

Cost-Benefit of Prevention

Review of research literature

“More people die, become ill, or are disabled from using these substances [alcohol, tobacco and illicit drugs] than from any other preventable behavior.”

Alcohol Abuse: “Robbing Our Future”
San Diego Community Health Improvement Partners

Summary

In 1995, abuse of alcohol and the use of tobacco and illicit drugs cost American society approximately \$428 billion which translates to \$1600 for every man, woman and child in the United States (Rice, 1999). Eliminating this cost could completely support the 2004 annual budget of the U.S. military with more than \$28 billion left over.ⁱ Of the \$428 billion, alcohol related problems account for \$176 billion, tobacco for \$138 billion and illicit drugs for \$114 billion. These costs cannot come close to being covered by taxes on tobacco and alcohol.ⁱⁱ It is important to remember that substance abuse and associated costs are completely preventable.ⁱⁱⁱ

There are only a few studies on the cost-benefit of specific drug abuse prevention programs and fewer studies on environmental prevention programs. However, research studies for prevention *programs* are increasing and many, although not all, are demonstrating positive findings. Cost benefit components for prevention programs are yet to be standardized across studies although most include some configuration of the following: training, implementation, participant time, facilities cost, number of years of program implementation, development and evaluation costs and contributions to programs from foundations and participants.ⁱⁱⁱ

Studies reviewed include both cost-benefit and cost-effectiveness, defined as follows. *Cost benefit* analysis is used to determine whether a program or policy application is a worthwhile investment but does not compare programs. A cost is calculated for the program or intervention and for program benefits. *Cost-effectiveness* measures outcome against cost meaning the analysis compares alternatives to determine which achieves the outcome at the lowest cost. Monetary values are not the only values assigned in cost-effectiveness studies.^{iv}

The cost-benefit ratio of prevention programs vary from type of program e.g., universal, selective, comprehensive, and variations in the way costs are calculated, which outcomes are included and which methodologies are utilized.^v Results of studies suggest that a comprehensive type of program spanning several years, with multiple channels and community support, may yield more long lasting effects than single year, single channel programs.^{vi}

Primary Findings

- Return on investment of prevention programs range from \$2-\$20. That is for every dollar spent on prevention programs, from \$2 to \$20 is returned in benefits. Benefits are estimates of savings over a period of time resulting from reduced demand for health and social services. Cost-benefit analysis is rare because it takes a substantial period of time for the benefits to be realized. The broad range in variability is contributed to differing programs, how costs are calculated, the outcomes included and methodologies utilized. Programs analyzed include Universal, selective and comprehensive.^{vii,viii,ix} (Universal programs target the general population. Selective programs target those at higher-than-average risk. Comprehensive programs are those that incorporate multiple program offerings simultaneously i.e., universal, selected and indicated. Indicated programs are those targeting individuals who are already using or engaging in the other high-risk behaviors however, no studies were found that measured indicated program cost-benefit.
- Program cost-benefit analysis methods vary as evidenced by the range in cost-benefit results i.e., \$2-\$20. Despite the use of multiple indicators, varied cost elements, and different program strategies, *every* study consistently found benefits outweigh costs by at least 2 to 1.^x
- Policy implications for prevention and early intervention programs for youth include investing in programs that have demonstrated previous success e.g., CSAP's model programs and implementing programs with emphasis on program fidelity or appropriate and documented adaptation. The Washington State Institute for Public Policy reports that some prevention and early intervention programs have a good return on the dollar, and recommend investing in research-proven programs. Ten of the twelve Youth Substance Abuse Prevention Programs reviewed demonstrated positive cost-benefit ranging from \$3.43 to \$102.29.^{xi} See figure 1.
- For every dollar invested in research-based prevention programs a savings of up to \$10 in treatment costs alone can be realized.^{xii}
- Cost benefit studies for the Strengthening Families Program indicate a net benefit of \$10 for every dollar spent. Guiding Good Choices program found a \$6 benefit for every dollar spent. Skills, Opportunity, And Recognition (SOAR) program found a \$4.25 benefit to cost ratio for every dollar spent.^{xiii}
- Less information is available on the effectiveness of environmental prevention however, review of these types of prevention efforts indicate the most powerful prevention programs are based on social learning models directed at behaviors linked with drug use. Social learning-based drug prevention programs have shown a positive long-term effect on tobacco, alcohol, and marijuana use. (3 studies cited)^{xiv}
- Cost benefit analysis is only one method to determine where to place emphasis and dollars for prevention. Cost-savings, cost effectiveness and cost analysis are additional methods for determining prevention policy.^{xv}

- Cohen (1998) estimates the cost savings from helping just one high-risk youth graduate from high school, avoid heavy drug use, and not engage in crime would range between \$1.7 and 2.3 million dollars.^{xvi}
- Holder (2000), in his research study on environmental (universal) strategies, reports a cost \$2.88 for every dollar spent. The environmental strategies employed include responsible beverage server training, increased drunk-driving enforcement, reduced availability to minors, and changes in local zoning to reduce access. The study is based on actual data collected in three communities and compared to similar control communities.^{xvii}
- Based on reduced health-care costs, Swisher (2001) estimates the lifetime benefits of a universal program to reduce the number of pack-a-day tobacco smokers to be \$19.64 for every \$1 spent.^{xviii}

