

What Are the True Benefits of School-Based Drug Prevention Programs?

The purpose of school-based drug prevention programs is to prevent, or at least diminish, children's use of a variety of substances, including licit substances such as alcohol and tobacco as well as illicit ones such as cocaine and marijuana. In fact, most successful school-based drug prevention programs, such as Lifeskills and Project ALERT, are not targeted to specific substances. Which drugs then, in terms of usage, do they affect? Where are the benefits of a drug prevention program realized? Through a reduction in crime related to a contracting cocaine market? Through higher productivity associated with diminished alcohol use? Or through less money spent on health care for smokers? To put the question more provocatively, are school-based drug prevention programs better viewed as a weapon in the war against illegal drug use or as a public health program for decreasing the adverse effects of licit substances?

The answers to such questions should provide a clearer understanding of the merits of a drug prevention program and limit unrealistic expectations of what such a program can accomplish. The answers to these questions also bear on funding sources for drug prevention and the types of programs drug prevention should be competing against for scarce resources. In a recent study, Drug Policy Research Center analysts Jonathan Caulkins, Rosalie Liccardo Pacula, Susan Paddock, and James Chiesa determined where drug prevention's benefits fall in terms of reductions in illicit-drug use, drinking, and smoking. They also evaluated whether the benefits of school-based drug prevention programs, in terms of reductions in the use of four substances—cocaine, marijuana, tobacco, and alcohol—exceed the costs of running the programs.

The DPRC estimates are limited to tangible, measurable benefits; they include reduced productivity losses and reductions in costs to government and the health care system, but

not decreases in pain and suffering or decreased loss of life. The estimates apply to a hypothetical drug prevention program that is representative of successful real-world programs. The researchers did not seek to evaluate and contrast the relative merits of specific programs.

Benefits and Their Allocation

To first resolve the broad issue—whether the benefits of a model school-based drug prevention program exceed its costs—Caulkins and his colleagues concluded that they apparently do. According to the researchers' best estimate (see Figure 1), society would currently realize quantifiable benefits of \$840 from an average student's participation in drug prevention, compared with a program cost of \$150 per participating student. The benefit estimate is subject to a number of assumptions, all of which are uncertain to some degree. The researchers repeatedly varied their assumptions

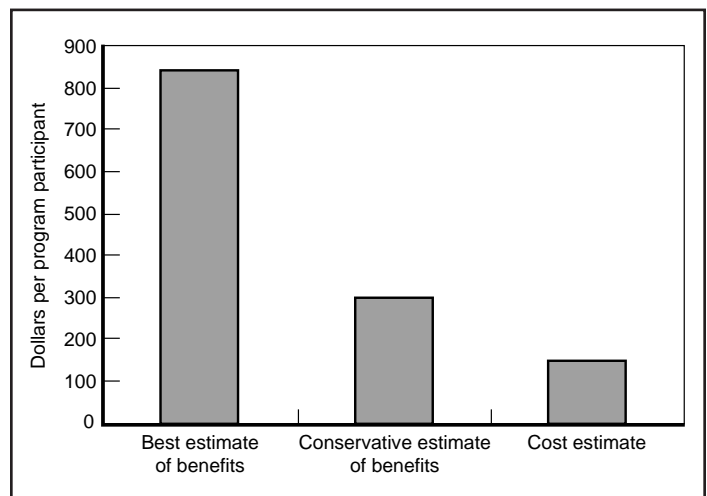


Figure 1—Benefits of School-Based Drug Prevention Are Probably Several Times Greater Than the Costs

to generate a large set of possible total benefit measures. About 95 percent of the time, the benefits exceeded \$300, or twice the costs.

Both the best and the most conservative benefit estimates account for prevention's effects on only four substances—cocaine, marijuana, tobacco, and alcohol. These are the four drugs for which there is a sizable literature documenting prevention's effectiveness.

How are prevention's benefits apportioned across the four substances? Close to 40 percent of prevention's social value is realized through reductions in tobacco use, and more than a quarter of the value is in decreased alcohol abuse. Most of the remaining third of the value is associated with reductions in cocaine use; reductions in marijuana use account for a very small fraction of the total.¹

The DPRC researchers attempted to take into account other illegal drugs by assuming that drug prevention reduces the use of those drugs by as much as it reduces cocaine use. In that event, alcohol and tobacco would still account for two-thirds of the quantifiable social benefits from drug prevention. (See Figure 2.) It therefore makes more sense to view drug prevention principally as a public-health program rather than principally as a criminal justice intervention in the war on illicit drugs.

