Evaluation of the In-School Tobacco Use Prevention Education Program, 2001–2002

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Executive Summary

Pursuant to *California (CA) Health and Safety Code, Section 104375,* the California Department of Health Services (DHS) contracted for the evaluation of tobacco use prevention activities taking place in California middle schools and high schools. To this end the contractor surveyed 18,668 students in grades six through 12, 828 teachers, 282 school administrators, 263 school coordinators, and 116 district administrators. A total of 325 randomly sampled public and private schools participated in the study.

This evaluation focused on three broad research questions with regard to youth tobacco use and prevention in California during the 2001–02 school year:

1. What is the prevalence of tobacco related behavior, attitudes, knowledge and awareness about tobacco and tobacco use prevention among California students?
2. What types of school-based tobacco use prevention and intervention policies and practices are being implemented in California schools, and to what level and consistency are they being implemented?
3. Is program exposure associated with lower levels of student tobacco use and lower levels of factors known to be precursors to tobacco use (e.g., pro-smoking attitudes)?

This report reviews 2001–02 tobacco use patterns observed in California in-school youth and relates this epidemiological information to information about tobacco use prevention programs being implemented in California schools during the study period. Both school-level and school district-level influences on students' rates of tobacco use were examined.

Student Behavior, Attitude, Knowledge, and Awareness

The observed student tobacco use prevalence rates reported here reflect the complex survey design used to collect the data and were cross-validated against the results of the *2001 California Student Survey* (CSS) conducted during the same time interval. The current tobacco use rates observed in California students was the lowest ever recorded in the state and lower than national rates, particularly for middle school students.

Program Implementation: School-based Tobacco Use Prevention and Intervention Policies and Practice

The findings relative to the second research question of this evaluation were mixed. When analyzing the data across all schools, neither students nor teachers reported as much knowledge about tobacco control as would be expected if TUPE programs adhered to all of the recommendations of the Centers for Disease Control and Prevention (CDC) school-based tobacco control guidelines. Students tended to report higher levels of knowledge about refusal skills, the harmfulness of secondhand smoke, accurate knowledge about smoking prevalence and what motivates people to smoke when their teachers were well-trained, and when their school district and school administrators strongly supported TUPE instruction. Most teachers appeared to be supportive of tobacco use prevention education, but did not feel well-prepared to teach it. Teachers who were surveyed reported low rates of TUPE training, even those whose teaching subject (e.g., health) lent itself to TUPE instruction. Nevertheless, 72.8 percent of health, science, and physical education teachers reported having taught tobacco use prevention lessons during the past year. The two most often cited barriers to teaching tobacco use prevention lessons were lack of time and that it was not part of what they were expected to teach. Teachers also reported that lack of district (and county) support for TUPE was an important barrier to their school-based tobacco control efforts. When administrator support for TUPE was high and more TUPE resources were made available to teachers, higher levels of TUPE resources were positively associated with student reports of tobacco lessons, lesson content, peer abstinence training, and cessation classes.

Respondents in the high school grade levels tended to report tobacco control messages as being less helpful than did middle school respondents. There is increasing national recognition that additional tobacco control resources specifically targeting older adolescents and younger adults are needed. More research is needed to understand the relatively low rates of cessation recorded among in-school California youth smokers.

Data from grantee and non-grantee schools with regard to program implementation suggest that grantee teachers and coordinators received more training on tobacco use prevention education/cessation, and grantees reported higher levels of program services. Students in grantee schools also reported higher levels of exposure to program activities, and were about twice as likely to have a cessation program. Although TUPE grantees provided a higher level of services, these differences did not appear to translate into lower levels of tobacco use among students in grantee schools. The absence of pre-award baseline tobacco prevalence data made it impossible to determine if the schools seeking TUPE grants were those with unusually high baseline rates of tobacco use, where TUPE exposure subsequently resulted in prevalence rates falling to average levels.

Program Impact

With respect to the third evaluation goal, assessing the true impact of TUPE grant funding on student learning was difficult because of the cross-sectional nature of the data and because of the patterns of the results made implementation different. Differences between grantee and non-grantee schools may also be obscured by the fact that TUPE is not the only source of tobacco use prevention education resources. For example, Federal Title IV legislation requires that school districts provide tobacco use prevention services to all students. Other sources include materials and messages provided by the American Cancer Society (ACS), typically as part of the ACS Great American Smokeout, as well as health education materials provided by other organizations such as the American Lung Association and the American Heart Association.

Few differences in student tobacco use were observed in comparisons involving TUPE grantee schools and non-grantee schools. Even when grantee versus non-grantee status was ignored, there were few significant relationships observed between intensity of TUPE instruction and student tobacco use outcomes. Suggestive of program effect, lifetime tobacco use (and perceived peer use) was substantially lower in schools that had grants for five years or more compared to other grantee schools. There was also some suggestion that grant duration was related to tobacco use precursors.

Only in the areas of infusion of tobacco related topics into the non-health curriculum, and district support for TUPE activities, was there consistent evidence that tobacco policies and practices were related to lower levels of student tobacco use. Because this data represents at best a snapshot in time, causal inferences about TUPE activities "working" or "not working" are premature. Specific to the potential for teachers to influence student tobacco use, a review of the findings suggested the following recommendations:

School district administrators need to publicly support TUPE activities, to publicize this support regularly, and to indicate that TUPE instruction is as important as other academic instruction.

More teachers need training in tobacco use prevention education. CA Department of Education (CDE), school districts, and schools should more overtly encourage teachers to use CDC-recommended, integrated tobacco use prevention programs. High school teachers need to make sure that they are providing developmentally-appropriate material.

High schools need to place more emphasis on recruiting smokers into school or community-based smoking cessation programs, including referral to the California Smokers' Helpline.

Schools and school districts need to publicize their no-tobacco-use policies regularly through signage and other means.

This evaluation of California in-school youth must, of course, be understood in the context of the large backdrop of anti-tobacco efforts occurring at the community, state, and national level. Existing scientific literature, for example, suggests that at least some of the recent decline in tobacco use by California adolescents may be attributed to the 50 percent rise in the price of cigarettes observed between 1999 and 2002.

Chapter 1: Introduction and Methods

Introduction

The *2001–02 In-School Evaluation of TUPE Programs* (IETP) was conducted to fulfill the enabling legislation requirements for Proposition (Prop) 99 (*Assembly Bills 75, 99*, and *816;* and *Senate Bill 391*). Legislation mandates that the California DHS, Tobacco Control Section evaluate the effectiveness of the school-based TUPE programs in California. This particular evaluation focuses on school-based tobacco use prevention activities in 325 randomly-sampled schools. The guidelines for evaluating the programs outlined in *California Health and Safety Code Section 104375* require an assessment of school-based tobacco use prevention activities and measurement of student responses to these activities. The evaluation is intended to measure the extent to which programs funded under Prop 99 promote two major goals: protection of nonsmokers and children from secondhand smoke, and reduction of tobacco usage by adults and youth.

This report is a sequel to the results presented in three previous *Independent Evaluation Student Survey* (IESS) reports (Independent Evaluation Consortium, 1998a, 1998b, and 2003). Most of the questions included in IETP were taken from the previous evaluations to allow for consistency in findings across reports. IETP provides extensive information on adolescent tobacco use and its correlates (i.e., attitudes, exposure to media, social norms) through the administration of the *2001–02 California Student Tobacco Survey* (CSTS). The evaluation also collects data on beliefs and knowledge about tobacco education program implementation and prevention efforts from teachers, school administrators, school TUPE/health coordinators, and district TUPE/health coordinators. IETP uses data from all of these sources to examine TUPE program implementation and program effectiveness. This chapter provides a summary of the design and methodology used in the 2001–02 IETP.

IETP provides an excellent opportunity to understand tobacco use patterns and to assess tobacco use prevention activities directed to California youth. Studies show that 80 percent of United States (U.S.) adult smokers between the ages of 30 and 39 began to smoke during their adolescent years (CDC, 1994, Anda et al., 1999). These findings suggest that if youth smoking can be prevented, most youth will never start smoking when they become adults.

Background

In November 1988, California voters approved the *Tobacco Tax and Health Protection Act of 1988* (Prop 99), which added a 25-cent tax to each pack of cigarettes and a proportional amount to other tobacco products sold in the state. The additional revenues resulting from this increase in the tobacco excise tax were earmarked for tobacco related research, health education, health care, and environmental conservation. Twenty percent of the Prop 99 revenues are appropriated to the Health Education Account (HEA) to support a comprehensive tobacco use prevention education and media campaign.

Approximately one-third of the overall HEA budget is allocated to CDE. Ninety percent of these funds are used for school-based, TUPE programs in school districts. The remaining 10 percent of local assistance funds are used for innovative and promising projects, programs for Indian Education Centers, research, curricular support, dissemination, and accountability.

Prior to 1994, CDE allocated school-based TUPE funds on an entitlement basis to all schools that served students in grades K through 12. Since 1994, CDE has allocated school-based TUPE funds to school districts using two different mechanisms. First, funds for TUPE programs in grades four through eight are allocated to districts on an "entitlement basis"—all schools in tobacco-free school districts serving students in grades four through eight receive funding for tobacco use prevention services based on average daily attendance. Second, a "competitive grant" process is used to allocate funds for programs in grades nine through 12; and, more recently, for innovative programs in grades six through eight. Districts with multifaceted programs with measurable objectives, strong rationales for interventions, high levels of community and school involvement, high quality monitoring and evaluation activities, and highly qualified personnel are more likely to receive competitive grants than other districts. Both entitlement and competitive program funds are required to support tobacco-specific student instruction, reinforcement activities, special events, and cessation programs for students. IETP provides information from data collected in districts supported by both of these mechanisms, with particular attention paid to schools with competitive grants. IETP also included private schools and public high schools that have not received TUPE funding from CDE.

Evaluation Design

As discussed above, IETP relies on data collected from a variety of sources to examine school-based tobacco use prevention and intervention activities and student responses to these activities in California. Each of the instruments is discussed in more detail below.

The evaluation focuses on three broad research questions with regard to youth tobacco use and prevention in California:

1. What is the prevalence of tobacco related behavior, attitudes, and knowledge and awareness about tobacco and tobacco use prevention among California students?
2. What types of school-based tobacco use prevention and intervention policies and practices are being implemented in California schools, and to what level and consistency are they being implemented?
3. Is program exposure associated with lower levels of student tobacco use and lower levels of factors known to be precursors to tobacco use (e.g., pro-smoking attitudes)?

To answer these three questions, the evaluation relies on a cross-sectional design that allows for comparisons of data from students, teachers, and administrators. For survey items that were asked in the three previous IESS, it is possible to examine trends over time as well. As with all cross-sectional data, however, causal inferences cannot be made with confidence.

Question One: Prevalence of Youth Tobacco Use

The CSTS uses the following information to address question one: 1) descriptive statistics showing levels of tobacco use, attitudes, and beliefs about tobacco use; 2) exposure to anti- and pro-smoking media and social marketing influences; and, 3) exposure to tobacco education programs at schools. The answers to these questions will advance knowledge of the scope and nature of tobacco use among youth, and how it relates to student perceptions of the types of prevention programs offered in schools. The analysis of the prevalence of youth tobacco use and its correlates (question one) is purely descriptive. These analyses are based exclusively on CSTS. Most of the results are presented graphically, showing the prevalence of tobacco use and its correlates by school grade or school type (middle vs. high). The results are presented in tabular form at the end of each chapter. All of the estimates are adjusted for sample weighting and sampling design. We also present comparisons of 2001–02 CSTS data with data collected from other sources to validate CSTS results, to assess the recent trend in student tobacco use and tobacco use correlates, and to permit comparison of tobacco use in California with that in the nation as a whole.

Question Two: Types of School-based TUPE Policies and Practices

The CSTS uses data from teachers, school administrators (e.g., principals, vice principals, and superintendents), school TUPE/health coordinators, and district TUPE coordinator surveys to address question two. The types of questions asked in the adult surveys allow us to make comparisons with CDC Guidelines for school-based programs and to compare adults' and students' perceptions about TUPE program delivery. Descriptive statistics that are presented are: a) tobacco program implementation; b) the types of programs implemented; c) enforcement of school tobacco policies; d) barriers to program implementation; and, e) staff attitudes about tobacco use prevention activities. We also examine differences in policies and practices between grantee and non-grantee high schools. As with CSTS results, all estimates were weighted to account for differences in enrollment across schools. Finally, to assess how effective program implementation was in reaching students, we examined the relationship between program implementation, as reported by administrators and teachers, and student exposure to program components, as reported by students. This analysis takes advantage of the parallel structure of the surveys given to administrators, teachers, and students.

Due to the cross-sectional data, it is difficult to accurately determine how TUPE policies and practices have changed over time. To make inferences about change, we examine the relationship between duration of program implementation and school-level policies and programs in high schools. We cannot provide this comparison for grades six through eight because all school districts were eligible to receive TUPE funds based on entitlement. Our information about duration of program implementation comes from an administrative database supplied by the Safe and Healthy Kids Program Office (SHKPO) at CDE.

Question Three: Impact of Tobacco Program Exposure

The analyses of program effectiveness (question three) are limited by factors that affect all cross-sectional designs. The analysis will allow us to examine associations between program participation/exposure and student tobacco outcomes. However, strong inferences about causality cannot be made, and interpretation of the results should be made with caution because of the limitations of a cross-sectional design.

Sample Design Issues

The sample design included data collection from students, teachers and administrators at the school level, and administrators at the district level. Analytical weights that take into account the complex survey design and that correct for student and school non-response were applied in such a way that the sum of the weights was equal to the total number of respondents. The weights are specified below.

2001–02 CSTS

The 2001–02 CSTS was a school-based, two-stage cluster sample designed to produce representative estimates of tobacco use and attitudes for public and private school students in grades 6 through 12 in California. The first-stage of sampling frame consisted of 5,921 elementary, middle, and high schools (primary sampling units). This sampling frame came from the 1999 California Basic Educational Data System (CBEDS) maintained by CDE. From the 5,921 primary sampling units, 455 schools were selected randomly within a grade range from 12 regions (strata) formed on the basis of county demographic and socioeconomic characteristics (age, race, population density, income, poverty, and Medi-Cal status). Schools were selected with a probability proportional to enrollment. Of the 455 schools selected, 11 schools were ineligible, most commonly because they served special education students exclusively (n=3), or because the schools could not be located, or had closed (n=4). Another "school" was actually only a virtual Internet school with no physical site; yet another was actually the name of a consortium

of schools, not a school per se. One was ineligible because it was a continuation school and one was a charter school in name only—it was not yet an operational entity. Of the remaining 444 schools, 325 participated in the survey (315 public and 10 private schools). There were a variety of reasons for school non-participation. The most common reason was because administrators felt that their students were already subject to too many other surveys, such as the *California Healthy Kids Survey,* that were perceived to address more pressing school-related issues (e.g., drug use and violence) than tobacco use. Some of the other more common reasons for non-participation included: lack of adequate parent consent; scheduling changes; and, administrator disinterest in compliance with the requirement to participate if receiving TUPE funding.

At the second stage of sampling, intact classes of required subjects (e.g., English) were randomly selected from each of the 325 schools. Three classrooms at three different grade levels were randomly selected at high schools, two to three classrooms (one sixth-, one seventh-, and one eighth- grade class based on school configuration) at middle schools, and one sixth-grade class at elementary schools. All the students within a selected class were eligible to participate. To participate, students needed the written consent of their parents. CSTS' complex sampling design required the calculation of sample weights to derive accurate point estimates and adjustments for clustering and stratification in order to compute sampling variances and standard errors. A weight was applied to each student record to account for varying probabilities of selection at each sampling stage, non-response, and disproportionate population sampling. These weights are necessary in order for the results to be generalized to all students in grades 6 through 12 in California. The weight used for estimation is given by

WS = WS1 * WS2 * FS1 * FS2 * FS3

where WS1 represents the inverse of the probability of selecting a school, WS2 is the inverse of the probability of selecting a classroom within each school for each grade, FS1 is a school-level non-response adjustment factor, FS2 is a student-level non-response adjustment factor, and FS3 is a post-stratification adjustment factor calculated by gender, grade (grades six through 12), and ethnicity (seven ethnic groups). The weights were also scaled so that the sum of the weights was equal to the number of respondents.

Teacher/Administrator Surveys

The sampling frame for the teacher, school administrator, and school TUPE coordinator surveys (described below) consisted of all schools/classrooms that administered CSTS. Thus, the school teacher/administrator samples represent teachers and administrators who serve students in CSTS sample. Similarly, the district coordinator sample represents district TUPE/Title IV[1] coordinators who serve CSTS students.

As was done for CSTS, a weight was applied to each record in the teacher/administrator surveys to account for differences in student enrollment across regions, districts, and schools.[2]

[1] In this context, Title IV refers to that section of the *U.S. Education Code* that governs the use of federal resources for combating student substance abuse and addressing student violence, notably through the Safe and Drug-Free Schools Program of the U.S. Department of Education.

[2] The teacher/administrator weights were calculated using an algorithm patterned after the weighting algorithm used to weight the student data. The weights were given by

WA = WA1 * FA1 * FA2

where WA1 represents the inverse of the number of respondents within a school (district), FA1 is the ratio of region enrollment to state enrollment, and FA2 is the ratio of school/district enrollment to the total enrollment of responding schools/districts within a region. The teacher/administrator weights were scaled so that the sum of the weights was equal to the number of respondents.

Survey Participation Rates and Sample Characteristics

The response rates for schools and students were adequate to make meaningful inferences, especially in light of the recent emphasis on high stakes academic performance testing that has made school administrators less willing to use class time for the administration of social surveys. Moreover, schools are increasingly asked to participate in surveys conducted by outside agencies in addition to the accountability measures required by funding agencies from which schools receive grants.

CSTS

Of the 444 schools eligible to participate in IETP, student data was received from 325 schools—yielding a school response rate of 73.2 percent. The student response rate was 69.6 percent. Thus, the school- and student-level response rates resulted in an overall response rate of 50.9 percent (0.732*0.696). The student response rate was adversely affected by failure to return parental consent forms. As noted above, weights were calculated to account for non-response.

School level participation rates were significantly higher in elementary/middle schools than in high schools (82.8 percent vs. 68.5 percent), while student response rates were similar across the two types of schools (70.3 percent vs. 69.2 percent). The overall response rate for middle schools and high schools were 58.2 percent and 47.4 percent, respectively. Of the participating elementary/middle schools, fifteen (12 percent) were elementary schools. Table 1.1 presents school characteristics by school participation in IETP. The numbers indicate that school participation rates were substantially higher in public schools than in private schools (77 percent vs. 28.6 percent) and in high schools with competitive TUPE grants than in other schools (e.g., 74 percent vs. 59.5 percent for current grantees). These patterns are expected: private schools are difficult to recruit, and schools that do not have a TUPE grant have less incentive to participate than schools that have a grant. There is also some evidence that, compared to non-participating schools, participating schools are composed of slightly lower proportions of African American students, and are slightly more affluent, as reflected by the percentages of students receiving subsidized meals and CALWORKS support. However, these socioeconomic differences are fairly small and do not preclude meaningful comparisons.

Table 1.1 School Characteristics by CSTS Student Participation

	All Schools		Middle Schools		High Schools	
	Non-Participants	Participants	Non-Participants	Participants	Non-Participants	Participants
Overall Percent	26.8%	73.2%	17.2%	82.8%	31.5%	68.5%
Sample						
Middle School	17.2%	82.8%	–	–	–	–
High School	31.5	68.5[A]	–	–	–	–
Public/Private						
Public School	23.0%	77.0%	14.9%	85.1%	27.0%	73.0%
Private School	71.4	28.6[A]	50.0	50.0[A]	80.0	20.0[A]
Current TUPE Grantee Status						
Non-TUPE	40.5%	59.5%	–	–	40.5%	59.5%
TUPE	26.0	74.0[A]	–	–	26.0	74.0[A]
Ever TUPE Grantee Status						
Never-TUPE	48.9%	51.1%	–	–	48.9%	51.1%
Ever-TUPE	23.5	76.5[A]	–	–	23.5	76.5[A]
School Enrollment	1782.8	1725.4	878.4	974.1	2037.6	2187.7
Ethnicity						
Asian	10.0%	9.6%	7.7%	8.7%	10.7%	10.2%
Hispanic/Latino(a)	37.6	35.9	41.9	39.5	36.4	33.7
African American	9.6	7.1[B]	9.7	7.7	9.6	6.8[B]
Caucasian	38.2	41.8	36.4	38.8	38.7	43.6
Reduce/Free meals	36.6%	33.2%	49.1%	43.7%	33.0%	26.7%[B]
CALWORKS	10.5%	8.2%[B]	11.2%	9.5%	10.3%	7.4%[B]
Academic Performance Index Scores	635.0	657.3	662.4	676.6	626.8	646.9
Number of Schools	119	325	26	125	92	200

Notes:
Source - 2001–02 CSTS sample definition database, CBEDS, and CDE/SHKPO TUPE competitive Grantee Database
[A] Percentage of participating schools are statistically different across groups ($p < 0.05$)
[B] Means are statistically different across participating and non-participating schools ($p < 0.05$)

Table 1.2 presents demographic characteristics based on CSTS and CBEDS data. A comparison of CSTS and CBEDS results shows few substantial differences, although CSTS student data appears to under-represent students in private schools. In addition, CSTS appears to slightly over-represent American Indian students and under-represent Hispanic/Latino students. These ethnic differences, however, should be interpreted with caution because CSTS and CBEDS use different methodologies to assess ethnicity. The population estimates presented in the last few rows of the table are quite similar across the two data sources, although there appears to be a slight undercount of students in private schools in CSTS compared to CBEDS. Overall, the estimates derived from the two data sources are similar.

Adult Participants

Table 1.3 presents survey response rates for the teacher/administrator surveys. The school teacher/administrator response rates were relatively high. Teachers exhibited the highest response rates, followed respectively by school administrators, school coordinators, and district coordinators.[3] No substantial participant/non-participant differences in school characteristics were found. However, district coordinator participation was higher among TUPE grantee districts than non-grantee districts (70.1 percent vs. 55.5 percent). In addition, schools in districts where the district coordinator returned the survey were more affluent than other schools as exhibited by having lower percentages of students receiving subsidized meals (30.3 percent vs. 39.1 percent), CALWORKS support (6.7 percent vs. 11.2 percent), and higher Academic Performance Index scores (666.9 vs. 639.6). Caution should thus be made in generalizing the district coordinator survey results.

[3] The "district coordinator" referred to the school district-appointed administrator responsible for coordinating school TUPE coordinators and was generally the person responsible for arranging TUPE training of teachers. The "school coordinator" referred to the person, usually a teacher, who helped to coordinate TUPE activities in the school. School-wide tobacco use education activities such as implementation of the Great American Smokeout and TUPE assemblies were usually the province of the school coordinator. The "school administrator" was usually the principal or assistant principal of the school.

Table 1.3 Adult Survey Participation Rates

Survey Participants	Number participating	Participation Rate
Teacher	828	96.8%
School Administrator	282	86.7%
School Coordinator	263	80.9%
District Coordinator	116	67.8%

Table 1.2 Sample School/Student Characteristics

	CSTS	CBEDS
Sample		
Middle School	43.9%	–
High School	56.1	–
Private		
Private School	4.8%	9.0%
Urbanicity[A]		
Large City	24.1%	22.2%
Urban Fringe—Large City	48.1	50.1
Midsize City	12.8	14.5
Urban Fringe—Midsize City	7.3	5.6
Large Town	0.0	0.4
Small Town	1.5	1.9
Rural	6.3	5.2
School Grade		
6th—8th	43.8%	47.3%
9th—12th	56.2	52.7
6th	15.4	16.4
7th	14.4	15.7
8th	14.2	15.2
9th	15.9	15.6
10th	14.8	14.0
11th	13.4	12.4
12th	11.9	10.7
Gender[A]		
Girl	49.0%	49.3%
Boy	51.0	50.7
Ethnicity[AC]		
American Indian	1.7%	0.9%[B]
Asian	8.8	9.0
African American	9.1	8.2
Hispanic/Latino(a)	36.4	40.3[B]
API/Filipino	3.7	3.4
Caucasian	40.4	37.7
Multi-Ethnic	–	0.5
Population Size		
Public	2,900,387	2,958,576
Private	147,743	293,835
Total	3,048,129	3,252,411
Number of observations	18,668	–

Notes: Source: 2001–02 CSTS and CBEDS.
[A] Public schools only. Population areas as defined by U.S. Census Bureau.
[B] CBEDS estimate lies outside CSTS 95 percent confidence interval.
[C] CSTS estimates are based on a question asking respondents to identify one ethnic category that best describes her/himself.

Data Collection Instruments

This next section presents details of each of the survey instruments for students, teachers, site administrators, site coordinators, and district coordinators.

CSTS

The student survey (CSTS) has 98–item multiple-choice questions, with item content based largely on the *National Youth Tobacco Survey* (NYTS-U.S.).[4] On most items, respondents were asked to select only one response that best represented their behaviors, attitudes, knowledge and awareness about tobacco and tobacco use prevention. Five questions asked students to "mark all that apply." The majority of students were able to complete the entire survey during the allotted class period. All student responses were recorded on a separate scannable answer sheet, where students "bubbled-in" their responses. The survey was typed in large, boldface, and easy-to-read type, and contained user-friendly graphics to encourage student participation. Surveys were bound in a paperback booklet with directions printed on the front. Student surveys were routinely collected after survey administration and checked for stray marks or writing. Spanish translations were made available to all schools. Almost all students chose to complete the survey in English. The purpose of providing a Spanish version to the schools was primarily to make it easy for Spanish-speaking parents to review the survey if they wanted to, before consenting to their child's participation.

CSTS Covered the Following Areas of Content:

Student Demographics. Five questions ascertained students' age, gender, grade level, and ethnicity.

Tobacco Use Prevalence and Patterns. The items on tobacco use covered lifetime, six month, and 30-day use of tobacco. These are standard items comparable to those found in major national surveys. Items also address quit attempts, brand preference, intent to use, and acquisition of the tobacco use habit.

Attitudes and Beliefs about Tobacco Use. These items asked about friends' use, perceived prevalence of friends' use, perceived harm from using tobacco, and perceived social consequences of tobacco use.

Media and Social Marketing Influences. The media influence items were intended to elicit information about exposure to various anti-tobacco media campaigns. They also assessed pro-tobacco and anti-tobacco social marketing campaigns and respondents' attitudes and beliefs about the effectiveness of these campaigns.

Exposure to Educational Programs at School. These items asked respondents about the types of tobacco related programs and policies at their school, the frequency with which they were exposed to educational messages about the harmful effects of tobacco, and how to counter peer and media influences to use tobacco. These were included to assess how, and the extent to which, tobacco use prevention and intervention programs were being implemented in the school.

[4] See http://tobacco.rti.org/devalf/surveys.cfm.

Teacher Surveys

Non-elementary school teachers in each classroom of students were asked to complete a 57-item questionnaire[5] while their students were completing CSTS. Most of the 6th graders participating in this survey were enrolled in middle schools. The relatively few teachers whose 6th graders were enrolled in elementary schools were too few to warrant separate analyses and were too different to warrant including in the surveillance involving middle and high school teachers. The teacher survey was based largely on that used by IESS (1998a, 1998b, 2003). The adult surveys asked attitudes toward school-based tobacco use prevention activities, tobacco use prevention programs and policies at their school, and their own personal tobacco related attitudes and behaviors. With the exception of one open-ended question, the survey was comprised of close-ended questions, with some opportunities to write in additional information (curricula titles, activities, topics, etc.) in blank spaces. On occasion, teachers were asked to "mark all responses that apply," but for the most part circled or checked-off the most accurate single response in the spaces provided on the survey. At the end of the survey there was a "comments" section, where teachers could voluntarily share any personal comments about the tobacco use prevention program.

School Administrator Survey

A school site administrator (e.g., principal, assistant principal, or vice principal) from each school was asked to fill out a 33–item questionnaire regarding the administration of tobacco programs at their school. The survey asked about the relative priority given to tobacco use prevention education at their site compared to other priorities, about school-level tobacco use policies and practices, and the administrator's personal experience with smoking. As with the teacher survey, the school administrator survey was based on IESS (1998a, 1998b, 2003).

School TUPE/Health Coordinator Survey

A 60-item multiple-choice and free-response (blank spaces, one open-ended question and comments section) questionnaire was given to TUPE site coordinators or health teachers at each school site. The person in this position at the school was asked about their experience with tobacco use prevention and intervention programs, their role in tobacco use prevention and education, barriers to prevention and their perceptions about student tobacco use, and the school's policies and procedures for addressing tobacco use on school property.

District TUPE/Title IV/Health Coordinator Survey

Once school site administration of the evaluation was complete, district level TUPE or Title IV Coordinators were mailed a 58–item questionnaire. Many of the questions were parallel to those asked of the school administrators. However, the primary aim of the District Coordinator Survey was to elicit responses about the district-level approach to tobacco use prevention and intervention programming. Coordinators were asked about staffing for TUPE, professional development and training, experience with and exposure to CDC's Guidelines for School Health Programs to Prevent Tobacco Use and Addiction, as well as their perceptions/knowledge about commonly implemented approaches to tobacco use prevention at the schools within their district.

[5] A 56–item questionnaire was administered to elementary school teachers.

Data Collection and Processing

WestEd staff coordinated outreach and school recruitment, trained and scheduled survey administration dates for surveyors, provided survey administration, secured parental consent, provided incentives and assured confidentiality.

The data collection phase began October 1, 2001, and ended March 11, 2002. Recruitment was most intensive at the beginning of this period, but continued, concurrent with data collection, during the entire five months. Once a site was successfully recruited and agreed to participate in the evaluation, trained WestEd survey proctors administered the student surveys at the school sites. A standard class period was needed for the student survey administration. Participants were asked not to write their names anywhere on the questionnaire or answer sheet. All students were told of the voluntary and anonymous nature of the survey prior to survey administration. Most students completed the survey in 30 to 40 minutes.

Classroom teachers completed the surveys while their students completed CSTS. The admini-strator and TUPE/health coordinator surveys were administered primarily via mail and fax.

In contrast to the recruitment strategies employed in IESS (1996–2000), no student was allowed to take CSTS unless a parent/guardian gave written consent by signing and returning the consent form. Instead of the "active parental consent" procedure used in collecting the data for this report, IESS researchers were permitted to use a "passive parental consent" procedure. Under "passive consent," students whose parents had not explicitly objected to their participation were permitted to participate. This difference in parental consent requirements is the major reason for the difference in student response rates between CSTS (73.2 percent) and the 1999–2000 IESS (90 percent).

Synopsis of the Remaining Chapters

CHAPTER 2: STUDENT-LEVEL DESCRIPTIVE DATA REGARDING TOBACCO USE AND ITS CORRELATES. Chapter two examines trends in tobacco use and patterns of use in California compared to elsewhere in the U.S., by grade, by gender and by ethnic affiliation. Also included in Chapter two are comparisons of CSTS student data with the previous IESS, CSS, NYTS-U.S., and the California sample from the National Youth Tobacco Survey (NYTS-U.S.-CA).

CHAPTER 3: STUDENT-LEVEL DESCRIPTIVES: ATTITUDES AND BELIEFS ABOUT TOBACCO USE. Chapter three examines student attitudes and cognitive precursors of tobacco use, their pro- and anti-tobacco media exposure, and their perceptions of exposure to tobacco lessons.

CHAPTER 4: DESCRIPTIVES AT THE TEACHER LEVEL. Chapter four examines teachers' history of tobacco use, their support for TUPE, and their involvement in student tobacco use prevention.

CHAPTER 5: HIGH SCHOOL TUPE COMPETITIVE GRANT FUNDING, PROGRAM EXPOSURE, AND STUDENT TOBACCO USE. Chapter five examines relationships between high schools that were awarded competitive TUPE grants and high schools that did not receive TUPE grants, and it describes the level of teachers' compliance with CDC recommendations for successful tobacco programs in schools.

CHAPTER 6: KNOWLEDGE OF TUPE PROGRAM IMPLEMENTATION. Chapter six examines information descriptive of school-level TUPE activities obtained from school TUPE coordinators, including adherence to CDC recommendations.

CHAPTER 7: RELATIONSHIP OF SCHOOL-LEVEL POLICIES AND PRACTICES TO STUDENT PROGRAM EXPOSURE. Chapter seven examines how school tobacco policies and practices, such as enforcement of No-use tobacco policies, delivery of tobacco use prevention curricula, and sponsorship of school-wide prevention activities are related to students' reported exposure to program services. Differences in program delivery in high schools that received competitive TUPE grants relative to those that did not receive grants are also examined.

CHAPTER 8: RELATIONSHIP OF SCHOOL-LEVEL POLICIES AND PRACTICES TO STUDENT TOBACCO USE OUTCOMES. Chapter eight examines how school tobacco policies and practices are related to student tobacco use outcomes, as well as competitive grantee and non-grantee differences in the relationships of policies and practices to tobacco use outcomes.

CHAPTER 9: CONCLUSIONS AND RECOMMENDATIONS

References

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Chapter 2: Student-level Descriptive Data Regarding Tobacco Use and Its Correlates

This chapter focuses on the following:

1. Current prevalence estimates for the most common measures of youth tobacco use obtained from the 2001–02 CSTS.
2. 2001–02 CSTS tobacco use prevalence estimates in light of trend information reported by the 1995–1996, 1997–98, 1999–2001 administrations of the *Independent Evaluation Student Survey (IESS)*.
3. A comparison of 2001–02 CSTS tobacco use prevalence estimates with the prevalence estimates obtained from the *California 1999–2001 Independent Evaluation Student Survey* (IESS), California data from the *2000 National Youth Tobacco Survey* (NYTS-U.S.-CA), and U.S. estimates from the 2000 *National Youth Tobacco Survey* (NYTS-U.S.).

The tobacco use prevalence questions in CSTS were chosen to ensure comparability with tobacco use questions administered in the past to California students (three previous IESS surveys; 2000 NYTS-U.S.-CA) and to students outside of California (2000 NYTS-U.S.). These surveys used comparable methodology—they all relied on representative data from in-school youth via paper and pencil self-report instruments. They differed, however, as to when they were administered. Most of CSTS data were collected in the fall whereas most of NYTS-U.S. data were collected in the spring. This half-year difference was not enough to explain the higher tobacco use estimates recorded in NYTS-U.S.; moreover, as Figures 2.3, 2.6 and 2.8 illustrate, NYTS-U.S. prevalence estimates for each high school grade tended to be significantly higher than the prevalence estimates for the next higher CSTS grade. For example, on the major tobacco use measures, a greater proportion of NYTS-U.S. students in grade nine reported use than did CSTS students in grade ten.

In the sections that follow, more detailed information about the numbers reported in figures or in the text can be found at the end of the chapter.

Figure 2.1 Current Cigarette Use (past 30 days): CSTS 2001–02

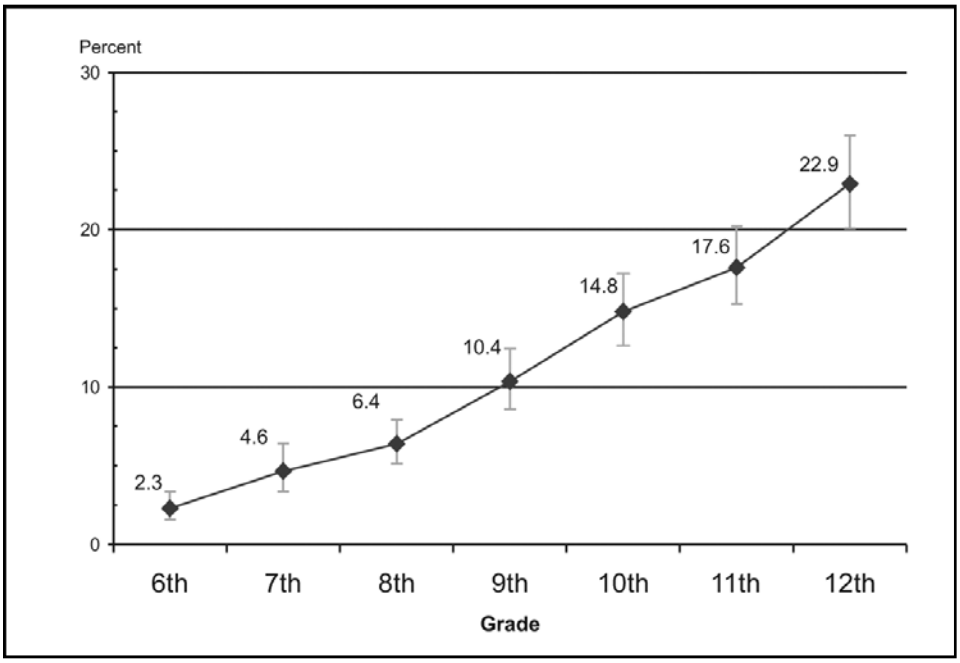
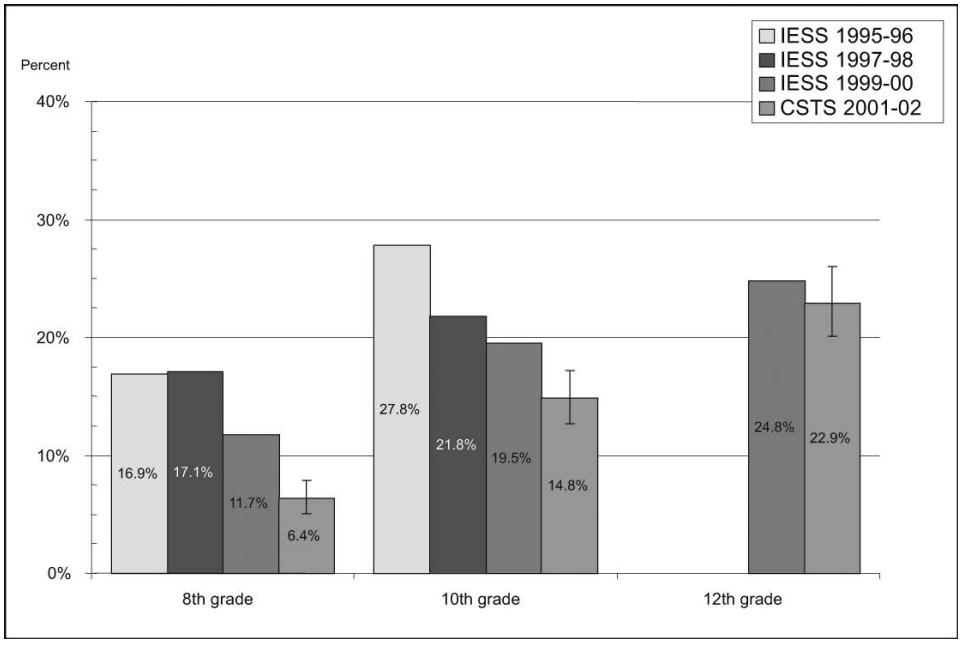


Figure 2.2 Current Cigarette Use: Trends based on IESS 1995–96, 1997–98, 1999–00 and CSTS 2001–02



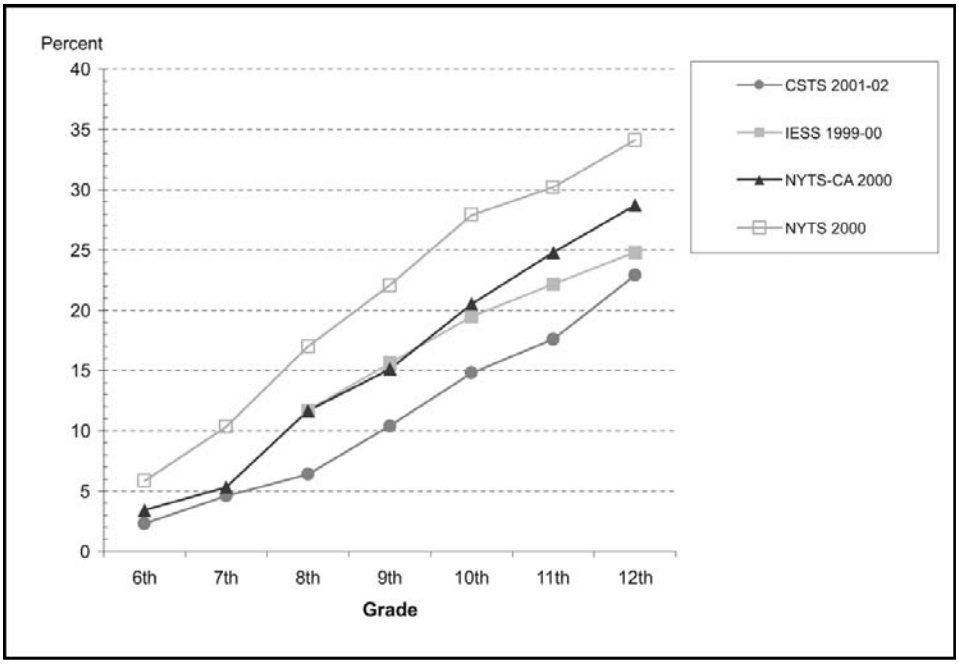
CSTS 2001–02 on Current Cigarette Use

Current cigarette use is defined as smoking on any day during the last 30 days prior to the survey. Figure 2.1, Table 2.1, and Table 2.2 show that the proportion of California students who report "current" smoking increases monotonically from grade 6 through grade 12, ranging from 2.3 percent to 22.9 percent. The typical onset of high school (grade nine) and the age at which tobacco use becomes legal (age 18, usually in grade 12) are the grades when increases in "current" smoking are most pronounced. When asked about current smoking "on school property", prevalence of cigarette use again increases monotonically with age, but less than half of the smokers reported ever smoking "on school property". For all but grade six, there were no significant differences between boys and girls in prevalence of current smoking. In grade six, boys' prevalence of current smoking (3.4 percent) exceeded that for girls in grade six (1.1 percent). Observed differences by ethnicity were generally consistent with ethnic differences in prevalence of current adolescent smoking observed elsewhere (e.g., NCI, 2001). The major ethnic minorities in grades 10 through 12, but especially African Americans, reported lower rates of current smoking than Caucasians. For example, in grade 12 the prevalence of current smoking among Caucasian adolescents was 30.5 percent whereas the prevalence of current smoking among African Americans was 11.5 percent.

