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## SUMMARY

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Drug use prevention programs are now commonplace in the nation's schools. Their aim is to prevent, or at least delay or diminish, children's use of a variety of substances, including illicit drugs such as marijuana and cocaine and licit substances such as alcohol and tobacco. It is now well established that school-based drug prevention *can* work to reduce drug consumption, at least in the short run. We emphasize *can* because large sums of money are still poured into programs whose effectiveness is dubious. However, there are proven models available for implementation.

Most successful drug prevention programs are not targeted to specific substances. Which drugs, then, do they affect? Besides differing in the legality of their use, drugs differ in the cost burden they place on society. Where are the benefits of a drug prevention program realized? Through a reduction in crime related to the cocaine market? Through fewer traffic accidents and higher productivity associated with lower alcohol use? Or through less money spent caring for the health of smokers? To put the question more provocatively, are school-based drug prevention programs better viewed as a weapon in the "war" against illegal drugs or as a public health program for decreasing the adverse effects of licit substances?

The answers to such questions will give both policymakers and the public a clearer understanding of the merits of school-based drug prevention programs and limit unrealistic expectations. Those answers also bear on who should be funding drug prevention and what types of programs prevention should be competing against for scarce resources. In this book, we identify where drug prevention's benefits

fall—in reductions in the use of illicit drugs, drinking, or smoking. And we determine whether all these benefits combined exceed the costs of running the prevention programs.

Our estimates are limited to tangible, measurable benefits. Those benefits include reduced productivity losses due to death, incarceration, and victimization from crime, but not illness, and also reductions in the costs of health care, the criminal justice system, and the social-welfare system. We omit certain benefits such as reductions in pain and suffering and loss of life, the quantification of which is difficult and controversial. Our estimates apply to a hypothetical drug prevention program that is representative of real-world programs that have been shown to be successful. We do not evaluate specific programs separately or recommend one program over another.

## CENTRAL FINDINGS

To answer the broadest question of this study—do the benefits of school-based drug prevention programs outweigh their costs?—we conclude that the benefits of model programs do in fact exceed the costs. According to the best estimate we can now make (see Figure S.1), society (i.e., the United States as a whole)<sup>1</sup> realizes total quantifiable benefits of \$840 from one average student’s participation in drug prevention at this mature stage of the U.S. drug epidemic. By comparison, the cost of one student’s participation comes to \$150. Long-term benefits are always difficult to estimate, and our benefit estimate is subject to a number of assumptions—e.g., how effective a program can be, how the effects decay, and how much of a substance would be consumed without the program. All of our assumptions are uncertain to some degree. We randomly and repeatedly varied our assumptions across reasonable ranges of values to generate a large set of possible total benefit measures. About 95 percent of the time, the benefits exceeded \$300—twice the amount of the costs.

Both our best and our conservative benefit estimates account for school-based prevention’s effects on only four drugs—alcohol, tobacco, marijuana, and cocaine. These are the four drugs for which

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<sup>1</sup>Our analysis uses data on U.S. programs and social costs, but our general conclusions may also be of interest to people in other countries.

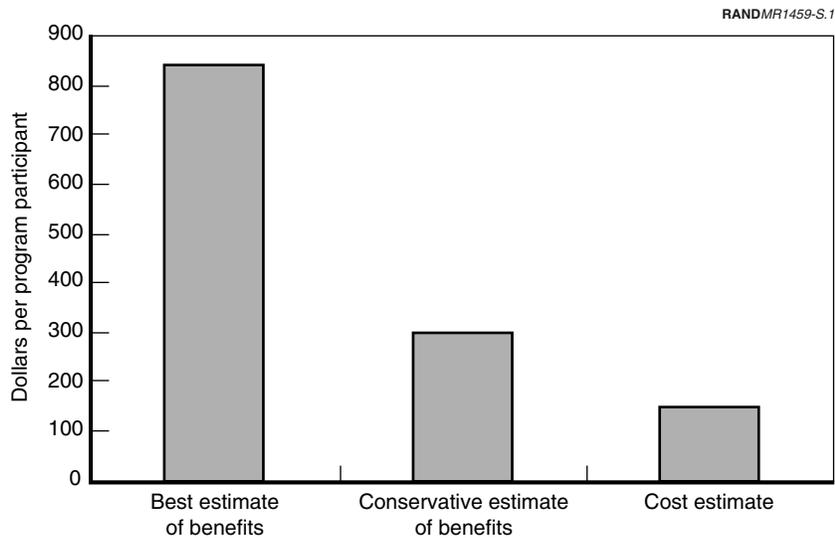
the evidence supported the estimates of the magnitude of lifetime reductions in use. If one were to assume that prevention programs reduce the use of other illicit drugs (heroin, methamphetamines, and other controlled substances) by the same proportion that they reduce cocaine use, the estimated benefits per participant would rise to about \$1,000.

