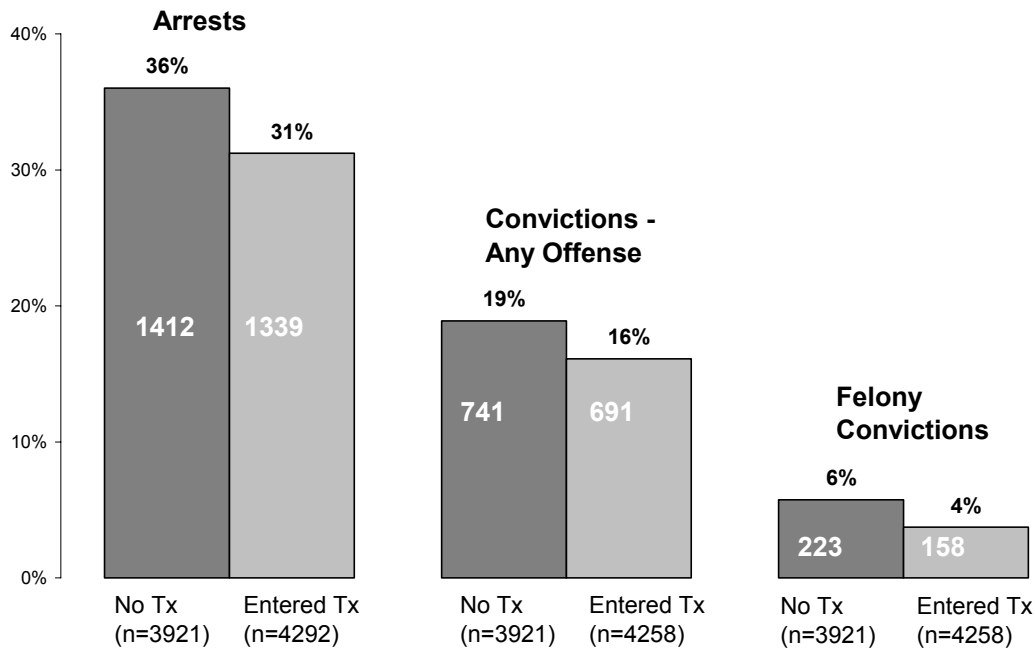
<sup>b</sup>Statistically significant results with  $p < .05$  are shown. Non-significant coefficients for other variables included in the equations are not shown: Asian, Hispanic, Native American, and Other (compared to White), depending on criminal justice outcome.

<sup>c</sup>Analyses of arrests were limited to clients who were alive 12 months after the index event.

<sup>d</sup>Analyses of convictions were limited to clients who were alive 18 months after the index event to allow additional time for adjudication in the courts.

In Figure 1, the arrest and conviction rates in the follow-up periods are shown. Among SSI clients who entered AOD treatment, 31 percent (1,339 out of 4,292 clients) were arrested after they began treatment, 16 percent (691 out of 4,258 clients) were convicted of an offense of any type, and four percent (158 out of 4,258 clients) were convicted of a felony. Each of these re-arrest or conviction rates were significantly lower than the rates for those who remained untreated despite an apparent need for AOD treatment (as discussed above in the results of the proportional hazards regressions.)

**Figure 1. Criminal Recidivism One Year After Treatment Initiated or Need for Treatment Identified**



### **Associations between Completing AOD Treatment or Length of Treatment and Re-arrests or Convictions**

Completing AOD treatment or receiving it for more than 90 days tended to reduce the likelihood of subsequent arrests and convictions among SSI clients who entered treatment and had no admissions to methadone treatment.<sup>15</sup> Successfully being discharged from AOD treatment with a classification of “completed” resulted in significant reductions in the hazards of being arrested in the next 12 months by 43 percent, of being convicted for any type of offense by 38 percent, and of receiving a felony conviction by 48 percent.

Staying in treatment for over 90 days was associated with a statistically significant reduction in the hazard of re-arrest by 30 percent and of conviction for any offense by 27 percent but had no significant relationship to subsequent felony convictions.

Several variables included in the proportional hazards regression equation as statistical controls or covariates—being younger, male, or African American—were associated with increased hazards of being re-arrested or convicted in the year after leaving AOD treatment. In general, clients whose primary drug was cocaine/heroin had an increased hazard of being re-arrested or convicted of a felony and those whose primary drug was recorded as amphetamines or methamphetamine had an increased risk of felony

<sup>15</sup> Clients who received any methadone treatment were excluded from analyses of outcomes associated with length of treatment or completion of AOD treatment. Methadone treatment is different from abstinence based treatment in that we would expect the beneficial effects to occur during rather than after treatment.

conviction compared to those whose primary substance was alcohol. Having marijuana listed in the TARGET treatment records as one's primary drug, however, was associated with a reduced risk of conviction for any type of crime compared to those whose primary substance was alcohol.

Table 16. Percent Change in Risk<sup>a</sup> of Criminal Justice Outcomes Associated with Length and Completion of AOD Index Treatment Episode for SSI Clients with Prior Arrests or Convictions

Independent Variables <sup>b</sup>	Criminal Justice Outcome		
	Arrest <sup>c</sup>	Any Conviction <sup>d</sup>	Felony Conviction <sup>d</sup>
<b>SSI Clients in Analyses</b>	<b>3,046</b>	<b>3,026</b>	<b>3,026</b>
Age 18-29 (compared to 45+)	80%	67%	160%
Age 30-44 (compared to 45+)	42%	44%	173%
Male (compared to female)	57%	65%	82%
African American (compared to White)	76%	31%	141%
Primary Drug (compared to alcohol)			
Cocaine-Heroin	32%		86%
Amphetamines/Meth			181%
Marijuana		-25%	
Treatment Variables			
<b>Length of Stay in Tx Over 90 Days</b>	<b>-30%</b>	<b>-27%</b>	
<b>Completed AOD Treatment</b>	<b>-43%</b>	<b>-38%</b>	<b>-48%</b>

<sup>a</sup>Percent change in risk was measured by proportional hazards regression analysis.

