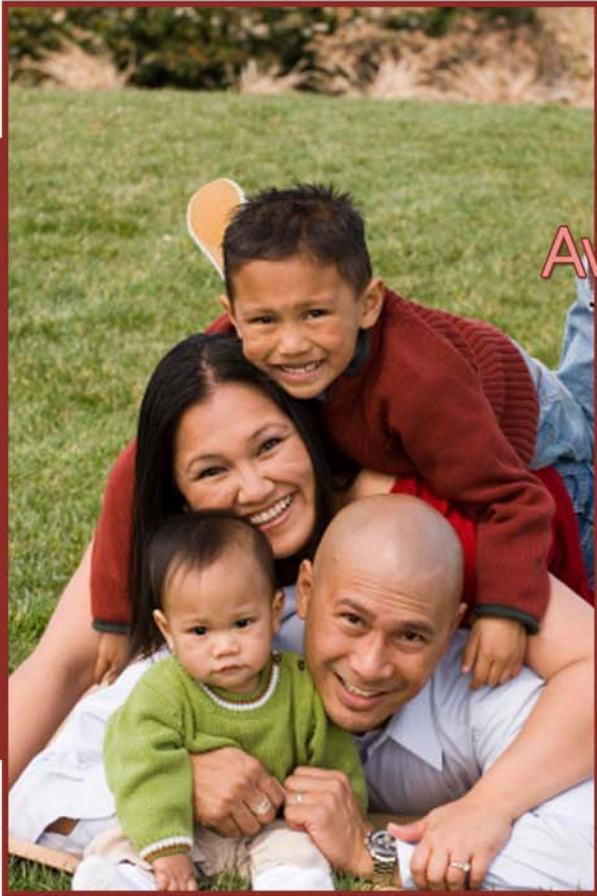


SECTION FOUR

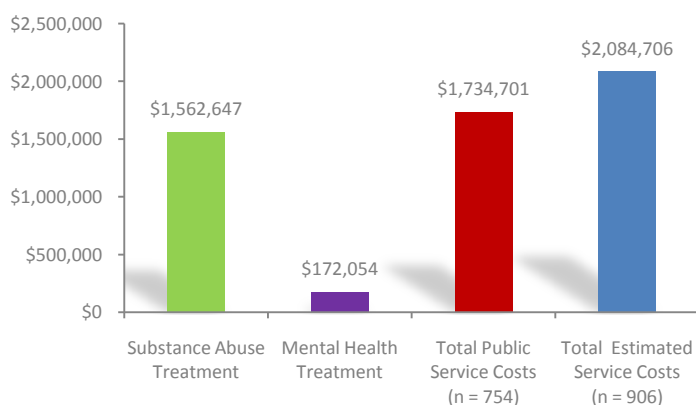
AVOIDED COSTS OF SUBSTANCE ABUSE TREATMENT IN KENTUCKY



4.1 Cost of Substance Abuse Treatment

Overall, KTOS follow-up clients received 24,867 state-funded services including medical and non-medical detoxification, outpatient counseling, intensive outpatient, case management, crisis stabilization, therapeutic rehabilitation, and supported employment. This study examines only the cost of state-funded treatment and does not include private payer sources such as employee assistance programs, other contracts and private insurance which represent a small percentage of the total clients served in this sample of follow-up clients. A total of 754 follow-up clients received state-funded services (including Medicaid) from their intake date to one year out. The cost of treatment services for these 754 clients was developed using cost report rates from the Kentucky Department of Mental Health. The total treatment cost for clients who received state-funded services was \$1,734,701 or \$2,301 per client (see Figure 4.1). The cost of services for the 754 clients included both specific substance abuse treatment (\$1,562,647, or \$2,072 per person) and mental health treatment (\$172,054, or \$228). In order to generalize this treatment cost to the entire follow-up sample, the per client treatment cost was multiplied by the total sample size (n=906) to arrive at a generalized total cost of \$2,084,706 for state-funded treatment services.

Figure 4.1. Total Cost of State-Funded Treatment Services and Total Cost of all Treatment



To estimate the potential cost-benefit ratio for Kentucky, this study compared inferred costs relating to the follow-up sample before treatment with the same inferred cost factors after treatment.

4.2 Crime Reductions

To estimate the costs of crimes, the total arrests for the past 12 months were analyzed using the distribution of crimes reported by the Kentucky State Police (Crime in Kentucky, 2006). The distribution of the 191,406 arrests in Kentucky in 2006 for the four major categories was: (1) Drug Trafficking and Possession – 56,376 (29.5%); (2) Property – 70,257 (36.7%); (3) Violence – 29,776 (15.6%); and (4) DUI – 34,997 (18.3%). These percentages were applied to the total self-reported arrests in the KTOS follow-up sample to arrive at a figure for the number of arrests for each type of crime.

