

AN INVENTORY OF COST OFFSET STUDIES FOR STATE SUBSTANCE ABUSE AGENCIES

Henrick Harwood
NASADAD
Director of Research

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Great interest in the Cost Offsets of Substance Abuse Treatment by States

- ▣ Cost offset (CO) studies are often cited in policy venues and media, finding:
 - SAT produces savings 4 to 10 times > cost of care
 - Although most savings are related to crime & justice system rather than savings in health costs
- ▣ CO studies make the “business case”
- ▣ California: first state “cost offset” study in 1993, followed by Oregon, Ohio, & others
- ▣ In recent years Washington State has done a number of well-regarded cost offset studies

Cost Offsets/Benefits

- ▣ Economic return from investment in treatment and/or prevention
- ▣ Compares cost of service with the “savings” realized in other parts of governments
- ▣ Can the expenditure “pay for itself”
- ▣ Identifies where and how these savings are realized — most are from avoided crime, although sometimes health savings are achieved and increases in earnings

Components of Economic Costs

- ▣ Direct Costs (actual use of goods and services)
 - Health system (physical and mental)
 - Social system (not transfers)
 - Justice System
- ▣ Indirect Costs (foregone potential productivity)
 - Mortality
 - Morbidity
 - Disability
 - Incarceration/crime career

Cost-Offset Studies

- ▣ Much state interest and effort on CO
- ▣ Speaks directly to effectiveness and accountability
- ▣ Builds on good outcome studies/ data
- ▣ Simplifies and creates a single index of the multiple types of behavior and impacts using the \$ metric
- ▣ Can consider CO to be a “payback analysis”

17 States Have Done or Are Doing SAT Cost Offset Studies (and counting)

California	Michigan	Tennessee**
Florida**	New York*	Texas
Hawaii*	Ohio	Utah
Kentucky	Oklahoma	Virginia
Louisiana	Oregon	Washington
Maine	South Dakota	

* State has done secondary calculations for policy;
or planning

** study in progress

Some History

- ▣ A few TX cost offset/benefit studies in 1970s, but they were synthetic estimates that did not track the results of a population
- ▣ Earliest CO studies for populations done for private health insurance; alcohol or MH TX
- ▣ CALDATA was first state system CO study '93
- ▣ Quickly followed by Oregon and Ohio

Major Types of Impacts/Savings

Avoided or Reduced Impacts = Savings

Police protection	Outpatient care
Prosecution	Inpatient care
Courts	Emergency room
Community corrections (probation/parole)	Outpatient mental health
Incarcerations (jail/prison)	Inpatient mental health
Victim losses	Loss of legal earnings
Theft losses	Welfare and disability “transfers”

There are Different Methods

- ▣ Client self-report to interviewers or therapists
 - Personal interview
 - Telephone interview
 - Combined with data from clinical records

- ▣ Data from Public Records Systems
 - Health insurance (Medicaid)
 - Other indigent health systems (clinics, ER, MH, hospitals)
 - Criminal justice, juvenile justice, child welfare
 - Employment security (unemployment insurance)
 - Disability, social assistance (e.g., TANF, food stamps)

Advantages and Drawbacks

- ▣ Telephone: inexpensive, but low response rate
- ▣ Personal interviews: can achieve high response rates, but at relatively high costs; suspect validity
- ▣ Public records considered valid, reliable
 - have confidentiality protections, can be slow to arrange & set up
 - Must be negotiated agency by agency
 - Matching records depends on unique IDs and accurate/exact spelling, dates, transcriptions, etc.
 - But once negotiated and set up it may be easy and inexpensive to keep it running!

Cost-Offset Calculations

- ▣ Costs from “pre-treatment” period compared to costs “during” and “post” treatment or to “similar” untreated substance abusers.
- ▣ Majority of clients have major reductions in costs during- and post-treatment relative to the pre-treatment period: treatment often “pays for itself” on the day it is delivered.
- ▣ Studies use different time periods for comparisons. Longer time periods (a year or more) are preferred for pre and post periods. Most studies look at a year or two of outcomes.
- ▣ A successful TX episode yields many years of benefits, so most cost-offset studies are conservative estimates!

