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Chemical Dependency Treatment and Cost Savings Estimates in Washington

Projections of Cost Savings to Public Agencies

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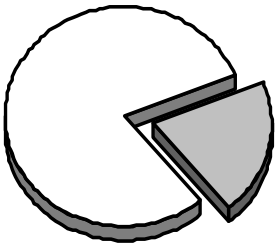
Background

Washington State, through the Division of Alcohol and Substance Abuse, funds chemical dependency treatment for thousands of clients annually. Treatment, if effective, should reduce costs for public agencies. Research done by DSHS Research and Data Analysis has focused on clients in the ADATSA program, indigent citizens deemed unemployable due to their dependence on drugs or alcohol. This report describes some initial efforts to analyze the costs of ADATSA clients to the state, and the cost-savings after treatment.

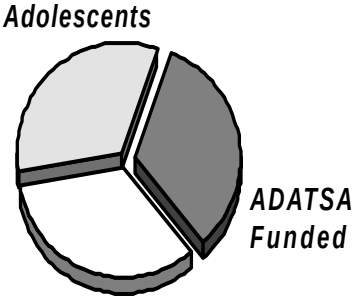
Some Facts About State-Funded Treatment

Those Needing Treatment in Washington State

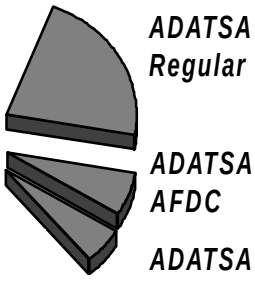


21% of adults who need treatment actually receive it.

Those Who Receive Treatment



Those Who Have Been Studied



Source: Washington State Needs Assessment Household Survey

Ways in Which Treatment Can Reduce Costs to Government

1

Criminal Justice
-Police Protection
-Court
-Jail

2

Medical
-Hospitalization
-Physician
-Medication

3

Income Assistance

4

Children of Chemically Dependent Parents
-Medical Conditions
-Out of Home Placement
-CPS

Cost Savings *One Year* After Treatment

	1 Criminal Justice	2 Medical	3 Income Assistance	4 Dependent Children	Total
Regular	NA	$900	$(86)	NA	$814
Felony Offenders	Prison (900)	$700	$(106)	NA	$1,494
AFDC	NA	$(182)	$(36)	NA	$(218)

NA indicates data was not available for our analysis

• On average, regular ADATSA clients avoid over $800 in costs to public agencies in the first year after treatment. This figure does not include probable savings from criminal justice and costs for children with chemically dependent parents. Given this limited data, these clients still avoid over one third of the costs of treatment in the first year.

• On average, felony offenders cost nearly $1500 less than a comparable group not receiving treatment. This represents about 65% of the costs of their initial treatment episode. Much of this is due to savings in prison costs.

Cost Savings *Five Years* After Treatment

	1 Criminal Justice	2 Medical	3 Income Assistance	4 Dependent Children	Total
Regular	NA	$4500	NA	NA	$4500
Felony Offenders	NA	$3500	NA	NA	$3500
AFDC	$3500	$(1315)	NA	NA	$(1315)

NA indicates data was not available for our analysis

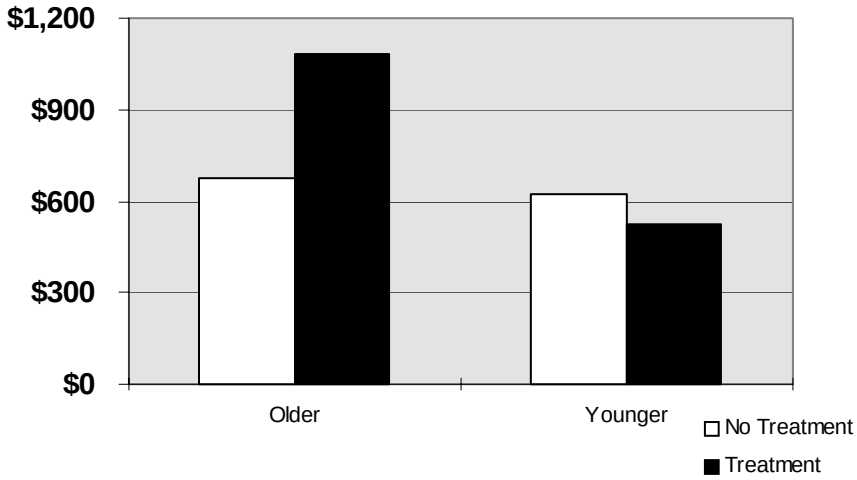
• Cost savings data five years after treatment is available only for Medicaid expenses. For both regular ADATSA clients and for felony offenders the savings is substantial. On average, regular ADATSA clients avoided $4500 in Medicaid costs for the five years following treatment, while felony offenders avoided $3500.