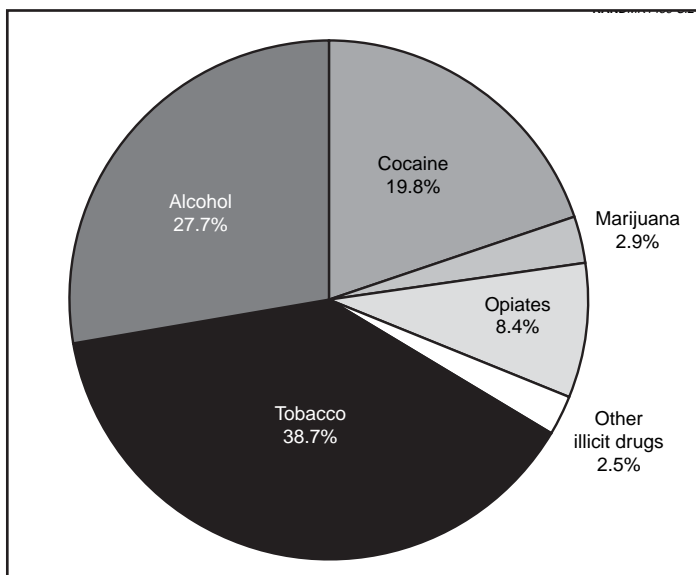


Figure 2—Most Benefits from School-Based Drug Prevention Are in the Form of Reductions in the Use of Legal Substances

¹In the process of estimating these drug-specific benefit contributions, the researchers produced two other sets of estimates that could be of use in further drug policy analysis. Those estimates were for the average social cost per unit of use for marijuana (\$12 per gram) and cocaine (\$215 per gram) and the average levels of lifetime consumption for those who ever try a substance (i.e., 550 grams for marijuana and 350 grams for cocaine).

Implications for Funding

What do these findings imply about funding of school-based drug prevention? First, they suggest that model drug use prevention programs can be justified on a benefit-cost basis by the reductions in substance use. Drug prevention thus appears to be a wise use of the funds devoted to it. Whether it is the wisest use of those funds depends on whether there are other uses that could reap even greater social benefits.

If prevention should be viewed as a public health intervention, and not a criminal justice intervention, the implication might then be that school-based drug prevention should be funded out of health dollars rather than criminal justice dollars (or education dollars). At a minimum, if law enforcement interventions are seen as a higher priority for scarce justice program dollars, it would be foolish not to fund prevention if public health resources were available.

Issues of budgetary support should not obscure the fact that the dominant costs of running prevention programs are not dollar costs—e.g., for purchasing program materials. Rather, the dominant cost is from the lost learning opportunity on the part of students, the result of diverting scarce class time from traditional academic subjects to drug prevention education. Unless the school year is lengthened to compensate for the time diverted to drug prevention programs, the principal social cost of prevention will be the displacement of the time that would have been spent on instruction in traditional subjects.

An implication of this observation is that evaluators of future prevention programs might consider assessing the programs' effects on traditional educational objectives (in addition to and distinct from their impact on children's knowledge about drugs). If a drug prevention program were to include instruction in writing, exercises in critical thinking, or other such activities, as well as instruction in the school subjects it displaces, then its true economic cost would be less than \$150 per participating student.

Scope of Effect: Small but Nevertheless Valuable

While cutting-edge prevention programs are a wise use of public funds, it is mainly because they are relatively cheap and because drug use is so costly to society, and not because the programs, even the model ones, eliminate a large proportion of drug use. In fact, the best estimates obtained by Caulkins and his colleagues are that prevention reduces lifetime consumption of tobacco by 2.3 percent, abuse of alcohol by 2.2 percent, and use of cocaine by 3.0 percent. Yet, even such small reductions in use can be very valuable because the

social costs of drug use are so high. However, most of the reductions in use occur many years after the program is run, so the present value of those reductions, discounted at 4 percent per year, is only about half as great as their nominal value.

The estimated reductions in lifetime use may appear to be especially small given that the best prevention programs report reducing specific measures of use by 10 percent, 20 percent, or even as much as 30 percent. There are two principal reasons for this order-of-magnitude contrast:

First, programs are evaluated on many outcome measures. A single program's evaluation may find a 33 percent reduction in weekly use of a substance but only a 5 percent reduction in the probability of someone ever using the substance. The

DPRC study's estimates are based on a program's effects using a consistent set of measures specified in advance, not measures selected ex post facto for which the impact was largest.

Second, prevention's effects usually decay over time. Effects on lifetime use are typically estimated to be only about 15 percent as great as the effects on use observed shortly after completion of an intervention.

School-based drug prevention is therefore a cost-effective tool for improving public health and for making incremental progress in the effort to manage mature drug epidemics, such as the U.S. cocaine epidemic. Furthermore, the study does not rule out the possibility that drug prevention programs may have an even greater impact on newly emerging epidemics than they have on the cocaine epidemic.

RAND research briefs summarize research that has been more fully documented elsewhere. This research brief describes work supported by the Robert Wood Johnson Foundation's Substance Abuse Policy Research Program, with additional support provided by RAND's Drug Policy Research Center with funding from the Ford Foundation. The research is documented in School-Based Drug Prevention: What Kind of Drug Use Does It Prevent? by Jonathan P. Caulkins, Rosalie Liccardo Pacula, Susan Paddock, and James Chiesa, MR-1459-RWJ, 2002, 198 pp., \$15.00 ISBN: 0-8330-3082-5. This report is available from RAND Distribution Services (Telephone: 310-451-7002; toll free 877-584-8642; FAX: 310-451-6915; or email: order@rand.org). Abstracts of RAND documents may be viewed at www.rand.org. Publications are distributed to the trade by NBN. RAND® is a registered trademark. RAND is a nonprofit institution that helps improve policy and decisionmaking through research and analysis; its publications do not necessarily reflect the opinions or policies of its research sponsors.

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