Key Findings and Citations from State Cost Offset Studies

- ▣ The following section presents the “verbatim” primary results — the punch lines — from the studies identified that we could access.
- ▣ These studies all conclude that the economic benefits of treatment are several to many times greater than the cost of treatment.
- ▣ State studies are in reverse alphabetical order, in recognition of the leadership of the Washington Division of Alcohol and Substance Abuse in this field.
 - The exception is the CALDATA study, which was chronologically the first State CO study, and the compiler of this list contributed to.
- ▣ Also listed are study citations, and the web addresses where they may be accessed (if on the web).

California: CALDATA

- ▣ Completed in 1993, this was the first “state-level” cost offset study of SA TX
- ▣ Representative sample of 2,000 from public SA treatment system from population of 150,000
- ▣ In-person interviews, ave. 18 mos. post discharge; 65% follow-up rate

- ▣ Reductions/savings = \$1.4 billion/year
- ▣ Treatment cost \$209 million
- ▣ Cost-offset of 7 to 1
- ▣ Average discharged client → \$10,000/yr benefits, sustained up to 2 years after TX
- ▣ Avoided crime made up 90% of benefits

- “Evaluating Recovery Services: The California Drug and Alcohol Treatment Assessment (CALDATA)”. Gerstein et al., for California Department of Alcohol and Drug Programs, 1994)

Recent California Studies

- ▣ •2008: UCLA studied the cost implications and benefit cost ratios of Proposition 36, which diverted 1st & 2nd drug offenders (nonviolent) away from prison to SA TX. Each showed that Proposition 36 yielded cost savings to state and local governments.
 - • Study 1 extended the baseline and follow up periods used in UCLA's earlier cost report from 30 months to 42 months. Here, costs for a pre-Proposition 36-era comparison group and for all first-year Proposition 36-eligible offenders found a net savings of \$1,977 per offender (N = 61,609) over a 42 month period, yielding a benefit-cost ratio of nearly 2 to 1. In other words, \$2 was saved for every \$1 invested.
 - • "Proposition 36 substantially reduced incarceration costs and resulted in greater cost savings for some eligible offenders than for others."
 - "The Proposition 36 (Substance Abuse Crime Prevention Act) 2008 Evaluation Report," Urada, Hawken, et al., for the Department of Alcohol and Drug Programs California Health and Human Services Agency, 2008.
- ▣ 2007: In a replication of CALDATA a team at UCLA found that, on average, substance abuse treatment costs \$1,583 and is associated with a monetary benefit to society of \$11,487, representing a greater than 7:1 ratio of benefits to costs. These benefits were primarily because of reduced costs of crime and increased employment earnings.
 - "California Treatment Outcome Project," Ettner, Huang, Evans et al. for the California Department of Drug and Alcohol Programs, the Center for Substance Abuses Treatment, and the Robert Wood Johnson Foundation), 2008.

Washington: A Leader in Field

- ▣ Medicaid Cost Outcomes: Medicaid Costs Declined Among Emergency Department Patients Who Received Brief Interventions for Substance Use Disorders through WASBIRT - Interim Report. September 18, 2007
- ▣ Medical Assistance Cost Outcomes: Medical Assistance Costs Declined Among Emergency Department Patients who Received Brief Interventions for Substance Use Disorders through WASBIRT April 2004-December 2005. January 8, 2007
- ▣ DASA Treatment Expansion Update: Expanding access to alcohol/drug treatment, January 31, 2007
- ▣ Medical Assistance Cost Outcomes: Medical Assistance Costs declined Among Emergency Department Patients who Received Brief Interventions for Substance Use Disorders through WASBIRT, January 8, 2007
- ▣ Chemical Dependency Treatment Reduces Emergency Room Costs and Visits, July 2004
- ▣ Methadone Treatment for Opiate Addiction Lowers Health Care Costs and Reduces Arrests and Convictions, June 2004
- ▣ Non-Methadone Chemical Dependency Treatment for Opiate Addiction Reduces Health Care Costs, Arrests and Convictions, June 2004
- ▣ Public Alcohol/Drug Treatment Reduces Future Medical & Psychiatric Costs in Washington State, April 2004
- ▣ Treatment of Stimulant Addiction Including Addiction to Methamphetamine Results in Lower Health Care Costs and Reduced Arrests and Convictions: Washington State Supplemental Security Income Recipients, December 2003
- ▣ Washington State Supplemental Security Income (SSI) Cost Offset Pilot Project: 2002 Progress Report, February 2003
- ▣ Economic Benefits and Costs Associated with Substance Abuse Treatment Provided to Indigent Clients through the Washington State's Alcoholism and Drug Addiction Treatment and Support Act (ADATSA) Program, November 1997
- ▣ Cost Savings in Medicaid Medical Expenses: An Outcome of Publicly Funded Chemical Dependency Treatment in Washington State, June 1997
- ▣ More studies available!