• Treated AFDC recipients cost more than the comparison group, and those additional costs might be attributed to treated clients who were pregnant. Unfortunately, during the first 6 months of life, Medicaid does not distinguish costs incurred by the mother and those incurred by the infant, so the source of these additional costs cannot be determined.

The Relationship Between Treatment and Income Assistance Costs: A Closer Examination

- The relationship between treatment and income assistance after treatment is influenced by age: while treated clients costs more in general in the first year after treatment, younger treated clients (age<30) cost significantly less.

Estimated Income Assistance Costs for Regular ADATSA Clients Comparing Older and Younger Clients (Older = Age >30)



- From this chart we see that clients over thirty years of age, if treated, costs more in the first year than similar untreated clients. However, that is not true of clients who are less than 30; these cost less.
- In addition to the confounding influence of age, there are significant positive relationships between income assistance costs after treatment on the one hand, and mental health problems and receiving income assistance on the other. One possible explanation for these findings is that we are witnessing the effects of disabling conditions other than substance abuse, which prevent gainful employment and keep clients on income assistance, regardless of treatment.

Unstudied Sources of Probable Cost-Savings for Public Agencies

Criminal Justice Costs

Studies in Oregon and California suggest that chemical dependency treatment results in large savings due to reductions in criminal justice costs. To understand the potential for savings, the costs to the criminal justice system from substance abuse must be assessed. In California, criminal justice costs accounted for 61% of the total cost of substance abuse to state and local governments (CALDATA 1994). While the study of ADATSA felony clients examined incarceration in state prisons, other costs, such as those to counties and municipalities, must be considered. These include police protection, adjudication, and incarceration in local jails. For example, the Oregon study found that the arrest rate for treated clients was 35% lower in the three years following treatment than that of a matched sample of untreated clients (Finigan 1996). Fewer arrests mean lower court costs, less time spent in county jails, and substantial savings for public agencies.

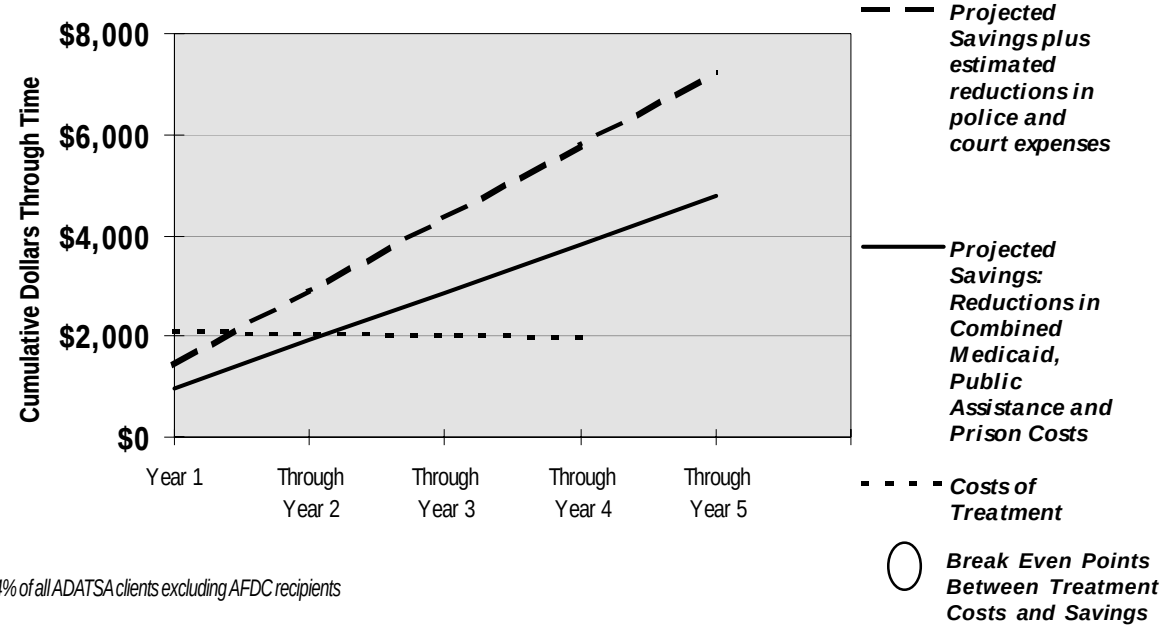
Long-Term Costs from Children of Chemically Dependent Parents