<sup>b</sup>Statistically significant results with  $p < .05$  are shown. Non-significant coefficients for other variables included in the equations are not shown: racial/ethnic groups (Asian, Hispanic, Native American, and Other (compared to White)), primary drug, and length of stay in treatment over 90 days, depending on criminal justice outcome.

<sup>c</sup>Analyses of arrests were limited to clients who were alive 12 months after the index event.

<sup>d</sup>Analyses of convictions were limited to clients who were alive 18 months after the index event to allow additional time for adjudication in the courts.

### *Completion of AOD Treatment Episode and Criminal Justice Outcomes*

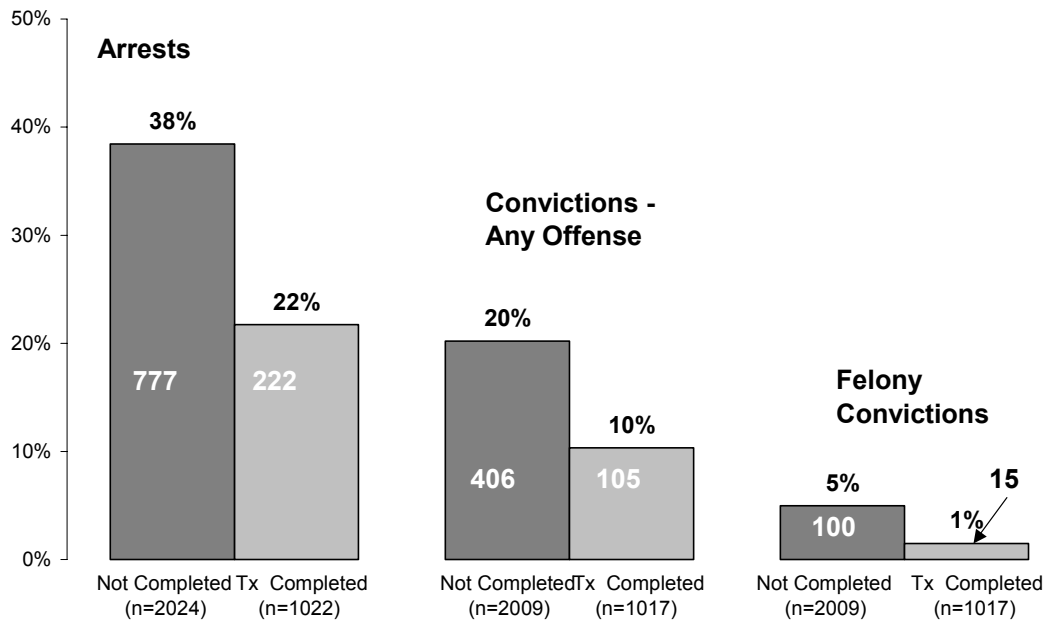
As shown in Figure 2, re-arrests, convictions for any type of offense, and felony convictions have lower rates in the follow-up period for clients who completed their AOD treatment episodes compared to those who entered treatment but did not complete it. Twenty-two percent of the clients who completed treatment were re-arrested after



their treatment ended compared to 38 percent of the clients who did not complete treatment.

Ten percent of those who completed treatment were convicted of an offense of any type and two percent of these clients were convicted of a felony. In comparison 20 percent of those who did not complete treatment were convicted of an offense of any kind and five percent were convicted of a felony.

**Figure 2. Criminal Recidivism One Year After Treatment Initiated but Not Completed or Treatment Completed**

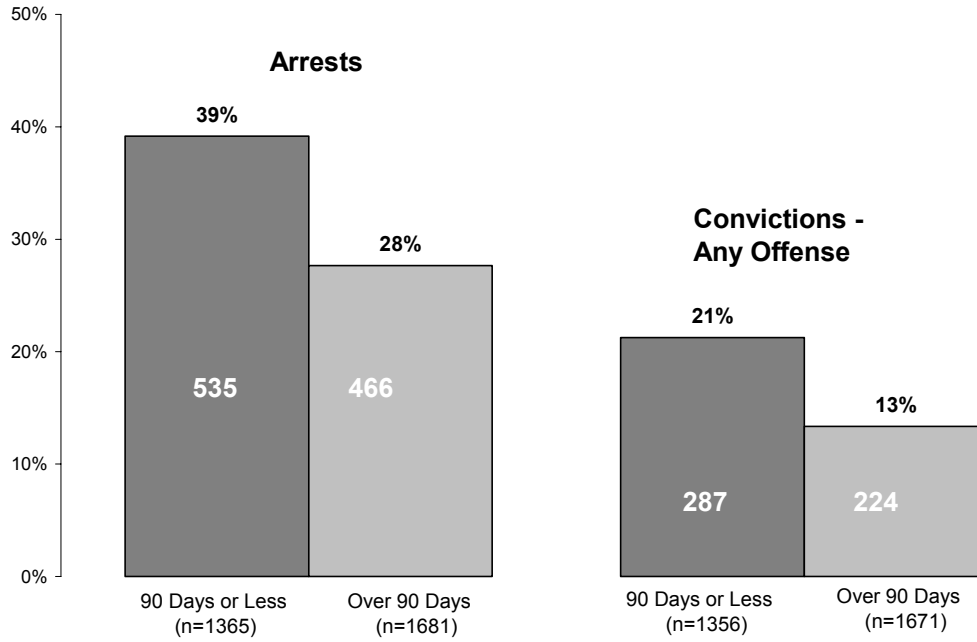


### *Length of AOD Treatment Episode and Criminal Justice Outcomes*

Figure 3 displays the re-arrest and conviction rates for any type of offense for those who remained in AOD treatment for over 90 days compared to those who stayed for 90 days or less. Of the 1,681 clients who stayed for over 90 days and who were alive 12 months after the start of their index AOD treatment episode, 28 percent, or 466 clients, were re-arrested during that 12-month period. In comparison, 39 percent, or 535, of the 1,365 clients who remained in treatment for 90 days or less were re-arrested in the 12-month follow-up period. Of the 1,671 clients who were in treatment for more than 90 days **and** who were alive 18 months after the onset of treatment (to allow an extra six months for the adjudication process), 13 percent (224 clients) were convicted of an offense of any type, while 21 percent (287 clients) of those who stayed in treatment for 90 days or less were convicted.