Washington

<http://www1.dshs.wa.gov/dasa/services/research/reports.shtml#Cost%20Offsets%20of%20Treatment>

- ▣ 1997: Studied 557 indigent clients with SUD and estimated that those that got SA TX had Medicaid expenses \$4,500 less than similar untreated individuals, which compared favorably to the \$2,300 TX cost. Savings were consistent across the 5 years (Luchansky & Longhi)
- ▣ .
- ▣ 1997: Used public records to analyze impact of SAT on Medicaid, and public assistance for 12 months following treatment. “For the average client, the cost of treatment was \$1,779 compared to a benefit of \$692” or \$0.38 on the dollar. Higher returns (\$0.67 per \$1) were achieved with high risk clients (Wickizer and Longhi).
- ▣ 2003: Studied SSI enrollees in need of SA TX. 50% got TX. Those treated achieved: lower medical costs of \$311/month; reduced: arrests of 16%, convictions of 15% felony convictions of 34% (Estee & Nordlund)

Washington, cont.

- ▣ 2007: In the Medicaid-only population going to the ER, compared future medical care costs for those that did and did not get SBIRT. Total medical costs and inpatient costs declined more for those that got SBIRT. The reduction in total medical costs ranged from \$157 per member per month (pmpm) to \$202. Most of the reduction was due to a decline in inpatient hospital costs of \$115 to \$178. ER costs increased for the group that got SBIRT by \$35. Overall reductions in total Medicaid costs could amount to as much as \$1.9 to \$2.4 million a year based on 1,000 patients (Estee & He).
- ▣ 2008: Analyzed impact of \$21 million treatment expansions in FYs 2005-07. Realized savings in Medicaid of \$17.8 million (Mancuso & Nordlund).
- ▣ 2008: Performing rigorous study of cost of SA TX (in draft)

Washington, Prevention

- ▣ It was probably our oversight, but there was also a cost-benefit study on prevention services for youth.
- ▣
- ▣ <http://www.wsipp.wa.gov/pub.asp?docid=04-07-3901>

Virginia

- ▣ The adverse effects of substance abuse cost State and local governments approximately \$613 million in 2006, affecting many State agencies but disproportionately impacting the public safety area. To mitigate these effects, the State and localities spent \$102 million providing substance abuse services.
- ▣ • Most populations that completed substance abuse programs evaluated for this study imposed lower net costs on the State and localities, and the majority experienced better recidivism and employment outcomes than similar groups who either did not enter or complete treatment.
- ▣ • The benefits of substance abuse services are not maximized in Virginia because many individuals who need substance abuse services (1) do not seek them, (2) cannot access them due to cost or logistical barriers, (3) do not receive the most appropriate treatment because of capacity constraints and service gaps, or (4) receive services that do not adequately follow proven practices.
- **“Mitigating the Costs of Substance Abuse in Virginia,”** Virginia Joint Legislative Audit and Review Commission, 2008 <http://jlarc.state.va.us/Reports/Rpt372.pdf>

Utah:

Salt Lake County Drug Court

- ▣ The cost-benefit return for the drug court based on the Utah cost-benefit model (Fowles, et al., 2005) is approximately \$4.29 return on every dollar invested in the program. This benefit takes into account both the explicit reduced costs to the taxpayer due to lowered recidivism and also the implicit reduced costs to potential victims due to lowered recidivism.
- ▣ **“ Evaluation of the Salt Lake County Adult Felony Drug Court Final Report,”** Van Vleet, Hickert, & Becker, Criminal and Juvenile Justice Consortium, College of Social Work, University of Utah, for Salt Lake County Criminal Justice Services, 2005. http://www.law.utah.edu/_studyfiles/1/1.pdf

Texas Drug Court Study

- ▣ • This study finds the Benefit-Cost ratio associated with the DIVERT Court program over a 40 month follow-up period to be **9.43:1**. That is, on average, for every dollar spent on upgrading drug treatment from the Control group (traditional adjudication) to drug treatment through DIVERT Court, \$9.43 of costs can be saved by society over a 40 month post-treatment period. Even though this Benefit-Cost ratio is quite substantial, it is still a conservative estimate of the benefits forthcoming from the DIVERT Court program for reasons detailed in the report.
- “DIVERT Court of Dallas County: Cost Benefit Analysis,” Thomas B. Fomby and Vasudha Rangaprasad, Department of Economics, Southern Methodist University, Aug. 31, 2002.
<http://faculty.smu.edu/tfomby/DivertFinal.pdf>

Tennessee

- ▣ “As a result of Tennessee's participation with Colorado at last month's NCSL Addictions Policy Institute, our legislators are asking for (1) a cost study for our state ASAP (2) information on other state studies, including what the studies themselves cost.”
- ▣ Communication from Division of Alcohol and Drug Abuse Services
Tennessee Department of Mental Health and Developmental Disabilities

South Dakota

- ▣ Five areas of savings or benefits were assessed, based on client information available from outcome studies in South Dakota, along with statewide and national financial information. The five areas assessed were: days worked, days of lost work, criminal justice-arrests, criminal justice-prison, and healthcare costs. The total dollar benefit values are not inclusive of all possible benefits associated with completing substance abuse treatment programs in South Dakota.
- ▣ Before treatment (based on more than 1000 persons followed 12 months after treatment), The cost of treatment (\$1,382) was significantly less than the benefits (\$11,653), resulting in a very favorable cost-benefit ratio. The cost benefit in this study was \$8.43 for every dollar invested. The cost benefit results presented here are similar (although somewhat higher-\$8.43 compared to \$7.00) to those reported elsewhere (Center for Substance Abuse Treatment, 2000; Gerstein, Johnson, Harwood, Fountain, Suter, and Malloy, 1994).
- ▣ “Substance Abuse Treatment Produces Savings in South Dakota,” Gary Leonardson, Mountain Plains Research, for **Division of Alcohol and Drug Abuse State of South Dakota**, Dec, 2005. <http://dhs.sd.gov/ada/Publications/SDImpactTreatment3.pdf>

Oregon

- ▣ 1996: A representative sample of treatment completers with a matched comparison group of clients who received little or no treatment
- ▣ Used existing state agency databases rather than self-report data for maximum objectivity; study period of two years prior and three years after treatment.
- ▣ The 1991–92 cohort of treatment completers produced cost savings of \$83,147,187 for the two and a half years following treatment. The cost for treating all adults in 1991–92 was \$14,879,128.
- ▣ Thus, every tax dollar spent on treatment produced \$5.60 in avoided costs to the taxpayer
 - “Societal Outcomes and Cost Savings of Drug and Alcohol Treatment in the State of Oregon”. Finigan, M. for Office of Alcohol and Drug Abuse Programs, Oregon Department of Human Resource, 1996.

