



What are the Average Costs of Substance Abuse Treatment in the Public Sector in North Dakota?

Objective: To examine the average costs associated with substance abuse treatment at the Regional Human Service Centers in North Dakota and the average degree to which the State benefits.

Data Sources:

- 1) Primary and administrative data, taken from the ND Department of Human Services' Regional Office Automated Program (ROAP) electronic record, on consumer services and agency costs from seven regional human service centers. Northwest Human Service Center was not licensed to provide substance abuse treatment.
- 2) Review of current literature on the benefits associated with substance abuse treatment in the United States (See references). The review of multiple sources demonstrates the advantages of substance abuse treatment that produce benefits to a state that, on average, equal to seven times the cost of treatment.

Study Design: The estimated direct cost of treatment is determined from human service center administrative data entered into the ROAP system. The cost of the consumer's substance abuse treatment episode is estimated for 'all treatment,' 'outpatient,' and 'residential' categories. Benefits of treatment are substantiated in a social planning perspective review of current literature.

Data Collection: Episode of Care treatment cost data were counted for the period January 1, 2005 to September 30, 2006. Those episodes of care with no events and non-substance abuse events were deleted, leaving a balance of 3,465 episodes of care. Of those, 3,256 received outpatient services and 946 received residential services.

Principle Findings: The average cost of substance abuse treatment per episode of care for the combined all treatment category is \$2,850 and is associated with a monetary per episode of care net benefit to society of \$17,100. This represents a greater than 7:1 ratio of benefits to costs. For 3,465 episodes of care, the net benefits to North Dakota is estimated at \$59,251,500.

Conclusions: Allocating taxpayer dollars to substance abuse treatment directly influences consumer improved health and quality of life, and additionally benefits society in lowering social and economic costs resulting from abuse and dependence on alcohol and other drugs.

Average Costs Per Substance Abuse Treatment Episode of Care (EOC), Including AOD Evaluations, at the Regional Human Service Centers in North Dakota

'Episode of Care' (EOC) is the term that measure the time from an admission date to treatment to discharge. Data were compiled from the Regional Office Automated Program (ROAP) system and represent all substance abuse treatment EOCs calculated using the Regional Human Service Center rate structure for the period studied. Substance abuse treatment episodes of care at seven regional human service centers totaled 3,465 from January 1, 2005 through September 30, 2006.

Results Based on per Substance Abuse Treatment Episode of Care

Table 1. Average Costs, Average Benefits, and Net Benefits per Substance Abuse Treatment Episode of Care (01/01/05 – 09/30/06)

	All Treatment (n=3,465)	Outpatient Treatment (n=3,256)	Residential Treatment (n=946)
Average cost per substance abuse treatment episode of care	\$2,850	\$2,100	\$3,300
Average benefits per substance abuse treatment episode of care	\$19,950	\$23,100	\$19,800
Net benefits	\$17,100	\$21,000	\$16,500
Cost-benefit ratio	7:1	11:1	6:1

$$\begin{array}{rclcl}
 \text{Average Cost per Episode of Care} & \times & \text{Cost-Benefit Ratio} & = & \text{Average Benefits per Episode of Care} \\
 \text{Average Benefits per Episode of Care} & - & \text{Average Cost per Episode of Care} & = & \text{Net Benefits}
 \end{array}$$

All Treatment costs per episode of care were calculated by counting unduplicated EOCs. The average cost per substance abuse treatment EOC (\$2,850) was determined by adding standard fees (\$9,875,250) and dividing by the unduplicated EOC count (3,465).

Average Outpatient costs per episode of care (\$2,100) were calculated by adding standard fees for all outpatient services including individual therapy, family therapy, group therapy, and nursing services (\$6,837,600) and dividing by the unduplicated outpatient EOC count (3,256). Group therapy may include day treatment, aftercare, intensive outpatient, or relapse prevention. Nursing services may include nursing assessment, monitoring vital signs, setting up medication, medication training and

support, setting up medication trays, and monitoring side effects and effectiveness of medications.

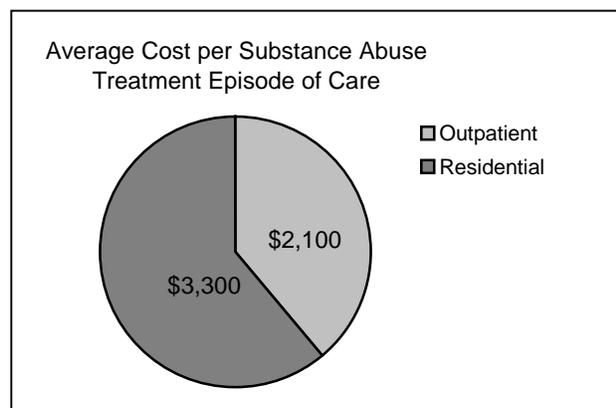
Average Residential costs per episode of care (\$3,300) were calculated by adding standard fees for social detoxification, residential room and board, residential therapeutic, crisis residential room and board, and crisis residential therapeutic (\$3,121,800) and dividing by the unduplicated residential EOC count (946). The \$3,300 average per residential episode of care is conservative because of the way the services were recorded during this period.

