

## *Executive Summary*

This review focuses on the extent to which comprehensive, statewide, tobacco control programs in the United States have induced change in teenage smoking or made progress towards this goal and under what circumstances such programs are likely to be most effective. The sources for this review include published journal articles, reports and documents, rather than any primary data analysis. We review evidence for the extent to which individual strategies that comprise a comprehensive tobacco control program are related to reducing teenage tobacco use, thereby providing a rationale as to why such comprehensive programs might be expected to reduce adolescent smoking when implemented on a statewide basis. This evidence suggests that school-based smoking prevention programs using the social influences approach, public education through counteradvertising, strongly enforced measures to: prevent youth from purchasing cigarettes, ban smoking in public places and ban tobacco advertising; and real increases in the price of cigarettes, all lead to reductions in teenage tobacco smoking.

When implemented as part of statewide programs, however, effects are difficult to assess and unwary legislators risk being poorly informed about the impact of comprehensive programs on teenage smoking. We identify five factors that can mislead: 1) changing population smoking prevalence is likely to be a relatively slow process, even in response to comprehensive programs; 2) smoking prevalence is usually only measured yearly or less frequently and sampling variation and different survey methodologies make these measures insensitive tools for assessing early change; 3) changes in smoking behavior and prevalence can reflect underlying societal influences unrelated to new tobacco control programs; 4) actual implementation of program strategies may differ substantially from intended implementation and the extent of disparity may vary over time and between programs; and 5) tobacco industry activities may undermine tobacco control programs and falsely suggest the programs are ineffective when, in fact, they could be very effective in the absence of industry efforts. For all these reasons, assessment of progress requires much more than a cursory look at teenage smoking prevalence. We argue for taking a larger view that takes account of the extent of program implementation and expenditure, and evaluates markers of progress in factors known to mediate teenage tobacco smoking, as well as change in tobacco smoking itself. Against this background, the report focuses mainly upon five states that have received funding for comprehensive programs: California, Massachusetts, Arizona, Oregon and Florida.

**California:** The California Tobacco Control Program, commenced in 1989, found the early program period to be associated with reduced aggregate cigarette consumption beyond what would have been expected from a price increase alone, an excess decline in adult smoking prevalence and stabilization of teenage smoking prevalence at a time when it increased in the rest of the nation. Since 1994 however, effects on both teenage and adult smoking prevalence appear to have been lost, or diminished, coincident with reduced program expenditure in this period. Importantly, these findings are largely supported in these time periods by concomitant change, or lack of it, in teenage tobacco-related beliefs and attitudes, perceptions of ease of access to tobacco, and compliance with school smoking restrictions, as well as an increase in the later period in tobacco advertising and promotion, as evidenced by tobacco industry expenditures and adolescent reports of exposure.

**Massachusetts:** Overall, evidence that the Massachusetts Tobacco Control Program (launched in 1993), was associated with influencing youth tobacco use is positive and consistent. This is especially true given

that trends in prevalence are contrary to those observed nationally since the program's inception. Evidence of decline in per capita consumption is particularly strong and available research suggests that some of this decline applied to adolescent smokers. Intermediate markers of progress are consistent with high levels of media message recall, acceptance by teenagers of the health risks of smoking and increased restrictions on smoking in public places. Like California, however, compliance with bans on smoking at school has not changed. Accessing tobacco at retail outlets appears more difficult, but most teenagers reported that cigarettes were still easy to obtain. Evidence suggests that social contacts are increasingly more likely to be sources for cigarettes.

**Arizona:** Information available to date from the Arizona Tobacco Education Program suggests that after a slow start in the development of the program, the predominantly youth-directed media campaign has been very intensive and well-remembered by adolescents. Effects on aggregate cigarette consumption were in line with expectations based on the extent of the 1994 price increase. Markers of progress with respect to youth attitudes, exposure to smoking restrictions, reduced youth access and smoking behavior will need to await completion of follow-up surveys later in the year. In addition, the adult-focused campaign which began in 1998 remains to be evaluated and a planned population survey of adults will provide important information about its impact.