Oregon Cost of Substance Abuse

- ▣ • Total direct economic costs from substance abuse in Oregon totaled approximately **\$5.93 billion** in 2006. These costs fall into the following three categories:
 - ▣ ° **\$813 million in healthcare costs** related to alcohol and drug abuse programs, and the adverse medical consequences associated with abuse.
 - ▣ ° **\$4.15 billion in lost earnings** as a result of foregone productivity by users who die prematurely, are sick, fail to come to work, or are incarcerated as a result of alcohol and drug abuse, and by victims of crimes committed by drug and alcohol abusers.
 - ▣ ° **\$967 million in other costs** such as violent, property, and consumption-related crimes; expenditures on alcohol and drug enforcement laws, criminal justice, and social welfare programs; and property damages attributed to motor vehicle crashes and fires.
- ▣ • Alcohol abuse alone cost Oregon's economy approximately \$3.244 billion in 2006. A large number by any measure, it is approximately **eight times** greater than the \$395.0 million in tax revenues collected in fiscal year 2006 from the sale of alcohol.
- ▣ *"The Economic Costs of Alcohol and Drug Abuse in Oregon in 2006," Whelan, Josephson & Holcombe, ECONorthwest, Inc. for Workdrugfree, Oregon Nurses Foundation and Associated Oregon Industries.*
- ▣ http://www.econw.com/reports/ECONorthwest_Costs-AlcoholDrugs.pdf

Oklahoma

- ▣ A cost analysis model was developed to compare the cost of sending 1,666 offenders (the number of offenders analyzed during the reporting time period – July 2001 through June 2003) to drug court, instead of prison. This model was also used to compare the cost of drug court to standard probation. The results are:
 - if all 1,666 offenders would have otherwise served their sentence in prison, the overall 4-year cost savings of drug court versus prison is \$46,646,178; and
 - if all 1,666 offenders would have otherwise served standard probation sentences, the 4-year costs of drug court were \$4,369,129 more than the costs for standard probation.
- “Analysis of Oklahoma Drug Courts: Fiscal Years 2002 – 2003,” Oklahoma Criminal Justice Resource Center, for the Oklahoma Department of Mental Health and Substance Abuse Services (ODMHSAS), 2004.
<http://www.ocjrc.net/pubFiles/Drug%20Court/DCreport0203.pdf>

NEW YORK

- ▣ The New York State Commission on Drugs and the Courts, chaired by Robert B. Fiske Jr., assembled a group of judges, prosecutors, defense attorneys, researchers and experts in areas like treatment and probation to study the impact of drug cases on the court system. The resulting report, “Confronting the Cycle of Addiction and Recidivism,” which was released in June 2000, strongly endorsed drug courts and the broader concept of judicially ordered and monitored drug treatment for non-violent addicted offenders.
- ▣ At that time, drug courts in New York had a one-year retention rate of over 60 percent and a one-year re-arrest rate of less than 15 percent – “far below the one year recidivism rates of drug offenders on probation and drug offenders released from prison, which are generally about 34 to 35 percent,” the report found. The report also noted that it cost between \$29,000 and \$47,000 a year to incarcerate an individual compared to an average cost of \$18,400 per year for residential drug treatment and \$5,100 for an outpatient program.
- ▣ “The Future of Drug Courts: How States are Mainstreaming the Drug Court Model,” Center for Court Innovation, New York State Court System, 2004.
<http://www.courtinnovation.org/uploads/documents/futureofdrugcourts.pdf>

Michigan

- ▣ It is estimated that for every dollar spent on addiction treatment programs, there is a \$4 to \$7 reduction in the cost of drug-related crimes. With some outpatient programs, total savings can exceed costs by a ratio of 12:1.
 - *Impaired Driving: There has been a reduction in estimated costs to Michigan, over the past 20 years, from \$6.6 billion to \$2.3 billion in FY 2007. This \$4.3 billion in savings comes as deaths fell by 57%, injuries by 75%, and miles driven increased by 37%.*
 - *Treatment Saves Money: Based on a conservative \$50,000 estimate of health care costs for a drug-affected infant, the 123 drug-free births to women in treatment in FY 2007 resulted in a savings to Michigan during the year of \$6 million. Additionally, through Law Enforcement treatment efforts, it is estimated that just over \$1 million was saved by averting 14,623 jail days.*
- ▣ “Michigan: State Snapshot,” Michigan Department of Community Health, Office of Drug Control Policy (ODCP), 2008.
http://www.michigan.gov/documents/mdch/Michigan_2pgr_WEB_final_210419_7.pdf