Trends in Current Smoking Rates by In-school California Youth Since 1995

Table 2.3 and Figure 2.2 show adolescent prevalence rates for current smoking to be lower among California youth for grades eight and 10 in 1999–00 compared to rates reported for 1995–96 and 1997–98. However the difference between 1999–00

Figure 2.3 Current Cigarette Use (past 30 days) by Survey



and 2001–02 was not as pronounced for students in grade 12, although the trend was consistent with the trends observed among students in grades eight through 10.

Other In-school Surveys Compared on Current Smoking Prevalence: CSTS 2001–02, IESS 1999–00, NYTS-U.S.-CA 2000, NYTS-U.S. 2000

The *National Youth Tobacco Survey* (2000 NYTS-U.S.) is a survey conducted by the American Legacy Foundation specific to youth tobacco surveillance, using many of the same tobacco use items as were used in 2001–02 CSTS. There is also a CA-specific sub-sample of 2000 NYTS-U.S. (NYTS-U.S.-CA 2000).

Examination of Figure 2.3 and Table 2.3 shows that prevalence rates for current smoking were significantly lower in CSTS 2001–02 than previously assessed by NYTS-U.S.-CA 2000 for all grades except grades six and seven. Also, all the prevalence rates are lower than the rates observed in NYTS-U.S. 2000 for all grades assessed (grades six through 12).

Concurrent Surveys Compared on Estimates of Current Smoking Prevalence: CSS 2001–02 versus CSTS 2001–02

CSS is a drug abuse survey conducted biennially by WestEd researchers on behalf of the California Attorney General in randomly selected California schools to students in grades seven, nine, and 11. The ninth administration of CSS occurred concurrently with the administration of CSTS 2001–02. The 2001 CSS included commonly asked questions about tobacco use, including questions about lifetime smoking, current smoking (last 30 days), and frequently smoking (20+ cigarettes in last 30 days). Prevalence estimates for these tobacco use questions on both surveys are given in Tables 2.3, 2.6, 2.9, and 2.12. None of these tobacco use measures were the prevalence estimates derived from these two surveys were statistically different at the 95–percentile confidence level. We conclude that both surveys yielded comparable estimates for each of the tobacco use questions, providing evidence of measurement reliability.

Figure 2.4 Lifetime Cigarette Use: CSTS 2001–02

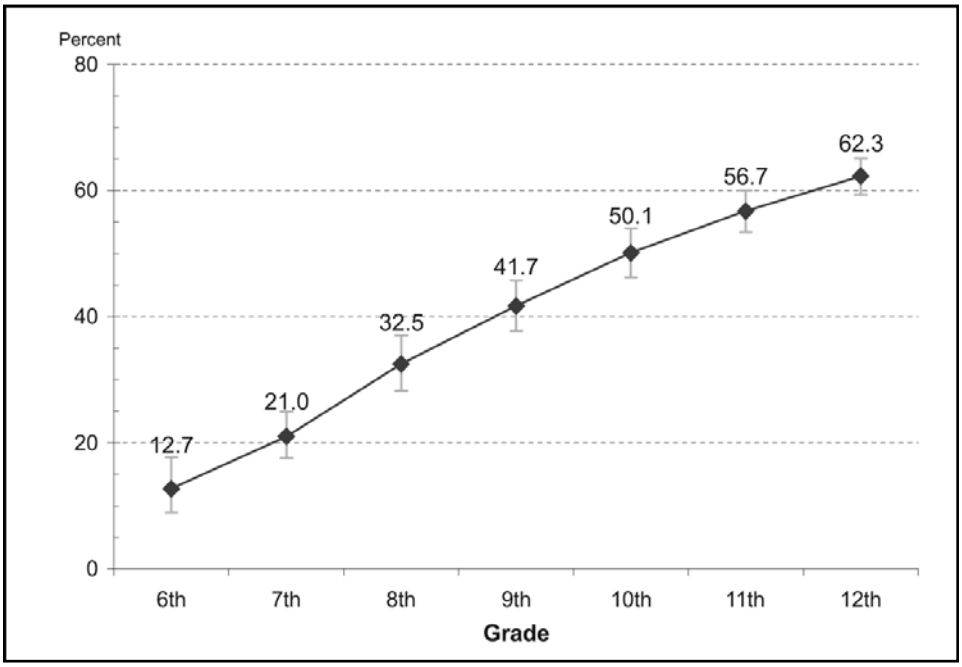
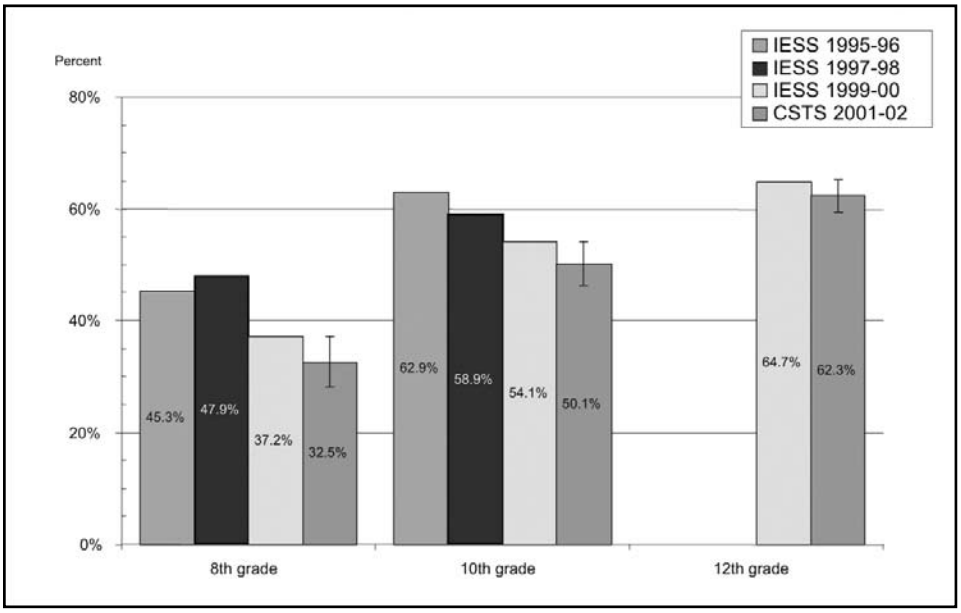


Figure 2.5 Lifetime Cigarette Use: Trends based on IESS 1995–96, 1997-98, 1999–00 and CSTS 2001–02



CSTS 2001–02 Lifetime Cigarette Use

Lifetime cigarette use was assessed using the question, "Have you ever smoked cigarettes, even one or two puffs?" Figure 2.4 and Table 2.4 show the proportion of CSTS 2001–02 respondents who responded "yes" to this question. As has been generally true of previous surveys of adolescent tobacco use in the U.S., rates of lifetime use increase monotonically with increasing grade. The observed rates reported in Figure 2.4 and Table 2.4 are likely to be underestimates of lifetime use for 16- to 18-year-olds, because adolescents in most states, including California, are permitted to drop out of school at age 16 and because dropouts are disproportionately more likely to smoke (Pirie et al., 1988). The increasing prevalence by grade holds true for all major ethnic groups except for African Americans, who show relatively constant rates from grades nine to 12, ranging from 46.6 percent to 51.8 percent. By contrast, the prevalence of lifetime smoking nearly doubled for Caucasians from grade nine to grade 12, ranging from 34.2 percent to 65.3 percent. Table 2.5 indicates that boys reported higher lifetime rates of smoking than girls in grades eight, 11, and 12. For example, 59 percent of the girls in grade 12 reported lifetime smoking compared to 65.7 percent of boys in grade 12. These observed differences in lifetime smoking stand in contrast to the lack of difference in current smoking rates observed in girls and boys.

Table 2.6 indicates that the grade 12 lifetime California prevalence rate of 62.3 percent is lower than the 72 percent figure for grade 12 respondents in 2000 NYTS-U.S; and, is lower than the 80 percent mark that is often quoted as the usual proportion of adolescents who have had some experience with smoking (U.S. Department Health and Human Services, 1994; *NCI Monograph,* 2001) by the time they reach adulthood.

Other In-school Surveys Compared on Lifetime Smoking: CSTS 2001–02, IESS 1999–00, NYTS-U.S.-CA 2000, NYTS-U.S. 2000 Lifetime Smoking

Figure 2.5 shows that the lifetime smoking prevalence rates for students in grades eight through 12 in CSTS 2001–02 were observed to be lower than the corresponding rates for IESS 1999–00 students in grades eight through 12. A similar but less pronounced difference was observed for CSTS 2001–02 and IESS 1999–00 students in grade 12. While these trends parallel the findings observed for current smoking, the differences were smaller. It may be that experimentation—smoking just a few cigarettes out of curiosity—is less affected by tobacco use prevention interventions than more regular smoking. In any case, the long-term trend beginning in 1995–96 is clearly continuing downward.

Figure 2.6 and Table 2.6 show that California's recent prevalence estimates for lifetime smoking by in-school adolescents are lower than comparable national rates for all grades assessed (grades six through 12) and are lower than California rates assessed in NYTS-U.S.-CA 2000 one year earlier, but only lower for the high school years and eighth grade. The proportions of students in grades six and seven reporting lifetime smoking did not differ between NYTS-U.S.-CA 2000 and CSTS 2001–02.

Frequent Use of Cigarettes (20 or More Days of Cigarette Smoking in Past 30 days)

Frequent use of cigarettes is characteristic of tobacco addiction. Figure 2.7 and Table 2.7 show that less than one percent of adolescents report frequent smoking prior to high school

Figure 2.6 Lifetime Cigarette Use by Survey

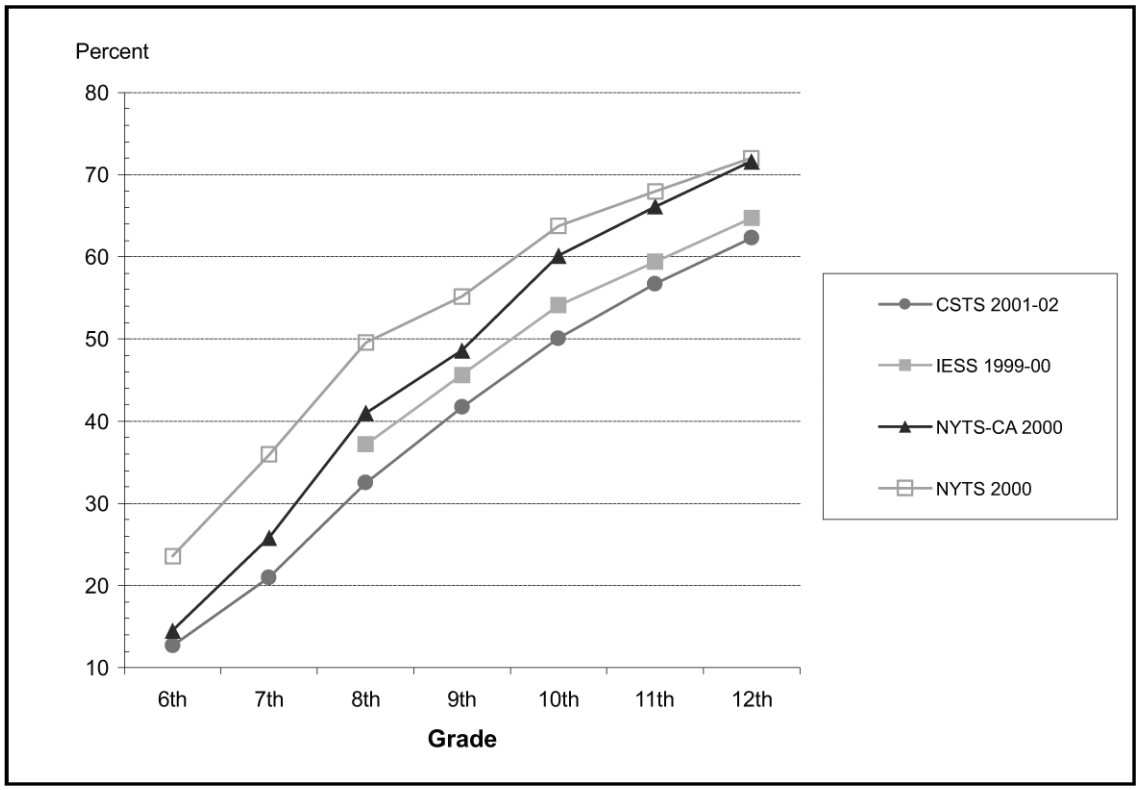
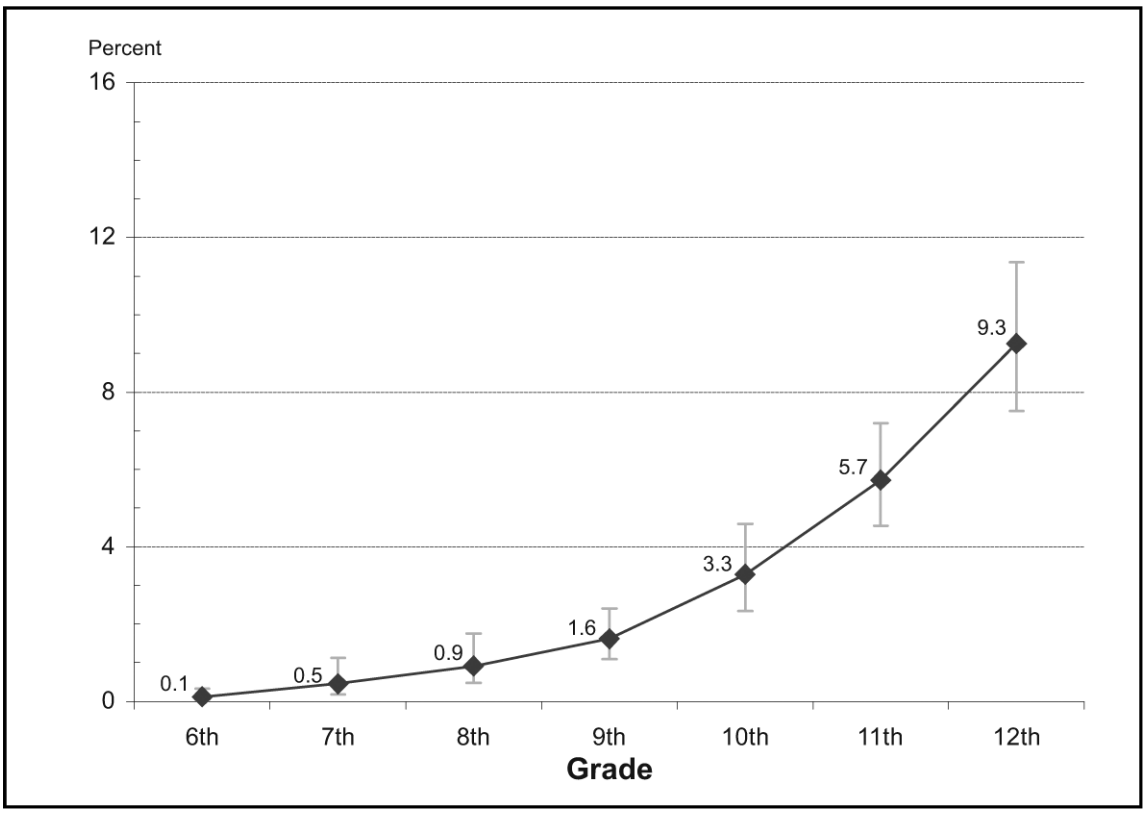


Figure 2.7 Frequent Cigarette Use (20+ days): CSTS 2001–02



entry in CSTS 2001–02. Increases in frequent smoking are particularly salient in grade 11 and 12, especially for Caucasians. Caucasians reported increased prevalence of frequent smoking relative to all other major ethnic groups beginning in grade nine and persisting through all high school years. In grade 12, for instance, 15.7 percent of Caucasians reported frequent smoking. No other ethnic group reported a grade 12 frequent smoking prevalence rate that exceeded 5.6 percent. Table 2.8 indicates that girls and boys did not differ in their frequent smoking rates during the middle school years but boys' prevalence rates of frequent smoking exceeded those of the girls in every high school grade except grade 10, where the rates were not significantly different.

Other In-school Surveys Compared on Prevalence Estimates for Frequent Smoking: IESS 1999–00, NYTS-U.S.-CA 2000, NYTS-U.S. 2000

Table 2.9 shows that the proportion of students reporting frequent smoking was higher in grades eight and ten in IESS 1999–00 survey than in the most recent CSTS 2001–02 survey. The grade 12 comparisons yielded a similar, but statistically non-significant trend.

Figure 2.8 and Table 2.9 show that the prevalence of frequent smoking was generally higher, and higher by grade, in NYTS-U.S.-CA 2000 as compared to CSTS 2001–02, although the differences in trends were not statistically significant for grades seven, 10, 11 and 12. Frequent smoking prevalence rates reported by California adolescents in CSTS 2001–02 were significantly lower than the frequent smoking prevalence rates reported by other U.S. adolescents surveyed in 2000 NYTS-U.S.

Lifetime Use of 100+ Cigarettes or More

A convention has emerged in the field of youth tobacco use surveillance that a history of having smoked at least 100 cigarettes distinguishes those youth who smoke just a few cigarettes,

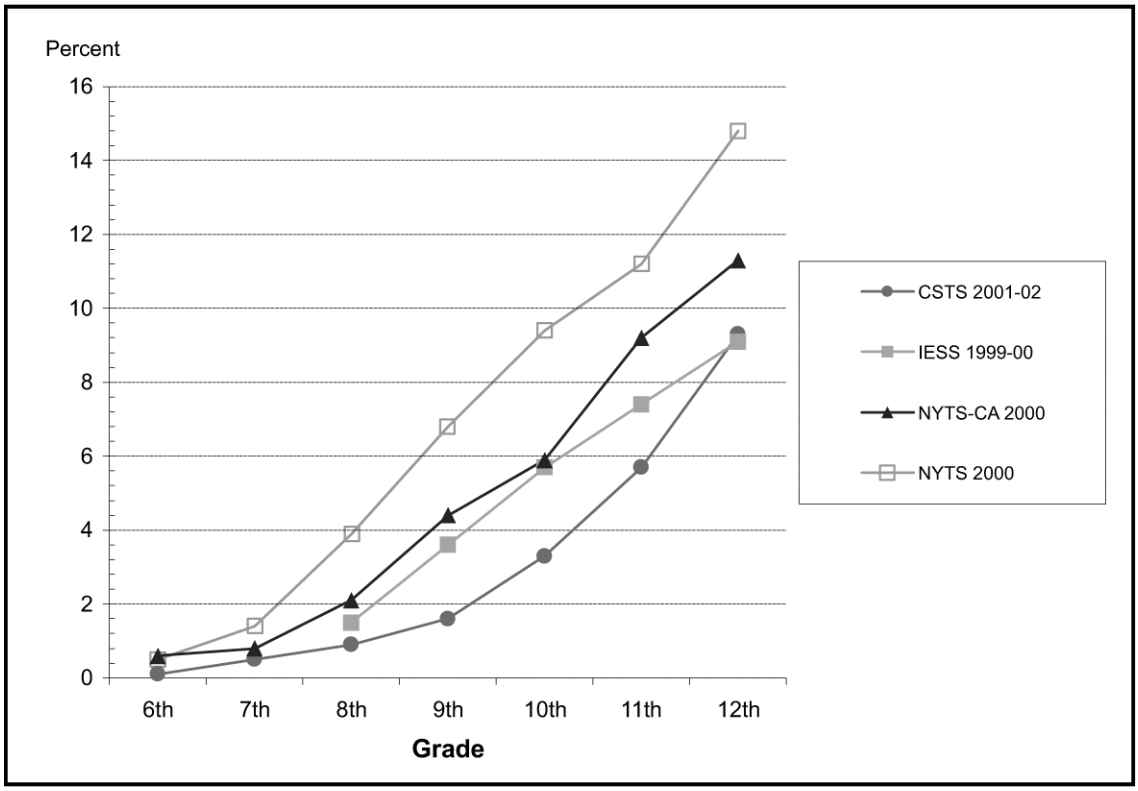
presumably out of curiosity, from those youth who smoke enough cigarettes to become habitual smokers. Figure 2.9 illustrates that the prevalence of youth smokers who had smoked at least 100 cigarettes remained below two percent among CSTS 2001–02 respondents through grade eight, then accelerated to 15.2 percent by grade 12. The pattern by ethnic group affiliation described in Table 2.10 resembled the pattern characterizing ethnicity with respect to prevalence of frequent smoking. Throughout the high school grades, Caucasian respondents reported a higher prevalence of having smoked at least 100 cigarettes than respondents associated with any other major ethnic group. By grade 12, 23.7 percent of all Caucasian respondents reported having smoked at least 100 cigarettes, compared to a maximum of 9.2 percent for any other major ethnic group. The pattern observed between girls and boys in Table 2.11 suggested an inconsistent excess prevalence of having smoked 100 cigarettes in boys relative to girls, in grades eight, nine, and 11. In grades 10 and 12, there was no statistically significant difference in prevalence between girls and boys in their having smoked at least 100 cigarettes.

Other In-school Surveys Compared: IESS 1999–00, NYTS-U.S.-CA 2000, NYTS-U.S. 2000 Lifetime Smoking of 100+ Cigarettes

Figure 2.10 and Table 2.12 show that CSTS 2001–02 reported prevalence rates of lifetime experience with 100 cigarettes or more were lower in grades eight, 10, and 12 than they were in the predecessor IESS 1999–00 survey. They also show that CSTS 2001–02 prevalence rates were lower for all the high school grades compared to the corresponding rates observed in NYTS-U.S.-CA 2000 survey and lower in all middle school and high school grades when compared to the corresponding rates observed in NYTS-U.S. 2000.

Figure 2.10 Comparison of Surveys: Lifetime 100+ Cigarette

Figure 2.8 Comparison of Surveys: Frequent Cigarette Use (20+ days)



Trends Involving Use of Other Tobacco Products: IESS 1995–96, 1997–98, 1999–00, CSTS 2001–02

Although cigarette smoking is the primary way that adolescents use tobacco, they gain significant exposure to tobacco through use of smokeless tobacco, cigars and specialty tobacco imports such as bidis or kreteks.

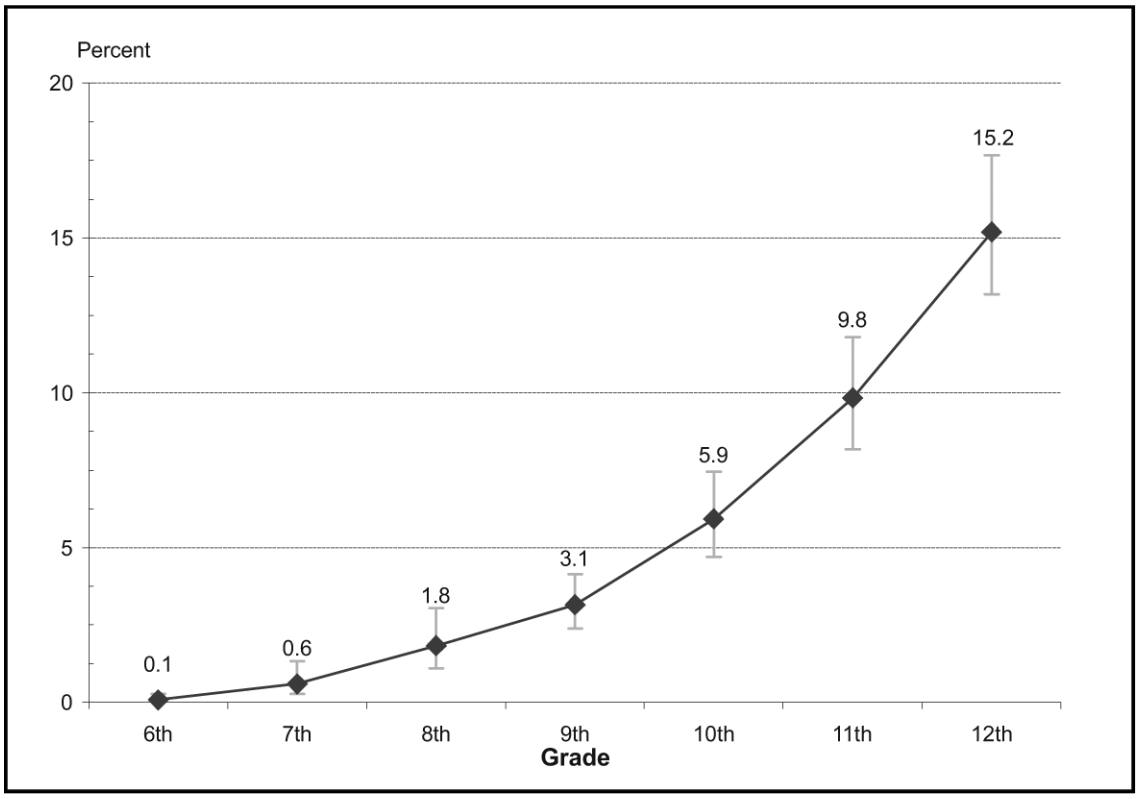
Examination of Table 2.13 suggests that CSTS 2001–02 respondents reported lower rates of bidi use than their predecessor IESS 1999–00 cohort, but higher rates of lifetime use of smokeless tobacco, and for grade 12 respondents only, higher rates of lifetime and 30-day use of cigars as well.

Consistent with past literature (e.g., CDC, 2001), girls were less likely than boys to report current use (in last 30 days) of smokeless tobacco, cigars or bidis. The highest prevalence of current smokeless tobacco use by girls in any grade was 1.6 percent; the range in prevalence rates for boys in the high school grades was 2.7 percent to 5.5 percent. While girls' current cigar use was as prevalent in grades seven through nine as boys' current cigar use, their prevalence peaked at 8.4 percent. By contrast, the boys' prevalence of current cigar use rose from 11.2 percent in grade 10 to 20.5 percent in grade 12. The pattern for lifetime use of bidis was similar to the pattern observed for current smokeless and current cigar use: no gender difference was apparent in the likelihood of using in grade seven, but boys' use increased relative to girls' use with increasing grade. By grade 12, 13.5 percent of girls had tried bidis, compared to 21.9 percent of boys.

Intent to Use Cigarettes

Intent to use cigarettes in the near future and beliefs about using if a friend offered them are two predictors of future tobacco use. (Pierce et al., 1996) Seventy-six percent of middle

Figure 2.9 Lifetime 100+ Cigarette Use: CSTS 2001–02



and 57.5 percent of high school students thought that they "definitely would not" smoke a cigarette in the next year. As can be seen in Table 2.14, these numbers mirrored the responses to the question asking if they would smoke a cigarette if their best friend offered it (75.9 percent and 56.5 percent of middle and high school students, respectively, responded "definitely not" to this question). The responses were similar across ethnic and gender groups. Comparison of these proportions in Table 2.14 with those in Tables 2.15 and 2.16, obtained from similar California respondents in 1999–00 IESS, the California sample of 2000 NYTS-U.S., and the national sample comprising 2000 NYTS-U.S., suggests that California youth are even more committed to not smoking than their predecessors and more committed to not smoking than corresponding students in the rest of the U.S. The differences are especially apparent in the younger grades and hold true across ethnic groups as well. Differences diminish to non-significance in the older grades, but California youth still tend to be more committed abstainers.

Quit Attempts, Desire to Quit, and Use of the Smokers' Helpline

Students were asked if they wanted to quit smoking. At least 50 percent of current smokers in each grade reported that they wanted to quit smoking (see Table 2.17). The rates were slightly higher for students in grades six, 11, and 12. No consistent patterns emerged when rates were examined by ethnicity. Similar to those who wanted to quit smoking, approximately 50 percent of current smokers had made at least one attempt to quit smoking (see Table 2.18). Quit attempts were higher for API students at most grade levels. When asked if they thought they could quit smoking now if they wanted to, 78.4 percent of current smokers responded "yes", (Table 2.19) 9.6 percent have participated in a program at school to help them quit using tobacco, and 5.7 percent of 30-day smokers had called the California Smokers' Helpline to get help quitting.

The results in Table 2.18 permit comparing prevalence of history of quit attempts in current smokers among 2001–02 CSTS respondents with those obtained from similar respondents in 1999–00 California IESS, the California sample of 2000 NYTS-U.S., and 2000 NYTS-U.S. A comparison of the total prevalence statistics suggests that 2001–02 California youth current (30-day) smokers are LESS likely to report having tried to quit their habit in the last year than either 1999–00 IESS respondents or the corresponding students in the California and national samples of NYTS-U.S. A resource available to student smokers who want to quit is a statewide Helpline. The Helpline number is1- 800-NO-BUTTS and is widely advertised throughout California. Table 2.20 shows the proportion of adolescent smokers who reported making use of the statewide Helpline. The reported overall proportion is 5.7 percent, with more boys (6.6 percent) than girls (4.6 percent) making use of this service, and with sixth grade smokers calling this number proportionately more often than smokers from grades eight through 12. The proportion of smokers calling the statewide Helpline did not vary across the major ethnic groups. The observed gender difference is deceptive. The boys reported a slightly longer smoking history and therefore have had a longer period in which to make attempts to quit smoking. Boys' longer history of tobacco use reflects their slightly earlier start (about two months earlier). When duration of smoking history is included in the analyses, the difference between boys and girls in use of the Helpline disappears. Table 2.21 indicates the reported number of quit attempts, by gender, for those respondents who self-reported having ever smoked. The biggest relative difference in quit attempts between boys and girls was in the percentage of who reported having tried to quit 10 or more times. More than four percent of boy smokers reported having tried quitting 10 or more times compared to less than one percent of girl smokers.

Regional Differences in Tobacco Use

There is increasing interest in understanding the geographic variations in prevalence of tobacco use (Brown and Duncan, 2000). Tobacco use has recently been shown to vary by the urbanicity of a region, with rural areas reporting the highest rates of tobacco use (CDC, 2002). CSTS design included stratification by 12 demographically distinct regions in California, with regions nine and 10 being less urban than other regions. Seven of the regions represented single counties (Los Angeles, San Diego, Orange, Santa Clara, San Bernardino, Riverside, and Alameda). The remaining five regions represented from five to twenty counties each. Table 2.22 shows current smoking, lifetime smoking, and current smokeless tobacco use by California region.

For current smoking, no discernable consistent pattern emerged. While the highest prevalence of current smoking (13.2 percent) did occur in region nine, representing the rural Central Valley, this prevalence rate was not significantly different from the rates observed in such urbanized areas as the San Francisco Bay area (12.5 percent) or San Diego (11.9 percent). For prevalence of lifetime smoking, no consistent pattern was apparent. While the highest prevalence of lifetime smoking (43.5 percent) did occur in region 9, this prevalence rate was not significantly different from the rates observed in such urbanized areas as Los Angeles (39.8) and San Diego (42.7 percent).

For current smokeless tobacco use, more discernable patterns did emerge by region. The highest rates occurred in the more inland regions, including the Central Valley (3.4 percent), the mostly inland northern counties (3.8 percent), and the Sacramento area (3.4 percent). By contrast, the lowest rates occurred in the coastal regions, especially the most urbanized, including Los Angeles (1.8 percent), the San Francisco Bay area counties (1.8 percent) and Orange County (1.7 percent).

Conclusion

2001–02 CSTS results generally indicate a continuing trend towards reduced adolescent tobacco use in California in-school youth observed across all grades and across a variety of lifetime and current tobacco use measures, compared to recent California and national youth tobacco surveys. All common tobacco use measures observed in 2001–02 CSTS were cross-validated in an independent drug abuse survey (2001–02 CSS) conducted among students in grades seven, nine and 11 from the same California population at approximately the same time period, increasing our confidence that they accurately reflect current tobacco use rates among California's in-school youth. Decreases in tobacco use among California youth in 2001–02 were reinforced by intent-to-use and the intent to refuse an offer from friend rates that were uniformly better than corresponding rates observed in earlier national and California surveys. With respect to cessation efforts by youth smokers; however, the results indicated that California's youth smokers are less likely to quit their habit than earlier California smokers or than smokers elsewhere in the U.S.