A number of birth defects are associated with drug and alcohol consumption during pregnancy. Developmental disabilities result in higher health care and educational expenses. Addicted parents have a difficult time raising children, and their difficulties might result in intervention from the Child Protective Services. Such intervention might result in placing the child outside the home. These outcomes are very costly to public agencies, and they are costs that might be reduced by effective chemical dependency treatment.

Recouping the Costs of Treatment

When is the savings from treatment sufficient to cover its costs? At this point, we can only give a qualified answer to this question, one that is based on projected treatment costs and projected savings. The following graph shows break even points for regular ADATSA clients and for the felony offenders. It is based on incremental treatment costs, defined as the difference between the treated group and the comparison group, and incremental cost savings. Two break even points are presented, based on two estimates of cumulative cost-savings. The first is calculated by taking the known cost-savings in the first year and projecting it for four additional years, while the second begins with those projections but then adds estimated savings from police protection and adjudication. The calculation of these additional savings rely on data from studies done in Oregon, as well as available Washington data. For this reason they are kept separate.

Five Year Comparison of Projected Incremental Savings with Projected Incremental Treatment Costs for Most ADATSA Clients*



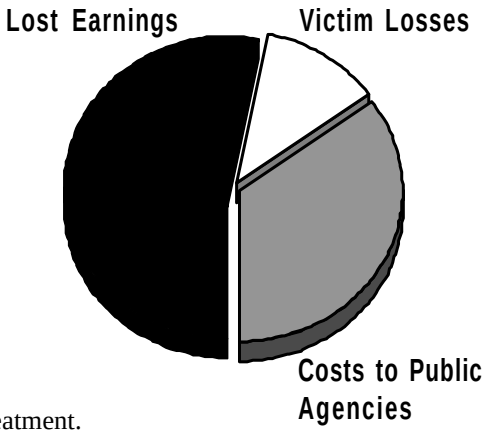
*84% of all ADATSA clients excluding AFDC recipients

- Based on estimates of reductions in Medicaid, public assistance, and prison costs in the year following treatment, projections show that each additional dollar spent on the treatment group will be recouped in about 2 years.
- When estimated reductions in police and court expenses are added to the projections, the break-even point occurs much sooner. Additional funds spent on treatment pay for themselves in just over 1 year.
- Overall incremental savings over 5 years are $7200, while cumulative incremental treatment costs total $1940. That means that every additional dollar spent on the treatment group results in $3.71 in savings by the end of the 5 year follow-up period.

Costs to Society

Substance abuse has costs that go beyond public agencies. Citizens and society at-large suffer as well. Some have suggested that these costs are much larger than costs to public agencies.

The Total Costs of Substance Abuse



Victim Losses

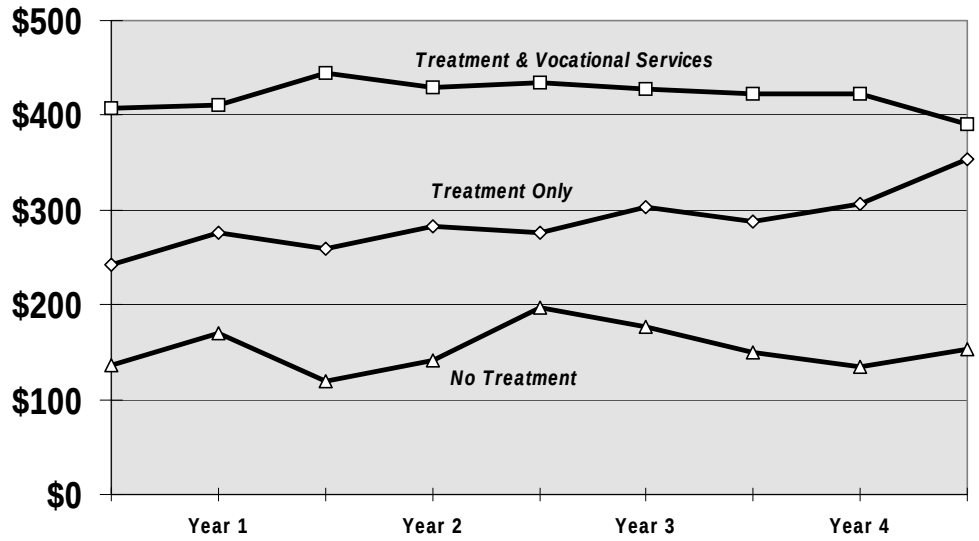
While not a direct cost to public agencies, individuals and households are directly affected by drug and alcohol related crime through theft and property destruction. Wickizer et al. (1993), using national data, has estimated that the citizens of Washington lost over $10 million in 1990 due to drug and alcohol-related property destruction. However, without adequate data on crimes committed by clients, and without values to place on the amount of losses, it is not possible to estimate cost-savings that might result from treatment.