Maine Cost of Substance Abuse

- ▣ In 2005, the total estimated cost of substance abuse in Maine was \$898.4 million. This translates into a cost equaling \$682 for every resident of Maine.
- ▣ Substance abuse treatment (\$25.2 million) comprised the smallest proportion of total cost (2.8%), while costs associated with crime comprised the largest proportion of costs (\$214.4 million or 23.9%).
 - “The Cost of Alcohol and Drug Abuse in Maine, 2005 **Summary Findings**,” Published by the Maine Office of Substance Abuse, 2007.
<http://www.maine.gov/dhhs/osa/data/index.htm>

Louisiana

- ▣ Based on the available evidence, from the point of view of government, we conclude that for each dollar the state puts into alcohol and drug abuse treatment programs, it will reduce future expenditures on criminal justice, medical care, and public assistance by approximately \$3.83.
- ▣ From the point of view of society, we estimate that for each dollar the state puts into alcohol and drug abuse treatment program society enjoys a reduction in future crime and health care costs of \$3.69 to \$5.19. Based exclusively on crime and medical care cost-savings, we calculate that society gains in reductions in medical care and crime costs between \$3.69 to \$5.19 for each dollar spent on alcohol and drug abuse treatments.
 - “POTENTIAL COST SAVINGS TO THE STATE OF LOUISIANA FROM THE EXPANSION OF SUBSTANCE ABUSE TREATMENT PROGRAMS” Report Prepared by Loren Scott & Associates, Inc. for Louisiana Department of Health and Hospitals Office for Addictive Disorders, 2003.

Kentucky

- ▣ Kentucky has been doing the Kentucky Treatment Outcome Study for years. The KTOS report is used with the legislators, etc because it gives cost offset, reduced criminal recidivism, increased employment, cost of services, etc. It is an excellent snapshot of Kentucky treatment. The baseline data is collected at time of admission and the final follow-up is a telephonic contact 12 months post-discharge.
- ▣ The reductions in self-reported arrests for Kentucky clients, combined with cost estimates for their crimes and increased earnings and tax revenues, suggest a cost benefit for Kentucky taxpayers estimated at a ratio of 4.98 to 1. In other words, Kentucky saved \$4.98 for every dollar spent on treatment during fiscal year 2006. These avoided costs are important for policy development in Kentucky and suggest important issues for treatment planning both on a client level and at the program level as discussed in the next section.
 - “KENTUCKY SUBSTANCE ABUSE TREATMENT OUTCOME STUDY FY 2006 FOLLOW-UP FINDINGS,” ROBERT WALKER, ALLISON MATEYOKE-SCRIVNER, JENNIFER COLE, TK LOGAN, ERIN STEVENSON, CARL LEUKEFELD, TOM JACKSON. Center on Drug Abuse Research, U. Kentucky, JUNE 2008
<http://cdar.uky.edu/ktos/downloads/report/Section%20Four.pdf>

Iowa

- ▣ **Cost Effectiveness Study**

- ▣ The Iowa Cost Effectiveness Study was modeled after the work of Michael Finigan Ph.D., author of "Societal Outcomes and Cost Savings of Drug and Alcohol Treatment in the State of Oregon". Like the Oregon study, the objective of the Iowa project was to identify costs and cost savings that result from substance abuse treatment utilization. The Iowa study included the following characteristics: a representative sampling of substance abuse treatment clients who completed their treatment; development of a matched comparison group using clients who began, but did not complete their treatment; extraction of cost and identifying data from existing state agency databases rather than self-reported data; and collection of selected client characteristics data collected over a period of time (two years prior and three years after treatment).

- ▣ **No citation found yet**

Thanks

- ▣ To the staff of the respective State substance abuse agencies that assisted in identification of these studies.
- ▣ Please send further studies (citations and web URLs) which you know of to the attention of NASADAD.