Which drugs account for most of prevention's benefits? Close to 40 percent of the social value of drug use prevention is realized through reductions in tobacco use, and over a quarter of the value is in decreased alcohol abuse. Most of the remaining third is associated with reductions in cocaine, and marijuana accounts for a very small fraction of the total.

Even if we assume that prevention reduces use of other illicit drugs (such as heroin and methamphetamines) by as much as it reduces cocaine use, it is still the case that roughly two-thirds of the quantifiable social benefits from drug use prevention are due to reductions in the use of legal drugs—alcohol and tobacco. (See Figure S.2.) It therefore makes more sense to view prevention principally as a public-health program with incidental benefits in the war on (illicit) drugs rather than viewing it principally as a criminal justice intervention in the war on drugs.

## **IMPLICATIONS OF THE FINDINGS**

What do these findings mean for taxpayers funding school-based drug prevention? First, the benefit estimates of which we are most confident suggest that model drug use prevention programs can be justified on a benefit-cost basis by reductions in substance use. Even a conservative estimate of prevention's total benefits suggests that the social gains from prevention justify its costs twice over. Drug prevention thus appears to be a wise use of public funds, at least for those patient enough to value benefits accruing some years in the future. Whether it is the wisest use of public funds depends on whether there are other uses of those funds that could reap even greater social benefits. That subject is beyond the scope of this report.



**Figure S.1—Estimate of Social Benefits Versus Cost of School-Based Drug Prevention**

Because at least two-thirds of prevention's benefits fall within the public-health arena, as opposed to the illicit-drug-control arena, some might infer from this discussion that 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 (or education) dollars. Indeed, there is some merit in this observation. Certainly, it would be foolish not to fund drug prevention simply because law enforcement interventions are seen as a higher priority for scarce criminal justice program dollars when public-health or education funding streams are available.

Concerns over the source of budgetary support for school-based drug prevention programs should not obscure the fact that the dominant costs of running these prevention programs are not dollar costs (e.g., for purchasing program materials). Rather, the dominant cost is from the students' lost learning opportunity, which is the re-

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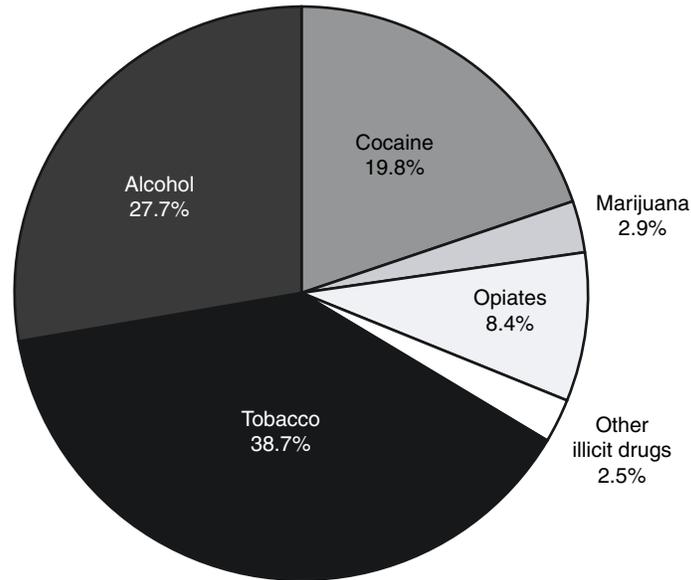


Figure S.2—Source of Drug-Related Prevention Benefits

sult of diverting scarce class time from traditional academic subjects into drug prevention instruction. Unless the school year is lengthened to compensate for the time diverted to drug prevention—an unlikely prospect—the principal social cost of drug prevention will be the displacement of equivalent time spent on education in traditional subjects.