Since the proportional hazards analysis did not find a significant effect of length of AOD treatment on felony convictions, those percentages by length of treatment are not shown in Figure 3.

**Figure 3. Criminal Recidivism One Year After End of AOD Treatment by Length of Treatment Period**



## **8** *Analyses for Final Report*

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There are a number of questions that remain to be answered for this project. In the remaining months, additional analyses will be conducted to better understand (1) how the untreated clients differ from the treated clients, and (2) what the pattern of treatment is for the treated clients.

### **What does the index event look like?**

The index event in which the need for AOD treatment is identified is sometimes a costly bout of medical care, often a hospitalization, in which a diagnosis suggesting drug or alcohol dependence is recorded. More analysis of the administrative records is warranted to better understand the nature of that care and whether or not the particular incident and its attendant costs could have been avoided. For example, might the index event be the result of chronic drug or alcohol use (like liver failure), or is it seemingly unrelated?

What is in a client's medical history leading up to the index event? Can precursors to the index event be found in the prior medical history? Information in administrative records prior to the index event will be examined for patterns that professionals might look for to avoid unnecessary hospitalizations or to identify a client's need for AOD treatment sooner.

### **Why do the untreated clients die at a higher rate than treated clients?**

The death rate for clients who needed AOD treatment but did not get it was higher than the rate for those who received AOD treatment. Analyses will be conducted to determine differences in age at death, timing relative to the index event, the nature of the medical care that preceded those deaths, and the underlying cause of death. Such analyses will help to explain the degree to which those deaths might have been prevented.

### **What is the nature of the treatment received?**

The current analyses showed that measures of treatment, such as completion of the index treatment episode or an index treatment episode longer than 90 days, was associated with better outcomes. While the majority of those receiving treatment had only one treatment episode, there was a substantial number who had more than one episode. Future analyses are planned to look at the course of AOD treatment. Possible questions are: What is the order of modality, timing, and duration both between and within episode? For example, for those clients who only have one treatment episode, is the episode likely to be a single admission or is it a continuous series of admissions to treatment? Is there any indication in the administrative records that some clients are more likely to get treatment than others? Also, how do clients who receive methadone differ from other clients?

Examining these questions may lead to a better understanding of the effect of treatment on costs and criminal justice outcomes.



## *References*

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- Estee S and Nordlund D. 2001. *Washington State Supplemental Security Income (SSI) Cost Offset Pilot Project: 2001 Progress Report*. Washington State Department of Social and Health Services, Research and Data Analysis Division, December 2001.
- Finigan M. 1996. *Societal Outcomes and Cost Savings of Drug and Alcohol Treatment in the State of Oregon*. Salem, OR: Oregon Department of Human Resources.
- Gerstein DR, Harwood HJ, Suter N, and Malloy K. 1994. *Evaluating Recovery Services: The California Drug and Alcohol Treatment Assessment*. Sacramento: The California Department of Alcohol and Drug Programs.
- Holder HD and Hallan JB. 1986. "Impact of Alcoholism Treatment on Total Health Care Costs: A Six-Year Study." *Advances in Alcohol and Substance Abuse* 6:1-15.
- Holder HD and Blose JO. 1986. "Alcoholism Treatment and Total Health Care Utilization and Costs." *Journal of American Medical Association* 256:1456-1460.
- Holder HD and Blose JO. 1992. "The Reduction of Health Care Costs Associated with Alcoholism Treatment: A 14-Year Longitudinal Study." *Journal of Studies on Alcohol* 53:293-302.
- Kohlenberg L, Lijian He, Luchansky B, Longhi D, and Boqing Wang. *Improve Outcomes and Reduce Government Costs by Increasing Alcohol/Drug Treatment for DSHS Clients*, Washington State Department of Social and Health Services, Research and Data Analysis Division, March 1999, Draft Report.
- Luchansky B and Longhi D. 1997. *Cost-Savings in Medicaid Medical Expenses*. Olympia, WA: Washington State Department of Social and Health Services.
- Luchansky B, Lijian He, Krupski A., and Stark KD. 2000. "Predicting Readmission to Substance Abuse Treatment Using State Information Systems: The Impact of Client and Treatment Characteristics," *Journal of Substance Abuse* 12:255-270.
- Luxenberg MG, Christenson M, Betzner AE, and Rainey J. 1996. *Chemical Dependency Treatment Programs in Minnesota: Treatment Effectiveness and Cost Offset Analysis*. St. Paul: Minnesota Department of Human Services.
- Maynard, C and Cox G. 2003. "Outcomes of Individuals with Co-occurring Disorders Discharged from State Hospitals." University of Washington, Alcohol and Drug Abuse Institute, unpublished.



# *Appendix A*

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## **Project Implementation**

### *Funding*

The SSI Cost Offset Pilot Project was supported with \$2.5 million in the 1999-2001 biennium and 2.9 million in the 2001-2003 biennium. These funds included nearly \$2 million in federal Title XIX match, spread across the two biennium. Funds were distributed about equally between the two fiscal years within each biennium and were used to cover residential treatment services, outpatient treatment, client transportation costs, and an evaluation of project outcomes.