Tables

Table 2.1 Current Cigarette Use (past 30 days), by Grade and by Ethnicity

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	2.3% [1.6, 3.3]	2.1% [0.6, 7.3]	2.2% [0.7, 7.0]	4.0% [2.6, 6.1]	0.9% [0.5, 1.7]
7th	4.6% [3.3, 6.4]	1.6% [0.6, 4.3]	6.6% [2.7, 15.3]	6.5% [4.2, 9.9]	3.4% [1.9, 5.8]
8th	6.4% [5.1, 7.9]	5.9% [2.4, 13.8]	4.6% [2.3, 9.1]	8.2% [6.1, 11.0]	4.9% [3.2, 7.5]
9th	10.4% [8.6, 12.4]	8.5% [5.3, 13.4]	3.6% [1.8, 6.9]	10.9% [7.7, 15.1]	11.6% [9.3, 14.3]
10th	14.8% [12.7, 17.2]	7.8% [4.9, 12.3]	10.1% [5.4, 18.0]	13.6% [9.9, 18.4]	18.8% [15.7, 22.5]
11th	17.6% [15.3, 20.2]	18.1% [12.9, 24.9]	9.1% [4.2, 18.5]	16.0% [12.8, 19.8]	20.8% [17.9, 24.0]
12th	22.9% [20.1, 26.0]	19.5% [15.0, 25.0]	11.5% [5.7, 21.7]	17.2% [14.0, 21.0]	30.5% [25.9, 35.6]
Total	10.9% [10.0, 11.8]	9.4% [7.7, 11.4]	6.5% [4.8, 8.9]	10.3% [9.2, 11.6]	12.9% [11.3, 14.8]

Note: Brackets contain the 95 percent confidence intervals

Table 2.2 Current Cigarette Use (past 30 days), by Grade and by Gender

Grade	Girl	Boy	Overall
6th	1.1% [0.7, 1.8]	3.4% [2.1, 5.6]	2.3% [1.6, 3.3]
7th	3.7% [2.1, 6.3]	5.7% [3.8, 8.3]	4.6% [3.3, 6.4]
8th	6.3% [4.5, 8.8]	6.5% [4.9, 8.6]	6.4% [5.1, 7.9]
9th	11.3% [8.9, 14.1]	9.6% [7.2, 12.5]	10.4% [8.6, 12.4]
10th	15.6% [12.8, 19.0]	14.0% [11.3, 17.2]	14.8% [12.7, 17.2]
11th	15.8% [12.9, 19.2]	19.3% [16.2, 23.0]	17.6% [15.3, 20.2]
12th	21.6% [17.6, 26.1]	24.3% [21.0, 27.9]	22.9% [20.1, 26.0]
Total	10.4% [9.2, 11.7]	11.3% [10.3, 12.5]	10.9% [10.0, 11.8]

Note: Brackets contain the 95 percent confidence intervals

Table 2.3 Comparison of Surveys: Current Cigarette Use (past 30 days)

Grade	CSTS 2001–02	CSS 2001–02	IESS 1999–00	NYTS-U.S.-CA 2000	NYTS-U.S. 2000
6th	2.3% [1.6, 3.3]	–	–	3.4% [2.2, 5.4]	5.9% [4.7, 7.3]
7th	4.6% [3.3, 6.4]	3.9% [2.8, 5.5]	–	5.3% [3.1, 8.9]	10.3% [8.9, 11.9]
8th	6.4% [5.1, 7.9]	–	11.7% [10.4, 13.0]	11.7% [8.8, 15.2]	17.0% [15.2, 18.9]
9th	10.4% [8.6, 12.4]	11.4% [9.6,13.6]	–	15.1% [11.2, 20.2]	22.1% [19.8, 24.5]
10th	14.8% [12.7, 17.2]	–	19.5% [17.7, 21.5]	20.5% [16.8, 24.8]	27.9% [25.2, 30.7]
11th	17.6% [15.3, 20.2]	20.3% [17.5, 23.4]	–	24.8% [18.3, 32.6]	30.2% [27.9, 32.5]
12th	22.9% [20.1, 26.0]	–	24.8% [22.3, 27.4]	28.7% [24.1, 33.8]	34.1% [31.0, 80.4]

Notes:
CSTS 2001–02 is the *California Student Tobacco Survey*
CSS 2001–02 is the *California Attorney General's California Student Survey,* designed to measure reported drug use by in-school students, including tobacco
IESS 1999–00 is the *Independent Evaluation*
NYTS-U.S.-CA 2000 is the California portion of the *National Youth Tobacco Survey*
NYTS-U.S. 2000 is the *National Youth Tobacco Survey,* funded by the American Legacy Foundation and conducted in conjunction with the Centers for Disease Control
Brackets contain the 95 percent confidence intervals

Table 2.4 Lifetime Cigarette Use by Grade and by Ethnicity

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	12.7% [9.0, 17.7]	10.3% [6.0, 17.1]	20.9% [14.8, 28.7]	13.0% [9.0, 18.3]	10.4% [6.3, 16.8]
7th	21.0% [17.6, 25.0]	16.1% [11.2, 22.5]	40.5% [15.7, 71.3]	24.6% [19.2, 30.8]	14.7% [10.6, 20.0]
8th	32.5% [28.2, 37.1]	24.1% [17.7, 32.0]	42.7% [28.3, 58.6]	39.1% [32.3, 46.4]	26.9% [21.6, 32.9]
9th	41.7% [37.7, 45.8]	29.1% [24.5, 34.2]	51.3% [42.3, 60.2]	51.3% [44.6, 58.0]	34.2% [29.4, 39.4]
10th	50.1% [46.2, 54.0]	39.5% [31.8, 47.9]	46.6% [36.2, 57.3]	55.6% [48.7, 62.3]	49.8% [45.8, 53.9]
11th	56.7% [53.4, 60.0]	49.1% [41.5, 56.7]	49.2% [42.1, 56.3]	64.4% [58.7, 69.6]	54.6% [51.0, 58.2]
12th	62.3% [59.3, 65.1]	52.1% [44.3, 59.9]	51.8% [43.9, 59.5]	64.5% [60.8, 68.1]	65.3% [60.8, 69.5]
Total	38.9% [37.2, 40.7]	32.4% [29.2, 35.8]	43.1% [35.3, 51.2]	42.8% [40.2, 45.5]	36.7% [33.7, 39.9]

Note: Brackets contain the 95 percent confidence intervals

Table 2.5 Lifetime Cigarette Use by Grade and by Gender

Grade	Girl	Boy	Overall
6th	11.5% [7.4, 17.5]	13.9% [9.7, 19.6]	12.7% [9.0, 17.7]
7th	19.1% [15.5, 23.2]	23.1% [18.6, 28.4]	21.0% [17.6, 25.0]
8th	28.7% [24.1, 33.7]	36.0% [30.3, 42.1]	32.5% [28.2, 37.1]
9th	40.5% [34.7, 46.4]	42.7% [38.1, 47.4]	41.7% [37.7, 45.8]
10th	49.8% [43.3, 56.3]	50.5% [46.5, 54.4]	50.1% [46.2, 54.0]
11th	53.4% [49.0, 57.6]	60.0% [56.1, 63.7]	56.7% [53.4, 60.0]
12th	59.0% [55.6, 62.4]	65.7% [61.9, 69.3]	62.3% [59.3, 65.1]
Total	36.7% [34.7, 38.9]	41.0% [39.1, 43.0]	38.9% [37.2, 40.7]

Note: Brackets contain the 95 percent confidence intervals

Table 2.6 Comparison of Surveys: Lifetime Cigarette Use

Grade	CSTS 2001–02	CSS 2001–02	IESS 1999–00	NYTS-U.S.-CA 2000	NYTS-U.S. 2000
6th	12.7% [9.0, 17.7]	–	–	14.5% [12.0, 17.5]	23.6% [20.9, 26.5]
7th	21.0% [17.6, 25.0]	18.3% [15.4, 21.5]	–	25.9% [18.8, 34.4]	36.0% [33.0, 39.0]
8th	32.5% [28.2, 37.1]	–	37.2% [34.1, 40.4]	41.0% [37.4, 44.7]	49.5% [46.5, 52.6]
9th	41.7% [37.7, 45.8]	40.3% [37.2, 46.0]	–	48.6% [43.0, 54.3]	55.2% [52.2, 58.1]
10th	50.1% [46.2, 54.0]	–	54.1% [51.0, 57.1]	60.2% [54.6, 65.5]	63.8% [61.3, 66.1]
11th	56.7% [53.4, 60.0]	57.3% [52.4, 62.0]	–	66.1% [59.7, 72.0]	68.0% [65.6, 70.3]
12th	62.3% [59.3, 65.1]	–	64.7% [61.6, 67.6]	71.6% [67.0, 75.9]	72.0% [68.8, 75.0]

Notes:
CSTS 2001–02 is the California Student Tobacco Survey
CSS 2001–02 is the *California Attorney General's California Student Survey,* designed to measure reported drug use by in-school students, including tobacco
IESS 1999–00 is the *Independent Evaluation*
NYTS-U.S.-CA 2000 is the California portion of the *National Youth Tobacco Survey*
NYTS-U.S. 2000 is the *National Youth Tobacco Survey,* funded by the American Legacy Foundation and conducted in conjunction with the Centers for Disease Control
Brackets contain the 95 percent confidence intervals

Table 2.7 Frequent Cigarette Use (20+ days), by Major Ethnic Affiliation

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	0.1% [0.0, 0.3]	0.4% [0.1, 2.3]	0.5% [0.1, 4.0]	0.0% –	0.1% [0.0, 0.4]
7th	0.5% [0.2, 1.1]	0.1% [0.0, 1.0]	0.0% –	0.1% [0.0, 0.9]	1.1% [0.4, 2.9]
8th	0.9% [0.5, 1.8]	0.1% [0.0, 0.9]	0.7% [0.1, 5.4]	1.0% [0.3, 3.6]	1.0% [0.5, 2.3]
9th	1.6% [1.1, 2.4]	0.9% [0.3, 2.7]	1.0% [0.2, 3.9]	0.6% [0.3, 1.3]	2.9% [1.8, 4.7]
10th	3.3% [2.3, 4.6]	1.1% [0.4, 3.0]	2.7% [1.0, 6.8]	1.6% [0.9, 2.7]	5.3% [3.4, 8.1]
11th	5.7% [4.5, 7.2]	5.9% [3.2, 10.5]	5.4% [2.0, 13.3]	2.8% [1.5, 5.1]	8.2% [6.1, 11.0]
12th	9.3% [7.5, 11.4]	5.6% [3.6, 8.8]	4.1% [1.7, 9.5]	3.2% [2.0, 5.1]	15.7% [12.2, 19.9]
Total	2.8% [2.4, 3.4]	2.1% [1.5, 3.1]	1.9% [1.2, 3.0]	1.1% [0.8, 1.6]	4.8% [3.8, 6.0]

Note: Brackets contain the 95 percent confidence intervals

Table 2.8 Frequent Cigarette Use (20+ days) by Grade and by Gender

Grade	Overall	Girl	Boy
6th	0.1% [0.0, 0.3]	0.1% [0.0, 0.3]	0.2% [0.0, 0.6]
7th	0.5% [0.2, 1.1]	0.3% [0.1, 1.8]	0.6% [0.2, 1.7]
8th	0.9% [0.5, 1.8]	0.4% [0.1, 1.2]	1.4% [0.7, 2.9]
9th	1.6% [1.1, 2.4]	0.7% [0.4, 1.3]	2.5% [1.6, 3.9]
10th	3.3% [2.3, 4.6]	3.7% [2.4, 5.9]	2.9% [1.8, 4.4]
11th	5.7% [4.5, 7.2]	4.7% [3.4, 6.6]	6.7% [5.1, 8.7]
12th	9.3% [7.5, 11.4]	7.9% [5.8, 10.7]	10.6% [7.9, 14.2]
Total	2.8% [2.4, 3.4]	2.4% [1.9, 3.0]	3.3% [2.7, 4.1]

Note: Brackets contain the 95 percent confidence intervals

Table 2.9 Comparison of Surveys: Frequent Cigarette Use (20+ days)

Grade	CSTS 2001–02	CSS 2001–02	IESS 1999–00	NYTS-U.S.-CA 2000	NYTS-U.S. 2000
6th	0.1% [0.0, 0.3]	–	–	0.6% [0.3, 1.1]	0.5% [0.3, 0.8]
7th	0.5% [0.2, 1.1]	0.3% [0.1, 1.0]	–	0.8% [0.3, 1.8]	1.4% [1.0, 1.8]
8th	0.9% [0.5, 1.8]	–	1.5% [1.0, 2.1]	2.1% [1.1, 3.7]	3.9% [3.1, 4.9]
9th	1.6% [1.1, 2.4]	2.0% [1.1, 3.6]	–	4.4% [2.5, 7.5]	6.8% [5.6, 8.2]
10th	3.3% [2.3, 4.6]	–	5.7% [4.3, 7.5]	5.9% [3.2, 10.7]	9.4% [8.0, 11.1]
11th	5.7% [4.5, 7.2]	5.9% [4.5, 7.8]	–	9.2% [4.9, 16.8]	11.2% [9.8, 12.7]
12th	9.3% [7.5, 11.4]	–	9.1% [7.9, 10.5]	11.3% [7.9, 16.0]	14.8% [12.7, 17.2]

Notes:
CSTS 2001–02 is the *California Student Tobacco Survey*
CSS 2001–02 is the *California Attorney General's California Student Survey,* designed to measure reported drug use by in-school students, including tobacco
IESS 1999–00 is the *Independent Evaluation*
NYTS-U.S.-CA 2000 is the California portion of the *National Youth Tobacco Survey*
NYTS-U.S. 2000 is the *National Youth Tobacco Survey,* funded by the American Legacy Foundation and conducted in conjunction with the Centers for Disease Control
Brackets contain the 95 percent confidence intervals

Table 2.10 Lifetime 100+ Cigarette Use by Major Ethnic Affiliation

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	0.1% [0.0, 0.3]	0.4% [0.1, 2.3]	0.0% –	0.0% –	0.1% [0.0, 0.6]
7th	0.6% [0.3, 1.3]	0.3% [0.1, 1.0]	0.5% [0.1, 3.3]	0.0% [0.0, 0.4]	1.3% [0.5, 3.3]
8th	1.8% [1.1, 3.0]	1.1% [0.4, 3.2]	2.0% [0.6, 7.0]	2.1% [0.8, 5.5]	1.6% [0.9, 2.9]
9th	3.1% [2.4, 4.2]	1.7% [0.7, 4.3]	2.3% [1.0, 5.1]	1.8% [1.0, 2.9]	5.0% [3.5, 7.1]
10th	5.9% [4.7, 7.4]	3.7% [2.0, 6.6]	3.1% [1.3, 7.2]	2.8% [1.7, 4.4]	9.8% [7.4, 12.9]
11th	9.8% [8.2, 11.8]	8.4% [5.0, 13.8]	4.7% [1.8, 11.5]	6.0% [3.3, 10.5]	14.0% [11.9, 16.5]
12th	15.2% [13.0, 17.7]	9.2% [6.0, 14.1]	4.8% [2.4, 9.4]	8.6% [6.6, 11.1]	23.7% [19.3, 28.7]
Total	4.9% [4.3, 5.5]	3.7% [2.7, 4.9]	2.4% [1.6, 3.5]	2.6% [2.1, 3.3]	7.8% [6.6, 9.1]

Note: Brackets contain the 95 percent confidence intervals

Table 2.11 Prevalence of Those Who Have Smoked at Least 100 Cigarettes by Grade and by Gender

Grade	Overall	Girl	Boy
6th	0.1% [0.0, 0.3]	0.1% [0.0, 0.4]	0.1% [0.0, 0.5]
7th	0.6% [0.3, 1.3]	0.5% [0.1, 2.2]	0.7% [0.3, 1.7]
8th	1.8% [1.1, 3.0]	0.5% [0.2, 1.2]	3.1% [1.8, 5.2]
9th	3.1% [2.4, 4.2]	2.5% [1.5, 4.1]	3.7% [2.7, 5.1]
10th	5.9% [4.7, 7.4]	5.4% [3.9, 7.4]	6.5% [4.7, 8.9]
11th	9.8% [8.2, 11.8]	7.2% [5.6, 9.2]	12.4% [9.6, 15.8]
12th	15.2% [13.0, 17.7]	14.2% [11.1, 18.1]	16.1% [12.8, 20.1]
Total	4.9% [4.3, 5.5]	4.1% [3.4, 4.8]	5.7% [4.8, 6.6]

Note: Brackets contain the 95 percent confidence intervals

Table 2.12 Comparison of Surveys: Lifetime 100+ Cigarette Use

Grade	CSTS 2001–02	CSS 2001–02	IESS 1999–00	NYTS-U.S.-CA 2000	NYTS-U.S. 2000
6th	0.1% [0.0, 0.3]	–	–	0.8% [0.4, 1.7]	1.3% [0.9, 1.9]
7th	0.6% [0.3, 1.3]	–	–	1.2% [0.6, 2.4]	3.1% [2.4, 4.1]
8th	1.8% [1.1, 3.0]	–	4.4% [3.4, 5.7]	2.8% [1.5, 5.1]	7.8% [6.5, 9.3]
9th	3.1% [2.4, 4.2]	–	–	7.6% [5.0, 11.5]	13.9% [12.1, 15.9]
10th	5.9% [4.7, 7.4]	–	12.7% [11.0, 14.6]	10.8% [6.9, 16.5]	19.6% [17.3, 22.0]
11th	9.8% [8.2, 11.8]	–	–	16.6% [10.5, 25.1]	23.5% [21.5, 25.7]
12th	15.2% [13.0, 17.7]	–	18.7% [16.7, 20.8]	20.4% [14.7, 27.4]	28.4% [25.5, 31.5]

Notes:
CSTS 2001–02 is the *California Student Tobacco Survey*
CSS 2001–02 is the *California Attorney General's California Student Survey,* designed to measure reported drug use by in-school students, including tobacco
IESS 1999–00 is the *Independent Evaluation*
NYTS-U.S.-CA 2000 is the California portion of the *National Youth Tobacco Survey*
NYTS-U.S. 2000 is the *National Youth Tobacco Survey,* funded by the American Legacy Foundation and conducted in conjunction with the Centers for Disease Control
Brackets contain the 95 percent confidence intervals

Table 2.13 Smokeless Tobacco Use, Cigar Use, and Bidi Use: IESS 1995–96, 1997–98, 1999–00, CSTS 2001–02

	Smokeless Tobacco Use		Cigar Use		Bidi Use
	Lifetime	Past 30-Days	Lifetime	Past 30-Days	Lifetime
8th Grade					
IESS 1996	5.9%	3.1%	27.7%	n/a	n/a
IESS 1998	8.0%	4.2%	29.2%	10.8%	n/a
IESS 2000	6.1%	3.0%	20.0%**	6.2%	n/a
CSTS 2001–02	9.6%*	2.4%	20.5%	5.4%	4.2%
10th Grade					
IESS 1996	9.7%	3.5%	38.7%	n/a	n/a
IESS 1998	9.3%	2.9%	37.4%	13.2%	n/a
IESS 2000	8.3%**	2.9%*	30.6%**	9.0%	13.9%
CSTS 2001–02	11.9%*	3.6%	31.4%	9.8	9.6%
12th Grade					
IESS 1996	n/a	n/a	n/a	n/a	n/a
IESS 1998	n/a	n/a	n/a	n/a	n/a
IESS 2000	12.1%	3.5%	39.2%	10.4%	26.3%
CSTS 2001–02	15.7%*	3.5%	45.3%*	13.9%*	17.7%*

Notes:
IESS 1999–00 is the *Independent Evaluation*
CSTS 2001–02 is the *California Student Tobacco Survey*
* $p < 0.05$
** $p < 0.01$

Table 2.14 Intent Not to Smoke

	Q31. Do you think you will smoke a cigarette at any time during the next year? (% Responding "Definitely Not")	Q32. If one of your best friends offered you a cigarette, would you smoke it? (% Responding "Definitely Not")
Middle School		
Overall	76.2 [73.8, 78.5]	75.9 [73.7, 78.0]
Girl	77.4 [74.5, 80.1]	77.4 [74.7, 79.9]
Boy	74.9 [71.6, 78.0]	74.3 [71.3, 77.1]
Asian/PI	79.5 [74.3, 83.8]	77.3 [71.9, 81.9]
African American	75.0 [70.7, 78.8]	75.2 [69.5, 80.0]
Hispanic/Latino(a)	70.6 [66.7, 74.2]	71.7 [68.4, 74.8]
Caucasian	80.4 [76.6, 83.7]	79.3 [75.8, 82.4]
High School		
Overall	57.5 [55.0, 59.9]	56.5 [54.3, 58.6]
Girl	57.6 [54.4, 60.8]	56.6 [53.9, 59.3]
Boy	57.4 [54.7, 60.1]	56.3 [54.1, 58.4]
Asian/PI	64.9 [60.8, 68.8]	64.0 [60.6, 67.4]
African American	74.0 [66.7, 80.2]	71.6 [66.5, 76.2]
Hispanic/Latino(a)	55.2 [51.5, 58.9]	52.3 [48.6, 55.9]
Caucasian	53.5 [50.8, 56.1]	54.2 [51.3, 57.0]

Note: Brackets contain the 95 percent confidence intervals

Table 2.15 Intent to Use Tobacco in the Next Year (Percent Responding "Definitely Not" to Smoke a Cigarette in the Next Year)

	CSTS 2001–02	IESS 1999–00	NYTS-U.S.-CA 2000	NYTS-U.S. 2000
Ethnicity				
American Indian	69.0% [60.6, 76.3]	54.6% [42.6, 66.1]	61.7% [50.7, 71.6]	59.5% [53.9, 64.9]
Asian	74.7% [70.8, 78.3]	57.7% [55.0, 60.4]	64.8% [60.5, 68.9]	62.7% [59.5, 65.9]
African American	74.4% [70.0, 78.4]	67.4% [63.1, 71.4]	71.8% [67.9, 75.4]	66.2% [63.9, 68.4]
Hispanic/Latino(a)	62.5% [59.9, 64.9]	48.8% [46.0, 51.6]	59.6% [55.3, 63.8]	56.8% [53.9, 59.6]
Native Hawaiian	62.2% [56.6, 67.5]	–	63.3% [52.5, 73.0]	53.2% [48.3, 58.0]
Caucasian	64.6% [61.5, 67.5]	51.2% [48.7, 53.7]	60.8% [55.0, 66.3]	56.1% [53.9, 58.3]
Mixed	–	50.9% [47.5, 54.3]	–	–
Other	–	56.2% [52.0, 60.4]	–	–
Total	67.2% [63.9, 67.2]	52.6% [50.9, 54.3]	61.8% [58.4, 65.0]	58.0% [56.3, 59.7]
Grade				
6th	84.5% [80.4, 87.9]	–	83.4% [79.7, 86.5]	79.1% [76.8, 81.2]
7th	77.7% [75.0, 80.2]	–	71.5% [67.1, 75.6]	66.2% [64.0, 68.3]
8th	65.8% [62.0, 69.4]	56.6% [53.5, 59.7]	59.3% [51.9, 66.3]	56.8% [54.3, 59.3]
9th	62.1% [58.8, 65.2]	–	51.9% [47.2, 56.7]	52.3% [49.6, 54.9]
10th	58.3% [53.9, 62.6]	52.7% [50.9, 54.5]	56.5% [54.0, 58.9]	49.4% [46.9, 51.9]
11th	55.8% [52.6, 59.0]	–	53.2% [49.7, 56.6]	50.6% [48.2, 52.9]
12th	52.3% [47.9, 56.6]	49.5% [46.9, 52.2]	49.6% [45.7, 53.6]	47.0% [43.7, 50.3]
Un-graded	–	–	–	38.2% [23.6, 55.3]
Total	67.4% [64.0, 67.4]	52.6% [50.9, 54.3]	61.8% [58.5, 65.1]	58.1% [56.4, 59.7]

Notes:
CSTS 2001–02 is the *California Student Tobacco Survey*
IESS 1999–00 is the *Independent Evaluation*
NYTS-U.S.-CA 2000 is the California portion of the *National Youth Tobacco Survey*
NYTS-U.S. 2000 is the *National Youth Tobacco Survey*, funded by the American Legacy Foundation and conducted in conjunction with the Centers for Disease Control
Brackets contain the 95 percent confidence intervals

Table 2.16 Intent to Smoke if Best Friend Offered (Percent Responding "Definitely Not" to the question "If one of your best friends were to offer you a cigarette, would you smoke it?")

	CSTS 2001–02	IESS 1999–00	NYTS-U.S.-CA 2000	NYTS-U.S. 2000
Ethnicity				
American Indian	65.3% [55.8, 73.8]	54.5% [42.9, 65.7]	63.0% [53.2, 71.8]	58.5% [52.2, 64.5]
Asian	72.9% [69.7, 76.0]	60.4% [57.7, 63.1]	65.4% [62.7, 67.9]	62.3% [59.4, 65.2]
African American	73.1% [69.4, 76.6]	70.0% [65.4, 74.1]	71.0% [68.0, 73.9]	66.0% [63.6, 68.3]
Hispanic/Latino(a)	61.4% [58.9, 63.9]	54.8% [51.9, 57.8]	61.1% [57.2, 64.9]	57.0% [53.9, 60.1]
Native Hawaiian	61.6% [55.5, 67.4]	–	61.7% [52.9, 69.8]	52.6% [47.1, 58.1]
Caucasian	64.5% [61.4, 67.5]	55.6% [53.3, 57.9]	61.3% [57.0, 65.4]	56.9% [54.9, 58.8]
Mixed	–	55.8% [52.7, 58.9]	–	–
Other	–	60.4% [56.0, 64.6]	–	–
Total	64.8% [63.1, 66.5]	57.2% [55.5, 58.9]	62.5% [59.7, 65.2]	58.5% [56.9, 60.1]
Grade				
6th	84.3% [80.5, 87.4]	–	82.0% [79.8, 84.0]	77.6% [75.4, 79.6]
7th	77.7% [74.8, 80.4]	–	70.5% [66.2, 74.5]	64.7% [62.4, 66.8]
8th	65.2% [61.5, 68.7]	61.4% [58.1, 64.5]	59.0% [54.0, 63.8]	56.7% [54.2, 59.0]
9th	60.0% [56.5, 63.3]	–	54.8% [51.7, 57.9]	53.2% [50.8, 55.7]
10th	57.0% [52.4, 61.6]	56.8% [54.8, 58.7]	56.3% [53.2, 59.4]	50.6% [48.2, 53.1]
11th	54.5% [51.8, 57.2]	–	54.3% [50.1, 58.5]	52.6% [50.3, 55.0]
12th	53.2% [49.3, 57.1]	54.9% [52.2, 57.5]	55.4% [51.4, 59.3]	50.6% [47.4, 53.7]
Un-graded	–	–	–	33.1% [18.8, 51.4]
Total	65.0% [63.3, 66.6]	57.3% [55.6, 59.0]	62.6% [59.7, 65.3]	58.5% [56.9, 60.1]

Notes:
CSTS 2001–02 is the *California Student Tobacco Survey*
IESS 1999–00 is the *Independent Evaluation*
NYTS-U.S.-CA 2000 is the California portion of the *National Youth Tobacco Survey*
NYTS-U.S. 2000 is the *National Youth Tobacco Survey,* funded by the American Legacy Foundation and conducted in conjunction with the Centers for Disease Control
Brackets contain the 95 percent confidence intervals

Table 2.17 Percent of Students Reporting Desire to Quit Smoking

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	65.4% [56.0, 73.8]	22.5% [3.4, 70.6]	87.2% [39.8, 98.6]	65.3% [45.7, 80.7]	77.3% [40.4, 94.5]
7th	59.3% [46.2, 71.2]	37.4% [11.2, 73.9]	44.4% [11.4, 83.2]	69.2% [54.4, 80.9]	42.5% [24.5, 62.8]
8th	61.3% [50.3, 71.1]	44.0% [21.9, 68.7]	79.1% [45.4, 94.5]	62.2% [46.3, 75.9]	55.1% [40.1, 69.3]
9th	57.3% [47.6, 66.4]	57.0% [41.8, 70.9]	61.0% [29.3, 85.5]	65.7% [47.2, 80.4]	46.1% [36.6, 55.9]
10th	49.9% [43.2, 56.7]	71.9% [57.7, 82.8]	51.8% [31.2, 71.9]	51.5% [40.1, 62.7]	45.4% [36.6, 54.5]
11th	62.8% [56.5, 68.7]	65.0% [45.7, 80.4]	60.4% [44.3, 74.5]	62.9% [46.7, 76.7]	62.9% [55.6, 69.7]
12th	62.1% [55.0, 68.7]	74.6% [61.1, 84.6]	63.9% [41.8, 81.3]	56.2% [44.6, 67.2]	62.3% [51.7, 71.8]
Total	59.0% [55.9, 62.1]	63.9% [55.7, 71.4]	63.8% [52.4, 73.8]	61.3% [54.4, 67.8]	55.7% [50.4, 60.8]

Note: Brackets contain the 95 percent confidence intervals

Table 2.18 Percent of Students Reporting Having Smoked in Last 30 Days and Reported One or More Quit Attempts in Last Year

	CSTS 2001–02	IESS 1999–00	NYTS-U.S.-CA 2000	NYTS-U.S. 2000
Ethnicity				
American Indian	33.1% [16.2, 55.9]	44.3% [27.5, 62.6]	64.3% [39.7, 83.1]	69.2% [57.3, 78.9]
Asian	63.6% [53.3, 72.9]	72.5% [66.5, 77.8]	65.1% [54.2, 74.6]	66.6% [59.8, 72.7]
African American	36.4% [26.1, 48.1]	63.5% [46.6, 77.6]	51.2% [34.9, 67.2]	63.0% [59.7, 66.2]
Hispanic/Latino(a)	49.8% [43.2, 56.5]	53.7% [48.5, 58.8]	56.5% [49.7, 63.0]	54.4% [50.9, 57.9]
Native Hawaiian	64.4% [51.0, 75.9]	–	66.6% [43.2, 83.9]	66.6% [54.7, 76.7]
Caucasian	46.6% [42.7, 50.5]	60.4% [57.1, 63.5]	53.6% [45.9, 61.2]	59.8% [57.8, 61.8]
Mixed	–	63.0% [57.0, 68.7]	–	–
Other	–	59.0% [47.1, 69.9]	–	–
Total	48.7% [45.8, 51.7]	60.0% [57.7, 62.3]	55.8% [50.8, 60.8]	60.1% [58.5, 61.7]
Grade				
6th	60.9% [35.4, 81.6]	–	64.9% [46.6, 79.6]	68.4% [61.7, 74.4]
7th	52.3% [37.4, 66.9]	–	59.6% [49.2, 69.3]	59.0% [54.6, 63.4]
8th	44.3% [32.7, 56.7]	52.3% [46.6, 58.0]	55.6% [34.1, 75.2]	60.6% [56.5, 64.6]
9th	48.0% [36.6, 59.7]	–	56.8% [43.2, 69.5]	60.2% [57.1, 63.2]
10th	39.1% [33.6, 45.0]	60.2% [57.3, 63.0]	52.4% [48.9, 55.9]	59.5% [56.0, 62.9]
11th	56.8% [50.5, 63.0]	–	60.5% [48.6, 71.3]	61.2% [58.1, 64.2]
12th	48.9% [43.5, 54.3]	62.6% [59.4, 65.7]	51.9% [42.4, 61.2]	57.8% [54.0, 61.5]
Un-graded	–	–	–	63.5% [39.0, 82.6]
Total	48.7% [45.8, 51.7]	60.0% [57.7, 62.3]	56.1% [51.2, 60.9]	60.1% [58.5, 61.7]

Notes:
CSTS 2001–02 is the *California Student Tobacco Survey*
IESS 1999–00 is the *Independent Evaluation*
NYTS-U.S.-CA 2000 is the California portion of the *National Youth Tobacco Survey*
NYTS-U.S. 2000 is the *National Youth Tobacco Survey,* funded by the American Legacy Foundation and conducted in conjunction with the Centers for Disease Control
Brackets contain the 95 percent confidence intervals

Table 2.19 Quit Attempts and Quitting Program Participation: Current Smokers

	Q38. Do you think you would be able to quit smoking cigarettes if you wanted to? (percent Yes)	Q39. Have you ever participated in a program to help you quit using tobacco? (percent Yes)
6th	65.3 [48.4, 79.0]	25.8 [20.7, 31.8]
7th	58.8 [49.0, 68.0]	23.0 [15.8, 32.2]
8th	80.3 [73.1, 86.0]	11.4 [7.9, 16.1]
9th	81.6 [72.4, 88.2]	9.5 [6.7, 13.1]
10th	80.9 [72.6, 87.1]	7.0 [4.3, 11.2]
11th	84.1 [79.6, 87.8]	6.2 [4.5, 8.5]
12th	81.3 [75.7, 85.8]	3.1 [2.1, 4.4]
Total	78.4 [76.2, 80.5]	9.6 [8.2, 11.3]

Note: Brackets contain the 95 percent confidence intervals

Table 2.20 Use of 1-800-NO-BUTTS Helpline by Gender, Grade, and Ethnicity

	Percent of student current smokers responding "Yes"
Gender	
Girl	4.6% [3.5, 5.9]
Boy	6.6% [4.9, 8.8]
Total	5.7% [4.6, 7.1]
Grade	
6th	14.1% [7.7, 24.5]
7th	8.9% [4.5, 16.8]
8th	8.1% [4.1, 15.4]
9th	4.3% [2.5, 7.2]
10th	5.0% [3.4, 7.3]
11th	3.4% [2.2, 5.2]
12th	5.1% [3.5, 7.3]
Total	5.7% [4.6, 7.1]
Ethnicity	
American Indian	6.7% [2.6, 16.2]
Asian	9.4% [6.0, 14.5]
African American	7.7% [4.1, 14.1]
Hispanic/Latino(a)	4.5% [3.2, 6.2]
Native Hawaiian	5.4% [2.8, 10.3]
Caucasian	5.7% [4.0, 8.0]
Total	5.7% [4.5, 7.1]

Note: Brackets contain the 95 percent confidence intervals

Table 2.21 Number of Quit Attempts among Self-reported Current Smokers, by Gender

	Girl	Boy	Total
Never tried	52.5% [49.3, 55.6]	48.8% [45.5, 52.2]	50.5% [48.5, 52.6]
Once	25.1% [22.5, 27.8]	29.0% [26.3, 31.8]	27.1% [25.2, 29.1]
Twice	11.7% [9.9, 13.7]	10.9% [9.1, 13.0]	11.3% [10.0, 12.7]
3–5 times	8.5% [6.4, 11.2]	5.7% [4.4, 7.3]	7.0% [5.7, 8.7]
6–9 times	1.4% [0.8, 2.4]	1.3% [0.8, 2.0]	1.4% [0.9, 1.9]
10 or more times	0.9% [0.6, 1.4]	4.3% [3.0, 6.1]	2.7% [2.0, 3.7]

Note: Brackets contain the 95 percent confidence intervals

Table 2.22 Lifetime, Current Cigarette Smoking, and Current Smokeless Tobacco Use by Region

Region/County or Area	Lifetime Cigarette Smoking	Current Cigarette Smoking	Current Smokeless Tobacco Use
1/Los Angeles	39.7% [35.8, 43.8]	9.9% [7.8, 12.5]	1.8% [1.1, 3.1]
2/San Diego	42.7% [36.0, 49.7]	11.9% [9.4, 14.9]	2.2% [1.4, 3.4]
3/Orange	37.6% [33.0, 42.4]	10.6% [8.6, 12.9]	1.7% [1.1, 2.6]
4/Santa Clara	34.9% [30.6, 39.4]	9.6% [7.9, 11.5]	2.3% [1.4, 4.0]
5/San Bernardino	36.1% [30.9, 41.6]	9.2% [6.7, 12.3]	2.3% [1.4, 3.7]
6/Riverside	37.3% [32.6, 42.3]	9.7% [7.4, 12.5]	3.4% [2.7, 4.4]
7/Alameda	36.2% [30.2, 42.7]	9.6% [7.4, 12.2]	2.8% [1.6, 4.8]
8/Bay Area counties	36.7% [32.3, 41.4]	12.5% [9.5, 16.3]	1.8% [1.1, 3.0]
9/Central Valley counties	43.5% [38.1, 49.0]	13.2% [11.1, 15.6]	3.4% [2.2, 5.3]
10/Northern counties	39.5% [33.3, 46.1]	12.2% [8.4, 17.6]	3.8% [2.8, 5.1]
11/Sacramento area counties	38.1% [31.5, 45.1]	11.2% [8.3, 14.8]	3.4% [2.3, 5.1]
12/Central Coast counties	36.8% [28.9, 45.6]	11.3% [7.8, 16.1]	2.0% [1.0, 4.2]
Overall	38.9% [37.2, 40.7]	10.9% [10.0, 11.8]	2.4% [2.1, 2.8]

Note: Brackets contain the 95 percent confidence intervals

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Chapter 3: Student-level Descriptives: Attitudes and Beliefs about Tobacco Use

Introduction

Psychosocial factors play an important role in the development of smoking behaviors among children and adolescents (Flay, 1993). Some of these factors include:

(1) advertising

(2) role models who smoke

(3) perceptions about one's ability to refuse an offer to smoke

(4) peer influences to smoke

(5) normative expectations with regard to smoking

(6) perception that smoking has personal utility

(7) availability of cigarettes

(8) perceived harm

Students in CSTS were not only asked questions about tobacco use behaviors, but also asked to comment on their attitudes about

(1) the tobacco industry

(2) social desirability of tobacco use

(3) perceived health consequences of tobacco use

(4) perceived social norms to examine these factors

The domains and items used for student-level analysis in Chapter 3 are found in Table 3.1.

Social Perceptions/Social Appeal

The perceived social desirability of smoking is considered a strong predictor of smoking behavior among youth. Adolescents face many challenges that influence the development of their self-identity, and their peers play a major role in that development (Jessor, 1984). Sussman et al. (1995) offered three examples of informational social influences: identification with social images, estimates of prevalence of a behavior, and perspective regarding an evaluative quality of a behavior. Youth who perceive that they will benefit socially by smoking, by appearing independent, more grown-up, tougher, or friendly, are more likely to be smokers (Botvin and Eng, 1979; Burton et al., 1989).

Respondents' answers to two CSTS questions were evaluated as evidence of how motivated they were by social desirability concerns. These questions were: (1) young people who smoke have more friends; and, (2) smoking cigarettes makes young people look cool/fit-in. Response options were "definitely yes," "probably yes," "probably not," and "definitely not." Grouping definitely/probably yes into one response option and definitely/probably no into the second option dichotomized the responses.

The overall rates of students reporting either "definitely or probably yes" that they believed young people who smoke cigarettes have more friends were similar for middle and high school students (19.9 percent and 18.9 percent, respectively). Across years of age, girls (17.0 percent high school; 16.5 percent middle school) were less likely to believe this compared to boys (22.7 percent high school; 21.2 percent middle school) (see Table 3.2). When students were asked if they thought that smoking makes young people look cool/fit-in, a greater proportion of middle school students (15.1 percent) compared to high school students (11.3 percent) responded affirmatively. As for the question about friends, fewer girls at both middle (11.8 percent) and high school (8.7 percent) compared to boys (18.3 percent middle and 13.7 percent high school) perceived that smoking makes a person look cool.

Across ethnic groups, the rates of high school students responding positively to the social perception questions were more similar compared to middle school rates, although Caucasians were less likely than other ethnic groups to hold these beliefs. For both questions about social perceptions, African American and Hispanic/Latino(a) middle school youth (by at least 10 percentage points) have higher rates than either Caucasian or API. In high school greater proportions of API and Hispanic/Latino(a)s held the belief that young people who smoke have more friends, compared to African Americans and Caucasians. These patterns were not congruent with the notion that teenagers who believe that higher proportions of peers use tobacco are more likely to smoke. If perceived prevalence of use by peers were predictive, then we would expect to see lower use rates for Caucasians, but we did not.

Health Consequences of Tobacco Use

Four questions in CSTS were asked to assess perceived harmfulness of tobacco use and perceived harmfulness of exposure to SHS. The results are presented in Table 3.2 for gender and ethnicity for middle and high school students responding "definitely/probably yes". Overall, most students believed that exposure to cigarette smoke either by smoking or through environmental exposure is harmful. Eighty-three percent (83.3 percent) and 91.2 percent of middle and senior high students, respectively, believed that young people risk harming themselves by smoking one to five cigarettes per day. The differences were not as large between middle and high school students for the remaining three questions. Middle (88.1 percent) and high (86.6 percent) school students reported that it is not safe to smoke

for only a year or two as long as you quit after that. A high proportion, 90.9 percent of middle school and 94.2 percent of high school students, believed that exposure to tobacco smoke is harmful. Ninety-four percent (94.0 percent) of middle school students and 94.8 percent of high school students said that tobacco is addictive.

Girls were more likely to report believing in the harmfulness of tobacco compared to boys across all four questions. When examining these items by ethnic group, the results for both middle school and high school youth were similar across groups. The exception was for African-American (74.2 percent) middle school students, who were less likely to believe that smoking one to five cigarettes per day is harmful, compared to 85.4 percent of API and 86.7 percent of Caucasians. In high schools the rates were within five percentage points across all questions. The data collected on perceived harm of cigarette smoking supported what others have found (e.g., Chassin et al., 2001). The majority of students from an early age understand the physical consequences of tobacco use.

Social Influences

Flay, et al. (1983) proposed a model of cigarette smoking that identified predictable stages in the development of the smoking habit. In the first stage, peers and family who smoke play a role in influencing non-smokers to think about smoking cigarettes. These social influences and others continue to be cited as strong predictors of future tobacco use among youth, and prevention programs based on social influences approaches generally, but not always (e.g., Peterson et al., 2000) have been shown to decrease rates of adolescent smoking (Hahn et al., 1990; Sussman et al., 1990). CSTS asked students about their exposure to tobacco use at home, in a car, and with close friends. Three of these questions also assessed the exposure to SHS, but were included in this section because they assessed the prevalence of smoking in the youths' environment. Table 3.3 shows the proportion of students responding either "zero" or "none" to five questions assessing social influences of cigarette smoking by gender and ethnicity. Higher proportions of youth responding "no" or "never" suggest less social influence on smoking behavior. The response options were coded in the negative to allow for comparisons to NYTS-U.S. data (CDC, 2001).

The majority of youth responding to these questions were not exposed to tobacco smoke in a room or car, although the rates were substantially lower for high school students (50.9 percent) for non-exposure to tobacco smoke in a room (not at home), compared to middle school students (66.7 percent). Eighty percent of middle school students (80.2 percent) and 77.3 percent of high school students reported that during the past week they were not in a room at home with someone smoking cigarettes. Fewer high school youth (70.8 percent) than middle school youth (79.2 percent) responded that they had not been in a car with someone who was smoking during the past seven days. Interestingly, the proportion of youth responding that they do not live with someone who smokes is about 10 percentage points lower than the proportion saying that they were not in a room at home with someone who was smoking. This suggests that while students may be living with others who smoke, the smoking behavior occurs outside or in an area of the home away from youth. Across age groups, girls reported slightly more exposure to social influences of smoking (e.g., exposure to tobacco use at home, car, and with close friends) than boys. Consistently lower rates of African-American middle and high school youth responded that they had not been exposed in a room, a room at home, or in a car. African Americans also had the lowest rates of living with someone who smokes, and in middle school, had a slightly lower rate of reporting that none of their friends smoke when compared to other ethnic groups.