Lost Productivity

In studies that attempt to estimate the costs of substance abuse to society as a whole, a primary contributor is lost productivity due to morbidity and mortality. The reason is simple: society loses some or all of the productive ability of those addicted. These costs are not direct, and require no immediate payment. Rather, they reflect lost resources. While it is very difficult to estimate these costs, and the effect treatment might have on them, there is evidence to suggest that such costs would be reduced. The ADATSA follow-up study found that treated clients, particularly those who received additional vocational services, earn significantly more money than a comparison group and are significantly more likely to be employed (Brown et al. 1996).

Reclaiming Lost Productivity

Average Monthly Earnings After Completing Treatment or Vocational Services



Discussion

This report is an initial attempt at gathering what is known about substance abuse treatment and cost savings to public agencies in Washington. Initial results are positive, as treated clients cost less, especially in Medicaid costs, than those not treated.

Unfortunately, at this time, data have been collected and analyzed on only certain types of costs. In the absence of available data, we have relied on information from other studies to make projections. While adequate for present purposes, those projections should not be relied on to replace actual data on Washington clients. Positive results on this limited data highlight the need for further research to complete the picture. In particular, two further pieces of information are essential, arrest data, which will allow the calculation of criminal justice savings, and treatment re-entry costs beyond the first year.

Technical Notes

• The described findings are based on a statewide representative sample of ADATSA clients, assessed in the fall of 1989, who were considered eligible for ADATSA treatment, some of whom obtained treatment in 1989-90, some of whom did not. Costs for each type of expense have been statistically adjusted for any known differences between clients who were either treated or untreated. Cost savings was then calculated by subtracting the costs of treated clients from the costs of those not treated.

• 'Regular' ADATSA clients, who comprise about two thirds of all ADATSA clients, have been distinguished from four other types of clients: those on AFDC, those convicted of a felony, SSI clients, and those who died. The number of those on SSI, and those who died after treatment was quite small. The initial ADATSA studies were designed to measure employment outcomes after substance abuse treatment. AFDC recipients and convicted felons were not expected to fare as well in the labor market, and thus they were kept separate from the regular clients. This separation continued in further studies and continues here.

• 'Treated' clients are defined as those who received at least 30 days of ADATSA treatment, either inpatient or outpatient, or who completed at least the primary phase of treatment after being assessed. Some may have obtained further treatment and support in the five year follow-up period.

• 'Untreated' clients are defined as those who did not receive any treatment, or who dropped out in the first 30 days of treatment, without completing the primary phase, after being assessed and found eligible for ADATSA treatment in the Fall of 1989. Some obtained further treatment and support in the five year follow-up period.

• All Medicaid cost savings (and ADATSA treatment costs) have been adjusted for inflation and are expressed in 1992 dollars.

• For details on procedures used to statistically estimate cost savings, see Report 4.19, "ADATSA Treatment Outcomes," pp 116-124.

Notes for the Break-Even Graph

• This graph includes data from regular ADATSA clients and felony offenders. AFDC clients were excluded because of some unique conditions. First, 78% of that subgroup is female, and 17% of those were pregnant. As expected, pregnant clients incurred large medical expenses, and the source of those expenses, whether from the mother or infant, cannot be determined. Also, we have no data on pregnancies after treatment, and their effect on medical costs. These factors confound any attempt at analysis, and weaken any relationship that might exist between treatment and subsequent costs to public agencies.