### *Participating Counties*

Sixteen counties initially agreed to participate in the pilot project in the 1999-2001 biennium, and an additional 14 counties agreed to participate in the 2001-2003 biennium, bringing the total to 30 counties. These counties represent the majority of SSI clients in Washington State. The counties are:

Adams	Grant	Pierce
Asotin	Grays Harbor	Skagit
Benton	Island	Snohomish
Chelan	Jefferson	Spokane
Clallam	King	Stevens
Clark	Kitsap	Thurston
Cowlitz	Kittitas	Walla Walla
Douglas	Lewis	Whatcom
Ferry	Mason	Whitman
Franklin	Okanogan	Yakima

In the 30 counties, additional funds were made available to each county's chemical dependency treatment system so that SSI clients in those counties could be referred to any county-designated outpatient provider for an assessment. These providers would assist the client in accessing the appropriate level of outpatient or inpatient treatment. In the remaining nine counties of the state, SSI clients continued to be eligible for regularly funded outpatient treatment.

Residential treatment capacity for SSI clients was expanded statewide. In all counties the ADATSA Assessment Center was able to refer SSI clients for residential treatment. In the 30 project counties, however, the outpatient treatment agency could refer clients directly to appropriate residential treatment.

### *Client Eligibility*

Only adult recipients of SSI assistance were eligible for the pilot project. Furthermore, use of pilot project funds was limited to a subset of SSI recipients depending on their usual source of income. In particular, SSI recipients were eligible for treatment using project funds if their medical identification cards were designated as S01. This Medicaid category pertains to SSI clients who receive monthly cash grants as their primary means of support. SSI clients who had other sources of monetary support (e.g., Social Security disability, other pensions, spousal income) were not eligible for treatment funding through this project.

### *Services*

The treatment services provided under the pilot project do not represent a new type of service. Prior to the implementation of this project, an estimated 50 percent of SSI clients who needed chemical dependency treatment received it.<sup>16</sup> The project was designed to increase this proportion so that even more adult SSI clients who needed such treatment would get it. To accomplish this goal, the Division of Alcohol and Substance Abuse (DASA) worked with the County Alcohol and Drug Coordinators to expand outpatient service capacity in the participating counties and to broaden the client needs assessment and referral process.

One of the main strategies of this project was to strengthen working relationships between primary sources for referrals of SSI clients and local treatment agencies. The primary sources of referrals include major medical providers, Regional Support Networks (RSNs) and their mental health providers, and HIV/AIDS projects. Working together, DASA and the County Alcohol and Drug Coordinators took steps to gain the support and cooperation of the primary referral sources. This included letters and meetings providing the referral sources with a description of the pilot project and sufficient information so that the referring agencies would be able to:

- Screen clients for chemical dependency;
- Know how to refer clients for assessment and treatment;
- Coordinate services or provide case management to ensure continuity of care for clients; and
- Solve problems of cross-agency coordination, should they arise.

The County Drug and Alcohol Coordinators were asked to meet with local treatment agencies and referral sources to foster cooperation and communication and to determine if there were likely to be waiting periods for assessment or treatment. Anecdotal evidence from some of the County Drug and Alcohol Coordinators suggests that participation of primary referral sources varied from county to county. For example, in some counties RSNs actively referred SSI clients for chemical dependency treatment, while, in others,

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<sup>16</sup> Liz Kohlenberg, Lijian He, Bill Luchansky, Dario Longhi, and Boqing Wang. "Improve Outcomes and Reduce Government Costs by Increasing Alcohol/Drug Treatment for DSHS Clients," Washington State Department of Social and Health Services Research and Data Analysis, March 1999, Draft Report.



the RSN for that area was less active. As part of the final report on this project, the local processes used to elicit participation of primary referral sources and to foster cross-agency cooperation will be described for all project counties.

The referral process was implemented late in the calendar year 1999 once agreements between DASA and the County Alcohol and Drug Coordinators had been reached. Letters were sent to outpatient providers in each of the project counties and to directors of the Regional Support Networks in November and December 1999, respectively. These letters served to inform these treatment providers and referral sources of the full scope of the project and, effectively, served to mark the official implementation of the project. The County Alcohol and Drug Coordinators also met with the treatment providers and referral sources locally once these official DASA letters had been sent. Anecdotally, the county coordinators have indicated that local meetings and discussions around the referral and assessment process continued through the first quarter of 2000, so implementation dates may vary on a local basis.



## *Appendix B*

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### **FY2002 Unit Costs Used to Estimate Cost of Alcohol or Other Drug Treatment from TARGET**

#### **Residential Treatment and other costs based on daily rate<sup>a</sup>**

	Daily Rate
1. II -Intensive inpatient (II)	\$ 65.38
2. LT -Long term residential (LT)	
PPW programs	104.72
non-PPW programs	51.47
3. MR -MICA Residential	109.58
4. EC -Extended Care Recovery House	28.18
5. RH -Recovery House	
PPW programs	91.06
non-PPW programs	37.41
6. DD -Dual Diagnosis – evaluation	86.83
7. DX -Detox (sub-acute)	120.00

#### **Outpatient activity costs based on a per activity charge<sup>a</sup>**

	Activity Charge
1. Individual Therapy-Full	\$ 56.01
Individual Therapy-Brief	29.91
2. Group (per ¼ hour)	4.40
3. Conjoint (with family)-Full	56.01
Conjoint (with family)-Brief	29.91
4. Family (without client) per ¼ hour	4.40
5. Childcare (Therapeutic)	48.87
6. Case Management (per hour)	30.00
7. Acupuncture (per ¼ hour)	4.40
8. Methadone dose change	10.21
9. Urinalysis sample	6.16

<sup>a</sup>Source: Division of Alcohol and Substance Abuse, Contracts and Fiscal Office, *Title XIX Rates, FY 2002*.