**Oregon:** Since the Oregon Tobacco Prevention and Education Program has been in the field for only two full years, relatively limited data are available to assess progress. However, early reports suggest that media messages have reached both adults and teenagers. To date, there are no published measures of changes in tobacco-related knowledge or attitudes, restrictions on smoking in public places, youth access, or tobacco industry promotional activity, although these data are being collected. However, the decline in per capita consumption since the program's inception is highly consistent with what was observed in California and Massachusetts, being greater than expected from a price increase alone. Similarly, the observed reduction in adult smoking prevalence mirrors that found in Massachusetts and the early program period in California. However, final judgement will need to await release of comparable national data.

**Florida:** Despite being in the field for only one year, the Florida Tobacco Pilot Program has been extremely proactive in its use of media counteradvertising, choosing to focus upon further discrediting the tobacco industry as the prime strategy to discourage adolescents from smoking. In addition, the program has been active in developing programs at the community level. The media campaign is being seen and remembered by teens, and there is evidence that it has increased negative attitudes towards the industry. The indication from the school-based surveys in Florida that teen prevalence significantly declined between 1998 and 1999 is notable, but must await comparison with national trends to determine whether these changes were part of underlying change in teenage smoking patterns.

Each of the programs underway in the five states differ by virtue of: their length of time in the field and per capita expenditure on tobacco control; background circumstances under which they were initiated; background trends in teenage smoking prevalence against which they will be judged; the relative allocation of funding to general tobacco control strategies as opposed to youth-specific approaches; selection of messages and strategies within each program component; extent of actual compared with intended implementation; and measures used to assess progress. When appraised individually, it is difficult to draw firm conclusions about the effectiveness of particular mixes of program inputs in reducing teenage tobacco use. However, when taken together, a number of consistent findings emerge.

First, we find that one of the single most critical factors in program success seems to be the extent of implementation, and the degree to which this is undermined by the tobacco industry and other competitors for funding. More fully implemented programs lead to

increased counteradvertising and community initiatives; a greater capacity to implement school-based smoking prevention programs; and an increase in the passage of local ordinances that create smoke-free indoor environments and reduce youth access. These factors create an environment more favorable for reduced teenage tobacco use. There is strong evidence from these comprehensive programs, coupled with other research, that price increases influence overall and adolescent tobacco use and that the addition of program activity reduces consumption more than expected due to price alone.

There is consistent evidence the programs are associated with a decline in adult smoking prevalence, with these effects observed to date in California, Massachusetts and Oregon. These changes in the normative environment for smoking, coupled with reduced opportunities to smoke and the message of social undesirability offered by increased bans on smoking, are likely to be an important influence on youth smoking. Arizona and Florida -- conducting more youth-focused campaigns -- have yet to examine change in adult prevalence associated with program exposure.

Finally, despite the different strengths and combinations of program messages and strategies used in these comprehensive programs, the evidence that they lead to markers of change in factors that influence teenage smoking, and to reductions in teenage smoking prevalence and uptake, is compelling. Plainly, for programs like Arizona, which has yet to report follow-up data, and Florida, which is early in its development, more research is needed to clarify and confirm important early indications of positive progress. Notwithstanding these cautions, we find that the weight of evidence falls in favor of comprehensive tobacco control programs being able to reduce teenage tobacco use.

As states decide what level of funding from their tobacco settlement money should be allocated to programs to reduce teenage tobacco use, legislators should not use 'lack of evidence for benefit' as an argument to avoid making such allocations. Given progress made by programs in the field, research findings that strongly link tobacco policy advances, counteradvertising and school-based tobacco education programs to reduced youth smoking, and our theoretical understanding of factors that shape teenage tobacco use, comprehensive tobacco control programs are in fact the 'best buy' for reducing teenage smoking.