Figure 1

Youth Substance Abuse Prevention Programs	Measured Benefits and Costs Per Youth			
	Benefits	Costs	Benefit per \$ of cost	Benefit minus cost
Adolescent Transitions Program ‡	\$2,420	\$482	\$5.02	\$1,938
Project Northland ‡	\$1575	\$152	\$10.39	\$1,423
Family Matters	\$1,247	\$156	\$8.02	\$1,092
Life Skills Training (LST) ‡	\$746	\$29	\$25.61	\$717
Project Star (Students Taught Awareness and Resistance) ‡	\$856	\$162	\$5.29	\$694
Minnesota Smoking Prevention Program ‡	\$511	\$5	\$102.29	\$506
Other Social Influence/Skills Building Substance Abuse Prevention Programs	\$492	\$7	\$70.34	\$485
Project Towards No Tobacco Use (TNT) ‡	\$279	\$5	\$55.84	\$274
All Stars ‡	\$169	\$49	\$3.43	\$120
Project ALERT (Adolescent Learning Exp. In Resistance Training) ‡	\$58	\$3	\$18.02	\$54
STARS for Families (Start Taking Alcohol Risks Seriously)	\$0	\$18	\$0.00	-\$18
D.A.R.E. (Drug Abuse Resistance Education)	\$0	\$99	\$0.00	-\$99

Source: Washington State Institute for Public Policy report titled Benefits and Costs of Prevention and Early Intervention Programs for Youth available at www.wsipp.wa.gov

‡ Cost estimates for these programs do not include the costs incurred by teachers who might otherwise be engaged in other productive teaching activities. Estimates of these opportunity costs will be included in future revisions.

The D.A.R.E. program has changed considerably since the last evaluation used in this report. A five year evaluation of the new program began in 2001.

ⁱ Center for Defense Information at <http://www.cdi.org/budget/2004/world-military-spending.cfm>

ⁱⁱ Swisher, J., Scherer, J., Yin, R. (2004). Cost-benefit estimates in prevention research. *The Journal of Primary Prevention*, Vol. 25, No. 2, October, 2004.

ⁱⁱⁱ Prevention WORKS! The Faces of Prevention: Benefits of Prevention Fact Sheet

^{iv} NIDA Monograph 176, multiple authors.

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- ^v Lillie-Blanton, M., Werthamer, L., Chatterji, P., Fienson, C. and Caffray, C. (1998) Issues and Methods in Evaluating Costs, Benefits, and Cost-Effectiveness of Drug Abuse Prevention Programs for High-Risk Youth, NIDA Research Monograph 176, US. Dept. of Health and Human Services, National Institutes of Health
- ^{vi} Pentz, M. (1998). Costs, Benefits, and Cost-Effectiveness of Comprehensive Drug Abuse Prevention, NIDA Research Monograph 176, US. Dept. of Health and Human Services, National Institutes of Health
- ^{vii} Swisher, J., Scherer, J., and Yin, R. (2004). Cost-benefit estimates in prevention research. *The Journal of Primary Prevention*, Vol. 25, No 2, pgs. 137-148, October, 2004
- ^{viii} Woodward, A. (1998). Overview of Methods: Cost-Effectiveness, Cost-Benefits, and Cost-Offsets of Prevention, NIDA Research Monograph 176, US. Dept. of Health and Human Services, National Institutes of Health
- ^{ix} Zarkin, G., Hubbard, R. (1998). Analytic Issues for Estimating the Benefits and Costs of Substance Abuse Prevention, NIDA Research Monograph 176, US. Dept. of Health and Human Services, National Institutes of Health
- ^x Prevention Works! Cost Benefit Estimates from Prevention Research, Office of Policy and Planning, Center for Substance Abuse Prevention, 2001 NPN Research Conference Edition
- ^{xi} Benefits and Costs of Prevention and Early Intervention Programs for Youth (2004). Washington State Institute for Public Policy at www.wsipp.wa.gov
- ^{xii} NIDA InfoFacts, National Institute on Drug Abuse, National Institutes of Health, U. S. Department of Health and Human Services, February, 2004
- ^{xiii} Preventing Drug Abuse among Children and Adolescents, National Institute on Drug Abuse (NIDA) at <http://www.drugabuse.gov/Prevention/applying.html>
- ^{xiv} Prevention Intervention Cost-Effectiveness and Cost Benefit, National Institute on Drug Abuse at <http://www.drugabuse.gov/about/organization/dspr/hsr/da-pre/WerthamerPreventive.html>
- ^{xv} Karoly, L., Kilburn, M., Begelow, J., Caulkins, J., and Cannon, J. (2001). Assessing Costs and Benefits of Early Childhood Intervention Programs: Overview and Application to the Starting Early Starting Smart Program. Available from Casey Family Programs, <http://www.Casey.org>
- ^{xvi} Cohen, M. (1998). The monetary value of saving a high-risk youth. *Journal of Quantitative Criminology*, 14, 5-33.
- ^{xvii} Holder, H. (2000). Community prevention of alcohol problems. *Addictive Behaviors* 25 (6), 929-942.
- ^{xviii} Swisher, J. (2001). "The costs, cost-effectiveness, and cost-benefit of school and community counseling services," in D. Locke, J. Meyer, and E. Herr (eds.), *Handbook of Counseling*, Sage, New York.