## *Appendix C*

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### **Codes Used to Identify Need for Alcohol or Other Drug Treatment from the Medicaid Management Information System (MMIS) and the Treatment Assessment Report Generation Tool (TARGET)**

This list is divided into two sections: NEED FOR TREATMENT INDICATORS and RECEIPT OF TREATMENT (SSI recipients who receive AOD treatment are also classified as needing treatment.)

#### **I. NEED FOR TREATMENT INDICATORS**

##### *A. ICD-9CM diagnosis codes (MMIS)*

*ICD-9CM codes beginning with:*

- 291        Alcoholic psychoses
- 292        Drug psychoses/withdrawal syndrome
- 303        Alcohol dependence
- 304        Drug dependence
- 305        Nondependent drug/alcohol abuse (excluding 305.1 for tobacco abuse)

*Specific ICD-9CM codes:*

- 571.1     Acute alcoholic hepatitis
- 648.3     Drug dependence complicating pregnancy

##### *B. Procedure Codes (MMIS)*

- 0010M     Drug abuse-intake evaluation
- 0011M     Drug abuse-physical exam
- 0017M     Drug abuse-urinalysis
- 0018M     Drug abuse - medication adjustment
- 0020M     Alcohol abuse outpatient/intake evaluate
- 0021M     Alcohol abuse outpatient - physical exam
- 0025M     Detox - hospital admit
- 0026M     Detox hospital follow-up call
- 0029M     DASA intensive case management epsdt
- 0141M     Adult intake processing subabusing DASA specific
- 0142M     Physical examination subabusing adult
- 0151M     Substance abuse pregnant/intake process (was eval)
- 0152M     Substance abuse pregnant/physical exam
- 0161M     Substance abuse epsdt youth intake processing
- 0162M     Substance abuse epsdt youth physical exam
- 0170M     Urinalysis
- 0173M     Substance abuse targeted case management epsdt youth
- 0175M     DASA - adolescent residential treatment

0176M	DASA - residential trtmt room & board
0188M	DASA - therapeutic child care
0197M	Drug Screen
09462	Alcohol detoxification
09465	Drug detoxification
09468	Combined alcohol & drug detoxification
2050M	DASA-youth detox stabilization sub acute
2051M	DASA - youth detox stabilization - acute
2151M	Chem depend intake processing - parenting women
2152M	Chem depend physical examination parenting women
2161M	Chem depend intake processing - non-espdt youth
2162M	Chem depend physical examination non-espdt youth
2170M	Chem depend assessment expanded - DCFS referred
2171M	Chem depend intake processing - DCFS referred
2172M	Chem depend physical examination DCFS referred
2175M	Chem depend initial screen - DCFS referred
2182M	CDDA sanctioned intake processing
2186M	Substance abuse case management
2189M	CDDA committable intake processing
2196M	Substance abuse case management

*C. Revenue codes (MMIS)*

116	Detoxification, room and board, private
126	Detoxification, room and board, semi-private (2 beds)
136	Detoxification, room and board, semi-private (3-4 beds)
146	Detoxification, room and board, private (deluxe)
156	Detoxification, room and board, ward
168	Chemically Using Pregnant Program (CUP)

*D. Modality of Treatment Admission (TARGET modality\_id )*

2	Detox
15	Transitional housing

## **II. RECEIPT OF AOD TREATMENT**

*A. DRG codes (MMIS)*

433	Alcohol or drug abuse or dependence, left against medical advice
434	Alcohol or drug abuse or dependence, detox or other symptomatic treatment wcc (with complications)
435	Alcohol or drug abuse or dependence, detox or other symptomatic treatment w/o cc (without complications)
436	Alcohol or drug dependence, with rehabilitation therapy
437	Alcohol or drug dependence, detox and rehabilitation therapy
743	Opioid abuse or dependence, left against medical advice

744	Opioid abuse or dependence, wcc (with complications)
745	Opioid abuse or dependence, w/o cc (without complications)
746	Cocaine or other drug abuse or dependence, left against medical advice
747	Cocaine or other drug abuse or dependence, wcc (with complications)
748	Cocaine or other drug abuse or dependence, w/o cc (without complications)
749	Alcohol abuse or dependence, left against medical advice
750	Alcohol abuse or dependence, wcc (with complications)
751	Alcohol abuse or dependence, w/o cc (without complications)

*B. Procedure codes – Hospital Claims only (MMIS)*

96.61	Alcohol rehabilitation
96.63	Alcohol rehabilitation and detoxification
96.64	Drug rehabilitation
96.66	Drug rehabilitation and detoxification
96.67	Combined alcohol/drug rehabilitation
96.69	Combined alcohol/drug rehabilitation and detoxification

*C. Procedure Codes (MMIS)*

0012M	Drug abuse-individual therapy-full visit
0013M	Drug abuse-individual therapy-brief visit
0014M	Drug abuse-group therapy
0015M	Drug abuse-activity therapy
0016M	Drug abuse-chemotherapy
0018M	Drug abuse-medication adjustment
0022M	Alcohol abuse/individual therapy - full
0023M	Alcohol abuse individual therapy - brief
0024M	Alcohol abuse outpatient - group therapy
0027M	Medication adjustment
0143M	Individual therapy full visit subabusing adult
0144M	Individual therapy brief visit subabusing adult
0145M	Adult substance abuse op/group therapy,per hr.
0146M	Adult drug abuse outpatient/chemotherapy
0147M	Adult drug abuse op/medication adjustment
0148M	Adult drug abuse op/acupuncture
0149M	DASA - adult group therapy per 1/4 hour
0153M	Substance abuse pregnant/individual full
0154M	Substance abuse pregnant/individual brief
0155M	Sub abuse pregnant/group therapy,per hr.
0156M	Drug abuse op pregnant/chemotherapy
0157M	Drug abuse op pregnant/medication adjustment
0158M	Drug abuse op pregnant/acupuncture
0159M	DASA - pregnant group therapy per 1/4 hour
0163M	Substance abuse epsdt youth individual therap
0164M	Substance abuse epsdt youth indiv ther brief
0165M	Non-Native American CD Encounter – Tribal match