Although drug prevention is a wise use of public funds, that is mainly because drug prevention is relatively cheap and because drug use is so costly to society, and not because even model programs eliminate a large proportion of drug use. In fact, our best estimates are that prevention reduces lifetime consumption of tobacco by 2.3 percent, lifetime abuse of alcohol by 2.2 percent, and lifetime use of cocaine by 3.0 percent. Yet, even such small reductions in use can cause large decreases in social cost. And small reductions are all that anyone should expect from prevention. Communities should not undertake drug prevention with the hope that they will see striking declines in

the rate of overall drug use, or even noticeable declines. Prevention is a cost-effective tool for improving the public health and for making *incremental* progress in efforts to manage a mature drug epidemic, such as the cocaine use epidemic in the United States.

## CONCEPTUAL FRAMEWORK

This study's findings and implications rest on a methodology that is simple in broad outline. The resulting estimates of the benefits versus the costs of school-based drug prevention programs, graphed in Figure S.1, are expressed in terms of dollars' worth of social cost averted per prevention program participant. As the figure clearly shows, the benefits from school-based drug prevention are probably several times as great as the costs. Cost averted per participant is obtained by multiplying together three aggregate factors: the amount of substance consumed in an average participant's lifetime, the percentage reduction in lifetime consumption associated with prevention, and the social cost per unit of substance consumed (that is, if lifetime consumption is measured in grams, then social cost is in dollars per gram). These three aggregate factors are themselves the products of other factors.

Estimating the three aggregate factors is not simple or straightforward. However, in the case of the first and last factors, the complexities are technical matters of extracting pertinent numbers from data that are subject to various limitations. Estimating the middle factor, prevention-related reduction in lifetime drug use, is not free of technical challenges but is also characterized by issues that lie closer to the core of how prevention works. The derivation of that factor thus deserves further attention, which it receives in this report.

The raw material for the estimation consists of results from the evaluations of seven effective drug prevention programs (see Appendix C for a description of those programs). To our knowledge, these are the only programs to have demonstrated, with sufficient scientific rigor, to have reduced drug consumption among adolescents. The effects—typically measured in terms of impact on initiation of drug use—generally decay entirely by the end of high school. That does not mean that effectiveness is limited to the early adolescent years. Rather, later initiation has been shown to be strongly correlated with lower lifetime consumption. We thus use these correlations to pre-

dict lifetime use reductions from the measured short-term initiation effects. In doing so, we consider variation across evaluations in end-of-program effectiveness, variant forms of decay (linear or not), and the possibility that our assumptions of total decay by the end of high school may be too conservative. Thus, we also estimate reasonable ranges for the values of various factors (although for simplicity's sake, we emphasize our best estimates in this summary); those reasonable ranges are inputs for the "Conservative Estimate of Benefits" in Figure S.1.

Further qualifications and adjustments are necessary before we arrive at a best estimate of the percentage effect of prevention on lifetime drug consumption. What we want to stress here, though, is that all of the components of the overall calculation of benefits are in the form of factors to be multiplied together. This multiplicative framework should facilitate further investigation of prevention's benefits.

If further research suggests that certain inputs to the calculation should be altered, or if another analyst's or another reader's judgment differs from ours, the factor in question can simply be adjusted accordingly. Thus, if it is judged that our estimate of the social cost saved per gram of cocaine not consumed should be only two-thirds of what we claim it is, that factor can be reduced by a third, and the total benefit from cocaine use reduction would then also be reduced by a third. We consider this transparent estimation model to be one of the key contributions of this research.