Table 4.2a presents changes in self-reported arrests at intake, the victim costs of crime, and the reduction in self-reported arrests at follow-up as well as crime costs for those self-reported crimes. Table 4.2a shows the amount of avoided victim costs from crime after substance abuse treatment and includes arrests during treatment as well as after treatment. Drug crime cost data are from Finigan’s (1999) article assessing cost off-sets resulting from drug court services. These studies include victims’ treatment costs in the crime cost estimates. The remaining costs of crime were derived from Miller, Cohen, and Wiersema’s (1996) report on victim cost of crime. All dollar amounts were adjusted to 2006 dollars for comparability using the Federal Reserve Bank CPI indexing system values which can be located at the following web address: <http://minneapolisfed.org>.

The following data suggest a substantial difference in costs to society based upon arrests at intake compared to arrests at follow-up.

Table 4.2a. Past 12-month Arrests at Intake and Follow-up and Estimated Victim Costs of Crime

Arrests	Estimated cost per arrest	Past 12 month arrests at intake	Cost of crimes at intake	Past 12 month arrests at follow-up	Cost of crimes at follow-up	Reduction in costs
Drug	\$3,821	291	\$1,111,911	138	\$527,298	\$584,613
Property	\$16,454	362	\$5,956,348	172	\$2,830,088	\$3,126,260
Violence	\$38,148	154	\$5,874,792	73	\$2,784,804	\$3,089,988
DUI	\$25,113	180	\$4,520,340	86	\$2,159,718	\$2,360,622
Total		987	\$17,463,391	469	\$8,301,908	\$9,161,483

Table 4.2b presents changes in costs associated with incarceration time from intake to follow-up for the entire sample. At intake, clients reported 40,803 nights incarcerated in the past 12 months. At follow-up clients reported 14,068 nights incarcerated in the past 12 months which is a 65.5% reduction in the number of nights incarcerated. Using Kentucky jail costs developed by the Kentucky Department of Corrections at \$32.64 per night, the total cost of jail time for the 12 months before intake was \$1,034,819 (Kentucky Jailers Association, 2006). At follow-up, the nights in jail in the past 12 months were estimated to cost \$419,685, for a \$615,134 reduction in costs. The time and costs of prison were also figured in to the estimate. At intake, clients reported spending 9,099 nights in prison in the past 12 months and 1,210 nights at follow-up. This represents a reduction of 7,889 (86.7%) nights in prison from intake to follow-up. In order to determine the cost savings ratio, the avoided cost of crime and the reduction in incarceration costs are added and the total is divided by the cost of substance abuse treatment for the entire follow-up sample. Therefore, adding the reductions in incarceration costs to the avoided victim costs of crime, suggests that the total avoided costs of crime at \$10,169,410 for a savings that can be expressed as \$4.88 for every \$1.00 spent on treatment.

Table 4.2b. Reduction in Nights in Incarcerated and Related Costs

Jail time and costs	At intake	At follow-up	Reduction
Overall number of nights spent in prison in the past 12 months*	9,099	1,210	7,889
Overall number of nights spent in jail in the past 12 months	31,704	12,858	18,846
Annualized total estimated cost of prison stays at \$49.79 per night	\$453,039	\$60,246	\$392,793
Annualized total estimated cost of jail stays at \$32.64 per night	\$1,034,819	\$419,685	\$615,134
Total	\$1,487,858	\$479,931	\$1,007,927

*Number of nights in prison calculated as percentage of sample reporting spending 2 months or more incarcerated during the past 12 months

4.3 Changes in Employment Earnings

Table 4.3 presents increases in employment and estimated changes in employment earnings. Using an estimated labor value of \$7.00 per hour, employment earnings increased from intake to follow-up by 86.5% for an estimated increase of \$3,555,552 in employment earnings for the entire sample 12 months after intake. With Kentucky’s six percent state tax on these employment earnings estimated at \$213,334, there are additional offsets to the treatment costs for this sample of clients. Adding these estimated tax revenues to the avoided costs of crime results in a savings that can be expressed as \$4.98 for every dollar spent on treatment.

Table 4.3. Increased Employment and Earnings

Employment variable	Intake	Follow-up	Increase
Number of clients working full or part-time	319	513	194
Annualized – days worked in the past 30 days for follow-up sample	73,368	136,860	63,492
Total annualized hours of paid work	586,944	1,094,880	507,936
Annualized total estimated labor value at \$7.00 per hour times total hours	\$4,108,608	\$7,664,160	\$3,555,552
Estimated tax value (@6%) of labor income	\$246,516	\$459,850	\$213,334

4.4 Summary of Cost Benefit Ratio

Using client self-report data on arrests and estimated costs per crime, an estimate of the total crime costs can be made for the follow-up sample before and after treatment. In addition, treatment event data and cost report information from the Kentucky Department of Mental Health was used for specific treatment costs for the follow-up sample.

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.