0166M Substance abuse epsdt youth chemotherapy  
0167M Substance abuse epsdt youth medication adjust  
0168M Substance abuse epsdt youth acupuncture  
0169M Substance abuse epsdt youth group ther 1/4 hr  
0171M DASA - youth enhanced recovery house  
0172M DASA - youth enhanced recovery house r&b  
0176M DASA – residential R & B  
0177M DASA - youth residential treatment-epsdt  
0178M DASA -youth residential treatment-level 1  
0179M DASA -youth residential trmt level ii-  
0180M FSPLUS long term residential  
0181M FSPLUS intensive inpatient  
0182M FSPLUS medical stabilization  
0183M DASA ppw long term residential treatment  
0184M Native American CD encounter  
0185M Inpatient  
0186M FSPLUS DASA room and board  
0187M Inpatient  
0188M Therapeutic Childcare  
0189M DASA TANF referred residential R & B  
0190M Opiate dependency treatment adult  
0191M Opiate dependency treatment pregnant postpartum  
0192M Opiate dependency treatment epsdt youth  
0193M Therapeutic Childcare  
0194M Youth Secure Evaluation/Treatment  
0195M Youth Secure Evaluation/Treatment R & B  
0196M CDDA Youth residential R & B  
0198M Non-Native American CD encounter  
0199M Non-Native American CD encounter - TANF  
09453 Referral alcohol rehab  
09463 Alcohol rehabilitation & detoxification  
09466 Drug rehabilitation & detoxification  
09467 Combined alcohol & drug rehabilitation  
09469 Combined alcohol & drug rehab and detox  
2133M SSI Individual therapy – Full visit  
2134M SSI Individual therapy – Brief visit  
2135M SSI Group therapy  
2139M SSI Opiate substitution treatment  
2143M Substance abuse TANF Individual therapy – Full visit  
2144M Substance abuse ANF Individual therapy – Brief visit  
2149M Substance abuse TANF Group therapy  
2153M Chem depend indiv therapy full visit parenting women  
2154M Chem depend indiv therapy brief visit parenting women  
2159M Chem depend group therapy parenting women  
2163M Chem depend indiv therapy full visit non-epsdt youth  
2164M Chem depend indiv therapy brief visit non-epsdt youth



2169M	Chem depend group therapy non-espdt youth
2173M	Chem depend indiv therapy full visit DCFS referred
2174M	Chem depend indiv therapy brief visit DCFS referred
2179M	Chem depend group therapy DCFS referred
2183M	CDDA Sanctioned Individual therapy – Full visit
2184M	CDDA Sanctioned Individual therapy – Brief visit
2185M	CDDA Sanctioned Group therapy
2190M	Opiate dependency treatment
2191M	Opiate dependency treatment parenting women
2192M	Opiate dependency treatment non-epsdt youth
2193M	CDDA Commitable Individual therapy – Full visit
2194M	CDDA Commitable Individual therapy – Brief visit
2195M	CDDA Commitable Group therapy
2197M	Opiate dependency treatment
9005M	Fed qual hlth ctr - chemical dependency
J1230	Inj methadone hcl up to 10 mg

*D. Modality of Treatment Admission (TARGET modality\_id)*

5	Intensive inpatient
7	Long-term residential
10	MICA-residential
3	Extended care
14	Recovery house
16	Variable stay residential
13	Outpatient
6	Intensive outpatient
9	MICA-outpatient
11	Methadone maintenance
4	Group care
1	Dual diagnosis



## *Appendix D*

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### **Criminal Codes Used to Identify Need for Alcohol or Drug Treatment from Washington State Patrol Arrest Records**

<b>Crime Code</b>	<b>Description</b>	<b>RCW*</b>	<b>Class**</b>
07200	Violation of the uniform legend drug act (VULDA)	69.41.020	U
07204	VULDA-obtain by fraud/forgery/false information	69.41.020	F
07206	VULDA-uttering forged prescription	69.41.020	F
07207	VULDA prescription requirements for legit medical purposes	69.41.040	F
07208	VULDA-sell or deliver	69.41.030	F
07209	VULDA-possession	69.41.030	M
07219	VULDA-labeling	69.41.050	M
07230	Precursor drug violation	69.43.000	U
07232	Precursor drug violation sale, transfer, furnish or receive for unlawful manufacture	69.43.070	B
07233	Precursor drug violation false statement in report or record	69.43.080	C
07236	Precursor drug violation fail to submit report	69.43.010(5)	G
07237	Precursor drug violation fail to report out-of-state source	69.43.020	G
07238	Precursor drug violation furnish or receive without a permit	69.43.090	G
07239	Precursor drug violation	69.43.010(4)	M
07300	Violation of the uniform controlled substances act (VUCSA)	69.50.401	U
07301	Controlled substance homicide: deliver substance resulting in death of user	69.50.415	B
07303	Involve a minor in a drug transaction	69.50.401(F)	C
07304	VUCSA-deliver heroin or narcotics to minor	69.50.401(A)(1)(I)	A
07306	VUCSA-deliver narcotics 3,4,5 or non narcotics 1-5 to minor	69.50.401(A)(1)	B
07307	VUCSA-sell heroin for profit prior conviction	69.50.410(1)	B
07308	VUCSA-sell heroin for profit	69.50.410(1)	C
07309	VUCSA - non felony	69.50.000	U
07310	VUCSA-felony violation of uniform controlled substance act	69.50.000	F