Cost/benefits ratios result from complex analysis on many levels (see References). Benefits may be seen through decreases in

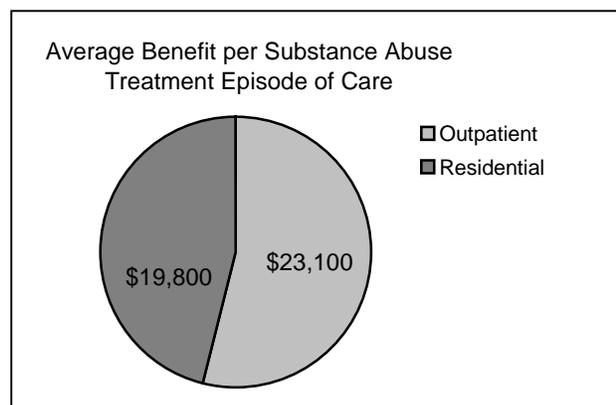
- visits to the emergency room
- number of nights in a hospital
- days missed at work
- dependence on illegal drugs
- the affects of serious mental illness
- depression
- smoking
- problems with law enforcement
- driving under the influence of alcohol or drugs
- causing domestic violence
- victims of domestic violence

A large body of scientific research (See References), which includes meta-analysis of multiple complex studies, supports the cost/benefit relationships identified in this report (7:1 for all treatment, 11:1 for outpatient, and 6:1 for residential). It would be cost prohibitive for North Dakota to conduct its own research simply to replicate and verify existing research. As one studies the data, they have an appearance of being 'reasonable.' This is important when applying the results of meta-analysis beyond the scope of individual studies.

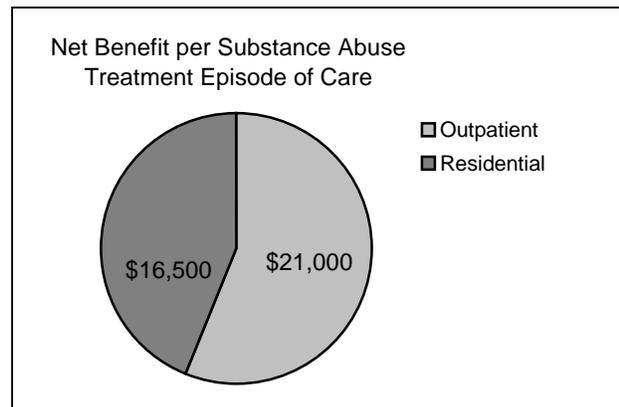
The average residential cost per substance abuse treatment episode of care is one-third (37%) more than that of outpatient episode of care.



The average benefit of the lower cost outpatient treatment is more than 16% higher than the benefit of residential care.



Subtracting average cost from average benefit results in net benefits. Outpatient treatment results in about 27% more net benefits than residential treatment.



Results Based on the Cumulative Costs of All Substance Abuse Treatment Episodes of Care

In the following table, cumulative costs are displayed which demonstrate net benefits to the State as a result of 3,465 episodes of care. Multiplying the average cost per substance abuse treatment EOC for all treatment (\$2,850) times 3,465 episodes of care equals \$9,875,250. Multiplying by a factor of seven yields benefits of \$69,126,750. Subtracting the cost of substance abuse treatment (\$9,875,250) results in net benefits to the State of \$59,251,500.

Table 2. Accumulated Costs and Benefits of Substance Abuse Treatment

	All Treatment (n=3,465)	Outpatient Treatment (n=3,256)	Residential Treatment (n=946)
Cost of substance abuse treatment	\$9,875,250	\$6,837,600	\$3,121,800
Benefits of substance abuse treatment	\$69,126,750	\$75,213,600	\$18,730,800
Net benefits	\$59,251,500	\$68,376,000	\$15,609,000
Cost-benefit ratio	7:1	11:1	6:1

$$\text{Average Cost per Episode of Care} \times n = \text{Cost of Substance Abuse Treatment}$$

$$\text{Cost of Substance Abuse Treatment} \times \text{Cost-Benefit Ratio} = \text{Benefits of Substance Abuse Treatment}$$

$$\text{Benefits of Substance Abuse Treatment} - \text{Cost of Substance Abuse Treatment} = \text{Net Benefits}$$

Cost/Benefit for Mutual Clients of Department of Corrections and Rehabilitation (DOCR) and DHS Human Service Centers (HSC) Identified on June 26, 2006 Who Received Substance Abuse Treatment at the HSC

On June 26, 2006, 1,211 consumers were mutual clients of the Department of Human Services Regional Human Service Centers (DHS HSC) and the Department of Corrections (DOCR). This is a subset of the n=3,465 (Table 1). The average cost per client remains the same at \$2,850 with a net benefit of \$17,100 (7:1). Cumulatively, the 1,211 mutual clients would yield a net benefit to the state of \$20,708,100. This is about 35% of the total net benefit to the state of all consumers receiving substance abuse treatment at HSCs.

Literature substantiates that there is a cost/benefit ratio yielding between \$1.91 and \$2.69 benefit for every \$1.00 spent on substance abuse treatment while in prison. Without knowing the cost of treatment while in prison, we cannot calculate cumulative benefits, but it is reasonable to believe that the costs would be substantially higher resulting in much lower net benefits.

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Attachment C

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