As might be expected, the rate for high school students reporting that they did not have any close friends who smoke cigarettes was substantially lower than the rate for middle school students (54.3 percent vs. 76.9 percent). Caucasians (82.1 percent) and API (79.5 percent) students reported having no friends who smoked in middle school, compared to Hispanic/Latino(a)s (72.6 percent) and African Americans (71.2 percent). In high school this pattern was reversed, with Caucasians (51.8 percent) and Hispanic/Latino(a)s (53.3 percent) having the lowest rates of reporting that none of their closest friends smoke compared to API (58.8 percent) and African Americans (66.7 percent).

Social Perceptions, Social Influences, and Perceived Health Consequences of Tobacco Use: Comparisons with NYTS-U.S.

NYTS-U.S. (CDC, 2001) also asked questions to assess social perceptions, health consequences, and social influences. To facilitate comparing responses to questions from CSTS with responses to similar questions from NYTS-U.S., only results for students responding "definitely not" or "definitely yes" to questions assessing these constructs were analyzed. The results for the overall group were similar to those found when looking at the response options as dichotomous (yes/no) questions (see Table 3.2), although it appeared that combining response options into a dichotomous yes/no response provided more sensitivity in detecting gender and ethnic differences.

Table 3.4 presents the proportion of youth who answered "definitely not" to these two statements: (1) young people who smoke have more friends, and (2) smoking cigarettes makes young people look cool/fit in. Results from 2001–02 CSTS failed to confirm the results obtained from 2000 NYTS-U.S. that indicated significant differences between middle and high school youth (36.5 percent vs. 33.1 percent) for the question about friends. The differences between middle and high school youth were even smaller (70.7 percent vs. 71.1 percent) in CSTS when respondents were asked if smoking makes young people look cool. However, when looking at the results by gender, 2001–02 CSTS patterns were similar to those of 2000 NYTS-U.S. A higher proportion of girls responded "definitely not" when asked about smokers having more friends and whether smokers look cool. In middle school; however, CSTS data did not show a gender difference for the question about friends.

Table 3.5 shows the rates for students responding to the questions assessing the perceived health consequences of smoking. The results were not that different across questions, although slightly more 2001–02 California youth believed that the smoke from other people's cigarettes is harmful and that tobacco is addictive, compared to the youth in 2000 NYTS-U.S. sample. However, a smaller proportion of 2001–02 CSTS middle school youth believed that it is not safe to smoke for a year or two and then quit, compared to middle school youth in the 2000 NYTS-U.S. The rates for 2001–02 CSTS high school youth on this question were similar to those for high school youth in 2000 NYTS-U.S.

Attitudes and Beliefs about the Tobacco Industry

As was found in the third wave of IESS, the prevailing attitude among both middle and high school students was strongly negative regarding the tobacco industry. The most negative attitudes were about whether tobacco companies try to get people addicted to tobacco. Youth reported being aware of the tobacco industry's marketing tactics as early as grade six. Approximately 90 percent of students across all age groups responded that tobacco

companies probably or definitely try to get people addicted to cigarettes. Fewer middle school (79.7 percent) than high school (88.7 percent) students did not believe that tobacco companies would stop selling cigarettes if they knew for sure that smoking hurts people. Similarly, high proportions of youth (85.5 percent middle and 90.5 percent high school) reported to believe that tobacco companies try to get young people to start smoking by using advertisements that are attractive to young people. Table 3.6 depicts the results by gender and ethnicity. Asians and Caucasians tended to have slightly more negative attitudes about the tobacco industry than either Hispanic/Latino(a)s or African Americans.

Media Exposure

Table 3.7 depicts the responses to anti-smoking media exposure by school type, gender, and ethnic group. Overall, Caucasians reported marginally lower rates of exposure to each media type: radio, billboards, and television. Television was the most recalled media source of ads about the dangers of using tobacco for both middle (77.3 percent) and high school (79.9 percent) students. More students recalled hearing ads on the radio than recalled seeing them on billboards, and high school students recalled radio ads at slightly higher rates than middle school students. Age was not a big factor in recollection of exposure to anti-smoking messages with 87.9 percent of middle school students and 90.2 percent of high school students reporting any exposure to anti-tobacco messages.

Table 3.8 shows the percent of students responding that they had seen specific anti-tobacco ads on television. Seventy-eight percent of all students reported seeing at least one of the ads. Less than 30 percent recalled seeing CDHS/TCS' anti-tobacco use crocodile cartoon ad, while more than two-thirds recalled seeing the American Legacy Foundation's 'truth' ads. Only 18 percent recalled exposure to TCS' ads of a fictional tobacco-marketing executive that ended with the question "Do you smell smoke?"

In addition to asking about anti-tobacco media exposure the 2001–02 CSTS asked questions about exposure to pro-smoking electronic media messages or tobacco industry paraphernalia. Table 3.9 shows the proportion of youth responding that they had seen actors using tobacco either in the movies or on television, or they had seen tobacco advertisements at community events. Far more students reported seeing actors using tobacco than recalled seeing tobacco advertising at community events across age and gender. Nearly 80 percent (79.2 percent) of middle and 87.7 percent of high school students recalled seeing actors using tobacco "some or most" of the time, compared to only 48.5 percent of middle school students and 58.1 percent of senior high students reporting that they have seen ads for cigarettes at sporting events, fairs, or other community events "sometimes" or "a lot".

Students were also asked two questions about tobacco company paraphernalia: (1) if they had ever received or purchased it and (2) whether or not they ever wore it. Although the rates for high school students were lower in general compared to middle school students, most reported not buying or receiving tobacco related items (87.2 percent middle and 81.3 percent high school), nor did they wear or use tobacco related items (82.5 percent middle school students and 74 percent high school students). Across age groups, boys were far more likely than girls to have either received or used tobacco related items (see Table 3.10).

Normative Expectations

Accuracy of perceived norms about peer tobacco use is one factor in predicting the onset and development of tobacco use (Hansen, 1991). When students were asked if most youth old enough to go to high school did not smoke, 18.9 percent of students in grade six responded "true," compared to 26.3 percent of students in grade 12. As students get older their perceptions about peer use of tobacco become more accurate. Nevertheless one would hope that more than one-fifth of students would know that most teens do not smoke. The response pattern was consistent across ethnic groups as can be seen in Table 3.11.

Exposure to Tobacco Lessons

From grade six through grade nine, between 74.8 percent and 81.4 percent of students recalled receiving information about tobacco at school. The rates dropped from 81.4 percent in grade nine to 67 percent in grade 10. The rates continued to decline throughout high school to 57 percent in grade 11 and 52 percent in grade 12 recalling being exposed to tobacco information at school. These results are found in Table 3.12. Our data show that most of the tobacco lessons were taught in specific classes, such as science, health, and physical education. The disparity in recollection of tobacco lessons may reflect the courses and grades in which tobacco was a focus. CDE guidelines for tobacco use prevention programs do not require tobacco lessons to be taught at each grade level with the same intensity. Although schools may choose to do this, it appears that the bulk of tobacco use prevention lessons occurred in health, science, and physical education courses, which have traditionally been the courses in which tobacco use prevention was taught. Another difficulty in interpreting these data is that it is unclear how students were interpreting the question. For example, students may be reporting only about information from formal lessons in classes that typically cover tobacco related content, and not about tobacco related information infused in other types of classes. More research on the validity and reliability of questions asking about exposure to school lessons needs to be conducted to provide a deeper understanding of how students interpret such questions.

Of those recalling that they had been exposed to tobacco lessons, 92.2 percent of students in grade six perceived tobacco information received at school to be helpful in making decisions about tobacco use, and across grade levels, the overall proportion of students perceiving the information as helpful was 79.3 percent. These perceptions shown in Table 3.13 declined monotonically with age, with only 64.5 percent of students in grade 12 feeling that tobacco information was helpful. When asked if the information received at school helped them feel that it's okay to say "no" to friends who offer cigarettes, 78.3 percent of students in grade six reported that the information was helpful. This perception fell to only 33.8 percent in grade 12. There is no table for this data.

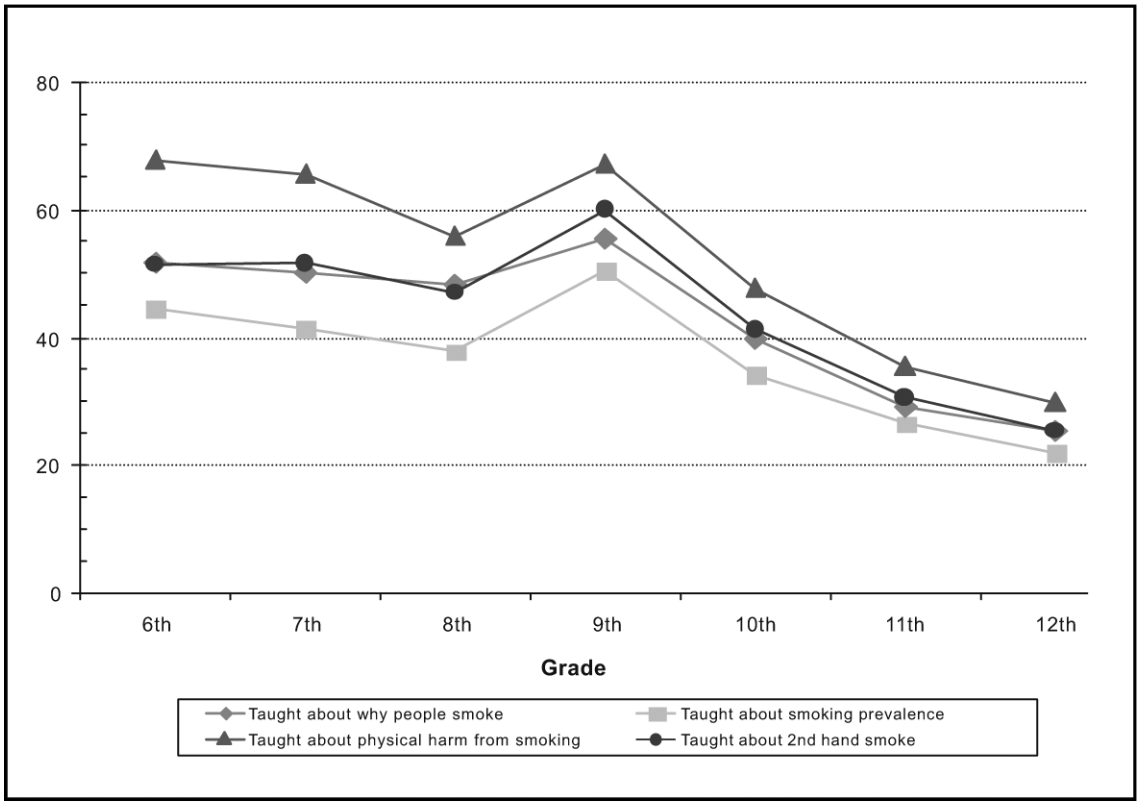
Awareness of Other Tobacco Activities

When asked if peers were trained to help other students stop smoking, only 27.9 percent of students responded "yes", and even fewer knew about special classes at school to help students stop smoking. It is not surprising that in the middle school grades, the rates ranged from 4.2 percent to 6.6 percent of students reporting that there were cessation classes because many fewer students typically smoke in middle school than in high school. However, only 14.5 percent, 22 percent, 20.2 percent, and 18.3 percent of students in grades nine,

10, 11, and 12 knew about cessation classes. Again, it is possible that this information is only salient to youth who are current smokers because of the immediate relevance to them. Chapter seven discusses how student awareness of school-based cessation resources corresponds to teachers' and administrators' perceptions about school-based resources for tobacco use prevention.

Table 3.13 shows the percentage of students' recall of tobacco lesson topics by grade. As can be seen in Figure 3.1 below the frequency of students recalling having been exposed to selected tobacco use prevention topics was similar between middle school and high school students for physical harm, SHS, why people smoke, and how many peers smoke. In spite of recommendations from CDC and CDE, teachers still seemed to be teaching about the physical consequences about tobacco use more frequently than the social influence issues such as peer smoking and the reasons people smoke.

Figure 3.1 Prevention Education Topics by Grade



Conclusion

The vast majority of California's school-aged youth have gotten the message: tobacco use is bad, both physically and socially. There seems to be an unfortunate decline, however, in tobacco control strategies targeted to adolescents in high school. Perhaps coincidentally, there is a parallel decline in students' perception that the tobacco use prevention information they are receiving is helpful as they move through the higher secondary school grades. The older students reported more accurate estimates of peer tobacco use than the younger students, a trend that should be protective. The perception reported by students that the content of tobacco use prevention messages focuses more on the physical consequences of tobacco use than on social resistance skills or use of peer leaders to help students quit smoking. This phenomenon may represent lost opportunities for prevention and may help to explain students' decreasing satisfaction with the content of the tobacco use prevention messages with increasing grades. In short, California student cognitions were generally consistent with no tobacco use, particularly in the younger grades.

Table 3.1 Items Used in the Analysis (Student Survey)

Domain	Question Number (Q)	Question
Social perceptions about smoking Percentage Reporting any	Q34	Do you think young people who smoke cigarettes have more friends?
	Q35	Do you think smoking cigarettes makes young people look cool or fit in?
Perceived health consequences from smoking Percentage Reporting any	Q36	Do you think young people risk harming themselves if they smoke from 1 to 5 cigarettes per day?
	Q37	Do you think it is safe to smoke for only a year or two, as long as you quit after that?
	Q50	Do you think the smoke from other people's cigarettes is harmful to you?
	Q97	People can get addicted to using tobacco just like they can get addicted to using other drugs such as cocaine or heroin.
Second-hand Smoke/ Social Influences Percentage Reporting	Q47	During the past 7 days, on how many days were you in the same room with someone who was smoking cigarettes?
	Q48	During the past 7 days, on how many days were you in the same room at home with someone who was smoking cigarettes?
	Q49	During the past 7 days, on how many days did you ride in a car with someone who was smoking cigarettes?
	Q51	Does anyone who lives with you NOW smoke cigarettes?
	Q52	How many of your four closest friends smoke cigarettes?
Anti-tobacco industry norms Percentage Reporting	Q70	Do you think that tobacco companies try to get people addicted to cigarettes?
	Q71	Tobacco companies would stop selling cigarettes if they know for sure that smoking hurts people.
	Q72	Tobacco companies try to get young people to start smoking by using advertisements that are attractive to young people.
Media Exposure Percentage Reporting	Q44	When you watch TV or go to the movies, how often do you see actors using tobacco?
	Q45	During the past 12 months, did you buy or receive anything that has a tobacco company name or picture on it?
	Q46	Would you ever use or wear something that has a tobacco company name or picture on it such as a lighter, T-shirt, hat, or sunglasses?
	Q64	When you listen to the radio, how often do you hear advertisements about NOT smoking or about NOT chewing tobacco?
	Q65	When you see billboards (outdoor signs), how often do you see advertisements about NOT smoking or about NOT chewing tobacco?
	Q66	When you watch TV, how often do you see stories or advertisements about the dangers of smoking tobacco or chewing tobacco?
	Q67	When you go to sports events, fairs or community events, how often do you see advertisements for cigarettes or chewing tobacco?
	Q68	During the last 30 days, do you remember seeing on TV any of the following messages about not smoking?
Accurate smoking norms Percentage Reporting	Q95	Most young people old enough to go to high school do NOT smoke cigarettes.

Table 3.2 Attitudes toward Smoking (Percent Responding "Definitely Yes" and "Probably Yes")

Measures	Overall	Female	Male	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
Middle School							
Social Perceptions							
Young people who smoke cigarettes have more friends	19.9% [18.2, 21.7]	17.0% [14.7, 19.5]	22.7% [20.3, 25.3]	17.6% [14.0, 21.8]	30.9% [21.4, 42.4]	25.2% [22.6, 27.9]	13.5% [11.4, 15.9]
Smoking cigarettes makes young people look cool/fit in	15.1% [13.5, 16.8]	11.8% [9.4, 14.8]	18.3% [16.4, 20.3]	14.6% [10.8, 19.4]	24.5% [17.9, 32.7]	16.6% [14.6, 18.9]	11.8% [9.8, 14.1]
Perceived Health Consequences							
Young people risk harming themselves if they smoke 1–5 cigarettes/day	83.3% [81.7, 84.8]	83.7% [81.2, 85.9]	82.9% [80.8, 84.9]	85.4% [81.6, 88.4]	74.2% [64.3, 82.2]	81.7% [79.6, 83.6]	86.7% [84.1, 89.0]
It's safe to smoke for only a year or two, as long as you quit after that [1]	88.1% [86.1, 89.9]	89.5% [87.2, 91.5]	86.8% [84.6, 88.7]	88.7% [86.2, 90.8]	87.9% [77.8, 93.8]	86.7% [84.3, 88.8]	89.3% [86.4, 91.6]
The smoke from other people's cigarettes is harmful to you	90.9% [89.5, 92.1]	92.8% [91.2, 94.2]	88.9% [86.4, 91.0]	93.3% [91.2, 94.9]	88.7% [84.3, 92.0]	87.8% [85.3, 89.9]	93.8% [91.9, 95.3]
People can get addicted to using tobacco like they can get addicted to using other drugs	94.0% [92.9, 94.9]	95.1% [93.8, 96.2]	92.9% [91.4, 94.1]	95.0% [92.0, 97.0]	91.6% [87.6, 94.4]	93.3% [91.6, 94.6]	95.5% [94.0, 96.7]

Measures	Overall	Female	Male	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
High School							
Social Perceptions							
Young people who smoke cigarettes have more friends	18.9% [17.6, 20.4]	16.5% [14.5, 18.6]	21.2% [19.7, 22.9]	23.5% [19.2, 28.4]	19.9% [15.3, 25.6]	23.9% [21.9, 26.1]	13.5% [11.8, 15.4]
Smoking cigarettes makes young people look cool/fit in	11.3% [10.1, 12.7]	8.7% [7.0, 10.8]	13.7% [12.5, 15.0]	13.6% [11.0, 16.7]	13.3% [8.5, 20.1]	12.9% [10.9, 15.2]	8.9% [7.4, 10.7]
Perceived Health Consequences							
Young people risk harming themselves if they smoke 1–5 cigarettes/day	91.2% [90.1, 92.2]	93.4% [92.3, 94.3]	89.2% [87.5, 90.7]	91.6% [89.9, 93.0]	87.2% [81.6, 91.2]	89.0% [86.0, 91.4]	93.8% [92.9, 94.6]
It's safe to smoke for only a year or two, as long as you quit after that [1]	86.7% [85.6, 87.6]	89.2% [88.1, 90.2]	84.4% [82.9, 85.8]	83.6% [81.0, 85.9]	89.0% [84.1, 92.5]	86.3% [84.5, 88.0]	87.5% [86.3, 88.7]
The smoke from other people's cigarettes is harmful to you	94.2% [93.0, 95.2]	96.1% [95.0, 97.0]	92.4% [90.8, 93.8]	95.8% [94.3, 96.9]	92.4% [88.0, 95.3]	92.7% [90.2, 94.6]	95.2% [94.1, 96.1]
People can get addicted to using tobacco like they can get addicted to using other drugs	94.8% [94.0, 95.4]	96.8% [95.8, 97.6]	92.8% [91.4, 94.0]	95.8% [94.4, 96.9]	91.8% [85.7, 95.4]	94.0% [92.1, 95.5]	95.6% [94.6, 96.4]

Notes:
[1]Percent "Definitely Not" and "Probably Not"
Brackets contain the 95 percent confidence intervals

Table 3.3 SHS and Social Influence of Smoking (Percent Responding "None" or "0")

	Exposure to cigarette smoke[1]	Exposure to cigarette smoke at home[2]	Exposure to cigarette smoke in car[3]	Live with smoker[4]	Close friend smokes[5]
Middle School					
Overall	66.7% [64.9, 68.5]	80.2% [78.2, 82.1]	79.2% [77.0, 81.3]	69.3% [66.9, 71.7]	76.9% [75.3, 78.6]
Female	64.3% [61.4, 67.1]	79.0% [76.4, 81.4]	78.7% [75.8, 81.4]	68.1% [65.1, 71.1]	77.6% [75.3, 79.8]
Male	69.0% [66.7, 71.3]	81.4% [79.0, 83.6]	79.9% [77.7, 81.9]	70.6% [67.8, 73.2]	76.4% [74.3, 78.5]
Asian/PI	65.6% [60.9, 70.0]	79.7% [74.9, 83.9]	83.1% [78.4, 87.0]	66.7% [62.2, 71.0]	79.5% [72.9, 84.8]
African American	54.4% [49.7, 59.1]	70.6% [66.0, 74.8]	66.7% [61.3, 71.7]	60.8% [53.4, 67.8]	71.2% [65.3, 76.4]
Hispanic/Latino(a)	73.6% [71.4, 75.6]	83.9% [81.9, 85.7]	82.4% [79.4, 85.1]	71.8% [67.8, 75.5]	72.6% [68.5, 76.3]
Caucasian	63.9% [60.8, 66.9]	79.7% [75.7, 83.2]	78.6% [74.4, 82.2]	69.6% [64.5, 74.2]	82.1% [79.1, 84.8]
High School					
Overall	50.9% [49.2, 52.6]	77.3% [76.1, 78.5]	70.8% [69.4, 72.1]	65.2% [63.6, 66.8]	54.3% [52.3, 56.3]
Female	46.9% [44.5, 49.3]	75.1% [73.1, 77.1]	69.1% [67.2, 70.9]	62.5% [60.3, 64.6]	53.5% [50.7, 56.3]
Male	54.7% [52.9, 56.6]	79.5% [77.8, 81.0]	72.3% [70.2, 74.3]	67.9% [66.0, 69.7]	55.2% [52.9, 57.3]
API	53.5% [48.3, 58.8]	76.7% [73.4, 79.8]	72.8% [70.1, 75.3]	63.8% [59.8, 67.6]	58.8% [55.5, 62.1]
African American	51.3% [45.4, 57.2]	72.9% [67.5, 77.8]	64.4% [59.7, 68.9]	55.7% [51.2, 60.2]	66.7% [59.4, 73.4]
Hispanic/Latino(a)	57.1% [54.7, 59.6]	81.1% [77.9, 84.0]	75.9% [73.7, 78.0]	65.1% [61.9, 68.2]	53.3% [49.1, 57.4]
Caucasian	45.0% [42.4, 47.7]	75.5% [73.4, 77.6]	67.4% [64.9, 69.8]	67.6% [65.0, 70.0]	51.8% [49.0, 54.5]

Notes:
[1] Q47. During the past seven days, on how many days were you in the same room with someone who was smoking cigarettes?
[2] Q48. During the past seven days, on how many days were you in the same room AT HOME with someone who was smoking cigarettes?
[3] Q49. During the past seven days, on how many days did you ride in a car with someone who was smoking cigarettes?
[4] Q51. Does anyone who lives with you NOW smoke cigarettes?
[5] Q52. How many of your four closest friends smoke cigarettes?
Brackets contain the 95 percent confidence intervals

Table 3.4 Social Perceptions toward Smoking

	Q34. Young people who smoke cigarettes have more friends ("Definitely Not")	Q35. Smoking cigarettes makes young people look cool/fit in ("Definitely Not")
Middle School		
Overall	36.5% [34.3, 38.9]	70.7% [68.5, 72.3]
Female	36.2% [33.6, 39.0]	75.7% [72.2, 79.0]
Male	36.9% [33.7, 40.2]	65.7% [62.9, 68.4]
Asian/PI	37.5% [32.4, 42.8]	67.9% [62.2, 73.1]
African American	32.1% [19.6, 47.8]	61.1% [55.0, 66.9]
Hispanic/Latino(a)	33.6% [31.1, 36.3]	67.6% [64.5, 70.5]
Caucasian	39.5% [36.5, 42.5]	76.1% [72.9, 79.1]
High School		
Overall	33.1% [31.5, 34.7]	71.1% [69.4, 72.8]
Female	36.4% [34.1, 38.9]	76.5% [74.7, 78.2]
Male	29.9% [28.4, 31.4]	66.0% [63.6, 68.4]
Asian/PI	29.8% [25.8, 34.1]	66.8% [62.6, 70.7]
African American	32.5% [28.3, 37.1]	75.6% [70.7, 79.9]
Hispanic/Latino(a)	29.8% [27.2, 32.5]	70.4% [68.2, 72.5]
Caucasian	36.7% [34.3, 39.2]	72.2% [69.6, 74.7]

Note: Brackets contain the 95 percent confidence intervals

Table 3.5 Perceived Health Consequences of Smoking

	Q37. It's safe to smoke for only a year or two, as long as you quit after that. ("Definitely Not")	Q36. Young people risk harming themselves if they smoke 1–5 cigarettes/day. ("Definitely Yes")	Q50. The smoke from other people's cigarettes is harmful to you. ("Definitely Yes")	Q97. People can get addicted to using tobacco like they can get addicted to using other drugs. ("Definitely Yes")
Middle School				
Overall	68.1% [65.6, 70.5]	69.6% [67.2, 71.8]	74.5% [72.4, 76.6]	73.3% [71.3, 75.1]
Female	69.6% [66.3, 72.8]	69.6% [65.8, 73.2]	74.9% [72.4, 77.4]	74.4% [71.7, 76.9]
Male	66.7% [64.0, 69.2]	69.4% [66.3, 72.4]	74.2% [71.1, 77.0]	72.1% [69.0, 75.1]
Asian/PI	66.6% [61.9, 71.1]	71.3% [66.7, 75.5]	74.3% [68.8, 79.0]	70.6% [65.9, 74.9]
African American	71.7% [65.8, 76.9]	59.6% [49.9, 68.6]	77.6% [71.9, 82.3]	68.0% [62.9, 72.7]
Hispanic/Latino(a)	65.9% [62.5, 69.0]	66.3% [64.0, 68.4]	71.8% [69.2, 74.3]	70.0% [67.2, 72.7]
Caucasian	69.2% [65.1, 73.1]	74.6% [70.6, 78.2]	77.0% [73.8, 61.0]	78.9% [76.3, 81.3]
High School				
Overall	61.4% [59.5, 63.2]	76.2% [74.5, 77.8]	80.2% [78.9, 81.4]	78.1% [76.7, 79.4]
Female	64.6% [62.5, 66.7]	79.1% [77.0, 81.0]	82.3% [80.2, 84.2]	81.1% [79.3, 82.8]
Male	58.4% [56.3, 60.6]	73.5% [71.3, 75.5]	78.2% [76.8, 79.5]	75.1% [73.6, 76.6]
Asian/PI	57.5% [54.3, 60.7]	76.7% [74.4, 78.8]	82.2% [80.0, 84.3]	77.0% [74.1, 79.7]
African American	72.0% [65.7, 77.5]	76.6% [67.8, 83.6]	81.9% [76.7, 86.2]	76.0% [70.7, 80.7]
Hispanic/Latino(a)	60.8% [57.7, 63.9]	73.8% [70.1, 77.2]	78.0% [75.5, 80.3]	74.5% [71.5, 77.4]
Caucasian	60.8% [58.7, 62.9]	78.0% [76.4, 79.4]	81.0% [79.6, 82.3]	81.1% [79.6, 82.6]

Note: Brackets contain the 95 percent confidence intervals

Table 3.6 Negative Attitudes about Tobacco Industry

Measures					
Middle School					
Tobacco companies try to get people addicted to cigarettes	89.2% [87.6, 90.6]	89.1% [86.9, 90.9]	89.3% [87.3, 91.0]	92.8% [90.6, 94.5]	86.0% [80.0, 90.4]
Tobacco companies would stop selling cigarettes if they knew for sure that smoking hurts people[1]	79.7% [76.9, 82.2]	80.5% [77.1, 83.4]	79.2% [75.8, 82.2]	84.8% [81.8, 87.4]	75.4% [68.3, 81.3]
Tobacco companies try to get young people to start smoking by using advertisements that are attractive to young people	85.5% [84.0, 86.9]	86.9% [84.8, 88.7]	84.3% [82.4, 86.0]	87.6% [85.1, 89.8]	77.9% [71.9, 82.9]
Measures	**Overall**	**Female**	**Male**	**Asian/PI**	**African American**
High School					
Tobacco companies try to get people addicted to cigarettes	92.1% [90.9, 93.1]	93.3% [91.9, 94.4]	91.0% [89.3, 92.4]	92.4% [90.3, 94.1]	91.9% [87.3, 94.9]
Tobacco companies would stop selling cigarettes if they knew for sure that smoking hurts people1	88.7% [87.8, 89.6]	90.5% [89.3, 91.5]	87.0% [85.7, 88.3]	87.6% [84.9, 89.9]	83.2% [78.7, 87.0]
Tobacco companies try to get young people to start smoking by using advertisements that are attractive to young people	90.5% [89.6, 91.3]	92.1% [90.8, 93.2]	89.0% [87.2, 90.6]	90.5% [88.4, 92.2]	86.8% [82.5, 90.2]

Notes:
[1]Percent "Definitely Not" and "Probably Not"
Brackets contain the 95 percent confidence intervals

Table 3.7 Media Exposure to Anti-smoking Messages (Percent Responding "Sometimes" or "A lot")

	Q64. How often do you hear ads about NOT smoking or about NOT chewing tobacco when you listen to the radio?	Q65. How often do you see ads about NOT smoking or about NOT chewing tobacco when you see billboards?	Q66. How often do you see ads about the dangers of smoking tobacco or chewing tobacco when you watch TV?	Any exposures to anti-smoking messages
Middle School				
Overall	58.6 [56.7, 60.5]	58.1 [55.2, 61.0]	77.3 [75.7, 78.9]	87.9 [86.3, 89.3]
Female	60.3 [57.1, 63.4]	59.4 [55.8, 62.9]	77.8 [75.3, 80.0]	89.0 [86.4, 91.2]
Male	56.9 [54.0, 59.8]	56.7 [53.2, 60.1]	76.9 [74.4, 79.2]	86.7 [84.5, 88.6]
Asian/PI	63.8 [58.5, 68.8]	59.6 [55.3, 63.8]	80.8 [76.4, 84.6]	89.9 [86.8, 92.3]
American	64.6 [57.1, 71.5]	62.3 [57.4, 67.1]	76.3 [67.9, 83.0]	88.6 [83.5, 92.3]
Hispanic/Latino(a)	61.0 [57.4, 64.5]	61.2 [56.9, 65.4]	79.4 [76.2, 82.3]	90.0 [87.2, 92.2]
Caucasian	53.4 [50.1, 56.6]	54.3 [50.3, 58.2]	74.7 [71.3, 77.8]	85.4 [82.7, 87.8]
High School				
Overall	63.5 [61.7, 65.2]	56.1 [54.0, 58.1]	79.9 [78.8, 90.9]	90.2 [89.4, 90.9]
Female	65.8 [63.0, 68.6]	54.7 [52.2, 57.3]	79.5 [77.6, 81.3]	90.7 [89.3, 92.0]
Male	61.2 [59.4, 62.9]	57.3 [55.0, 59.6]	80.4 [78.7, 81.9]	89.8 [88.4, 91.0]
Asian/PI	66.1 [63.1, 69.0]	55.7 [52.1, 59.2]	80.9 [77.7, 83.6]	91.2 [89.0, 92.9]
American	68.0 [62.4, 73.1]	61.0 [52.6, 68.9]	79.6 [75.8, 82.9]	91.4 [86.2, 94.7]
Hispanic/Latino(a)	65.3 [62.1, 68.4]	57.6 [55.1, 60.1]	81.2 [79.5, 82.7]	90.6 [89.1, 91.9]
Caucasian	60.6 [57.7, 63.5]	54.4 [52.0, 56.7]	79.1 [77.6, 80.6]	89.7 [88.4, 90.8]

Note: Brackets contain the 95 percent confidence intervals

Table 3.8 Recall Viewing Specific Television Ads

Television Message	Percent
Cartoon crocodile character	29.6
End with word "truth"	67.3
"Do you smell smoke?"	18.0
Any of the above	78.5

Table 3.9 Exposure to Pro-tobacco Media (Percent Responding "A lot" or "Sometimes")

	See actors using tobacco[1]	See tobacco ads in sport/community events[2]
Middle School		
Overall	79.2% [77.1, 81.2]	48.5% [45.9, 51.1]
Female	77.3% [74.7, 79.7]	49.1% [45.8, 52.4]
Male	81.1% [78.4, 83.5]	48.0% [44.9, 51.1]
Asian/PI	79.5% [75.0, 83.3]	49.1% [43.7, 54.4]
African American	83.1% [78.0, 87.3]	52.0% [46.5, 57.5]
Hispanic/Latino(a)	77.9% [73.8, 81.5]	51.8% [47.9, 55.7]
Caucasian	80.0% [76.7, 82.7]	44.5% [40.7, 48.3]
High School		
Overall	87.7% [86.5, 88.7]	58.1% [56.3, 59.9]
Female	87.8% [85.9, 89.5]	56.0% [53.5, 58.4]
Male	87.5% [86.1, 88.8]	60.0% [57.9, 62.0]
Asian/PI	87.8% [85.1, 90.1]	52.0% [48.6, 55.4]
African American	85.7% [78.2, 90.9]	56.6% [49.5, 63.5]
Hispanic/Latino(a)	87.1% [84.9, 89.0]	61.1% [57.9, 64.1]
Caucasian	88.5% [87.2, 89.7]	57.8% [55.4, 60.1]

Notes:
[1] Q44. When you watch TV or go to movies, how often do you see actors using tobacco?
[2] Q67. When you go to sports events, fairs, or community events, how often do you see advertisements for cigarettes or chewing tobacco?
Brackets contain the 95 percent confidence intervals

Table 3.10 Did Not Receive or Use Tobacco Related Items (Percent Responding "No")

	Didn't buy or receive tobacco related items[1]	Would not wear or use tobacco related items[2]
Middle School		
Overall	87.2% [85.0, 89.1]	82.5% [80.0, 84.7]
Female	89.1% [86.7, 91.1]	86.1% [83.3, 88.5]
Male	85.3% [82.7, 87.6]	78.9% [75.8, 81.7]
Asian/PI	89.1% [85.4, 91.9]	82.8% [77.5, 87.0]
African American	84.4% [69.2, 92.9]	83.2% [77.5, 87.7]
Hispanic/Latino(a)	86.1% [83.4, 88.4]	78.5% [75.1, 81.7]
Caucasian	88.9% [86.8, 90.6]	86.0% [83.3, 88.3]
High School		
Overall	81.3% [80.0, 82.5]	74.0% [72.7, 75.2]
Female	84.0% [82.4, 85.6]	79.7% [77.1, 82.1]
Male	78.6% [76.8, 80.3]	68.6% [66.7, 70.4]
Asian/PI	81.2% [78.3, 83.8]	78.0% [75.1, 80.7]
African American	85.4% [81.6, 88.6]	82.3% [78.5, 85.6]
Hispanic/Latino(a)	81.6% [79.4, 83.6]	72.6% [69.9, 75.1]
Caucasian	80.5% [78.8, 82.0]	72.3% [70.5, 74.0]

Notes:
[1] Q45. During the past 12 months, did you buy or receive anything that has a tobacco company name or picture on it?
[2] Q46. Would you ever use or wear something that has a tobacco company name or picture on it such as a lighter, T-shirt, hat, or sunglasses?
Brackets contain the 95 percent confidence intervals

Table 3.11 Belief That Majority of Peers Do Not Use Tobacco

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	18.9% [16.3, 21.8]	13.8% [8.2, 22.2]	20.3% [13.5, 29.2]	19.6% [15.4, 24.7]	18.8% [13.3, 25.9]
7th	18.8% [16.6, 21.2]	17.5% [12.0, 24.9]	17.9% [9.4, 31.3]	17.4% [14.0, 21.5]	21.7% [16.6, 27.9]
8th	18.3% [15.8, 21.2]	20.3% [15.3, 26.5]	15.4% [9.4, 24.0]	18.6% [15.2, 22.5]	18.0% [14.1, 22.6]
9th	23.0% [20.7, 25.5]	24.6% [20.2, 29.6]	26.1% [19.6, 33.8]	19.0% [15.1, 23.5]	25.3% [21.9, 29.1]
10th	22.9% [20.0, 26.0]	19.3% [15.3, 24.0]	28.4% [16.0, 45.4]	20.2% [17.2, 23.5]	25.7% [21.1, 30.8]
11th	23.6% [21.8, 25.6]	27.7% [21.7, 34.7]	18.6% [9.4, 33.3]	19.6% [16.0, 23.6]	26.3% [23.5, 29.5]
12th	26.3% [23.8, 28.9]	22.3% [16.3, 29.8]	27.4% [21.9, 33.6]	21.3% [16.7, 26.7]	29.9% [26.9, 33.0]
Total	21.6% [20.7, 22.6]	21.1% [19.3, 23.1]	22.3% [18.6, 26.4]	19.3% [17.8, 20.8]	23.7% [22.2, 25.3]

Note: Brackets contain the 95 percent confidence intervals

Table 3.12 Received Information about Tobacco at School

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	80.6% [75.0, 85.1]	86.9% [80.2, 91.6]	80.2% [63.2, 90.5]	84.0% [79.7, 87.6]	76.2% [66.9, 83.6]
7th	78.5% [73.2, 83.0]	89.3% [84.1, 92.9]	82.2% [73.2, 88.7]	78.1% [68.8, 85.2]	75.0% [67.6, 81.2]
8th	74.8% [70.3, 78.8]	74.2% [65.6, 81.4]	82.9% [73.8, 89.4]	73.2% [68.1, 77.8]	74.8% [66.9, 81.3]
9th	81.4% [77.8, 84.5]	79.6% [73.4, 84.7]	78.3% [69.6, 85.0]	83.5% [76.8, 88.5]	80.6% [74.8, 85.3]
10th	66.5% [63.3, 69.6]	63.6% [54.4, 71.9]	65.1% [54.3, 74.6]	69.8% [63.7, 75.3]	65.2% [60.6, 69.6]
11th	57.1% [53.9, 60.2]	57.2% [47.3, 66.6]	62.8% [54.3, 70.6]	58.8% [53.1, 64.2]	54.8% [51.0, 58.5]
12th	52.1% [48.0, 56.2]	54.3% [39.6, 68.3]	56.1% [47.0, 64.8]	54.4% [48.3, 60.4]	49.6% [45.1, 54.1]
Total	70.9% [69.0, 72.7]	71.6% [67.1, 75.7]	73.2% [66.8, 78.8]	73.2% [70.6, 75.6]	68.4% [65.8, 70.8]

Note: Brackets contain the 95 percent confidence intervals

Table 3.13 Tobacco Lesson Content

Grade	Assemblies	Guest Speaker	Why People Smoke	Smoking Prevalence	Physical Harm	SHS
6th	51.0% [43.5, 58.4]	55.6% [49.7, 61.3]	51.5% [46.6, 56.4]	44.3% [39.8, 49.0]	67.7% [62.1, 72.8]	51.4% [45.7, 57.1]
7th	52.4% [44.9, 59.7]	50.4% [42.5, 58.2]	50.3% [46.3, 54.2]	41.4% [37.1, 45.8]	65.6% [60.5, 70.5]	51.5% [46.8, 56.2]
8th	42.2% [36.0, 48.6]	40.7% [35.3, 46.3]	48.2% [43.6, 52.9]	37.8% [34.1, 41.7]	55.9% [51.6, 60.2]	46.9% [42.4, 51.4]
9th	38.2% [33.6, 43.0]	39.8% [36.0, 43.6]	55.2% [49.9, 60.4]	50.4% [45.4, 55.3]	67.1% [62.5, 71.4]	59.9% [55.0, 64.7]
10th	26.0% [22.6, 29.6]	31.0% [27.7, 34.5]	39.8% [36.2, 43.5]	34.0% [31.2, 36.9]	47.7% [44.3, 51.2]	41.3% [37.2, 45.5]
11th	22.9% [19.5, 26.6]	20.7% [18.2, 23.4]	29.3% [25.7, 33.2]	26.4% [22.9, 30.2]	35.5% [31.6, 39.5]	30.5% [27.4, 33.8]
12th	19.1% [16.2, 22.4]	16.8% [13.8, 20.3]	25.3% [22.7, 28.2]	22.1% [19.2, 25.4]	29.8% [26.9, 32.8]	25.3% [22.2, 28.6]
Total	36.6% [33.8, 39.5]	37.2% [34.6, 39.9]	43.6% [41.8, 45.5]	37.3% [35.6, 39.2]	53.8% [51.8, 55.7]	44.7% [42.7, 46.7]

Note: Brackets contain the 95 percent confidence intervals

Table 3.14 Tobacco Information Helpful

Grade	Overall	Asian/PI	African American	Hispanic/ Latino(a)	Caucasian
6th	92.2% [90.1, 93.9]	94.9% [86.9, 98.1]	91.9% [84.6, 95.9]	92.7% [89.8, 94.9]	90.8% [87.1, 93.4]
7th	87.1% [84.9, 89.1]	89.1% [77.3, 95.1]	94.8% [88.9, 97.7]	85.0% [80.9, 88.3]	86.5% [81.5, 90.3]
8th	81.5% [78.4, 84.2]	80.4% [72.1, 86.7]	83.2% [70.6, 91.0]	84.2% [80.6, 87.3]	78.8% [71.8, 84.5]
9th	79.7% [76.2, 82.8]	77.7% [70.0, 83.9]	78.2% [66.6, 86.6]	85.7% [81.0, 89.4]	76.2% [71.8, 80.1]
10th	70.5% [66.6, 74.1]	75.4% [64.2, 83.9]	66.3% [52.3, 77.9]	77.1% [72.1, 81.4]	64.6% [61.1, 67.9]
11th	66.9% [63.1, 70.5]	72.1% [64.8, 78.3]	71.5% [57.9, 82.1]	74.5% [66.4, 81.3]	58.7% [54.4, 62.9]
12th	64.5% [61.3, 67.6]	68.4% [60.1, 75.6]	72.2% [58.6, 82.6]	71.5% [66.4, 76.1]	56.2% [51.3, 60.9]
Total	79.3% [77.9, 80.6]	80.6% [77.5, 83.3]	81.0% [76.4, 84.9]	83.2% [81.5, 84.9]	74.8% [72.6, 76.9]

Note: Brackets contain the 95 percent confidence intervals

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Chapter 4: Descriptives at the Teacher Level

Introduction

This chapter reviews teacher-level data that speaks to their experience with tobacco use, their motivation to participate in tobacco use prevention education, and some detailed information about the specific content and strategies that characterize their personal involvement in tobacco use prevention education.