07311	VUCSA-deliver to a minor	69.50.401(A)(1)	F
07313	VUCSA-sell other than heroin for profit prior conviction	69.50.410(1)	B
07314	VUCSA-sell other than heroin for profit	69.50.410(1)	C
07315	VUCSA-manufacture/deliver schedule 1,2 narcotics prior conviction	69.50.401(A)(1)(I)	A
07316	VUCSA-manufacture/deliver schedule 1,2 narcotics	69.50.401(A)(1)(I)	B
07317	VUCSA-possess with intent schedule 1,2 narcotics prior conviction	69.50.401(A)(1)(I)	A
07318	VUCSA-possess with intent schedule 1,2 narcotics	69.50.401(A)(1)(I)	B
07321	VUCSA-sell for profit	69.50.410(1)	F
07323	VUCSA-manufacture/deliver schedule 1,2,3 non-narcotics prior conviction	69.50.401(A)(1)(II)	B
07324	VUCSA-manufacture/deliver schedule 1,2,3 non-narcotics	69.50.401(A)(1)(II)	C
07325	VUCSA-possess with intent schedule 1,2,3 non-narcotics prior conviction	69.50.401(A)(1)(II)	B
07326	VUCSA-possess with intent schedule 1,2,3 non-narcotics	69.50.401(A)(1)(II)	C
07327	VUCSA-manufacture/deliver schedule 4 prior conviction	69.50.401(A)(1)(III)	B
07328	VUCSA-manufacture/deliver schedule 4 narcotics	69.50.401(A)(1)(III)	C
07331	VUCSA-manufacture/deliver/possess with intent	69.50.401(A)(1)	F
07333	VUCSA-possess with intent schedule 4 prior conviction	69.50.401(A)(1)(III)	B
07334	VUCSA-possess with intent schedule 4	69.50.401(A)(1)(III)	C
07335	VUCSA-manufacture/deliver schedule 5 prior conviction	69.50.401(A)(1)(I)	B
07336	VUCSA-manufacture/deliver schedule 5	69.50.401(A)(1)(I)	C
07337	VUCSA-possess with intent schedule 5 prior conviction	69.50.401(A)(1)(I)	B
07338	VUCSA-possess with intent schedule 5	69.50.401(A)(1)(I)	C
07341	VUCSA-possess with intent	69.50.401(A)(1)	F
07343	VUCSA-manufacture/deliver/possess with intent marijuana prior conviction	69.50.401(A)(1)(II)	B
07344	Manufacture/deliver/possess with intent-marijuana	69.50.401(A)(1)	F
07345	VUCSA-possess heroin or schedule 1 or 2 non-narcotics prior conviction	69.50.401(D)	B
07346	VUCSA-possess heroin or schedule 1 or 2 non-narcotics	69.50.401(D)	C
07347	VUCSA-possess schedule 3-5 narcotics or non-	69.50.401(D)	B

	narcotics prior conviction		
07348	VUCSA-possess schedule 3-5 narcotics or non-narcotics	69.50.401(D)	C
07351	VUCSA-possess	69.50.401	F
07353	VUCSA-counterfeit sub schedule 1,2 narcotics prior conviction	69.50.401(B)(1)(I)	A
07354	VUCSA-counterfeit sub schedule 1,2 narcotics	69.50.401(B)(1)(I)	B
07355	VUCSA-counterfeit sub schedule 3 narcotics/schedule 1-3 non-narcotics prior	69.50.401(B)(1)(II)	B
07356	VUCSA-counterfeit sub schedule 3 narcotics/schedule 1-3 non-narcotics	69.50.401(B)(1)(II)	C
07358	VUCSA-liquid sub or material in lieu of a cont sub	69.50.401(C)	C
07359	VUCSA-possess marijuana 40 g. Or less prior conviction	69.50.401(E)	M
07361	VUCSA-possess without a prescription	69.50.401(D)	F
07363	VUCSA-possess without prescription schedule 1,2 prior conviction	69.50.401(D)	B
07364	VUCSA-possess without prescription schedule 1,2	69.50.401(D)	C
07365	VUCSA-possess without prescription schedule 3-4 or non-narcotics prior conviction	69.50.401(D)	B
07366	VUCSA-possess without prescription schedule 3-4 or non-narcotics	69.50.401(D)	C
07369	VUCSA-possess marijuana 40 g. Or less	69.50.401(E)	M
07370	VUCSA-possess marijuana unknown amount	69.50.401	U
07371	VUCSA-counterfeit substance	69.50.401(B)(1)	F
07373	VUCSA-obtain by fraud/false/forged prescription prior conviction	69.50.403(A)(3)	C
07374	VUCSA-obtain/attempt obtain by fraudulent/false/forged prescription	69.50.403(A)(3)	C
07375	VUCSA-utter forged prescription prior conviction	69.50.403(A)(5)	C
07376	VUCSA-utter forged prescription	69.50.403(A)(5)	C
07377	VUCSA-possess marijuana more than 40 g. prior conviction	69.50.401(D)	C
07378	VUCSA-possess marijuana more than 40 grams	69.50.401(D)	C
07379	Glue sniffing *recodified (refer to 007398)	9.47A.020	M
07381	VUCSA-false/forged/fraud/misrepresent	69.50.403	F
07383	Possess ephedrine, pseudoephedrine or anhydrous ammonia with intent to manufacture methamphetamine	69.50.440	F
07384	Use building for unlawful drugs	69.53.000	F
07385	Use building for unlawful drugs make available building for use	69.53.010	C

07386	Use building for unlawful drugs allow fortification of building	69.53.020	C
07387	Use building for unlawful drugs use fortified building	69.53.030	C
07388	Maintain place/dwelling for selling/use cont sub	69.50.402(A)(6)	C
07389	Drug paraphernalia	69.50.412	M
07390	Imitation controlled substance	69.52.000	U
07392	Imitation controlled substance distribute to a minor	69.52.030(2)	B
07394	Imitation controlled substance manufacture/distribute/possess with intent to distribute	69.52.030(1)	C
07396	Imitation controlled substance publication; post or dist advertisement or solicit	69.52.030(3)	C
07397	Drug paraphernalia - deliver to person under eighteen	69.50.412	G
07398	Inhale, possess, sale toxic fumes	9.47A.000	M
07399	Drug related charge	69.00.000	U
07644	Drive under the influence	46.61.502	G
07644	Drive while under the influence	46.61.502	G
07645	Drive or being in phys control u/21 after consuming alcohol	46.61.503	M
07646	Physical control being in actual physical control while intoxicated	46.61.504	G