- Incremental treatment costs through time were estimated in the following manner: The average initial treatment episode for the treatment group cost $2300, while $200, on average, was spent on the comparison group. The incremental treatment cost is defined as the difference between the two, or $2100 in the first year. Data from the first year after treatment show that on average the treated group cost $460 in additional treatment, while the comparison group cost $500. It was then assumed that clients would return for that same amount of treatment each year thereafter. Thus, the incremental treatment costs declined by $40 each successive year. The validity of our assumption of constant treatment costs through time is debatable, because while drug and alcohol addiction is known to require multiple episodes of treatment, there is no extant research, other than our own efforts, that attempts to assess the cost of treatment re-entry.

- Additional criminal justice cost savings has two components, savings in police protection and savings in court costs. Police protection savings were calculated by taking the cost of an arrest and multiplying it by the average number of avoided arrests per client. In other studies, the cost of an arrest was calculated by dividing total police expenditures by the number of arrests (CALDATA 1994). However, this approach fails to recognize that police expenditures are not solely determined by the number of arrests, and that some expenses are fixed. In private industry, fixed costs, or overhead, average 15 to 20% of total expenditures. So, in our calculations, we take 80% of total police expenditures in Washington in 1994 and divide that figure by the number of arrests in the same year. We have no estimate of avoided arrests for substance abuse clients in Washington. However, an Oregon study estimates that the average treated client has .12 avoided arrests per year for a three year period following treatment, and we have used that figure in our calculations. The methods and sample used in the Oregon study are similar to those used in our studies, and given the very small number of avoided arrests, we feel it is an adequate estimate for our purposes.

- Savings in court costs was calculated in a similar manner: first a cost per arrest was obtained by dividing 80% of crime-related court expenditures by the number of arrests. This figure was then multiplied by avoided arrests to arrive at an estimated total of savings in court costs.

- It was assumed that additional criminal justice savings would remain constant through time. Thus, years 2 through 5 represent cumulative totals.

Cautions

1. *Findings from the ADATSA follow-up study reflect results from just one cohort of ADATSA clients. While the results are quite positive, more research is needed to validate those findings.*

2. The DSHS Division of Alcohol and Substance Abuse serves many different types of clients, and these studies examine only select groups within that population. Generalizations should be confined to these groups, and not to the population as a whole.

Addendum: Additional Data from the Needs Assessment Database

Checking the Accuracy of our Projections

One goal of this report was to estimate the point at which treatment paid for itself in the form of savings from other state programs. To do this, we made projections of certain costs through five years after treatment, based on only one year of data. Projections were made on income assistance and treatment costs through years two through five following treatment.

Recently, data, in the form of RDA's Needs Assessment Data Base (NADB), has become available that allows us to check the accuracy of those projections. NADB combines information on services clients receive from DSHS and the costs of those services. Data was available for fiscal years 1991-94. In 1993, an abbreviated version of NADB was produced, which included only income assistance costs, and some DASA costs. Thus, we have three full years of data, from July of 1990 until June of 1992, and from July of 1993 until June of 1994, on all DSHS costs, and an additional year on certain other costs.

Our primary interest was in checking the accuracy of projected income assistance and treatment costs. Results from the NADB show that our projections on both costs were close to the actual values.

1. In years two through four following treatment, treated clients cost slightly more than those in the comparison group in terms of income assistance. The difference was statistically significant in these years, just as it was in the year immediately following treatment. However, in year five, there was no significant difference between those groups.
2. Results from the NADB also corroborate our projections of future chemical dependency treatment costs. In each of the follow-up years, the treatment group costs slightly less than the comparison group, but the difference was never significant.

In addition to these data, NADB provides the costs of other services such as mental health and vocational rehabilitation. Regression analysis showed that there is no significant difference between our groups in terms of the these costs.

A Preliminary Look at Treatment Re-entry

NADB illuminates another issue as well. It is a common assumption that DASA clients return for additional treatment on a continual basis, and are thus a continual expense for the state. Data on treatment costs over time, collected in NADB, allows us to examine that assumption. The results do not support the common wisdom. In fiscal year 1991, 41% of treated clients received either additional treatment or support. That figure dropped to 27% in 1992, and to 23% in 1994. Thus, after four years, 77% of clients who were treated are no longer seeking services from DASA.