CA teachers, as a group, report low rates of current smoking. Eight hundred and twenty-eight teachers responded to the survey (97 percent response rate) in the high schools and middle schools in which the surveys were conducted. Of the 828, only 50 reported smoking any cigarettes in the last month (5.2 percent). According to current definitions of adult "current smoking," (current smokers include persons who reported smoking at least 100 cigarettes in their lives and who reported at the time of the survey that they currently smoked every day or on some days) the prevalence rate of current smoking among teachers was 5.4 percent.

The rate of "daily smoking" for teachers was lower still—a rate of 2.6 percent compared to a daily rate of 12.5 percent that prevailed among California adults in 2001 (*Behavioral Risk Factors Survey/CA Adult Tobacco Survey,* 2001) and even lower than the 23.3 percent rate characterizing adults nationally in 2000 (CDC, 2002). To be fair, the appropriate comparison group should be adults with at least one college degree, because teachers all have bachelor's degrees and many have masters or doctorates as well. California adults with at least a bachelor's degree had a daily smoking prevalence rate of 5.9 percent in 2001, close to the 5.4 percent rate reported by teachers in 2001–02. In short, teachers have smoking rates that are very low.

Teachers' expressed support for their school's no-tobacco use policy was generally very high. Ninety-three percent expressed the strongest support possible. Not surprisingly, support for their school's no-tobacco use policy dipped for the few teachers who smoked, but 53.8 percent of the "everyday" smokers still expressed the strongest support possible, and 80.9 percent of the "occasional" smokers (smoking

some days) expressed the strongest support possible. This overall high level of support not withstanding, the significant relationship between teacher smoking status and their support for their school's no-tobacco use policy ($\chi^2 = 70.85$, $p < .0001$) suggests that teacher support for no-tobacco use policies will increase if those teachers still smoking could be induced to give up their habit. Teachers' support for their school's no-tobacco use policy increased with teacher tenure ($F[3, 159] = 7.97$, $p < .001$).

Teachers' expressed support for their school's no-tobacco use policy did not automatically translate into judgments that time spent on tobacco use prevention education was a valuable use of students' time. Seventy-one percent (71.0 percent) rated it "very valuable" or "valuable." The remaining 29.0 percent expressed varying levels of doubt about the value of students' time spent on tobacco use prevention education. This doubt was colored by the nature of the curriculum taught by each teacher. Not surprisingly, the teachers who taught health education were more likely to endorse using student time to teach tobacco use prevention (81.9 percent) than were other teachers (69.6 percent). Science teachers were also more likely than average to endorse the value of spending students' time on tobacco use prevention education. Interestingly, even though not a single one of the 59 physical education teachers reported current smoking, they were only marginally more likely than other teachers to endorse tobacco use prevention education as a valuable use of student time (75.0 percent vs. 71.7 percent). Social science teachers, by contrast, were the least likely teachers to endorse tobacco use prevention education as a valuable use of instructional time (63.3 percent) compared to other teachers (74.5 percent).

When asked whether they were infusing their respective subjects with lessons on tobacco use prevention education, 42.9 percent said that they were. Middle school teachers were slightly more likely (46.8 percent) than high school teachers (42 percent) to report infusing their curriculum with tobacco use prevention lessons, although these differences were not statistically significant. These rates are marginally lower than national rates recently reported by NCI (Crossett et al., cited in NCI, 2001). The national prevalence statistics were 55 percent of middle school teachers and 47 percent of high school teachers who reported infusing their subject matter with tobacco use prevention lessons.

Those teachers reporting the highest level of perceived value in spending students' time on tobacco use prevention education were nearly twice as likely as those teachers expressing some degree of skepticism to report having infused their curriculum with tobacco use prevention education within the last year (Odds Ratio = 2.31, $p < 0.01$). It appears then that one barrier to raising the proportion of classes in which tobacco use prevention lessons are taught is teachers' perception that TUPE lacks educational value compared to other instruction. Overall, 29 percent of teachers (especially social science [39.5 percent] and English [39.9 percent] teachers) reported some doubt that teaching tobacco use prevention lessons was a valuable use of students' time.

Students' lack of interest in tobacco use prevention education could adversely affect teachers' inclination to infuse their subject matter with tobacco use prevention lessons. Fortunately, most teachers (89.5 percent) reported that their students were "moderately" or "very" interested in the tobacco use prevention lessons that they had taught in the last year. These perceptions, of course, were related to teachers' judgments about the value of tobacco use prevention lessons to students' time (χ^2 [4] = 33.0, $p < 0.01$). Teachers who reported that

students were "moderately" or "very" interested in tobacco use prevention lessons were approximately seven times more likely to report that tobacco use prevention lessons were a valuable way to use students' time (O.R. = 6.8, $p < 0.01$). It would seem critical, therefore, that the tobacco use prevention lessons that teachers use be creative and designed to capture students' interest.

Among all teachers surveyed, 39.3 percent reported having taught some kind of tobacco use prevention lesson during the last school year. Of teachers that would be expected to teach tobacco lessons, (physical education and health teachers in high school and physical education, health, and science teachers in middle school), 72.8 percent reported having taught a tobacco use prevention lesson during the last school year.

A potential influence on teachers' inclination to teach tobacco use prevention was the degree to which they said that school and district administrators expected teachers to teach tobacco use prevention lessons. The percentage of teachers reporting that district administrators expected them to teach tobacco use prevention lessons was 36.0 percent. Teachers who reported that district administrators expected them to teach tobacco use prevention lessons were many times more likely to report having taught a tobacco use prevention lesson in the previous year than teachers who reported that district administrators did not have this expectation (O.R. = 17.2, $p < 0.01$). Teachers who reported that district administrators expected them to teach tobacco use prevention lessons were approximately six times more likely (O.R. = 6.0, $p < 0.01$) to report having infused their curriculum with tobacco use prevention lessons than other teachers.

The percentage of teachers reporting that school site administrators expected them to include tobacco use prevention lessons in their subjects was 31.4 percent—more than two-thirds do not. Teachers who reported that their school administrator expected them to teach tobacco use prevention lessons were many times more likely to report having taught a tobacco use prevention lesson in the previous year than teachers who reported that their school site administrator did not have this expectation (O.R. = 22.4, $p < 0.01$). For the more focused question about infusing tobacco use prevention lessons in one's subject matter, teachers who reported that their school site administrator expected them to teach tobacco use prevention lessons were five-fold more likely (O.R. = 5.4, $p < 0.01$) to report having infused their curriculum with tobacco use prevention lessons than teachers who reported that their school site administrator did not expect them to teach tobacco use prevention.

The teachers who had taught tobacco use prevention lessons in the last school year responded to four-point Likert-scale questions about the level of administrator support for tobacco use prevention education that they had experienced. These perceived administrator support questions were separate from the questions about what the teachers thought the administrators expected teachers to teach. Choices for the support questions ranged from "a great deal [of support]" to "not at all." In general, the teachers reported a moderately high level of administrator support. Fifty-four percent of teachers reported getting either moderate or a great deal of support for tobacco use prevention education from district administrators. Fifty-eight percent reported receiving moderate or a great deal of support from school site administrators. As discussed in Chapter 1, district administrators were district-level staff responsible for TUPE, and school site administrators were either the principal, assistant principal, or vice principal at the school.

A common standard for evaluating school-based tobacco use prevention education programs is the set of guidelines published by CDC (1994). One simple and direct way of assessing teachers' preparedness to follow these guidelines is to ask if they have ever received a copy of CDC guidelines. Only 8.9 percent of the teachers surveyed reported ever receiving a copy of these guidelines. Among health, physical education, and middle school science teachers, 16.0 percent reported receiving a copy of CDC guidelines. Of those who reported receiving any tobacco use prevention in-service training, the proportion saying that they had received a copy of CDC guidelines was higher at 36.6 percent but still low. During the few site visits conducted, it became clear that while teachers may not have received a written copy of CDC guidelines, the information they received from the district contained most of the elements of the guidelines. It appears that if schools are to achieve the goals set forth in CDC guidelines, more in-service trainings that specifically identify the guidelines and link them to the CDE-developed Getting Results document may help. At a minimum they would increase awareness among teachers about the national tobacco use prevention goals.

Curriculum Content

Several questions on the teacher survey asked about the content of the tobacco use prevention curriculum used in their lessons [for those 302 teachers who taught tobacco use prevention lessons during the previous (2001–02) school year]. Table 4.1 shows in rank-order of popularity the topics that were included in their lessons.

Table 4.1 Major Topics Discussed in Tobacco Use Prevention Lessons, Rank-ordered by Popularity

Curriculum topic:	2001–02 Prevalence
Effects of tobacco on physical health	80.4% [73.9–85.6]
Reasons why young people use tobacco	66.3% [60.1–72.0]
Effects of secondhand smoke	65.0% [58.5–71.0]
Influence of tobacco advertising and marketing	65.0% [58.3–71.3]
Social influences that promote tobacco use	56.3% [49.0-63.4]
Social consequences of tobacco use	52.4% [45.7–58.9]
Statistics on prevalence of youth tobacco use	49.6% [41.7–57.5]
Behavioral skills for resisting tobacco offers	42.7% [35.4–50.4]
General personal and social skills (including goal-setting, problem-solving, communication skills, assertiveness)	38.9% [31.3–47.1]
How to quit smoking and rates of relapse	29.3% [22.2–37.7]
Discussion about other topics, esp. smokeless tobacco use	24.5% [18.9–31.0]
Cigar use: prevalence and dangers	19.2% [13.5–26.6]

Note: Brackets contain the 95 percent confidence intervals.

The most popular topic for teachers to discuss in their tobacco use prevention lessons was "Effects of tobacco on physical health." The popularity of this topic stretches back to the earliest days of the first concerted attempts to get young people not to use tobacco (Thompson, 1978). Its continuing preeminent popularity seems inconsistent with the paucity of scientific evidence for its utility in dissuading young people from beginning the tobacco use habit (USDHHS, 1994). By contrast, teaching refusal skills and correcting high estimates of peer smoking rates have been found to be consistently helpful in reducing youth smoking (USDHHS, 1994) and yet are discussed only half as often as the effects of tobacco on physical health. The fourth most popular topic was the influence of tobacco advertising and marketing, a topic that teachers enjoy in part because exposure to advertising is so ubiquitous in the U.S., and yet its influence on behavior is seldom discussed in traditional courses. Effects of secondhand smoke is another popular topic, in part because most teachers are not smokers themselves and so can relate more to the documented health effects of secondhand exposure to tobacco smoke. The twelve topics that were explicitly asked about were relatively exhaustive, because only 12 percent of respondents felt compelled to write in additional topics. Twenty-two percent of the write-in topics concerned smokeless tobacco use; another 12 percent of the write-in topics concerned the economics of the tobacco industry. The remaining write-in topics included a disparate laundry list, including the ethics of marketing a product that kills, the addiction process, the history of tobacco, and the chemical composition of tobacco.

Teachers who taught tobacco use prevention lessons in the previous school year (2000–2001) were asked if they used the following modalities: classroom discussion, small group activities, lectures, role-playing, and student worksheets. Far and away the most popular modality was classroom discussion, with less than 1.8 percent of teachers reporting "not at all" in use of this modality; 57.6 percent said "a great deal," and another 33.9 percent said "somewhat." Lectures were the next most popular modality, with only 7.5 percent saying that they used lectures "not at all" in conducting their tobacco use prevention lessons; 26 percent said that they used lectures "a great deal." Surprisingly, relatively little use was made of role-playing, which is virtually de rigueur in teaching refusal skills and social skills. More than half (57.7 percent) said they use role-playing "not at all" when they teach tobacco use prevention; only 6.6 percent said that they used role-playing "a great deal." Small group activities and student worksheets were only a little more popular than role-playing. More than 40 percent of teachers said that they used small group activities and student worksheets "not at all." Future in-service training should feature use of non-traditional modalities for teaching tobacco use prevention education.

In-service Training on Tobacco Use Prevention Education

Among health, physical education, and middle school science teachers—teachers who are often given the responsibility to teach tobacco use prevention lessons—one-third have received in-service training on tobacco use prevention education. Of those who received in-service training on tobacco use prevention education, 69.5 percent reported receiving more than one full day of in-service training, 21.2 percent received exactly one full day, and 9.3 percent received less than one day of in-service training.

Although teachers who did not receive in-service training on tobacco use prevention education might nonetheless feel prepared to teach tobacco use prevention lessons, the survey data suggested that this was rare. Generally it was only those who had received training who reported feeling well prepared. Of health, physical education, and middle school science

teachers who reported no in-service training, only 16.5 percent felt they were prepared a great deal. By contrast, a much higher proportion of teachers who reported having some in-service training believed they were prepared a great deal (50.2 percent). Those who reported having some in-service training were three times more likely to report feeling "a great deal" prepared than teachers who reported having received no training ($p < 0.01$). These results suggest that higher rates of in-service training would help to reduce the proportion of teachers reporting feeling ill-prepared to teach tobacco use prevention education.

Barriers to Teaching Tobacco Use Prevention

All respondents were asked to review a list of potential barriers to their teaching of tobacco use prevention lessons and to mark those that they thought applied to them. They were also asked to describe additional barriers, as appropriate. Table 4.2 shows the frequency with which health, physical education, and middle school science teachers endorsed each of nine potential barriers. Almost 30 percent of these teachers reported that they encountered none of the barriers asked about. The most often cited barrier (36.0 percent) to teaching tobacco use prevention lessons was lack of time. The second most common barrier (22.7 percent) cited was that tobacco use prevention was not seen to be a part of the teacher's curriculum. Most of the other choices concerned the priority that the district or the school placed on tobacco use prevention.

Table 4.2 List of Major Barriers, Rank-ordered by Frequency of Mention

	Prevalence
Lack of time	36.0% [25.4, 48.2]
None of these barriers	29.9% [18.2, 45.0]
Prevention is not part of my curriculum	22.7% [15.8, 31.5]
Lack of adequate instructional materials	19.8% [12.9, 29.2]
I haven't received adequate training	11.5% [6.6, 19.3]
Prevention isn't part of outcomes assessed	11.3% [6.1, 20.2]
Other barriers	8.0% [3.9, 15.7]
Prevention is not mandated in my district	7.2% [3.3, 15.0]
District has not made it a high priority	4.9% [2.9, 8.3]
School has not made it a high priority	3.6% [1.9, 6.7]

Note: Brackets contain the 95 percent confidence intervals

Resources for Tobacco Control

The effectiveness of tobacco use prevention efforts by teachers is affected by the community and available school tobacco control resources. In general, only a minority of teachers agreed that key school tobacco control resources were available. For instance, only 29.1 percent said, "Yes," to the question: "Have you ever received information from your school about where school staff could go if they wanted help in quitting their tobacco use?" Fortunately, twice the proportion of teachers (63.4 percent) could say yes to the question about school resources to help students who wanted help to quit their smoking habit. This overall proportion masks a big difference between middle and high schools, however. Only 19.5 percent of middle school teachers said "yes," compared to 75.1 percent of high school teachers. Potentially offsetting the variable tobacco control resources on campus was a nearly unanimous agreement (98.2 percent) that more general campus resources were available, such as school counselors and other special programs that could help students with personal problems such as a drug abuse problem. In this context it is worth noting that teachers' consensus (94.6 percent) was that there were cessation clinics or programs in the community for youth who wanted to quit using tobacco.

Most Important Risk Factors for Youth Smoking

Respondents were asked to check the three most important risk factors for youth smoking out of nine listed, or to write in their own suggestions. Table 4.3 shows that there is overwhelming consensus (90.4 percent) that a serious risk to youth of becoming smokers is if their friends smoke. Teachers also recognize the influence that smoking parents have on their children. The most surprising observation, however, was that twice as many teachers (28.4 percent) felt that pro-smoking messages in the media constituted a risk factor as teachers who felt that lack of exposure to tobacco use prevention education was a risk factor (14.9 percent).

Table 4.3 Major Risk Factors for Youth Tobacco Use

	Prevalence
Friends' use of tobacco	90.4% [86.1–93.4]
Family members' use of tobacco	77.4% [72.3–81.8]
Availability of tobacco	46.8% [42.3–51.3]
Pro-smoking media messages	28.4% [24.9–32.3]
Use of other drugs	15.1% [12.1–18.8]
Insufficient tobacco use prevention education	14.9% [11.8–18.7]
Ethnic/cultural background	8.1% [5.9–11.1]
Performance in school	5.3% [3.3–8.1]
Other risk factors	3.8% [2.4–6.1]
Family income	2.6% [1.8–4.0]

Note: Brackets contain the 95 percent confidence intervals

Conclusion

Schools have long been the targets of public health advocates for preventing tobacco use onset among children, and for good reason. About 90 percent of California school-age children attend public schools. Teachers are highly respected by children and are the most commonly observed adult models for most children other than their adult family members. Most California teachers (71.0 percent) appear to be supportive of tobacco use prevention education, but only 50.2 percent of those who have received some training feel well prepared to teach it. Very few teachers are current smokers. At a minimum, children will see little evidence that smoking is popular among their teachers, thereby undermining a message implicit in ubiquitous tobacco promotion efforts—namely, that cigarette smoking is normative behavior among adults. Teachers can do more than just model abstinence, but they will need more exposure to training opportunities, more support from district personnel, and greater clarity from the state about TUPE being a priority. Probably the most obvious and helpful resource would be the provision of more comprehensive and more frequent in-service training in how to teach tobacco use prevention education. Chapters 7 and 8 describe some of the school and district level influences that modulate teachers' impact on their students' tobacco use behaviors and attitudes.

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Chapter 5:
High School TUPE Competitive Grant Funding, Program Exposure, and Student Tobacco Use

Introduction

Since 1994, CDE has allocated school-based tobacco use prevention education funds to school districts using two different mechanisms—an entitlement program that allocates funds for tobacco use prevention for programs in grades four through eight, and a competitive grant program that allocates funds to selected districts for grades nine through 12. CDE also offers competitive grants to middle schools to replicate proven effective tobacco use prevention education programs. This chapter focuses on the high school competitive grant program. It examines differences in program implementation, program exposure, student tobacco use, and factors associated with student tobacco use (precursors) across high schools that have been awarded competitive TUPE grants and those that have not been awarded such grants.

It is important to note that it is not just schools with competitive TUPE grants that provide tobacco use prevention services to high school students. Most districts in the state receive funding from the Federal Safe and Drug Free Schools Program (Title IV), which requires that schools provide tobacco use prevention services to all students. In addition, lessons about tobacco use are a common component of most health education curricula. Although many schools in California provide tobacco use prevention activities without using TUPE funds, the competitive TUPE program provides the bulk of funding for prevention and intervention services to high schools in the State.

It is also possible that high schools with competitive TUPE grants differ from those without such grants in ways that are not directly related to tobacco use prevention education activities. Table 5.1 shows demographic characteristics of grantee and non-grantee schools based on information from CBEDS. Overall, grantee and non-grantee schools are roughly similar in terms of student demographics—student enrollment;

the proportion of Asian, African American, and Hispanic/Latino(a) students; the proportion of students who receive Cal-Works support or subsidized meals; and the educational level of parents are similar in grantee and non-grantee schools. Two differences are apparent however. Non-grantee schools have higher percentage of Caucasian students than grantee schools (49.7 percent vs. 41.5 percent), and score higher on the Academic Performance Index. Because Caucasian students generally exhibit higher levels of tobacco use than non-Caucasian students—this demographic difference may act as a confounder, making it appear that prevention education activities are responsible for the lower levels of student tobacco use in grantee schools when in fact those differences are due to differences in demographics.

Table 5.1 Demographic Characteristics of Non-grantee and Grantee Schools (S.D.)

	High School Grant Status		
	Non-grantee	Grantee	p-value
Student Enrollment	2,211 (731)	2,210 (785)	0.99
Ethnic Composition			
African American (Percent)	6.6 (10.9)	6.6 (6.1)	0.99
Hispanic/Latino(a) (Percent)	31.1 (22.1)	34.3 (25.1)	0.38
Caucasian, non-Hispanic/Latino(a) (percent)	49.7 (25.4)	41.5 (24.9)	0.04
Cal-Works Recipients (Percent)	6.7 (7.6)	7.8 (8.7)	0.39
Subsidized Meals (Percent)	25.8 (21.4)	27.5 (20.0)	0.59
Academic Performance Index	666.2 (97.6)	636.1 (89.5)	0.04
Parental Education (1=less than high school, 5=graduate degree)	3.1 (0.7)	3.0 (0.6)	0.13
Number of schools	66	134	

Note: Parentheses contain standard deviations.

Program Implementation in TUPE Grantee and Non-grantee High Schools

Table 5.2 shows teacher, TUPE/health school coordinator, school administrator, and district TUPE/health administrator reports of various measures of program implementation by TUPE grantee status. The implementation measures are organized according to four areas: (1) enforcement of No-use tobacco policies and consequences of violation of No-use policies, (2) TUPE instruction, (3) school-wide anti-tobacco activities, and (4) tobacco cessation activities. We describe grantee and non-grantee differences in implementation across these areas in turn.

Table 5.2 Teacher, Principal, and Coordinator Reports of Prevention/Intervention Services by High School TUPE Grantee Status

	Teacher		Coordinator		Principal	
	Non-grantee	Grantee	Non-grantee	Grantee	Non-grantee	Grantee
No-use Tobacco Policy						
Enforcement (A great deal)	67.8 [59.0, 75.4]	70.5 [63.8, 76.3]	78.5 [61.3, 89.4]	70.8 [58.2, 80.8]	- -	- -
Consequences of Violation						
Suspension/ Expulsion	53.5 [44.8, 61.9]	48.5 [43.0, 54.0]	66.1 [49.5, 79.5]	36.6** [27.1, 47.1]	52.8 [36.0, 68.9]	53.2 [40.0, 66.0]
Referral to cessation services	12.9 [8.9, 18.3]	35.5** [29.5, 41.9]	31.5 [20.9, 44.6]	82.0** [72.2, 88.9]	53.8 [39.1, 67.9]	79.1* [63.6, 89.2]
Tobacco Instruction						
Lessons	85.7 [61.5, 95.7]	73.7 [52.0, 87.9]	70.2 [53.6, 82.7]	85.9* [78.8, 90.9]	- -	- -
Hours taught	4.8 [2.8, 6.7]	14.5 [0.0, 31.1]	12.2 [-0.1, 24.5]	15.7 [11.3, 20.2]	- -	- -
Published curriculum	35.8 [24.4, 49.1]	38.6 [28.4, 49.9]	57.6 [36.6, 76.2]	78.5 [60.1, 86.8]	- -	- -
Topics Covered						
Tobacco and health	89.1 [76.0, 95.5]	77.6 [68.8, 84.5]	92.7 [77.3, 98.0]	100.0 -	- -	- -
Smoking prevalence	59.1 [44.7, 72.2]	50.8 [38.8, 62.7]	85.8 [68.4, 94.4]	75.9 [67.9, 82.4]	- -	- -
Reasons why people smoke	77.4 [62.1, 87.7]	64.2 [54.8, 72.7]	96.3 [85.7, 99.1]	84.4 [67.5, 93.4]	- -	- -
Secondhand smoke	56.0 [42.2, 69.0]	68.3 [58.0, 77.1]	93.4 [80.3, 98.0]	89.5 [77.1, 95.6]	- -	- -
Social influences	64.1 [51.3, 75.2]	54.5 [41.1, 67.3]	79.1 [60.2, 90.5]	79.5 [61.6, 90.4]	- -	- -
Behavioral skills	46.5 [34.7, 58.8]	39.4 [27.7, 52.3]	54.2 [34.7, 72.4]	74.8 [57.7, 86.6]	- -	- -
Tobacco cessation	30.0 [17.6, 46.3]	36.2 [27.5, 45.9]	44.4 [29.2, 60.7]	75.7** [63.8, 84.6]	- -	- -
In-service training	14.0 [6.7, 27.0]	35.8** [27.8, 44.7]	45.3 [27.7, 64.1]	84.7** [76.9, 90.2]	- -	- -
Preparedness (A great deal)	16.2 [8.3, 29.1]	32.2* [24.0, 41.6]	39.7 [23.8, 58.0]	69.0** [58.3, 78.1]	- -	- -

(table continued on p. 5-4)

Notes:
Brackets contain the 95 percent confidence intervals
* $0.01 < p < 0.05$
** $p < 0.01$

Table 5.2 (continued)

	Teacher		Coordinator		Principal	
	Non-grantee	Grantee	Non-grantee	Grantee	Non-grantee	Grantee
School-Wide Anti-tobacco Activities						
Smoke Out	27.0 [19.7, 35.8]	60.6** [55.4, 65.6]	43.4 [29.1, 59.0]	78.9** [70.8, 85.2]	50.4 [35.6, 65.1]	73.6* [59.5, 84.0]
Assembly	5.8 [3.2, 10.4]	25.5** [18.6, 33.8]	9.6 [4.2, 20.7]	49.8** [36.4, 63.3]	7.7 [3.1, 17.8]	41.9** [32.4, 52.0]
Contest	10.1 [4.8, 19.9]	27.7** [18.5, 39.3]	27.8 [15.6, 44.3]	57.1** [45.9, 67.5]	31.8 [17.5, 50.7]	48.3 [36.0, 60.9]
Anti-tobacco club	3.5 [1.5, 8.1]	16.7** [11.2, 24.0]	10.0 [3.2, 27.4]	35.3** [26.2, 45.6]	7.1 [2.5, 18.8]	16.0 [9.1, 26.6]
Local health department	4.4 [1.6, 11.2]	13.3* [8.6, 19.9]	19.5 [9.1, 36.9]	28.1 [16.8, 43.1]	22.8 [10.2, 43.3]	26.5 [17.0, 38.8]
Anti-tobacco posters	24.0 [18.5, 30.6]	46.0** [39.5, 52.6]	54.7 [39.6, 69.0]	81.0** [73.7, 86.6]	61.6 [45.3, 75.6]	76.9* [67.7, 84.1]
Red Ribbon Week	61.9 [51.6, 71.3]	60.1 [51.8, 68.0]	76.7 [60.3, 87.7]	87.2 [77.4, 93.2]	90.7 [80.6, 95.8]	83.3 [68.0, 92.1]
Number of activities	1.3 [1.1, 1.6]	2.5** [2.2, 2.8]	2.5 [1.9, 3.0]	4.5** [4.2, 4.9]	2.7 [2.3, 3.2]	3.8** [3.3, 4.3]
Cessation Activities						
Cessation programs	21.1 [13.9, 30.7]	55.1** [48.1, 61.8]	34.5 [20.9, 51.2]	88.4** [80.4, 93.5]	44.8 [29.2, 61.4]	82.7** [68.8, 91.2]
Referral to cessation	5.0 [1.9, 12.6]	14.6* [9.1, 22.5]	55.2 [32.2, 76.2]	80.7 [64.6, 90.6]	- -	- -

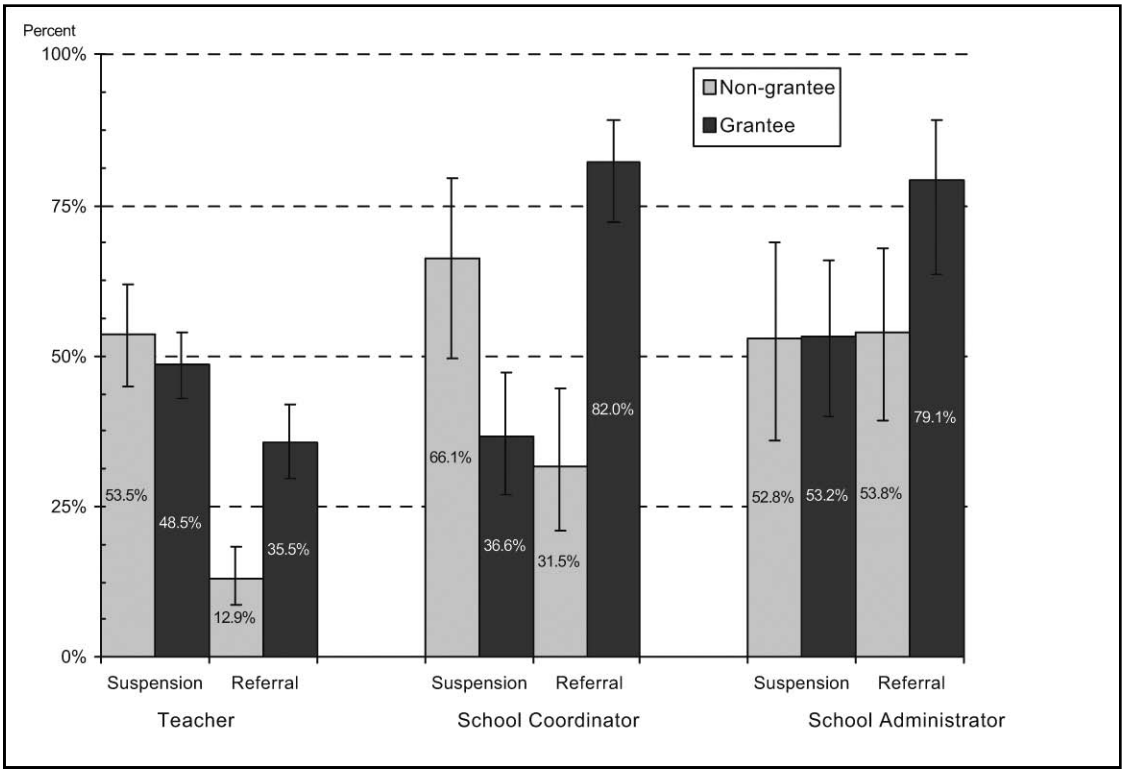
Notes: Brackets contain the 95 percent confidence intervals
* $0.01 < p < 0.05$
** $p < 0.01$

Enforcement of No-use Policy and Consequences of Violation

There were no significant differences between grantee and non-grantee schools in reports of the level of enforcement of student violations of No-use policies. The majority of respondents reported that student No-use policies were enforced "a great deal," with the highest levels of enforcement reported by district coordinators (see Chapter 6)—but no differences were apparent between grantee and non-grantee schools.

According to school TUPE/health coordinators, grantee schools are less likely to suspend or expel students for violating the no-smoking policy than non-grantee schools. Approximately 36.6 percent of school coordinators in grantee schools reported that students who are caught smoking cigarettes at school are supposed to be suspended or expelled, compared to 66.1 percent of coordinators in non-grantee schools. This difference however, was not evident based on the reports of teachers, site administrators, or district coordinators. The evidence is more consistent for ameliorative responses to students caught smoking. Teachers, school TUPE/health coordinators, and school administrators in grantee schools are more likely to report that the school policy for students caught smoking on school property is referral to a special class or tobacco cessation program than their counterparts in non-grantee schools. These grantee/non-grantee differences, which are displayed in Figure 5.1, are fairly pronounced. Approximately 35.5 percent of teachers, 82.0 percent of school coordinators, and 79.1 percent of school administrators in grantee schools report that students caught smoking are referred to a special class or tobacco cessation program, compared to only 12.9 percent, 31.5 percent, and 53.8 percent, respectively, in non-grantee schools.

Figure 5.1 Consequences of Violation of No Tobacco Use Policy by Grantee Status

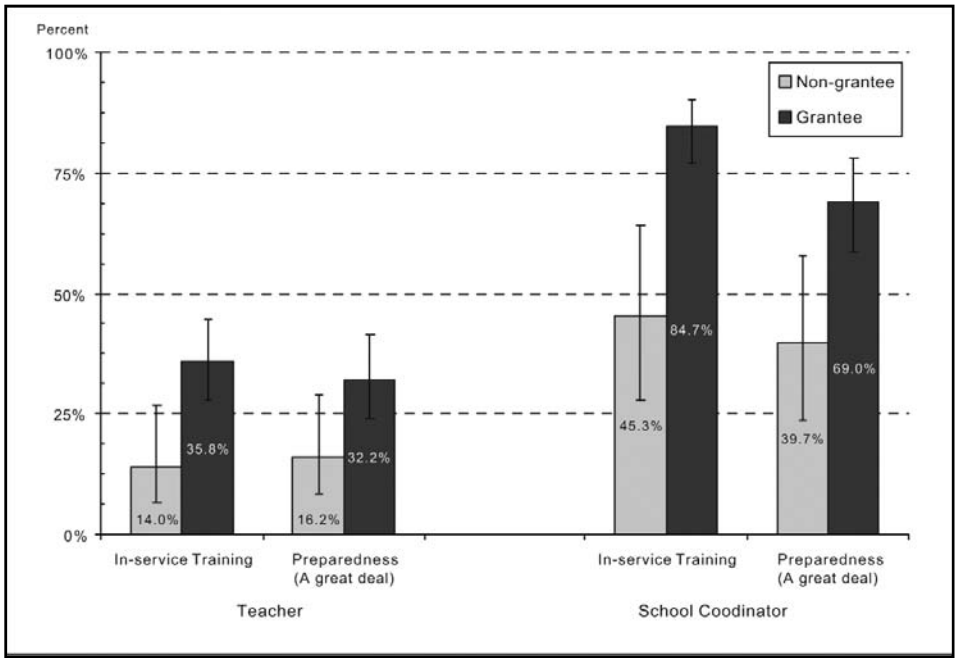


Tobacco Use Prevention Instruction

Few differences were apparent between grantee and non-grantee high schools in teacher reports of tobacco use prevention instruction provided to students. Teacher reports pertaining to tobacco use prevention instruction come from health and physical education teachers—teachers of other subjects are excluded from the analyses because very few of them would be expected to teach tobacco related lessons. Although proportionately more teachers reported providing tobacco use prevention lessons in non-grantee schools (85.7 percent) than in grantee schools (73.7 percent), this difference was not statistically significant. On average, health/physical education teachers provided about 9.5 more hours of tobacco use prevention instruction in grantee schools than in non-grantee schools (14.5 vs. 4.8), but again, this difference was not statistically significant. Teachers in grantee and non-grantee schools were equally likely to report using a published curriculum and to cover various topics in the lessons they taught; however, a majority did not use published curricula. For the most part, school coordinator reports of tobacco related instruction also did not differ by grantee status—although coordinators in grantee schools were more likely to report that they provided tobacco use prevention related lessons (85.9 percent vs. 70.2 percent) and were substantially more likely to cover tobacco cessation in the classes they taught (75.7 percent vs. 44.4 percent).

With regards to tobacco use prevention instruction, the principal difference between staff in grantee and non-grantee schools is in training and preparedness. As shown in Figure 5.2, teachers and coordinators in grantee schools are more likely to report having received in-service training on tobacco use prevention education during the five years prior to the survey. The vast majority of coordinators (84.7 percent) in grantee schools reported receiving such training. And teachers and coordinators in grantee schools reported substantially higher levels of preparedness to teach tobacco use prevention lessons than their counterparts in non-grantee schools.