\*RCW – Revised Code of Washington

\*\*Class:

F – Felony

A – Class A Felony

B – Class B Felony

C – Class C Felony

U – Undifferentiated Felony

G – Gross Misdemeanor

M – Misdemeanor

## *Appendix E*

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### **Community Mental Health Hospitalization Identification**

Community mental health hospitalizations are identified based on the category of service, the claim input form indicator, and the first five ICD-9-CM diagnosis codes on paid Medicaid claims. **If any of the three conditions** listed below **are true** for a claim, then it is classified as a community mental health hospital cost.

#### **Condition 1**

The category of service in the Medicaid Management Information System equals:  
94 – Inpatient Psychiatric Hospitalization or  
95 – Involuntary Treatment Act

#### **Condition 2**

The claim input form indicator is equal to A, R, S, Q, and the DRG code is in the range from 424-437 or 743-751, where

*Claim input form indicators:*

- A – DRG Inpatient Outlier
- R – DRG Hospital Claim
- S – Non-DRG Hospital Claim
- Q – Gross Adjustment

*DRG code:*

- 424 Operating Room Procedures with Principal Diagnosis of Mental Illness
- 425 Acute Adjustment Reaction & Disturbances of Psychosocial Dysfunction
- 426 Depressive Neuroses
- 427 Neuroses Except Depressive
- 428 Disorders of Personality & Impulse Control
- 429 Organic Disturbances & Mental Retardation
- 430 Psychoses
- 431 Childhood Mental Disorders
- 432 Other Diagnoses of Mental Disorders
- 433 Substance Use & Substance Induced Organic Mental Disorders, left against medical advice
- 434 Drug Dependence
- 435 Drug Use Except Dependence
- 436 Alcohol Dependence
- 437 Alcohol Use Except Dependence

- 743 Opioid Abuse or Dependence, left against medical advice
- 744 Opioid Abuse or Dependence with Complications
- 745 Opioid Abuse or Dependence without Complications
- 746 Cocaine or Other Drug Abuse or Dependence, left against medical advice
- 747 Cocaine or Other Drug Abuse or Dependence with Complications
- 748 Cocaine or Other Drug Abuse or Dependence without Complications
- 749 Alcohol Abuse or Dependence, left against medical advice
- 750 Alcohol Abuse or Dependence with Complications
- 751 Alcohol Abuse or Dependence without Complications

**Condition 3**

A. The claim input form is a Medicare Crossover Inpatient Claim (code = V) and the second, third, fourth, or fifth diagnosis begins with any one of the following:

- 291 Alcoholic Psychoses
- 292 Drug Psychoses
- 303 Alcohol Dependence Syndrome
- 304 Drug Dependence

OR

B. The claim input form is a Medicare Crossover Inpatient Claim (code = V) and the primary diagnosis begins with one of the diagnoses in the following list

- 290 Senile/Presenile Psychoses
- 291 Alcoholic Psychoses
- 292 Drug Psychoses
- 293 Transient Organic Mental Disorder
- 294 Other Organic Psychiatric Conditions
- 295 Schizophrenic Disorders
- 296 Affective Psychoses
- 297 Paranoid States
- 298 Other Non-organic Psychoses
- 299 Psychoses of Childhood
- 300 Neurotic Disorders
- 301 Personality Disorders
- 302 Sexual Disorders
- 303 Alcohol Dependence Syndrome
- 304 Drug Dependence
- 305 Nondependent Drug Abuse
- 306 Psychophysiologic Disorders
- 307 Special Symptom Not Elsewhere Classified
- 308 Acute Reaction To Stress
- 309 Adjustment Reaction
- 310 Nonpsychotic Brain Syndrome



311 Depressive Disorder Not Elsewhere Classified  
312 Conduct Disturbance Not Elsewhere Classified  
313 Emotional Disorders Childhood/Adolescence  
314 Hyperkinetic Syndrome  
315 Specific Developmental Delays  
316 Psychic Factor with Other Disorders  
317 Mild Mental Retardation  
319 Mental Retardation Not Otherwise Specified  
318.0 Moderate Mental Retardation  
318.1 Severe Mental Retardation  
318.2 Profound Mental Retardation  
758.0 Down's Syndrome  
758.1 Patau's Syndrome  
758.2 Edwards' Syndrome  
758.3 Autosomal Deletion Syndrome  
760.71 Maternal Alcohol Affecting Newborn  
760.72 Maternal Narcotic Affecting Newborn  
760.75 Cocaine - Noxious Influencing Fetus  
779.2 Central Nervous System Dysfunction Syndrome of Newborn  
779.4 Newborn Drug Reaction/Intoxication  
779.5 Newborn Drug Withdrawal Syndrome  
780.1 Hallucinations  
780.50 Sleep Disturbance Not Otherwise Specified  
780.52 Insomnia Not Elsewhere Classified  
780.54 Hypersomnia Not Elsewhere Classified  
780.55 Irregular Sleep-Wake Rhythm Not Otherwise Specified  
780.56 Sleep Stage Dysfunctions  
780.59 Sleep Disturbances Not Elsewhere Classified  
784.60 Symbolic Dysfunction Not Otherwise Specified  
784.61 Alexia And Dyslexia  
784.69 Symbolic Dysfunction Not Elsewhere Classified  
790.3 Excess Blood-Alcohol Level  
V71.01 Observation-Adult Antisocial Behavior  
V71.02 Observation -Adolescent Antisocial Behavior  
V71.09 Observation-Other Suspected Mental Condition