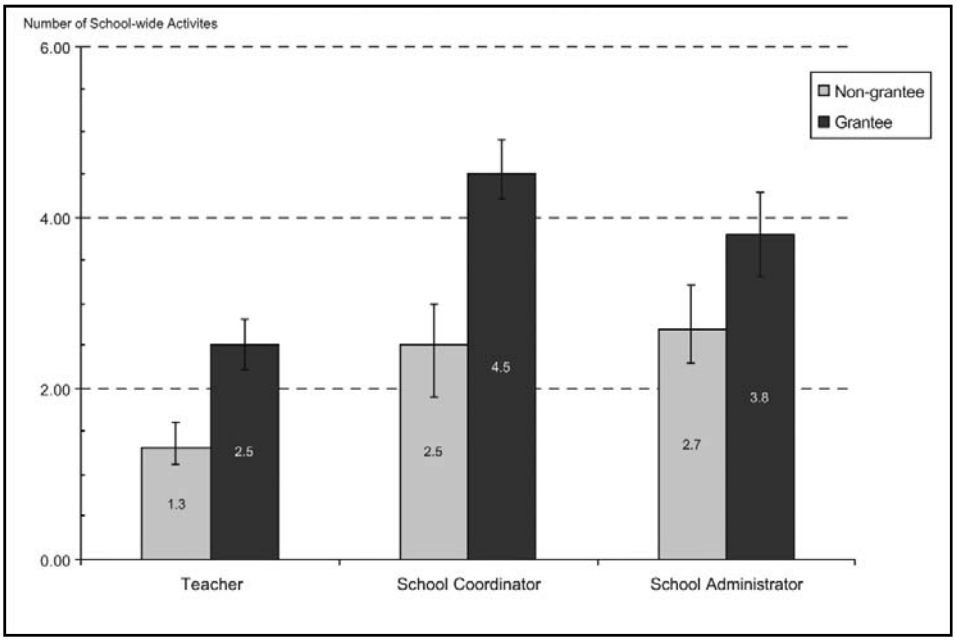
Figure 5.2 In-Service Training and Preparedness by Grantee Status



School-wide Anti-tobacco Activities

Grantee and non-grantee schools also differ markedly on reports of school-wide anti-tobacco activities. According to the adult surveys, grantee schools are more likely than non-grantee schools to sponsor a special day where students and staff are encouraged to refrain from smoking, hold an anti-tobacco assembly, sponsor an anti-tobacco club, and post anti-tobacco posters. As shown in Figure 5.3, grantee schools provide between one and two more school-wide tobacco use prevention activities, on average, than non-grantee schools, depending on whether the report comes from teachers, school coordinators, or school administrators.

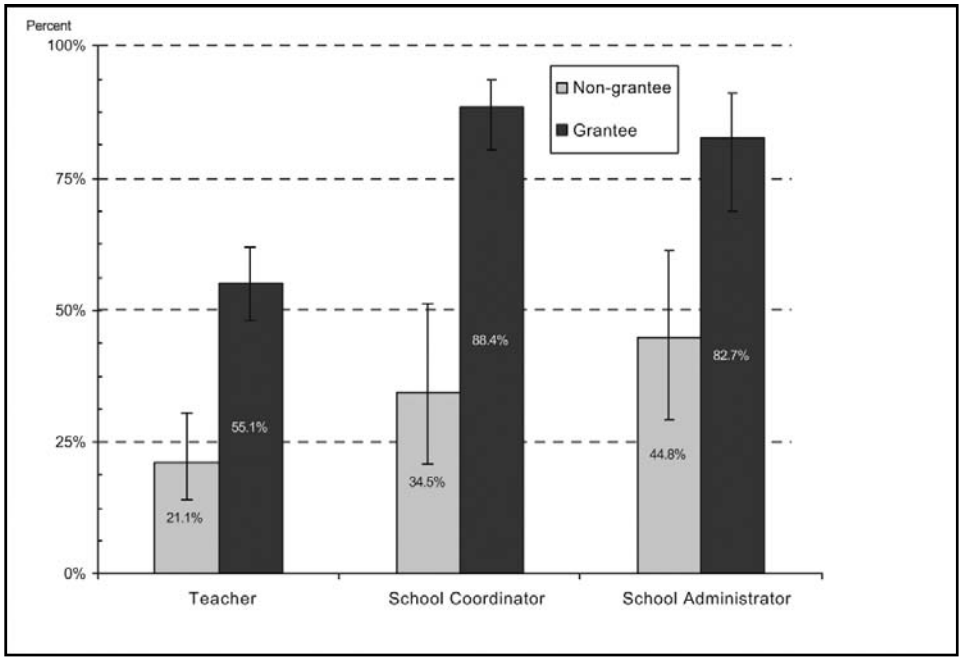
Figure 5.3 Number of School-wide Anti-tobacco Activities by Grantee Status



Cessation Activities

Figure 5.4 shows grantee/non-grantee differences in reports of the presence of cessation programs for students. The figure shows that grantee schools are about twice as likely to have a cessation program for students than non-grantee schools, regardless of who is providing the report. Overall, teachers are less likely to be aware of such services than school coordinators, school administrators, and district coordinators.

Figure 5.4 School Tobacco Cessation Program by Grantee Status



Student Exposure to Prevention/Intervention Services in TUPE Grantee and Non-grantee High Schools

Figures 5.5–5.8 and Table 5.3 show differences between high schools with TUPE competitive grants and schools without such grants on student reports of exposure to program services. The student measures of exposure to program services are described in more detail in Chapter 3. Overall, the results indicate that students in grantee schools report higher levels of exposure to program services than students in non-grantee schools. However, differences between students in grantee and non-grantee high schools are not as pronounced as might be expected, which may underscore the fact that TUPE competitive programs are not the only source of resources for school-based tobacco use prevention activities. No attempt was made in this study to quantify the impact of other resources such as materials from the American Cancer Society, American Lung Association, American Heart Association, or other federally funded prevention programs.

Figure 5.5 Access to Tobacco Related Information at School by Grantee Status

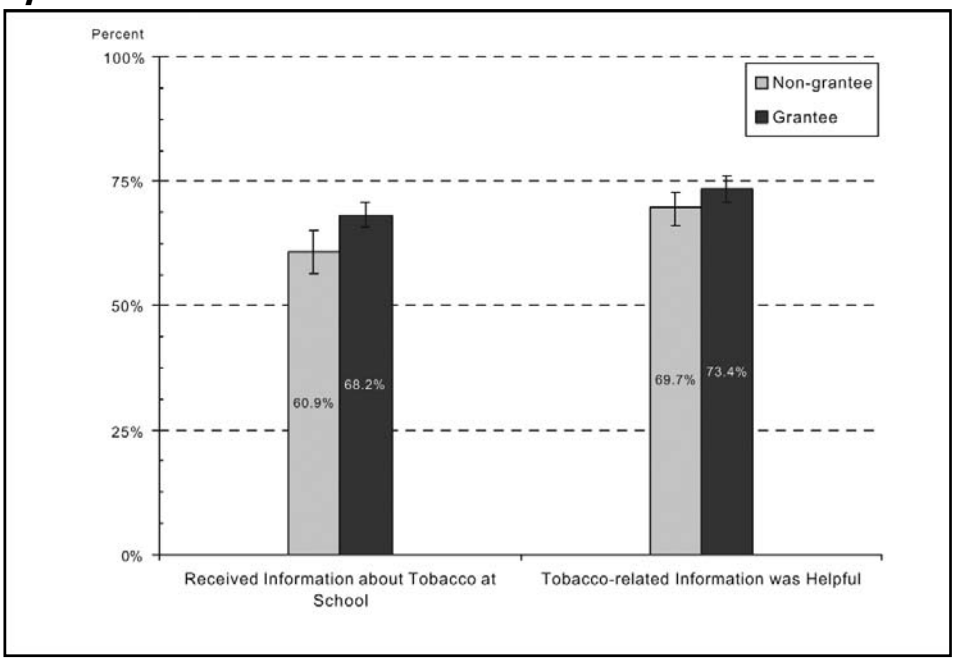


Figure 5.5 shows that 68.2 percent of students in grantee schools report that they received information about tobacco use at school during the 12 months prior to the survey. This compares to 60.9 percent of students in non-grantee schools, a statistically significant difference from the percentage of students in grantee schools. The majority of students found the tobacco related information to be helpful in making decisions about tobacco use. Among students who had received tobacco related information at school, 73.4 percent of those in grantee schools and 69.7 percent of those in non-grantee schools found the information to be helpful. Although students in grantee schools are slightly more likely than their counterparts in non-grantee schools to report that the tobacco related information was helpful, this difference across grantee and non-grantee schools was not statistically significant.

Figure 5.6 Exposure to Tobacco Lessons by Grantee Status

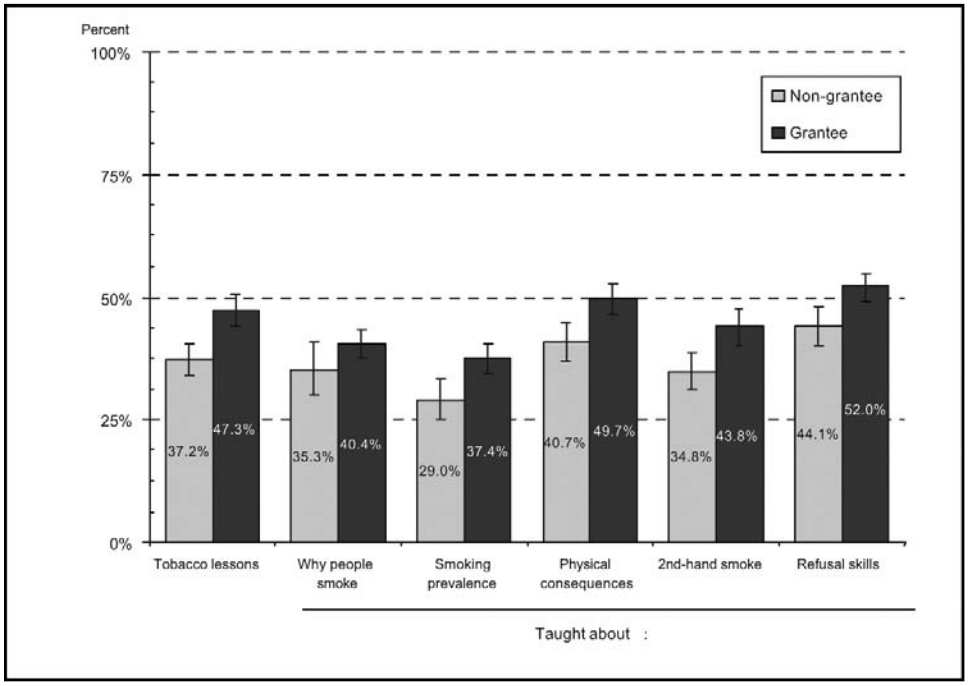


Figure 5.6 shows student exposure to tobacco lessons and tobacco related topics by TUPE grantee status. Students in grantee schools are more likely to report having had school lessons about tobacco use than students in non-grantee schools. Approximately 47 percent and 37 percent, respectively, of students in grantee and non-grantee schools report attending school lessons about tobacco use. As discussed in Chapter 3, students in grade nine are more likely than other high school students to attend courses that cover tobacco related material. This same pattern is present in

grantee and non-grantee schools. As shown in Figure 5.7, however, sophomores and seniors in grantee schools exhibit substantially higher rates of exposure to tobacco lessons than their counterparts in non-grantee schools. The higher rates of tobacco lessons among students in grades 10 and 12 in grantee schools account for the overall grantee/non-grantee difference in tobacco lessons presented in Figure 5.6. Thus, it appears that students in grantee schools are more likely to be exposed to tobacco-related curricula throughout their high school years.

Figure 5.6 also shows grantee/non-grantee differences in students' exposure to specific tobacco topics. High school students in grantee schools report significantly higher levels of exposure to specific tobacco lesson topics in all areas assessed except for the reasons people smoke ($p < 0.10$). The most common topics covered are refusal skills (52.0 percent and 44.1 percent in grantee and non-grantee schools, respectively) and the physical consequences of tobacco use (49.7 percent vs. 40.7 percent). The least common topic covered is smoking prevalence (37.4 percent vs. 29.0 percent).

As shown in Figure 5.8, students in grantee schools report higher levels of exposure to school-wide tobacco events and report that their schools provide more cessation-related services than students in non-grantee schools. Grantee/non-grantee differences in tobacco use assemblies, however, are not statistically different ($p=0.09$). The most pronounced difference between grantee and non-grantee schools is in the presence of cessation groups/classes. Almost one-quarter of students (24.3 percent) in grantee schools report that their school has special groups or classes for students who want to quit smoking, compared to 9.1 percent among students in non-grantee schools. Clearly, services for cessation classes are a critical component funded by the high school competitive TUPE program.

The results presented in Figures 5.5–5.8 show that, according to students, high schools with competitive TUPE grants deliver more tobacco use prevention services than schools without such grants. To examine whether or not schools with TUPE grants deliver services to students more effectively with greater experience, we next examined the relationship between how long the school had a competitive grant and student reports of exposure to program services. To do this, we divided schools with TUPE grants into three groups—those that had a grant less than three years (17 percent), those with grants for more then three years but less than five years (68 percent), and those

Figure 5.7 Exposure to Tobacco Lessons by Grade and Grantee Status

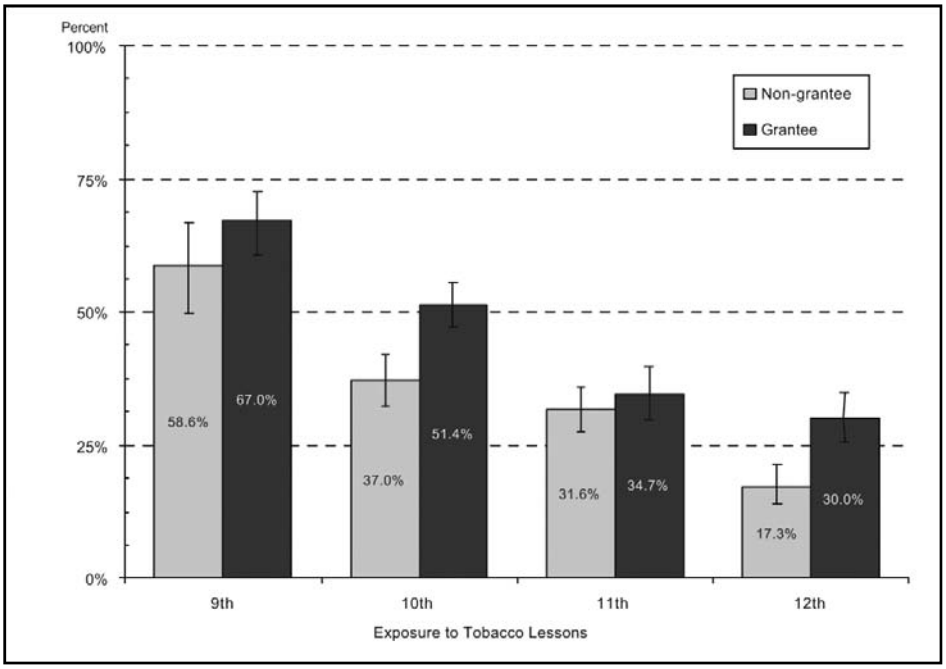
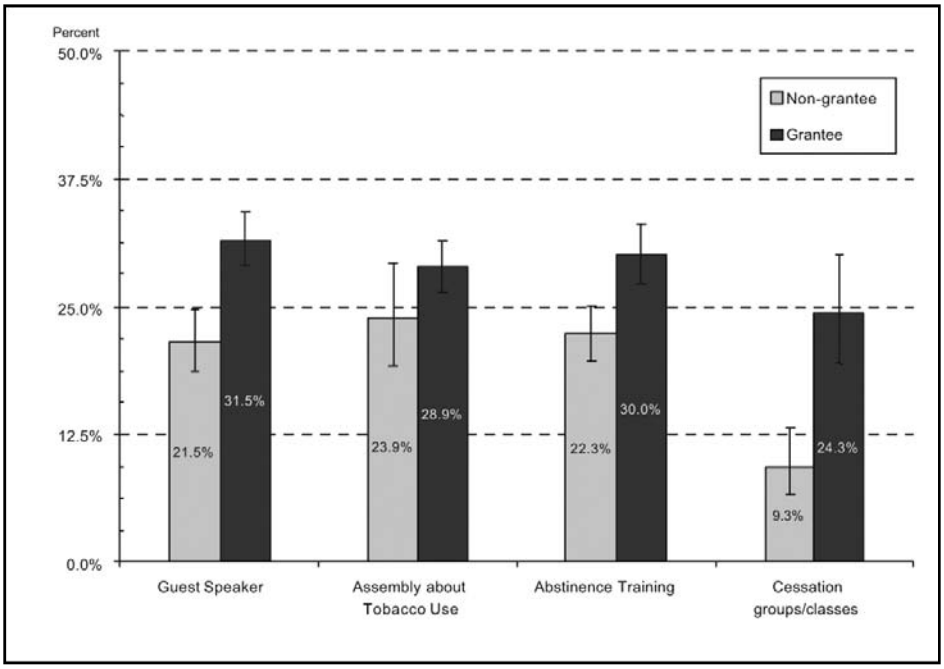


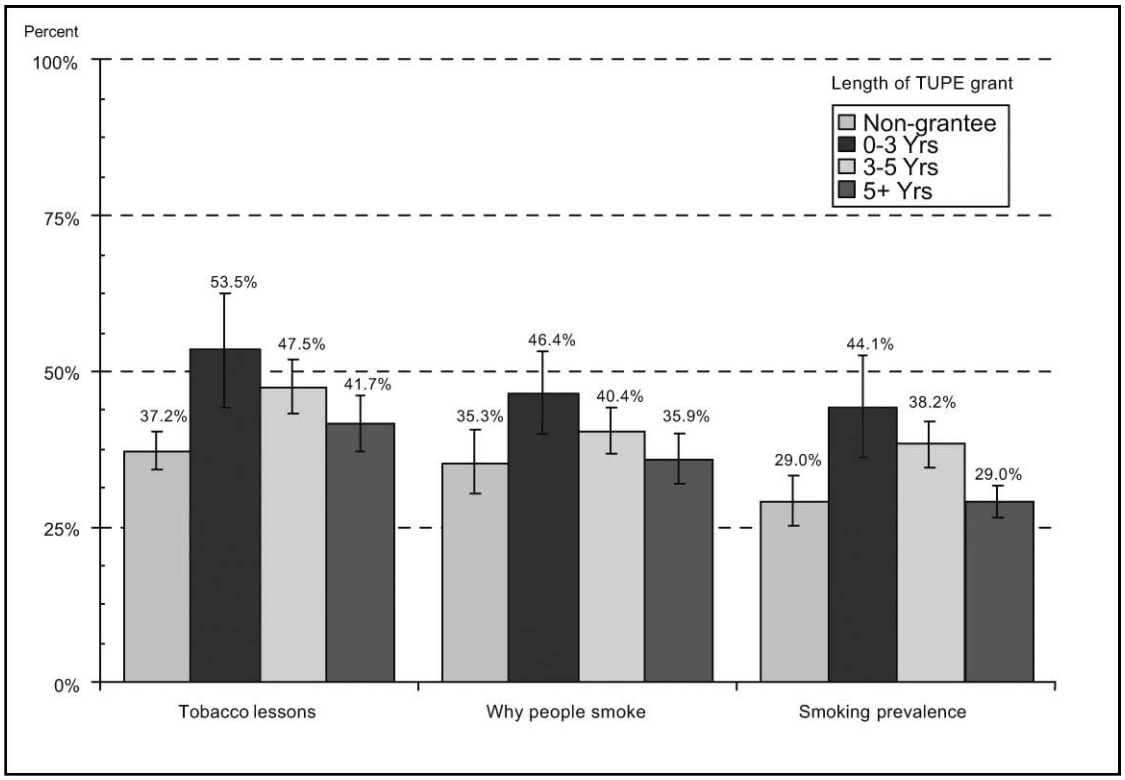
Figure 5.8 School-wide Tobacco Events and Cessation Activities by Grantee Status



which had a grant for more than five years (15 percent). We then compared student reports across these three groups of grantee schools.[6]

These comparisons are presented in Table 5.4. Overall, the results suggest that TUPE grant duration is not significantly related to most of the student measures of tobacco use prevention services. However, the length of TUPE grant is significantly related to program services; exposure to services declines as the length of the grant increases. Exposure to tobacco lessons, being taught about the reasons that people smoke, and being taught about smoking prevalence is highest among recent grantees and declines with grant duration. These differences by grant duration, which are statistically significant, are presented in Figure 5.9. These differences suggest that, at least according to student reports, recent grantees deliver tobacco lessons to more students than schools that have had grants for a long period of time. They also deliver more lessons about the causes and prevalence of smoking, or at least the lessons that they do deliver are more memorable to students.

Figure 5.9 Tobacco Lessons and Lesson Content by Duration of TUPE Grant



[6] We also compared teacher and school coordinator reports of program implementation across these three groups of grantee schools. Although the limited sample size reduces our ability to detect differences, in no case was there evidence that TUPE grant duration was related to teacher and coordinator reports of program implementation.

Student Tobacco Use and Tobacco Use Precursors in TUPE Grantee and Non-grantee High Schools

The results presented above indicate that students in grantee schools report higher levels of exposure to program services than students in non-grantee schools. According to the results in Figure 5.10 and in Table 5.5, these differences do not appear to translate into lower levels of tobacco use among students in grantee schools. Lifetime tobacco use, current cigarette use, frequent cigarette use, and lifetime regular cigarette use is no different in grantee and non-grantee schools. Although the lack of association between TUPE participation and student smoking behavior suggests that the competitive TUPE program is not effective in reducing tobacco use, this need not be the case. If grantee schools had a greater need for services prior to receiving an award, and thus higher tobacco use rates—the fact that tobacco use rates are no different in grantee and non-grantee schools at the time of the survey may suggest that grantee schools made progress in reducing tobacco use. With cross-sectional data such as these, it is impossible to make strong inferences about the effectiveness of the competitive TUPE program.

Figure 5.11 and Table 5.6 show grantee/non-grantee differences in tobacco use precursors—factors known to be associated with reductions in future tobacco use. Like the results for tobacco use, the results for tobacco use precursors indicate no significant differences between grantee and non-grantee schools.

As discussed at the beginning of this chapter, grantee schools had lower percentages of Caucasian students than non-grantee schools, which may have masked higher levels of smoking in grantee schools compared to schools without grants. To account for this potential confound, we used regression techniques to examine differences in student tobacco use and tobacco use precursors

Figure 5.10 Student Tobacco Use by TUPE Grantee Status

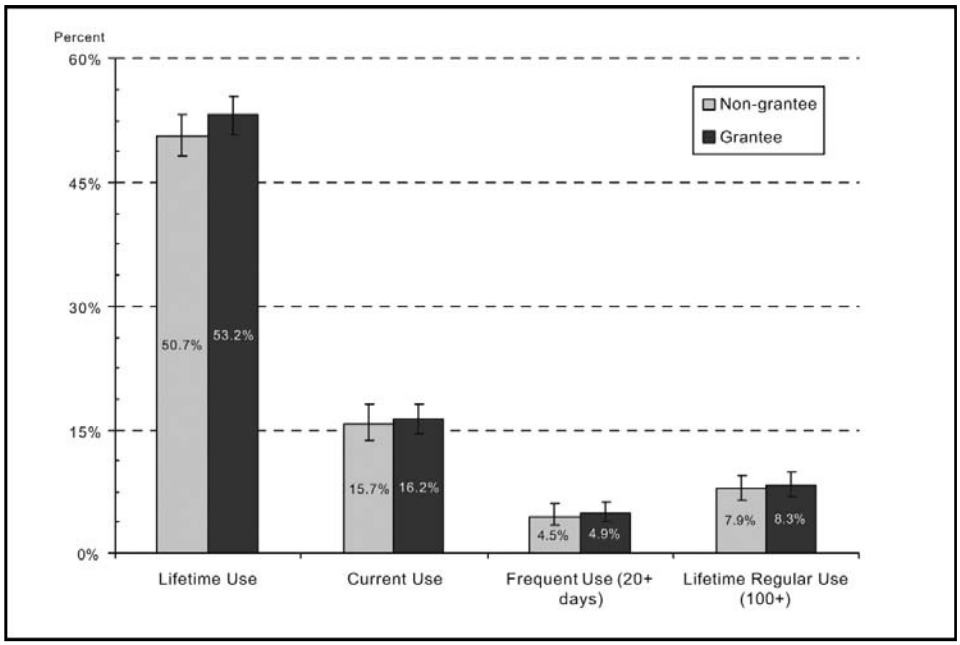
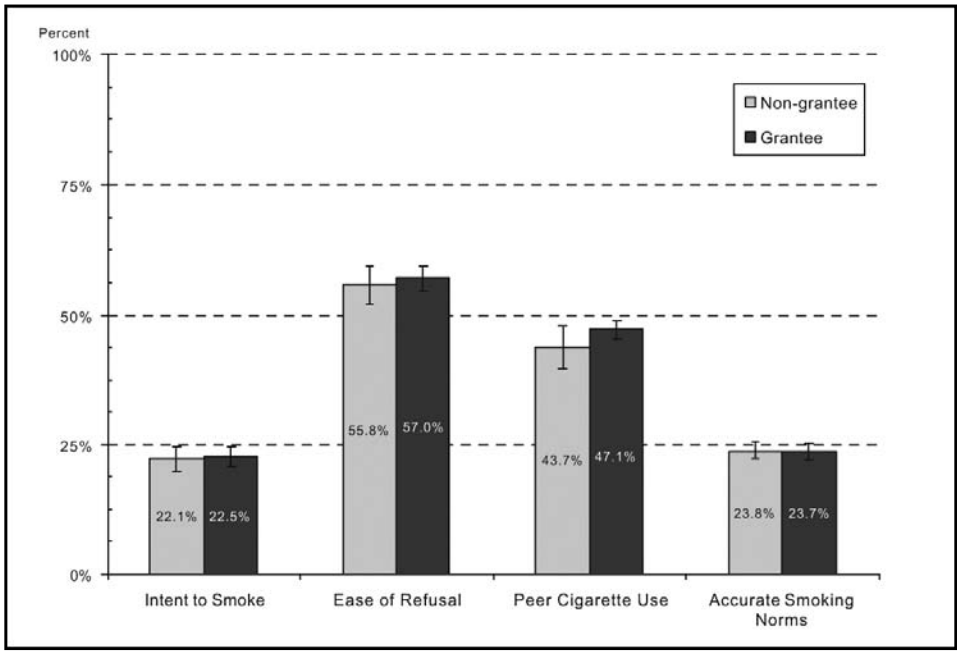


Figure 5.11 Student Tobacco Use Precursors by TUPE Grantee Status



across grantee and non-grantee schools. In these regression models, we controlled for the percentage of Caucasian students in the sample. The results based on these models were substantively identical to those discussed above. Differences between grantee and non-grantee schools in ethnic composition did not mask differences in student tobacco use or tobacco use precursors.

As we did with exposure to program services, we also examined how tobacco use and tobacco use precursors varied across grantee schools by length of funding. If schools become more effective at preventing and reducing tobacco use with increasing experience, then we would expect grantees that had been funded for a longer period of time to exhibit lower levels of tobacco use and precursors to use than more recent grantees. Figure 5.12 (and Table 5.7) show how tobacco use prevalence is related to the length of a TUPE grant. Although the results for both lifetime and current tobacco use suggest that student tobacco use is lower in schools with more experience providing TUPE-funded prevention and intervention activities, only the result for lifetime cigarette use is statistically significant. Still, lifetime tobacco use is substantially lower in schools that had a grant for five years or more than it is in other grantee schools. There is also some support that grant duration is related to tobacco use precursors. Figure 5.13 shows that intentions to smoke and peer use decline with grant duration, while reported refusal skills appear to increase with duration. However, only the group difference in peer cigarette use is statistically significant. And Figure 5.14 shows a tendency for perceived beliefs about the negative consequences of smoking, anti-cigarette industry norms, and physical harm to be highest in schools that have had their grants for the longest period of time.

Figure 5.12 Student Tobacco Use by Duration of TUPE Grant

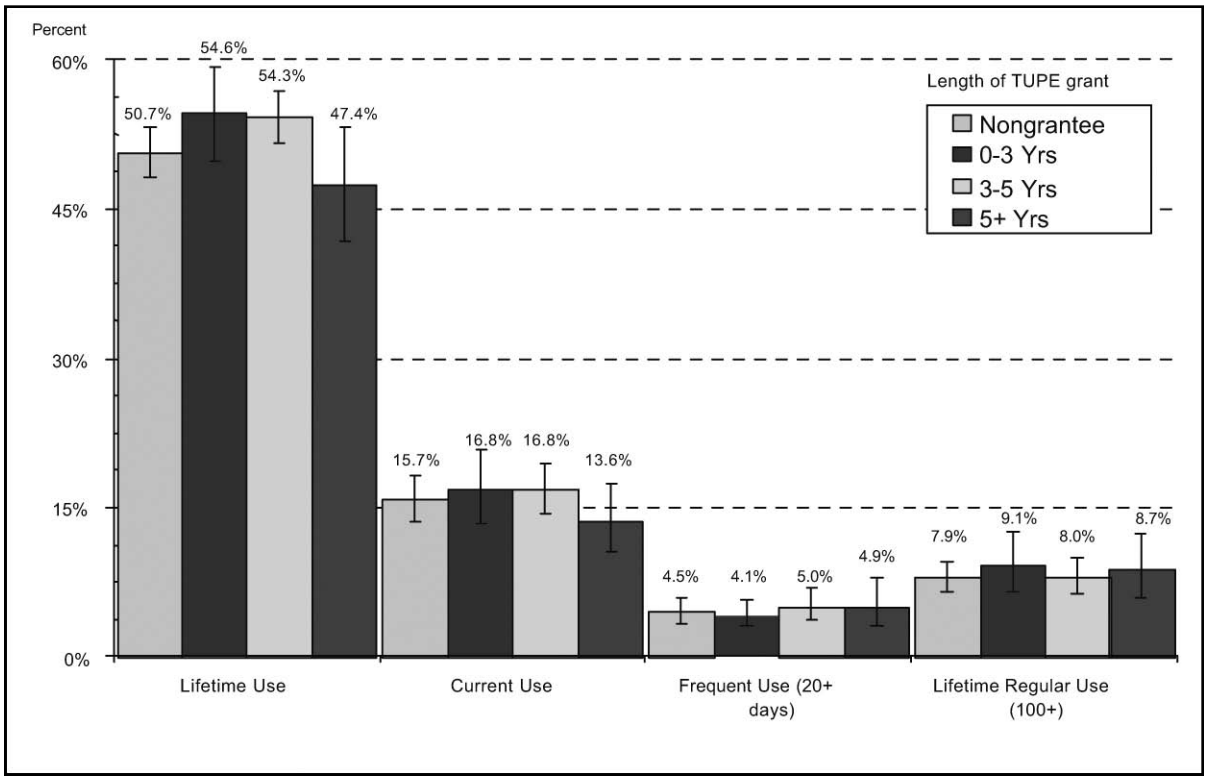


Figure 5.13 Student Tobacco Use Precursors by Duration of TUPE Grant

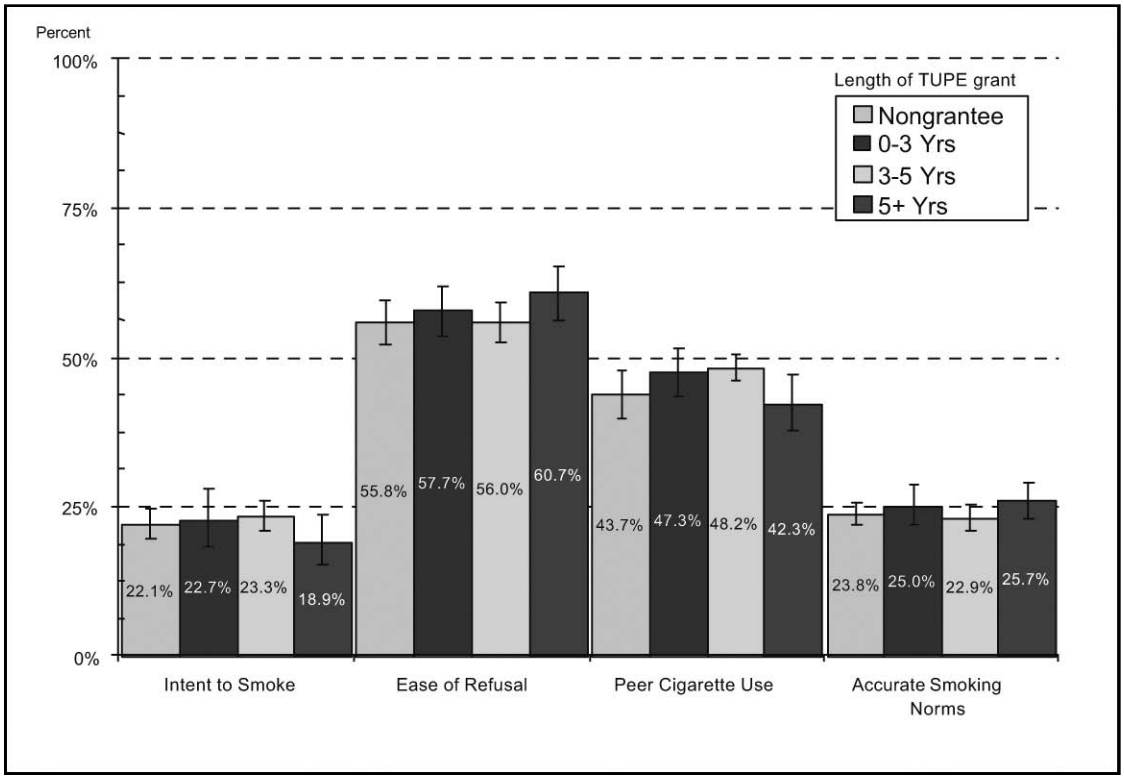
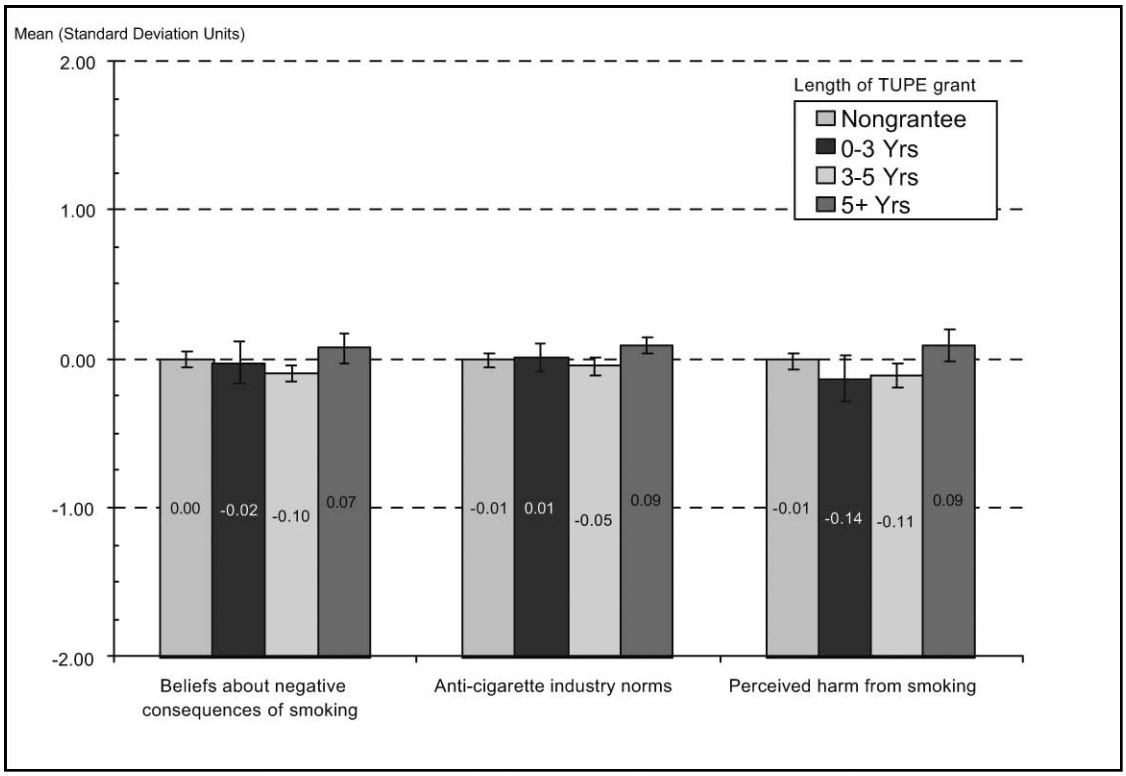


Figure 5.14 Student Tobacco Use Attitudes by Duration of TUPE Grant



Conclusion

Our analyses of teacher, school coordinator, school administrator, and district coordinator reports of program implementation indicated that high schools with competitive TUPE grants are more likely than other schools to offer cessation services to students, to sponsor school-wide anti-tobacco activities, and to provide in-service tobacco use prevention instruction training to teachers and school coordinators. School health coordinators also are more likely to teach about tobacco use prevention in grantee schools than in non-grantee schools. We found little evidence, however, that health and physical education teachers in grantee schools teach about tobacco use prevention more frequently or that teachers and coordinators cover different topics than their counterparts in schools without competitive grants.

The majority of high school students in California recall receiving information about tobacco use at school, and of those that did receive information, the vast majority of those found the information helpful in making decisions about tobacco use. Although students who attend high schools with competitive TUPE grants are more likely to recall being exposed to tobacco use prevention services than other students, differences between students in grantee and non-grantee schools are not as pronounced as might be expected. This underscores the fact that the TUPE competitive program is not the only source of resources for school-based tobacco use prevention activities. Even high schools that do not have competitive TUPE grants are able to provide tobacco use prevention education to their students. The most significant difference between grantee and non-grantee schools is the presence of cessation classes. Almost one quarter of students in grantee schools indicate that their school has a special program for students who want to quit smoking, compared to nine percent among students in non-grantee schools. Services for cessation appear to be a common component funded by the high school competitive TUPE program.

For the most part, TUPE competitive grant duration is not significantly related to student exposure to tobacco use prevention services—although there is some evidence that recent grantees deliver tobacco use prevention lessons to more students than do grantees funded for longer periods, at least according to student reports.

Although students in grantee schools report higher levels of exposure to program services, these differences do not appear to translate into lower levels of tobacco use among students in grantee schools. Student tobacco use is no different in grantee and non-grantee high schools. These results are consistent with those reported by the Independent Evaluation Consortium. There is limited evidence, however, that tobacco use and the risk of tobacco use decline with greater grant duration. Lifetime tobacco use and peer use decline with grant duration, while reported beliefs about the negative consequences of smoking, anti-cigarette industry norms, and perceived physical harm from smoking increase with duration. Although these results are only suggestive, they provide some support that grantee schools may become more effective in reducing tobacco use precursors with increasing experience. However, these results run contrary to the pattern of reduced student exposure to tobacco lessons with greater grant duration, and thus should be interpreted cautiously.

Table 5.3 Student Reports of Exposure to Prevention/Intervention Services by High School

Competitive Grantee Status	High School Grant Status		
	Non-grantee (Percent)	Grantee (Percent)	p-value
Received information about tobacco	60.9 [56.4, 65.2]	68.2 [65.6, 70.6]	0.01
Tobacco information helpful	69.7 [66.2, 73.0]	73.4 [70.6, 76.1]	0.11
Tobacco lessons	37.2 [34.2, 40.3]	47.3 [44.1, 50.5]	<0.012
Guest speaker	21.5 [18.7, 24.7]	31.5 [29.0, 34.2]	<0.01
Assembly about tobacco use	23.9 [19.2, 29.3]	28.9 [26.4, 31.4]	0.09
Taught about why people smoke	35.3 [30.2, 40.7]	40.4 [37.4, 43.5]	0.10
Taught about smoking prevalence	29.0 [25.1, 33.3]	37.4 [34.4, 40.4]	<0.01
Taught about physical harm from smoking	40.7 [36.7, 44.8]	49.7 [46.6, 52.7]	<0.01
Taught about secondhand smoke	34.8 [31.2, 38.7]	43.8 [40.2, 47.4]	<0.01
Refusal skills training	44.1 [40.1, 48.1]	52.0 [49.1, 54.8]	<0.01
Cessation training	22.3 [19.7, 25.1]	30.0 [27.2, 33.1]	<0.01
Cessation classes	9.3 [6.5, 13.2]	24.3 [19.4, 30.1]	<0.01

Note: Brackets contain the 95 percent confidence intervals

Table 5.4 Student Reports of Exposure to Prevention/Intervention Services by Duration of TUPE Funding

	Length of TUPE Grant			
	0–3 Years (Percent)	3–5 Years (Percent)	5+ Years (Percent)	p-value
Received information about tobacco	71.5 [63.2, 78.5]	68.0 [64.5, 71.4]	66.3 [62.0, 70.2]	0.51
Tobacco information helpful	74.7 [70.3, 78.6]	74.1 [70.3, 77.6]	69.3 [63.2, 74.8]	0.23
Tobacco lessons	53.5 [44.0, 62.6]	47.5 [43.3, 51.8]	41.7 [37.3, 46.2]	0.05
Guest speaker	30.0 [24.2, 36.4]	32.3 [29.4, 35.2]	29.5 [24.3, 35.2]	0.58
Assembly about tobacco use	27.0 [19.0, 36.7]	28.7 [25.8, 31.8]	30.9 [24.9, 37.6]	0.74
Taught about why people smoke	46.4 [39.8, 53.1]	40.4 [36.7, 44.2]	35.9 [31.9, 40.1]	0.01
Taught about smoking prevalence	44.1 [22.0, 28.4]	38.2 [34.7, 41.8]	29.0 [26.5, 31.7]	0.01
Taught about physical harm from smoking	54.8 [47.7, 61.7]	49.9 [45.5, 54.2]	44.9 [40.7, 49.0]	0.11
Taught about secondhand smoke	47.2 [41.1, 53.5]	44.6 [39.4, 49.9]	37.8 [33.8, 42.0]	0.10
Refusal skills training	55.0 [48.5, 61.2]	52.2 [47.9, 56.3]	49.1 [44.4, 53.8]	0.41
Cessation training	29.7 [23.6, 36.6]	30.0 [27.1, 33.2]	30.2 [23.7, 37.7]	0.99
Cessation classes	17.6 [10.9, 27.2]	24.9 [18.8, 32.0]	27.1 [18.0, 38.5]	0.39

Note: Brackets contain the 95 percent confidence intervals

Table 5.5 Student Smoking Behavior by High School Competitive Grantee Status

	High School Grantee Status		
	Non-grantee	Grantee	p-value
Lifetime cigarette use	50.7 [48.2, 53.2]	53.2 [50.9, 55.4]	0.13
Current cigarette use	15.7 [13.6, 18.1]	16.2 [14.5, 18.1]	0.73
Frequent cigarette use (20+ days)	4.5 [3.4, 6.0]	4.9 [3.8, 6.2]	0.69
Lifetime 100+ cigarette use	7.9 [6.5, 9.5]	8.3 [6.9, 9.9]	0.76

Note: Brackets contain the 95 percent confidence intervals

Table 5.6 Student Precursors to Smoking by High School Competitive Grantee Status

	High School Grant Status		
	Non-grantee	Grantee	p-value
Intent to smoke	22.1% [19.8, 24.6]	22.5% [20.6, 24.5]	0.83
Ease of cigarette refusal	55.8% [52.0, 59.5]	57.0% [54.6, 59.4]	0.56
Peer cigarette use	43.7% [39.7, 47.8]	47.1% [45.3, 48.9]	0.13
Accurate smoking norms	23.8% [22.1, 25.6]	23.7% [22.0, 25.4]	0.89
Beliefs about the negative consequences of smoking	3.24% [3.21, 3.26]	3.21% [3.19, 3.23]	0.16
Anti-cigarette industry norms	3.52% [3.49, 3.55]	3.51% [3.49, 3.54]	0.70
Perceived physical harm from smoking	0.02% [-0.03, 0.07]	-0.04% [-0.10, 0.02]	0.14

Note: Brackets contain the 95 percent confidence intervals

Table 5.7 Student Smoking Behavior by Duration of TUPE Competitive Grant

	Length of TUPE Grant			
	0–3 Years	3–5 Years	5+ Years	p-value
Lifetime cigarette use	54.6 [49.9, 59.3]	54.3 [51.6, 56.9]	47.4 41.8, 53.1]	0.05
Current cigarette use	16.8 [13.4, 20.8]	16.8 [14.5, 19.3]	13.6 [10.5, 17.4]	0.28
Frequent cigarette use (20+ days)	4.1 [3.0, 5.7]	5.0 [3.7, 6.8]	4.9 [3.0, 7.9]	0.74
Lifetime 100+ cigarette use	9.1 [6.5, 12.6]	8.0 [6.4, 10.0]	8.7 [6.0, 12.4]	0.79

Note: Brackets contain the 95 percent confidence intervals

Table 5.8 Student Precursors to Smoking by Duration of TUPE Competitive Grant

	Length of TUPE Grant			
	0–3 Years	3–5 Years	5+ Years	p-value
Intent to smoke	22.7% [18.1, 28.1]	23.3% [20.8, 25.9]	18.9% [15.1, 23.4]	0.22
Ease of cigarette refusal	57.7% [53.6, 61.7]	56.0% [52.6, 59.3]	60.7% [56.1, 65.1]	0.17
Peer cigarette use	47.3% [43.2, 51.5]	48.2% [46.0, 50.5]	42.3% [37.8, 47.0]	0.05
Accurate smoking norms	25.0% [22.0, 28.4]	22.9% [20.7, 25.3]	25.7% [22.9, 28.8]	0.24
Beliefs about the negative consequences of smoking	3.23% [3.16, 3.30]	3.19% [3.17, 3.22]	3.27% [3.23, 3.32]	0.01
Anti-cigarette industry norms	3.53% [3.47, 3.59]	3.49% [3.46, 3.53]	3.59% [3.55, 3.62]	0.00
Perceived physical harm from smoking	-0.09% [-0.24, 0.05]	-0.07% [-0.14, 0.00]	0.12% [0.02, 0.22]	0.01

Note: Brackets contain the 95 percent confidence intervals

Chapter 6: Knowledge of TUPE Program Implementation

Introduction

The overall purpose of collecting data from adults at the school sites and district offices was to assess the extent to which teachers and administrators were knowledgeable about TUPE program in their schools or district and to triangulate the data from the adult surveys with student data to help explain how various types and intensities of program implementation relate to student outcomes. Using data from these sources chapter four discussed the effects of teacher attitudes on student outcomes, and chapter eight will discuss the impact of school-level policies and practices on student outcomes. This chapter will provide a description of the responses across the four adult surveys (teacher, site administrator, site TUPE/Health Coordinator, and District TUPE/Health Coordinator) with respect to questions asked to assess knowledge about TUPE Program and CDC Tobacco Program Guidelines (CDC, 1994). In addition to the quantitative data collected through the self-report surveys, qualitative data was collected from 13 randomly selected middle and high schools from each of the 12 regions. Site visits at these schools were conducted to determine how the programs reflected CDC Guidelines for tobacco programs.

Adult Surveys: Responses to Items Related to CDC Guidelines

As discussed in Chapter 1, surveys were administered to adults at both the school site level and the district-level. The site administrator was typically the principal or assistant principal in charge of health-related curriculum. The site coordinator was either the TUPE Coordinator or other teacher responsible for the health curriculum at the site. Finally, the teachers were those who happened to be in the classrooms of students selected for participation in this study. These teachers completed the survey while their class completed the student survey.

CDC Guideline Number One: Develop and Enforce a School Policy on Tobacco Use

There was high consensus on the items related to school policy. The majority of adults said they were aware of school and district tobacco use policies. Table 6.1 provides responses to questions about tobacco use policies. In general, adults at the district and school sites agreed that the policies applied to both students and adults and were enforced 24 hours per day. Answers regarding consequences of the policies for students varied, suggesting that while there may be a policy in place, the consequences of violating the policy were either not well developed or not clearly communicated to staff, or both. Moreover, district coordinators seemed to differ greatly in their perceptions about policy enforcement and consequences of violating those policies, compared to site staff. More district level coordinators reported that the policies were being enforced during school hours 'a great deal' (92.0 percent) compared to 80.8 percent of teachers and 75.8 percent of site health coordinators. Seventy-four (74.4) percent of district coordinators reported that students were suspended if caught in violation of the policy while only 53.3 percent, 52.0 percent, and 58.2 percent of teachers, site coordinators, and site administrators, respectively, reported this to be the usual consequence of violating the no-tobacco-use policy. These disparities may be a result of district policies that allow school administrators some discretion in determining the consequences of policy violations at the site level. It could also reflect imperfect communication from the district to the school about the policy enforcement protocol and consequences.

Table 6.2 shows the response rates for teachers who teach health-related subjects and for teachers who do not teach health-related subjects.[7] Ninety-two (92.2) percent of teachers who teach health compared to eighty-five (84.9) percent of other teachers responded that the policy applies to students. More "health" teachers (87.0 percent) than "non-health" teachers (78.9 percent) responded that the policy was being enforced during school hours.

CDC Guideline Number Two: Provide Instruction About the Negative Physiologic and Social Consequences of Tobacco Use, Social Influences on Tobacco Use, Peer Norms Regarding Tobacco Use, and Refusal Skills

Table 6.3 provides an overview of instructional programs related to CDC Components Two and Three. The perception of the district coordinators with regard to instructional content was not congruent with responses from site staff. CDC Guidelines listed several topics that have been found to be important components of effective prevention programs. Adults were asked to mark all of the topics taught in tobacco use prevention lessons. District coordinators tended to report a higher frequency for each of the topics listed, compared to other adult respondents. Effects of tobacco and second-hand smoke were the most widely named topics across adult respondents (80.4 percent at the sites and 90.7 percent at the district). This topic was followed in popularity by (1) reasons why young people smoke (66.3 percent), (2) secondhand smoke (65.0 percent), and (3) the effects of tobacco advertising (65.0 percent). Fewer teachers reported teaching about social consequences (52.4 percent), behavioral skills for refusing offers of cigarettes (42.7 percent), and social influences (56.3 percent). Peer norms or "how many young people smoke" was reported by only 49.6 percent of teachers. Only 38.9 percent of teachers who taught tobacco use prevention lessons in the past year included general personal and social skills, while 75.5

[7] Science & health teachers in middle schools; health and physical education teachers in high schools

percent of district coordinators marked this topic. In retrospect, it would have been more appropriate to ask the district coordinators to respond only for the school that participated in IETP. Not all schools in a district were selected to participate, and they were not selected to be representative of the district. Most likely the district coordinator responses were assessments of the overall implementation of TUPE in all schools in the district.

When asked about the method of delivery of the tobacco lessons, the overwhelming majority of teachers (95.0 percent), site coordinators (90.9 percent), and district coordinators (98.1 percent) marked discussion. Lecture (73.2 percent) was the next most frequently marked method by teachers followed by small group activities (45.0 percent) and role-playing (28.0 percent). It is interesting to note that 86.1 percent of site administrators believed that teachers make all or some of the decisions about the curricula or topics used compared to 69.7 percent of teachers marking this option.

CDC Guideline Number Three: Provide Developmentally Appropriate Tobacco Use Prevention Education in K–12

This instruction should be especially intensive at the junior high/middle school level and be reinforced at the high school Level.

District coordinators were more likely to report that specific curricula were being used. Nearly half (45.6 percent) of teachers who taught prevention lessons during the previous school year reported using non-published curricula. Moreover, less than ten percent of teachers who taught prevention lessons during the previous year used any of the listed programs: *Here's Looking at You 2000, Tobacco Awareness Program* (TAP) *Readiness for Cessation, Tobacco Education Program* (TEG) *Cessation, Towards No Tobacco* (TNT), *Life Skills*, or *Project ALERT*. These are all listed in CDE's *Getting Results* (CDE, 1998) as being promising or research-based strategies programs.

The district coordinator's response to the types of curricula used was not congruent with responses of the site staff. Again, as discussed above, there may have been more congruence in responses if district coordinators had been asked to report only on the schools participating in the study. The most frequently reported published curricula used by district coordinators were *Here's Looking at You, 2000* (70.5 percent), followed by *Project ALERT* (48.2 percent). Site coordinators (31.5 percent) reported TAP or TEG (smoking cessation) as the primary curriculum used, followed by *Here's Looking at You, 2000* (18.3 percent), *Life Skills* (11.7 percent), and *Project ALERT* (10.3 percent). The percentage of teachers who taught prevention lessons the previous year, by curriculum, were *Life Skills* (9.7 percent), *Here's Looking at You, 2000* (7.8 percent), TAP or TEG smoking cessation (7.6 percent), and *Project ALERT* (four percent). TNT was relatively new when this study was conducted, which might explain why less than one percent marked this curriculum. At the time of the survey, only *Life Skills* and *Towards No Tobacco Use* (TNT) were on CDC's list of recommended programs for tobacco use prevention education. However, schools were not required to use programs from a list that CDC provided. They were provided a list identified by CDE as being promising or effective research-based strategies that should be incorporated into a comprehensive tobacco use prevention program.

CDC Guideline Number Four: Provide Program-specific Training for Teachers

Responses to questions addressing CDC Guidelines four, five, and six are reported in Table 6.4. When asked specifically about training during the previous and current school years, 66.7 percent of site coordinators reported receiving in-service training for tobacco use prevention, 46.9 percent were trained to deliver a specific curriculum, and only 50.6 percent felt they were "a great deal" prepared to teach about tobacco use prevention. Sixty-seven (66.5) percent of teachers teaching prevention the previous year received in-service training, 19.3 percent were trained in a specific curriculum, and 25.4 percent responded "a great deal" when asked how prepared they felt they were to teach tobacco use prevention. Seventy-nine (78.6) percent of these teachers said that there was a school-level person available to conduct onsite training and support for the tobacco program. It is plausible that the site coordinators were not currently teaching in the classroom and would not therefore necessarily be responsible for teaching lessons.

CDC Guideline Number Five: Involve Parents or Families in Support of School-based Tobacco Use Prevention Programs

Across a variety of strategies for involving parents in school-based tobacco control efforts, the consensus of all school district staff surveyed was that parent involvement was low. The most successful strategies, such as distributing tobacco control materials to parents or setting up tobacco control displays at "open houses" were cited less than 40 percent of the time by site TUPE coordinators and cited only about 10 percent of the time by teachers. Table 6.4 depicts the strategies used to involve parents.

CDC Guideline Number Six: Support Cessation Efforts Among Students and All School Staff Who Use Tobacco

Table 6.4 also shows the responses of teachers who taught prevention lessons last year, and responses from site and district coordinators regarding smoking cessation efforts. Sixty-three (63.4) percent of teachers, 69.4 percent of site coordinators, and 64.8 percent of site administrators responded "yes" when asked if their school had special classes, groups, or programs for students who want help quitting smoking. These results were for middle and high school combined and may as a consequence be lower than for high school separately. Typically, high schools are more likely to offer cessation programs at the site level than middle schools because there are relatively few regular student smokers in grades six through eight. When analyzed by school type only, the item asking about resources at school for students who want to quit smoking yielded significantly different results consistently across respondents. Middle school teachers (20.0 percent), site coordinators (25.0 percent), and site administrators (27.2 percent) reported that there were resources at school for students who wanted to quit compared to 75.4 percent of teachers, 78.8 percent of site coordinators, and 75.1 percent of site administrators at high schools. Overall, 90.6 percent of district coordinators reported that their district provided support for student smokers to quit; 94.6 percent of teachers and 97.0 percent of site coordinators reported that the community provided cessation services to youth. It is not unusual for schools to collaborate with community-based agencies to provide services that are more successfully conducted away from the school setting. One barrier to conducting smoking cessation classes at school is that students have to be pulled out of class or have to attend Saturday school. Teachers are not always willing to release students from course work to attend cessation classes during school time, especially students they consider to be high-risk students who may already be academically compromised.

School Site Visits

Recruitment

Thirty-six schools (two high schools and one middle/elementary school from each region) were randomly selected to participate in site visits. The aim was to conduct site visits at about 10 percent of the total IETP schools to obtain a more "in-depth" and qualitative look at TUPE programs within the school setting. Because coordination of the site visits began in late February/early May, school participation in the site visits was quite low. Many of the coordinators felt unable to participate because of scheduling conflicts, limited time before school dismissal for summer vacation, or because they felt that preparing for the site visit would require too much effort. As a result, we were able to conduct site visits at only 13 of the 36 randomly selected subset of schools and in only half of the 12 regions.

Data Collection

WestEd staff used a standard instrument, the '"Site Visit Intake" form for data collection during the school visits. The data collection form contained approximately 25 items, which were a combination of open-ended and multiple-choice questions that prompted surveyors to take note of the range and content of materials used for TUPE. The intake form was based on key concepts from CDC's Guidelines for School Health Programs to Prevent Tobacco Use and Addiction. Surveyors were asked to assess (1) which teaching/prevention strategies the TUPE program appeared to be using; (2) how coordinated/infused tobacco use prevention appeared to be with other elements of school programming and curricula; and (3) the relative emphasis that teaching materials placed on knowledge, attitudes, and skills by assigning a percentage to each of these three domains of health education.

Data from the site visits were reviewed for recurring themes and characteristics as well as anomalous or unique features of TUPE programs. Because site visits were conducted at such a small proportion of schools that participated in IETP, the data should be viewed as reflecting only TUPE programs that were in place at this subset of schools.

Results

The results presented here are not intended to reflect the range of TUPE programs in schools, but are meant to provide a deeper understanding of TUPE at a small cross-section of participant sites. Indeed, all of the schools that agreed to participate in the site visits appeared to have a TUPE program in place, which indicates a likely source of self-selection bias. Some of the schools' TUPE programs were still in the early stages of development.

TUPE programs varied greatly from school to school. Each program emphasized different aspects of tobacco use, from prevention, to media literacy, to the biology of the tobacco plant. Some programs were sustained throughout an entire year, while others were offered during specific semesters, and still others simply prescribed a certain number of hours of TUPE lessons that each student should receive over the course of the year. Tobacco use prevention was most often taught in life-skills courses, but there was ample evidence that it was also infused into English, biology, health, and social studies at several schools. Tobacco use prevention materials seemed to be available to teachers on a wide range of subject areas, but whether or not they 'infused' them into lesson plans seemed to depend on the teacher. Site coordinators tended to have the most tobacco use prevention materials available for biology, communications / English, and social studies teachers.

Participant sites made a range of materials (e.g., curricula, lesson plans, posters, pamphlets and videos) available for review. All schools except two provided at least one curriculum to review. In one case, the site coordinator developed the curricula, whereas other sites utilized published curricula, such as *Here's Looking at You—2000, Triple T (Teens Tackle Tobacco), Towards No Tobacco-Use* (TNT), and *Healthy Heart* (American Heart Association).

One of CDC's primary recommendations is that schools "develop and enforce a school policy on tobacco use." While clearly posted signs indicating "A Tobacco-free Facility"or a "Drug Free Zone" existed at some schools, aspects of enforcement and application of the policy were impossible to assess beyond brief conversations with site coordinators and access to available materials. One district provided a copy of the policy on tobacco-free schools/smoking adopted by their board in 1995. This policy was included in the school level materials as acknowledgment of the importance that policies can have in supporting a tobacco-free environment.

The second recommendation contained in CDC Guidelines encourages schools to "provide instruction about the short and long term negative physiologic and social consequences of tobacco use, social influences on tobacco use, peer norms regarding tobacco use and refusal skills." Approximately half of the schools used the social influences model by including instruction on how peers can influence a student's decision to use tobacco. Interestingly, every school responded that they provided "a great deal" of instruction on media influences on tobacco use. Teachers used examples from advertising, published slide lists and "propaganda" to illustrate media impacts on tobacco usage.

At eight of the sites we found that teachers discussed with their students at least some key concepts surrounding "normative expectations," including the notion that youth who use tobacco are more likely to do so because they think it is prevalent, or the norm, among peers. Students typically grossly overestimate peer use of tobacco (Sherman et al., 1983). As reported in chapter three, students completing CSTS also overestimated the prevalence of tobacco use among high school students. Correcting this misconception is a critical aspect of teaching normative expectations for tobacco use (Hansen and Graham, 1991; CDC, 1994). Specifically, one school uses *Tobacco Free! Tobacco Use Prevention Lessons for Middle School,* an infusion curriculum that clearly delineates the concept of normative expectations and includes it as a key learning objective for several of the lessons. At other schools, the conversations about normative expectations appeared to take the form of contrasting student perceptions of peer use with actual self-reports of peer use.

CDC guidelines advise that school programs should teach students both the long- and short-term consequences of tobacco use. Long-term consequences of tobacco use were taught at most schools with fewer likely to discuss the short-term consequences. Just over half of the schools focused only on the long-term health effects of tobacco use, while only three taught about short-term consequences at all. It was once believed that youth respond more to the short-term consequences of tobacco use because things like yellow teeth and bad breath are much more proximal and salient results of smoking for adolescents (Evans et al., 1978), although Sussman et al. (1995) found that incorporating the physical consequences of tobacco use in a prevention curriculum was an effective strategy. *Tobacco Free! Tobacco Use Prevention Lessons for Middle School* was used at one site to describe the long-term physiologic effects and the short term, cosmetic, social, and economic costs of smoking.

Participant schools all taught information about smoking cigarettes and smokeless tobacco, indicating an awareness of the need to teach about cigarettes as well as chew, snuff, etc. All but one school taught students decision making skills and refusal / resistance skills training, reflecting the known importance of teaching what CDC guidelines call "behavioral skills for resisting social influences that promote tobacco use." It is particularly encouraging that these sites seem to have a skills based component to their lesson plans/curricula. Schools have historically been criticized for focusing too much on imparting new knowledge without providing students with the skills, such as refusal / resistance skills, to apply their new knowledge. Four of the 13 schools did not appear to utilize student advocacy, peer leadership, or modeling as strategies in their tobacco use prevention programs. Schools selected for the site visits were more likely to use interactive training strategies (role-plays / small group activities) and to focus on media literacy and media based interventions. This is different from the results we saw in chapter four in which just over half the teachers reported that they did not use role playing "at all." Nicøteen magazine is one example of a "peer-to-peer" publication used by schools, which was clearly geared toward a youth audience and created by young people. The issue that was available for review. It included articles about normative expectations, family exposure to smoke, and the short-term consequences of tobacco use ("Why Not Lick an Ashtray?"). These materials were used as prompts for discussion and activities about youth tobacco use.

It should be encouraging that only one school's TUPE program was characterized as providing information only, while the other sites used at least one other alternative teaching method, such as peer leadership or interactive groups. At one site, students engaged in experiential learning by using the "Dare to Pass" Store Assessment Form, where they walked into a store and used a checklist to assess the store's practices related to tobacco selling. For example, a student would take note of a tobacco ad or product displayed within three feet of candy. Most schools used some scare tactics, according to site visitors. Several schools invited health professionals, such as doctors, dentists, or nurses, to discuss health complications due to smoking.

The 13 schools varied greatly in their relative focus on self-esteem building as a way to address tobacco use prevention. Some schools provided much more knowledge and skills-based training and hardly focused on self-esteem. Most schools offered some lessons on self-esteem and making positive choices, but this was not the dominant focus of their tobacco use prevention education. Three schools paid special attention to self-esteem, life-skills, asset/youth development, and conflict resolution as strategies for encouraging cessation or tobacco use prevention. While research does indicate that tobacco use prevention should not solely be based around building self-esteem (Hansen, 1992), CDC does encourage teaching general personal and social skills as a way to build resistance and refusal skills. The textbook, *Discover, Skills for Life* (published in the 1980s) was used at one site and devoted a section to self-esteem building and another chapter to building decision making and relationship skills. Character education was taught at one school as an avenue for communicating tobacco resistance skills to students, while two other sites indicated a strong emphasis on decision-making and resistance skills. One site had a lesson developed around a video, "The Coach's Final Lesson," which depicted the last eight months of the life of a high school coach who had been diagnosed with lung cancer. The video and accompanying materials aimed to teach students about the dangers of smoking and to spark conversation/writing about the presentation and tobacco.

Perhaps one of the most challenging, yet critical elements of any type of health education is that it must be sustained and infused throughout the school environment and curricula. Despite the general consensus that the use of "one-time events" does not constitute an effective tobacco use prevention program when used in isolation, the majority of schools had TUPE programs that were at least somewhat "based on one-time events or presentations that are not explicitly connected to classroom lessons." Activities like the "Great American Smokeout," "Up In Smoke," and "Red Ribbon Week" were among the most popular events that tended to have little or no classroom follow-up for the majority of students. However, at one school all teachers received lesson plans to encourage follow up on the "Great American Smokeout" and "Save A Sweetheart." Clearly, such assemblies and activities have a lot of appeal to schools. They are fun and can involve the entire school, yet research does not support their effectiveness when used alone.

Eight of the sites provided tobacco cessation services aimed at helping users to quit. Only one middle school (grades six and seven) site did not offer any cessation programs. Some schools did not have cessation programs on site but had a clear sensitivity to the fact that some youth may already smoke. These sites made resource hotlines, toll-free numbers, and "cessation packs" (videos, lists of community services) available to students who wanted help in quitting their tobacco use habit. One TUPE coordinator indicated that although they purchased TEG and TAP, they did not have enough students to refer to groups. Another two sites offered diversion and cessation after-school programs for students who were self-referred or referred by others. One site used a program based on trained peer-to-peer and teacher/counselor-student relationships, where smokers were encouraged to develop optional contracts for quitting. While most programs presented a general prevention message for all students, one school really emphasized that the intent of their TUPE program was to target students in grades nine through 12 who are particularly at risk of addiction, by focusing efforts on students caught using or carrying tobacco products.

All schools, except one, offered media literacy lessons, which were defined as those "lessons aimed at helping students to develop an informed and critical understanding of the nature of mass media, and the techniques used by the mass media to promote tobacco use among young people." Schools relied on videos, slide shows, and magazine advertising to work with students around these topics. One video, "Ad-Libbing It," was described as "a look at how advertisers try to hook young people" and focused on giving students an analytical eye for tobacco ads. One site had an extensive slide collection, *The Stop Teenage Addiction to Tobacco (STAT) Speakers Guide and Slide Collection,* which contained five sections, one of which describes a "powerful and unethical industry" whose advertising has resulted in increases in smoking. Other topics in the section included selling and false promises, how industry practices encourage kids to smoke, how sports and selling tobacco are related, indirect methods of smoking promotion, and selling death in the Third World.

Teacher training was not readily documented at most schools. There were just three schools that provided evidence of staff development and training related to tobacco use prevention. At one school, teachers received on-site training for using the AHA curriculum, *Healthy Heart,* from a trained health educator. The TUPE coordinator at this site believed that the staff development was a critical piece of building teacher awareness and confidence around teaching tobacco use prevention. At two other sites, drug and alcohol counselors from an outside agency, the Drug Abuse Alternatives Center (DAAC), met individually with teachers to determine staff and students' needs related to TUPE. They also provided staff with support materials, such as *Intervening with Teen Tobacco Users—A Positive Alternative to*

Suspension and *Tobacco Free! Tobacco Use Prevention Lessons* (middle school) teacher's guide. At one school, the nurse presented tobacco control information to every health class throughout the year and provided the students with one tobacco lesson. This nurse also made presentations to parents at PTA meetings. Two schools used California Healthy Kids data to help inform their tobacco use prevention programming.

Service learning was occasionally an element of TUPE programs. Some sites integrated community service around tobacco use prevention into the school curriculum. These types of learning activities provide experiential learning for youth to learn about a topic or issue. Off-campus projects, letter writing, high school peer counseling of younger students, and shadowing local police departments were some of the community service programs that were cited. Two schools indicated that they received funding from the American Legacy Foundation through a grant from CDHS/TCS to fund SPLAT, Sonoma County Peer Leaders Against Tobacco, a teen coalition to train students to be peer educators, media advocates, and leaders in tobacco use prevention. Friday Night Live was implemented in two sites. At one site, students advocated for local merchants to post laws and to comply with laws regulating sales to minors.

Conclusion

Results from the adult surveys were mixed across the different staff positions. There are several explanations for this. Schools were not sampled by district and cannot be considered to be representative of a district unless the school responding is the only school in the district. It is not clear that the district coordinator would necessarily know what each school was doing. In retrospect, it would have been more appropriate to ask them specifically about the schools in the study. Districts may have a tobacco use prevention plan in place that is not implemented universally across schools. Overall, schools seem to be implementing a variety of tobacco use prevention education programs ranging from one-day events to full semesters of research based curricula.

There are a few findings that are discouraging. Lack of consistency with which school level and district level staff responded to questions about the tobacco policy at their school/district was a concern. There were a small percentage of high schools not receiving TUPE funding. These schools would not be required to have a policy in place. Chapters seven and eight will examine these differences. On the other hand almost all school staff reported having a school policy, and most reported that it was being enforced. However, it was unclear from the responses how well the consequences of violating the policy were being disseminated. A successful program would ensure that all school staff, students, and parents are familiar with the policy and familiar with the consequences of violating it. This does not appear to be happening most of the time.

The most discouraging finding, although not surprising, is the lack of site coordinators who feel prepared to teach about tobacco. It is increasingly difficult for teachers to be released from their classroom teaching responsibilities to attend all day trainings in tobacco use prevention. It is equally as difficult to persuade teachers to attend Saturday trainings or trainings during breaks (winter/spring). Trainings after school for one or two hours do not provide teachers with enough information to teach research-based programs. Moreover, it is questionable how effective those trainings can be after the teachers have been with as many as 150 students over the course of a day in secondary schools. If schools are required to use only research-based programs for tobacco use prevention education, teachers must have opportunities to attend trainings so that these programs can be taught with fidelity.

One of the greatest challenges/limitations of the site visits was that it was not possible to view TUPE program "in action." Because WestEd staff reviewed materials, rather than observing classroom lessons or school practices, it was very difficult to determine how often or when materials were used. As in so many areas of health seeking and risk taking behavior, environment plays an important role in tobacco use, refusal and cessation. An important next step in future iterations of the in-school evaluation may be to conduct school level observations to deepen our understanding of how students operate in the environment and how much the school environment prevents or facilitates smoking related behaviors through modeling.

Table 6.1 CDC Component 1: Policy

	Teacher[1] (Percent)	Site Coordinator (Percent)	Site Administrator (Percent)	District Coordinator (Percent)
Policies are made at:				
District level	—	—	—	58.9
School level and district level	—	—	—	35.1
To whom the policy applies:				
Students	86.7	97.3	95.5	99.7
Teachers and staff	81.1	93.6	94.4	99.3
School visitors	73.6	92.9	92.7	99.3
Don't know	10.7	1.2	0.2	0.8
Policy is being enforced during school hours:				
A great deal	80.8	75.8	—	92.0
Moderately	15.7	18.9	—	7.0
Not too much	3.4	5.2	—	1.0
Not at all	0.1	0.1	—	0.0
Consequences for student's offenses on school grounds:				
Suspension	53.3	52.0	58.2	74.4
Getting a ticket	11.9	27.0	35.1	23.2
Referred to a special class	16.1	32.7	32.6	42.6
An adult counselor	16.1	23.6	26.0	43.8
A peer counselor	5.7	7.5	11.8	14.0
Punishment for smoking	8.9	11.5	16.6	13.0
Parents are called in	19.1	30.1	50.1	49.6
A cessation clinic	9.1	30.9	40.3	50.2
Cessation in lieu of suspension	5.6	22.3	28.2	36.3

Notes: : [1] All teachers

Table 6.2 CDC Component 1: Policy by Subject Taught by Middle/ High School Teachers

	Teachers Who Teach Health-Related Subject(s) [1] (Percent)	Teachers Who Do Not Teach Health-Related Subject(s) (Percent)
To whom the policy applies:		
Students	92.2	84.9
Teachers and staff	77.2	82.4
School visitors	69.6	74.9
Don't know	10.5	10.8
Policy is being enforced during school hours:		
A great deal	87.0	78.9
Moderately	11.0	17.2
Not too much	1.7	3.9
Not at all	0.3	0.1
Consequences for student's offenses on school grounds:		
Suspension	57.2	52.0
Getting a ticket	17.4	10.1
Referred to a special class	17.7	15.6
An adult counselor	23.0	13.9
A peer counselor	8.9	4.6
Punishment for smoking	7.1	9.5
Parents are called in	23.8	17.6
A cessation clinic	17.1	6.5
Cessation in lieu of suspension	6.4	5.3

Notes: [1]Science and health teachers in middle schools and health and physical education teachers in high schools

Table 6.3 CDC Component 2 and 3: Instruction Content

	Teacher [1] (Percent)	Site Coordinator (Percent)	Site Administrator (Percent)	District Coordinator (Percent)
Name of curriculum used:				
Here's Looking at You, 2000	7.8	18.7	—	70.5
TAP or TEG	7.6	31.5	—	38.7
Towards No Tobacco Use (TNT)*	0.8	9.3	—	6.9
Life Skills*	9.7	11.7	—	19.9
Project ALERT	4.0	10.3	—	48.2
NON-Published Curricula	45.6	21.4	—	—
Topics of Instruction				
Effects of tobacco on health	80.4	80.3	—	90.7
How many young people smoke	49.6	63.6	—	44.8
Reasons why young people smoke	66.3	69.3	—	72.9
Social consequences of using tobacco	52.4	66.8	—	74.9
SHS	65.0	73.6	—	84.1
Social influences promoting tobacco use	56.3	62.9	—	82.2
Behavioral skills for resisting offers	42.7	58.4	—	76.0
General personal and social skills	38.9	52.4	—	75.5
Tobacco advertising and marketing	65.0	64.7	—	80.9
Method of delivery				
Discussion	95.0	90.9	—	98.1
Small group activities	45.0	70.2	—	85.0
Lecture	**73.2**	**70.7**	**—**	**77.7**
Role-playing	28.0	37.2	—	66.9
Decision-making about curricula/topics used[2]				
Teacher makes decision	69.7	60.4	86.1	13.2
Site coordinator makes decision	—	54.8	—	25.7
District coordinator makes decision	—	—	—	26.7
Site/district administrator makes decision	44.3	50.9	75.2	—
Availability of TUPE materials				
Elementary teachers	—	—	—	21.9
Secondary teachers	—	—	—	32.8

Notes:
[1]Teachers that taught prevention lessons last year
[2] "Make all/some decisions" vs. "Make the decisions"
*CDC recommended programs.

Table 6.4 CDC Component 4, 5, and 6: Parent Involvement, Teacher Training, and Cessation Efforts

	Teacher [1] (Percent)	Site Coordinator (Percent)	Site Administrator (Percent)	District Coordinator (Percent)
Involvement of parents and families				
Get parents involved	12.8	36.0	—	—
Included parents in homework assignments	17.7	26.5	—	—
Held meetings with parents	2.4	5.4	—	—
Distributed materials to parents	9.8	37.2	—	—
Provided cessation information	7.5	30.8	—	—
Displays at open house for parents	9.6	38.7	—	—
Invited parents to be guest speakers	1.1	8.7	—	—
Other involvement	3.3	11.1	—	—
Teacher Training				
In-service training	66.5	66.7	—	—
Were trained to deliver a curriculum	19.3	46.9	—	—
Preparedness to teach (a great deal)	25.4	50.6	—	—
School level coordinator available for on-site training and support	78.6	—	87.6	—
Cessation				
Resources at school for students	63.4	69.4	64.8	—
Resources at school for staff/teacher	29.1	50.4	—	—
District support for students	—	—	—	90.6
Programs in community for youth	94.6	97.0	—	—

Notes: [1] Teachers who taught prevention lessons last year

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Chapter 7: Relationship of School-level Policies and Practices to Student Program Exposure

Introduction

Other chapters in this report have described the wide variety of policies and practices implemented in California schools that are intended to reduce student tobacco use. These practices include enforcement of No-use tobacco policies, delivery of tobacco use prevention curricula, sponsorship of school-wide prevention activities, involvement of parents and families in tobacco use prevention, and providing support for tobacco cessation—to name just a few. These services are provided to students across all schools in the state, not just students in schools with TUPE funding. The purpose of this chapter is to examine how these policies and practices are related to students' reported exposure to program services. We also examine differences in program delivery in high schools that received competitive TUPE grants relative to those that did not receive grants.

The analyses reported herein illustrate how well different tobacco policies and practices in schools reach students, and help to gauge their potential for affecting student tobacco use and the precursors to use—a topic that is examined in more detail in chapter eight.

For ease of interpretation, the analyses examined the numerous outcome measures as answered by respondents without attempting first to summarize those that were highly correlated. With so many statistical tests, however, it is likely that some of the "statistically significant" findings reported herein are due to chance factors alone. The reader is therefore encouraged to be skeptical of isolated findings and to favor those findings that have been corroborated across multiple, similar measures. This warning applies particularly to coefficients whose nominal p-values are greater than 0.01.

Analytic Strategy

To examine how school policies and practices are related to student program exposure, we estimated logistic or ordinary least squares regression models depending on whether or not the dependent variable was dichotomous or continuous. These regression models took the following general form:

$$Exposure_{ij} = a_0 + b_{1*}Practice_j + b_{2*}Grade_{ij} + b_{3*}Gender_{ij} + b_{4*}Ethnic_{ij} + e_{ij}, \quad [1]^{9}$$

where Exposure represents exposure to specific program services for student $_i$ in school $_j$, Practice represents the tobacco use prevention activity in school $_j$, Grade is a set of dichotomous variables indicating a student's grade in school (seventh, eighth, etc.), Gender is a dichotomous variable indicating whether the student is female, and Ethnicity is a set of dichotomous variables representing student racial/ethnic group membership (American Indian, Asian, African American, Latino, Pacific Islander, Caucasian). Of particular interest is the coefficient b_1, which represents the association between a particular tobacco use prevention activity and student exposure to program services after controlling for grade, gender, and racial/ethnic composition across schools. This coefficient taps the effectiveness of tobacco policies and practices in reaching students.

The estimation procedures take into account sample weighting, clustering, and stratification. To obtain the standard errors of [1], the dependence among students within schools was adjusted for by using the Huber-Caucasian sandwich estimator of variance that relaxes the assumption of independence of observations (Huber, 1967, Kish and Frankel, 1974, Caucasian, 1980).[10]

Measures

Tobacco Use Policies and Practices

We relied on the teacher, school coordinator, and school administrator survey responses to measure tobacco use policies and practices at schools. For the teacher reports, measures were calculated by averaging reports across teachers within each school. Table 7.1 lists the tobacco policy and practice measures used in this chapter by source of report. We focused on five broad areas of tobacco use prevention/intervention services: (1) tobacco No-use policies, (2) tobacco related instruction, (3) school-wide anti-tobacco activities, (4) cessation activities, and (5) governance. Appendix Table A7.1 shows the questionnaire items used to assess each measure.

[9] Equation [1] represents the case for when the dependent variable is continuous. For dichotomous tobacco outcomes (e.g., lifetime use), we estimate:

$$\log_{(Pij/1-Pij)} = a_0 + b_{1*}Practice_j + b_{2*}Grade_{ij} + b_{3*}Gender_{ij} + b_{4*}Race/Ethnic_{ij}$$

[10] Because schools are the primary sampling units in CSTS and the estimation procedures take into account this complexity, the estimates, standard errors, and degrees of freedom for testing b1 in [1] are virtually identical to those based on a multilevel model with a random intercept. Specialized multilevel modeling software (e.g., HLM) was not used in this report to estimate the association between school-level practices and student outcomes because commercially available multilevel modeling software currently is unable to handle stratification.

Student Exposure to Program Services

The measures of student exposure to program services are identical to those used and discussed in chapters three and five. We examine how tobacco use policies and practices are related to student reports of receiving tobacco related information, helpfulness of tobacco information received in making decisions about tobacco use, exposure to tobacco lessons, exposure to specific topics about tobacco use, knowledge about school-wide anti-tobacco activities (e.g., guest speakers and assemblies), and knowledge about peer abstinence training and cessation classes at school.

Table 7.1 School-level Tobacco Use Policy and Practice Measures

	Teacher	Coordinator	Administrator
Tobacco Policy			
Enforcement of No-use policy	√	√	
Consequences of violation	√	√	√
Tobacco related Instruction			
Lessons taught	√	√	
Hours of instruction	√	√	
Infusion of tobacco lessons into other subjects	√	√	√
Published curriculum	√	√	
Topics covered	√	√	
Mode of delivery	√	√	
Training	√	√	
Barriers to teaching lessons	√	√	√
School-wide Anti-tobacco Activities			
Number of school-wide activities	√	√	√
Cessation Activities			
Presence of cessation services for students	√	√	
Governance			
Support from district	√	√	√
School-level and personal support	√	√	√

School Tobacco Policies and Practices to Student Exposure to Program Services

Enforcement of No-use Policy

A large majority of teachers and school coordinators report that student prohibitions against tobacco use on school property are enforced a "great deal." The results presented in Table 7.2 indicate that the level of enforcement reported by teachers is unrelated to most measures of student exposure to program services, although it is positively related to the receipt of tobacco related information. Conversely, students report that they are exposed to fewer program services in schools in which coordinators report high levels of enforcement. Enforcement is negatively related to student reports of receipt of tobacco related information, lessons about why people smoke, smoking prevalence, physical harm from smoking, and refusal skills training. These results are presented graphically in Figure 7.1. Overall, these results provide partial support for the notion that exclusive attention paid to the enforcement of No-use policies may divert resources away from tobacco use prevention education.

Figure 7.1 Level of Enforcement of No-use Policy (School Coordinator) and Student Reports of Exposure to Program Services

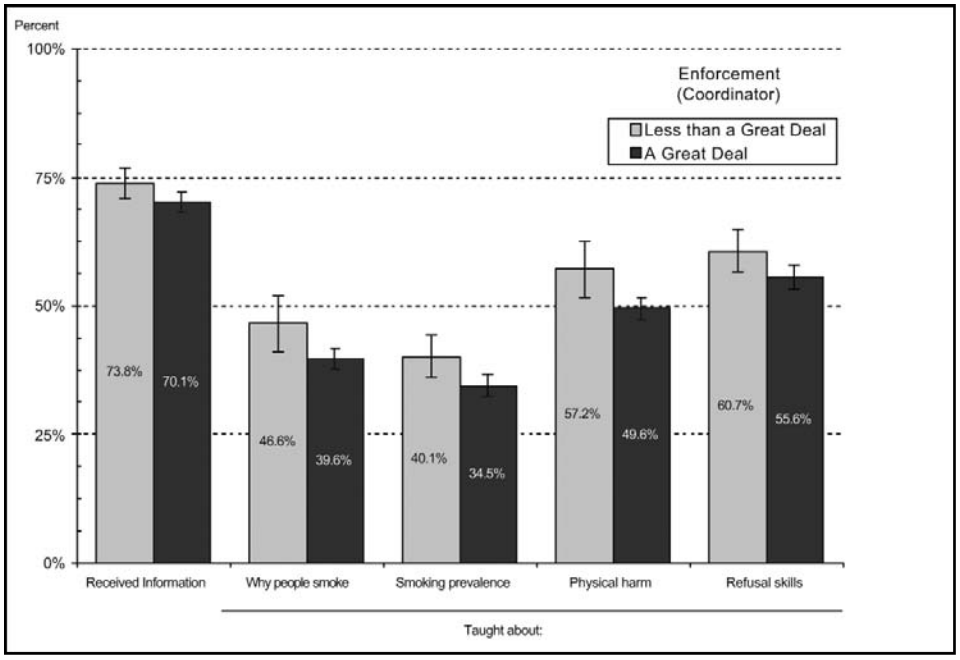


Table 7.2 Relationship of Enforcement of No-use Policy to Student Reports of Exposure to Program Services

	Level of Enforcement of No-use Policy			
	Teacher		School Coordinator	
Outcome variable	OR	p-value	OR	p-value
Received information about tobacco at school	1.28**	0.03	0.83**	0.04
Tobacco information helpful	1.08	0.66	0.91	0.33
Tobacco lessons	1.16	0.41	0.83	0.18
Taught about why people smoke	1.05	0.78	0.75**	0.02
Taught about smoking prevalence	1.07	0.76	0.79**	0.02
Taught about physical harm from smoking	1.12	0.36	0.73**	0.02
Taught about secondhand smoke	1.08	0.52	0.87	0.29
Refusal skills training	1.09	0.54	0.81**	0.03
Guest speaker	0.86	0.49	0.83	0.24
Assembly about tobacco use	1.20	0.38	0.83	0.26
Peer abstinence training	0.91	0.56	0.91	0.36
Cessation classes	0.69	0.37	0.71	0.24

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Consequences for Students Who Violate No-use Policy

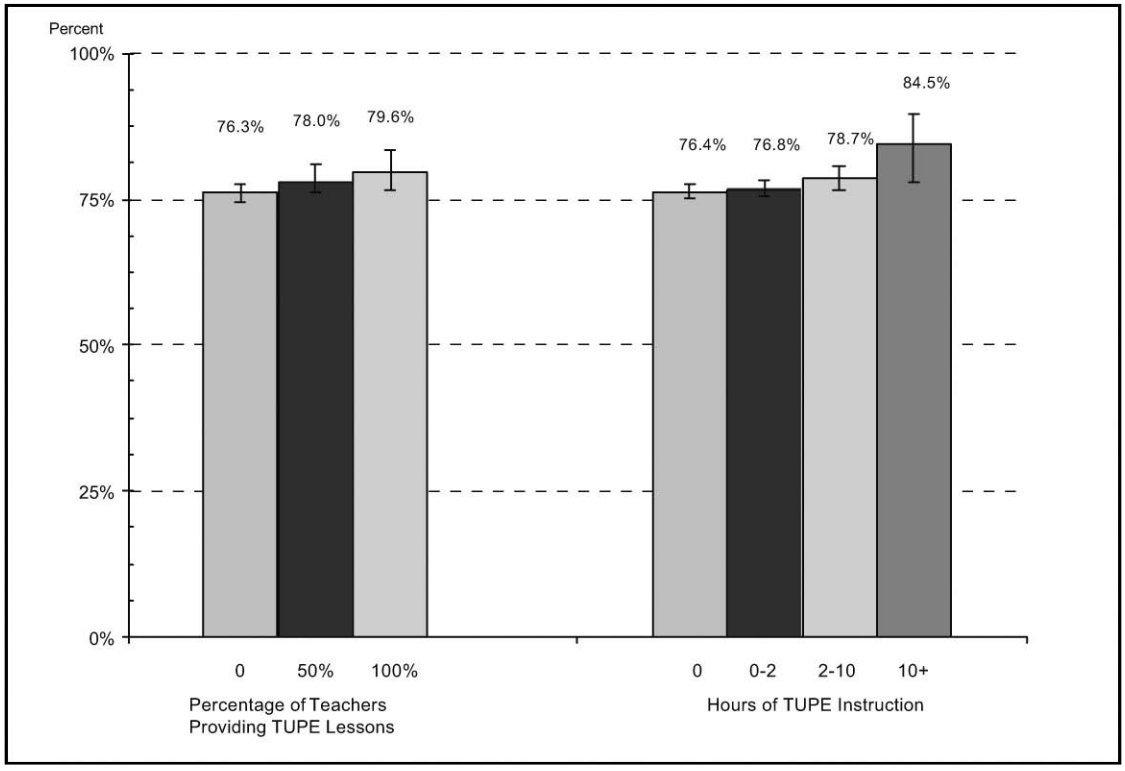
It is debatable whether suspending or expelling students for violating a school's no-smoking policy is as effective in deterring tobacco use in the long-run as providing prevention and intervention services. To address this question, we first used teacher, school coordinator, and school administrator reports of what is supposed to happen to students who are caught smoking cigarettes on school premises. We categorized responses as punitive (suspension/expulsion) and supportive (referred to special class, referred to tobacco cessation program), and examined the association of punitive and supportive consequences to student exposure to program services. Table 7.3 shows that supportive consequences are associated with increases in student exposure to program services in several areas, at least with respect to teacher and coordinator reports of such policies. School administrator reports of supportive responses are unrelated to student exposure to program services (not shown). Overall, the results suggest that schools that intervene supportively when students use tobacco on school premises provide a myriad of other prevention and intervention resources to students.

Table 7.3 Relationship of Consequences of Violation of No-use Policy to Student Reports of Exposure to Program Services

	Teacher				School Coordinator			
	Punitive		Supportive		Punitive		Supportive	
	OR	p-val	OR	p-val	OR	p-val	OR	p-val
Received information about tobacco at school	0.80	0.14	2.16***	0.01	0.88	0.14	1.30	0.10
Tobacco information helpful	0.93	0.64	0.92	0.78	1.04	0.63	0.89	0.33
Tobacco lessons	0.84	0.25	2.03*	0.07	0.91	0.36	1.42*	0.07
Taught about why people smoke	0.81*	0.06	2.50***	0.01	0.91	0.38	1.32*	0.06
Taught about smoking prevalence	0.80	0.14	2.63***	0.01	0.90	0.27	1.38*	0.06
Taught about physical harm from smoking	0.85	0.17	2.14**	0.02	0.84	0.12	1.38**	0.03
Taught about secondhand smoke	0.90	0.30	1.94**	0.05	0.82*	0.06	1.18	0.29
Refusal skills training	0.79**	0.05	1.64*	0.09	0.88	0.11	1.06	0.71
Guest speaker	0.80	0.30	3.22***	0.01	1.01	0.96	1.75**	0.02
Assembly about tobacco use	0.89	0.51	2.38**	0.03	0.89	0.38	0.86	0.54

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Figure 7.2 Tobacco Instruction and Usefulness of Tobacco Related Information



Anti-tobacco Instruction

Tobacco Lessons and Hours of Instruction

We next turn to the relationship between the level of tobacco use prevention instruction and student exposure to tobacco related information. As seen in Tables 7.4 and 7.5, teacher reports of providing tobacco use prevention lessons and hours of tobacco instruction are positively related to student reports of exposure to tobacco related information. This should come as no surprise. In addition, coordinator reports of lessons are positively associated with student exposure to most of the areas of lesson content assessed. However, what is surprising is that coordinator reports of hours of instruction are not related to student exposure to tobacco use prevention education. Thus, it appears that tobacco use prevention instruction delivered by a broad range of teachers is more effective in delivering tobacco related information to students than intensive instruction delivered by one party, namely the school coordinator. What is also apparent from the results is that tobacco use prevention lessons and hours of instruction as reported by teachers are positively related to students' perceived usefulness of lesson content. This particular relationship is presented graphically in Figure 7.2. These results suggest that saturation of tobacco-related education is not only associated with the delivery of more content but also with the delivery of better quality and more useful tobacco use prevention information to students.

Table 7.4 Relationship of Tobacco Use Prevention Instruction Lessons to Student Reports of Exposure to Program Services

	Taught Tobacco Use Prevention Lessons			
	Teacher		School Coordinator	
Outcome variable	OR	p-value	OR	p-value
Received information about tobacco at school	1.61***	0.01	1.17*	0.10
Tobacco information helpful	1.22*	0.07	1.11	0.23
Tobacco lessons	2.16***	0.01	1.12	0.33
Taught about why people smoke	1.91***	0.01	1.28**	0.03
Taught about smoking prevalence	1.84***	0.01	1.33**	0.01
Taught about physical harm from smoking	1.99***	0.01	1.30**	0.05
Taught about secondhand smoke	1.72***	0.01	1.31**	0.02
Refusal skills training	1.59***	0.01	1.11	0.34

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Table 7.5 Relationship of Hours of Tobacco Use Prevention Instruction to Student Reports of Exposure to Services

	Hours of Instruction			
	Teacher		School Coordinator	
Outcome variable	OR	p-value	OR	p-value
Received information about tobacco at school	1.03**	0.02	1.00	0.37
Tobacco information helpful	1.03**	0.02	1.00	0.50
Tobacco lessons	1.05***	0.01	1.00	0.74
Taught about why people smoke	1.06***	0.01	1.00	0.45
Taught about smoking prevalence	1.05***	0.01	1.00	0.92
Taught about physical harm from smoking	1.06***	0.01	1.00	0.43
Taught about secondhand smoke	1.06***	0.01	1.00	0.73
Refusal skills training	1.04***	0.01	1.00	0.40

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Infusion of Tobacco Use Prevention Curriculum in Other Subjects

One might expect that when teachers routinely integrate tobacco related information into non-health related topics when they teach, students will be more likely to retain tobacco related knowledge. We only found partial support for this expectation when we examined the relationship between infusion and student exposure to lessons and lesson content. As shown in Table 7.6, teacher reports of infusion are related to greater student exposure to tobacco lessons. School administrator reports of tobacco lesson infusion—which are measured by the reported number of non health-related subject areas that include tobacco lessons—were unrelated to student exposure to lessons and lesson content (not shown).

Table 7.6 Relationship of Tobacco Infusion to Student Reports of Exposure to Services

	Infusion of Tobacco Info	
	Teacher	
Outcome variable	OR	p-value
Received information about tobacco at school	1.19	0.15
Tobacco information helpful	1.17	0.15
Tobacco lessons	1.61***	0.01
Taught about why people smoke	1.19	0.12
Taught about smoking prevalence	1.22*	0.09
Taught about physical harm from smoking	1.21	0.12
Taught about secondhand smoke	1.26**	0.05
Refusal skills training	1.23*	0.09

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Use of Published vs. Non-published Tobacco Curriculum

On average, utilization of a standardized tobacco curriculum may help ensure that students are exposed to a broader array of tobacco related topics than use of a nonstandard, locally developed curriculum. However, the extent to which breadth versus depth of curriculum content is more effective in reducing student tobacco use is unknown. The results in Table 7.7 suggest that use of a published tobacco curriculum is associated with greater student exposure to tobacco lessons, lessons about why people smoke, lessons about prevalence, lessons about the physical consequences of smoking, and refusal skills training, but not associated with students believing that the material was helpful in making decisions about tobacco use. Use of an unpublished curriculum is only associated with greater exposure to tobacco lessons, but in all cases the use of a published curriculum has more pronounced effects on student exposure than the use of an unpublished curriculum. These results hold for teacher reports; school coordinator reports of the use of published and unpublished curricula are unrelated to student exposure to lessons in most of the topic areas assessed—although coordinator use of a published curriculum is associated with increased exposure to lessons about tobacco prevalence (not shown).

Table 7.7 Curriculum and Student Reports of Exposure to Program Services

	Teacher			
	Published		Unpublished	
Outcome variable	OR	p-value	OR	p-value
Received information about tobacco at school	1.46*	0.07	1.22	0.15
Tobacco information helpful	1.19	0.27	1.03	0.78
Tobacco lessons	1.98***	0.01	1.54***	0.01
Taught about why people smoke	1.58**	0.01	1.23	0.13
Taught about smoking prevalence	1.49**	0.01	1.14	0.37
Taught about physical harm from smoking	1.71**	0.01	1.22	0.11
Taught about secondhand smoke	1.36	0.11	1.16	0.32
Refusal skills training	1.48**	0.03	1.29**	0.03

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Tobacco Use Prevention Topics Covered and Mode of Delivery

The teacher and school coordinator surveys asked about the topics covered in tobacco use prevention lessons. These topics included such things as the effects of tobacco on health, smoking prevalence, behavioral skills for resisting tobacco offers, and tobacco advertising and marketing. We examined how these topics were associated with student reports of exposure to lessons and lesson content. Not surprisingly, both teacher and coordinator reports of tobacco use prevention topics were strongly and consistently related to student exposure to tobacco lessons and specific lesson content. None of the tobacco topics was related to student perceptions of the usefulness of tobacco related information learned about in school—although coordinator reports of covering resistance training skills and cessation activities were marginally associated with students' greater perceived usefulness of tobacco information ($p < .10$).

We also examined the relationship between the methods of delivery of program lessons and student exposure to lessons and lesson content. Methods of delivery included traditional lectures, class discussions, and non-traditional methods such as small group activities, student worksheets, and role-playing. In no case was a particular method of instruction found to be associated with student reports of exposure to lessons and lesson content.

Tobacco Related Instructional Training and Preparedness

Two indicators of teacher/coordinator training in tobacco education were used to examine how training is related to student exposure to tobacco related information, lessons, and lesson content—the receipt of inservice training on tobacco use prevention education and the level of preparedness for teaching tobacco use prevention lessons. The results presented in Table 7.8 show that teacher and coordinator training is strongly and consistently associated with student exposure to tobacco lessons and lesson content. The results clearly suggest that when teachers and coordinators are trained to deliver tobacco lessons, students report greater exposure to lessons. The results for preparedness are less clear cut. Teacher reports of their level of preparedness to teach tobacco lessons are positively associated with most of the measures of student exposure assessed. However, school coordinator reports of preparedness are unrelated to all but one (physical harm from smoking) of the measures of student exposure.

Table 7.8 Relationship of Tobacco Use Prevention Training and Preparation to Teaching to Student Reports of Exposure to Services

	Training				Level of Preparedness			
	Teacher		School Coordinator		Teacher		School Coordinator	
Outcome variable	OR	p-value	OR	p-value	OR	p-value	OR	p-value
Received information about tobacco at school	2.01***	0.01	1.20**	0.05	1.10*	0.06	1.08	0.23
Tobacco information helpful	1.25	0.20	1.07	0.40	1.07	0.22	1.06	0.29
Tobacco lessons	2.49***	0.01	1.27**	0.02	1.29***	0.01	1.08	0.36
Taught about why people smoke	1.93***	0.00	1.31***	0.01	1.15**	0.01	1.06	0.38
Taught about smoking prevalence	1.93***	0.01	1.26***	0.01	1.16**	0.02	1.08	0.25
Taught about physical harm from smoking	2.31***	0.01	1.38***	0.01	1.17**	0.01	1.18**	0.01
Taught about SHS	1.95***	0.01	1.28**	0.01	1.11	0.16	1.12*	0.09
Refusal skills training	1.99***	0.01	1.15	0.11	1.12*	0.06	1.04	0.56

Notes: Results come from models that control for student gender, ethnicity, and grade level.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Barriers to Teaching Tobacco Lessons

Teachers, school coordinators, and school administrators were asked to indicate what they perceive to be the barriers to teaching tobacco use prevention lessons in their school. The relationship of perceived barriers to three student outcome variables were examined: (1) the receipt of tobacco related information at school, (2) the usefulness of tobacco related information received, and (3) whether or not the student was exposed to tobacco use prevention lessons. Table 7.9 shows how perceived barriers are related to each of these student program outcomes. In general, the results indicate that greater barriers to teaching tobacco use prevention are associated with reduced student exposure to tobacco information and tobacco use prevention lessons, although the results vary considerably depending on the type of barrier, the reporter (teacher vs. coordinator), and the outcome assessed. Students are less likely to report that they received tobacco related information in schools where teachers report that tobacco use prevention is not part of their curriculum, tobacco education is not mandated, tobacco use prevention is a low district priority, and training is inadequate. These same barriers, plus lack of assessment of student outcomes and a low priority placed on tobacco use prevention in the school, are related to lower student exposure to tobacco lessons.

Coordinator reported barriers are not as consistently related to student program outcomes as teacher reported barriers, although lack of coordinator time is associated with lower student exposure to tobacco related information and tobacco use prevention lessons. In addition, students in schools in which the coordinator states that tobacco use prevention is a low priority for the district report less exposure to tobacco use prevention lessons than students in other schools. Administrator reports about an overall effect of barriers were inversely related to student reports of receiving tobacco use prevention information at school. The one specific administrator identified barrier clearly linked to reduced levels of receiving tobacco use prevention information was the district not having mandated tobacco use prevention at the school or in the district.

Teacher and coordinator reported barriers are not significantly related to student reports of the usefulness of tobacco related information received. Administrator reported barriers, however, are related to such reports. Students are less likely to report that the information they received about tobacco use at school was useful in schools where administrators report that tobacco use prevention education is not mandated by the district. The fact that administrator reports of barriers are associated with the usefulness of information received, while teacher and coordinator reports are not, suggests that administrators, by being further removed from students, are more able to identify barriers.

Table 7.9 Relationship of Barriers to Teaching Prevention Lessons to Student Reports of Exposure to Services

	Outcome variable: Student reported that they received information					
	Teacher		Coordinator		Administrator	
	OR	p-value	OR	p-value	OR	p-value
Barriers						
Not part of curriculum	0.76**	0.02	0.90	0.44	0.83*	0.06
Not mandated	0.68**	0.03	0.73	0.15	0.73***	0.01
Outcomes not assessed	0.76*	0.06	0.94	0.57	0.96	0.63
Lack of materials	1.05	0.78	0.79	0.16	0.91	0.48
Lack of time	0.93	0.55	0.84**	0.04	0.83	0.12
Low district priority	0.72**	0.03	0.83	0.14	0.92	0.29
Low school priority	0.74*	0.06	1.04	0.82	0.66**	0.01
Lack of training	0.68***	0.01	1.05	0.62	0.77*	0.06
All barriers	0.50***	0.01	0.62*	0.10	0.55***	0.01
	Outcome variable: Student reported that information received was helpful					
	Teacher		Coordinator		Administrator	
	OR	p-value	OR	p-value	OR	p-value
Barriers						
Not part of curriculum	0.90	0.29	1.03	0.82	0.83**	0.02
Not mandated	1.32	0.23	0.90	0.47	0.72***	<0.01
Outcomes not assessed	0.93	0.67	1.02	0.86	1.17**	0.03
Lack of materials	1.19	0.38	1.15	0.33	1.03	0.81
Lack of time	0.86	0.29	0.97	0.68	0.90	0.34
Low district priority	0.94	0.75	0.89	0.38	1.02	0.80
Low school priority	1.02	0.93	0.91	0.52	0.80**	0.03
Lack of training	1.00	0.99	0.84	0.12	0.95	0.63
All barriers	0.93	0.81	0.87	0.60	0.88	0.45
	Outcome variable: Student reported exposure to tobacco use prevention lessons					
	Teacher		Coordinator		Administrator	
	OR	p-value	OR	p-value	OR	p-value
Barriers						
Not part of curriculum	0.61***	0.01	1.04	0.82	0.81*	0.08
Not mandated	0.50**	0.01	0.74	0.14	0.65***	<0.01
Outcomes not assessed	0.55***	<0.01	0.84	0.23	1.01	0.92
Lack of materials	1.00	0.99	0.94	0.69	0.97	0.83
Lack of time	0.82	0.22	0.76***	0.01	0.90	0.43
Low district priority	0.40***	<0.01	0.69***	0.01	0.95	0.62
Low school priority	0.54**	0.02	0.89	0.55	0.60***	<0.01
Lack of training	0.72	0.11	0.81	0.16	0.72***	0.01
All barriers	0.25***	<0.01	0.47**	0.02	0.58**	0.02

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

School-wide Anti-tobacco Activities

Number of School-wide Activities

Teachers, coordinators, and administrators were asked about eight school-wide, tobacco use prevention activities (e.g., Great American Smokeout, anti-tobacco club) that took place at their school during the school year prior to the survey. Table 7.10 shows how the total count of these activities is related to students' receipt of tobacco related information and perceived usefulness of this information. The results clearly show that students report higher levels of receipt of tobacco related information and higher usefulness of this information when they attend schools that sponsor greater numbers of school-wide tobacco education activities. School-wide tobacco related activities also show significant, positive associations with tobacco lessons, each measure of lesson content, peer abstinence training, and cessation classes (not shown).

Table 7.10 Relationship of School Activities to Student Reports of Exposure to Services

	Outcome variable			
	Received Information		Information helpful	
	OR	p-value	OR	p-value
School wide activities				
Teacher	1.17***	<0.01	1.08***	0.01
School coordinator	1.09***	<0.01	1.04**	0.02
School administrator	1.06**	0.02	1.06***	0.01

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* 0.05 < p < 0.10
** p < 0.05
*** p < 0.01

Cessation Activities

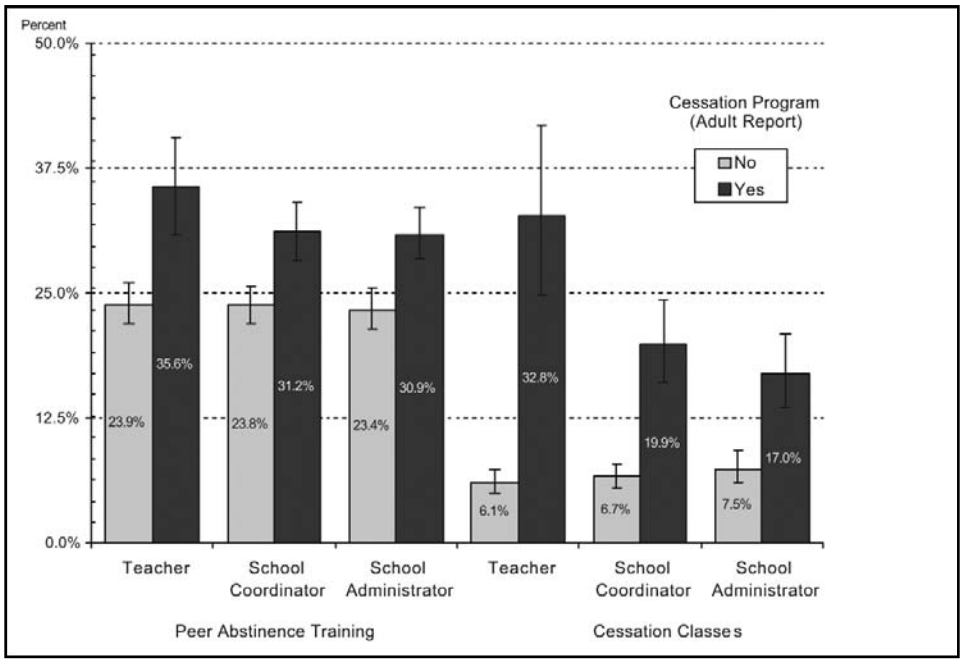
As expected, teacher, coordinator, and administrator reports of the presence of special programs for students who want help quitting their smoking habit are positively related to student reports of the presence of peer abstinence training and cessation classes. The relationships are shown in Table 7.11 and graphically in Figure 7.3.

Table 7.11 Relationship of Cessation Activities to Student Awareness of Cessation Services

	Outcome variable			
	Peer Abstinence Training		Cessation Classes	
	OR	p-value	OR	p-value
Cessation Program				
Teacher	1.75***	<0.01	7.47***	<0.01
School coordinator	1.45***	<0.01	3.47	<0.01
School administrator	1.46***	<0.01	2.52***	<0.01

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* 0.05 < p < 0.10
** p < 0.05
*** p < 0.01

Figure 7.3 Student Awareness of Cessation Services by Teacher, Coordinator, and Administrator Reports of Cessation Program



Governance

Tobacco Use Prevention/Intervention Resources and Support from the School District

The first two panels in Table 7.12 show how perceived changes in prevention/intervention resources and support from the school district are related to students' receipt of tobacco related information and their perceived usefulness of this information in making decisions about tobacco use. Students in schools where teachers report that they currently are receiving more tobacco related resources than last year receive tobacco related information at school more frequently and find the information they receive to be more useful than students in other schools. Teachers' perceived increases in resources are also positively related to student reports of tobacco lessons, lesson content, peer abstinence training, and cessation classes (not shown). Interestingly, although teacher reports of increases in resources are related to greater student exposure to program resources, this is not the case for coordinator reports. Coordinator reports of increases in tobacco use prevention/intervention resources are unrelated to students' program exposure across all the areas assessed.

Table 7.12 Relationship of School Activities, Tobacco Use Prevention/Intervention Resources, and Support from District to Student Reports of Exposure to Services

	Outcome variable			
	Received Information		Information helpful	
	OR	p-value	OR	p-value
Increases in TUPE Resources				
Teacher	1.86***	0.01	1.45**	0.01
Site coordinator	1.05	0.57	1.11	0.20
Support from district				
Teacher				
District expects TUPE lessons	1.48***	0.01	1.33***	0.01
District support	1.21	0.15	1.14	0.23
Site coordinator				
District expects TUPE lessons	1.22**	0.03	1.09	0.27
District support	1.20	0.13	0.93	0.47
Site administrator				
District support	1.45***	0.01	1.13***	<0.01
Priority of Tobacco Education at School				
Teacher	1.32***	<0.01	1.18***	0.01
Site coordinator	1.12**	0.04	1.07	0.21
Site administrator	1.10*	0.08	1.00	0.96
Tobacco education is a valuable use of student time				
Teacher	1.28*	0.08	1.12	0.36
Site coordinator	1.02	0.86	1.09	0.49
Site administrator	1.32	0.18	1.13	0.47

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Table 7.12 also shows how district support for tobacco use prevention education is related to student receipt of tobacco related information and the usefulness of that information. Both teacher and coordinator reports that the district expects tobacco lessons to be taught are positively associated with the receipt of tobacco related information, and teacher reports are associated with students' perceived usefulness of that information. This suggests that better quality, more useful, tobacco related information is provided to students when district administrators expect tobacco lessons to be taught. Unlike the results for perceived district expectations about tobacco lessons, both teacher and coordinator overall ratings of support from district administrators are not significantly related to students' receipt and perceived helpfulness of tobacco related information. Conversely, site administrator perceptions of general district support is positively associated with student receipt and perceived helpfulness of tobacco related information.

Priority of Tobacco Use Prevention Education at School

The third panel of Table 7.12 shows how teacher, coordinator, and administrator ratings of the priority of tobacco use prevention education at the school are related to student receipt of tobacco information and perceived usefulness of that information. Teacher perceptions of the priority of the tobacco use prevention education program at the school are positively related to students' perceived receipt of tobacco information. In addition, teacher reports of program priority are positively related to students' perceived usefulness of tobacco related information. When teachers feel

that tobacco use prevention education has a high priority relative to other health education topics at their school, their students are more likely to report that they receive valuable tobacco related information at school.

In results not presented in Table 7.12 teacher ratings of the priority of tobacco use prevention education at the school are positively related to student exposure to program services across every dimension assessed.

The results in the fourth panel in Table 7.12 pertain to teachers', coordinators', and administrators' personal opinion about the value of tobacco use prevention education for students. Overall, the results suggest that personal opinions about the value of tobacco use prevention education are not necessarily related to student exposure to program services or the student's perceptions about the value of tobacco related information.

School Tobacco Policies and Practices and Student Exposure to Program Services: Differences across High Schools with Competitive TUPE Grants

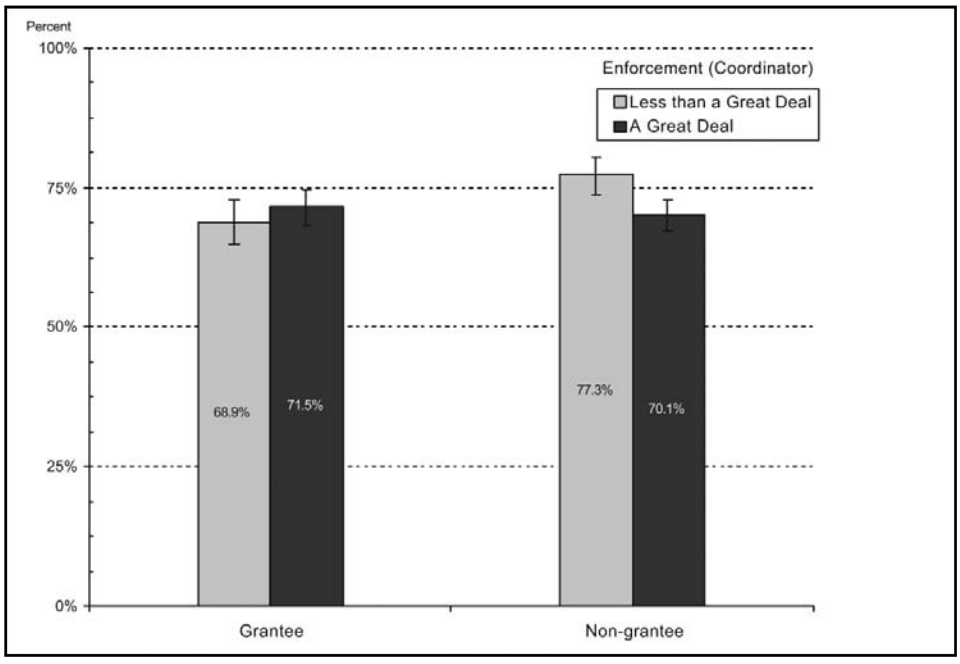
Differences between high schools with competitive TUPE grants and those without such grants in the relationships of policies and practices to student exposure to program services are shown. That is, we examined grantee/non-grantee differences in the effectiveness of program implementation in reaching students. To do this, estimates of the interaction effects between grantee status and each of the tobacco policy/practice variables described above were assessed. Overall, very few significant and consistent differences across grantee and non-grantee schools were found.

No-use Tobacco Policy

Enforcement of No-use Policy

With one exception described below, there were no differences between grantee high schools and non-grantee high schools in associations between the level of enforcement of No-use policies and student exposure to program services. As shown in Figure 7.4, enforcement, as reported by the school coordinator, was unrelated to students' perceptions that the tobacco related information that they received in schools was useful in grantee high schools, but negatively associated with such perceptions in non-grantee high schools.

Figure 7.4 Enforcement of No-use Policy and Student Perceived Helpfulness of Tobacco Related Information



Consequences for Students Who Violate No-use Policy

We found that suspension/expulsion policies for violation of the no-smoking rule are positively associated with student exposure to program services in non-grantee schools, but negatively associated with exposure to program service in grantee schools. Table 7.13 shows that, in non-grantee schools, suspension/expulsion policies are positively associated with student reports of receiving helpful tobacco related information and exposure to specific lesson topics. In grantee schools, suspension/expulsion policies are negatively associated with receiving tobacco related information at schools, exposure to tobacco lessons, and refusal skills training. Overall, these results suggest that punitive policies are associated with a host of supportive prevention activities in non-grantee schools, but not so in grantee schools.

Table 7.13 Consequences of Violation of No-use Policy and Student Reports of Exposure to Program Services in Grantee and Non-grantee High Schools

	Suspension/Expulsion (Admin)			
	Non-grantee		Grantee	
Outcome variable	OR	p-value	OR	p-value
Received information about tobacco at school	1.14	0.33	0.73**	0.01
Tobacco information helpful	1.33**	0.03	0.94	0.66
Tobacco lessons	0.99	0.95	0.67***	0.01
Taught about why people smoke	1.38**	0.01	0.87	0.37
Taught about smoking prevalence	1.42**	0.01	0.90	0.49
Taught about physical harm from smoking	1.30**	0.03	0.85	0.13
Taught about secondhand smoke	1.25*	0.09	1.28*	0.05
Refusal skills training	1.19	0.15	0.80**	0.01

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Tobacco Use Prevention Instruction

Tobacco Lessons, Hours of Instruction, and Infusion of Tobacco Lessons

The relationship of tobacco lessons and total hours of instruction to student exposure to program services did not differ markedly in grantee and non-grantee schools—although both of these factors had stronger, more positive relationships with student reported peer abstinence training and cessation classes in grantee schools. Overall, however, there is little evidence that grantee schools do a better job in reaching students than non-grantee schools. We also found little evidence that the infusion of tobacco related information in non-health related subjects is differentially associated with student exposure to program services in grantee and non-grantee schools.

Tobacco Use Prevention Topics Covered and Mode of Delivery

Similar to the results presented above, the relationship between tobacco use prevention topics covered in lessons and the use of specific instructional strategies to student exposure to lessons and lesson topics did not differ across grantee and non-grantee schools.

Tobacco Use Prevention Instructional Training and Preparedness

We found that for site coordinators, the receipt of in-service tobacco use prevention training and teaching preparedness are differentially associated with student exposure to tobacco lessons and lesson content in grantee and non-grantee schools. As shown in Table 7.14, tobacco use prevention training is positively associated with receipt of tobacco-related information, tobacco lessons, and lesson content in grantee schools, but is not related to these outcomes in non-grantee schools. The differences in these coefficients are statistically significant.

A contrasting pattern is apparent for teaching preparedness, which is unrelated to student lessons and lesson content in grantee schools but positively related in non-grantee schools.

Cessation Activities

There were no differences between grantee high schools and non-grantee high schools in associations between the presence of special programs for students who want help quitting their smoking habit as reported by teachers, coordinators, and administrators, and students' reports of peer abstinence training or cessation classes.

Table 7.14 Relationship of Training and Preparedness to Student Reports of Exposure to Lessons and Lesson Content

	Training (Coordinator)				Preparedness (Coordinator)			
	Non-grantee		Grantee		Non-grantee		Grantee	
	OR	p-val	OR	p-val	OR	p-val	OR	p-val
Received information about tobacco at school	0.73	0.82	1.74***	<0.01	1.28	0.16	0.82	0.69
Tobacco information helpful	1.11	0.47	0.94	0.64	1.23	0.27	0.76*	0.07
Tobacco lessons	1.00	0.98	1.65***	<0.01	1.49**	0.03	0.69	0.42
Taught about why people smoke	1.13	0.39	1.70***	0.01	1.52**	0.01	0.76	0.36
Taught about smoking prevalence	1.10	0.51	1.61***	0.01	1.69***	0.01	0.71	0.34
Taught about physical harm from smoking	1.05	0.68	1.90***	<0.01	1.55***	0.01	0.99	0.96
Taught about secondhand smoke	1.02	0.91	1.78***	<0.01	1.41**	0.02	0.99	0.98
Refusal skills training	0.93	0.60	1.38***	0.01	1.22	0.30	0.91	0.73

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

School-wide Anti-tobacco Activities and Governance

Number of School-wide Activities

Grantee/non-grantee school differences were also evident in the relationship between school-wide tobacco use prevention activities and student exposure to prevention services. As Table 7.15 shows, school-wide activities appear to be more strongly and consistently associated with student exposure to services in non-grantee schools than in grantee schools. The association between school-wide activities and exposure to services is significantly more pronounced in non-grantee schools than in grantee schools for receipt of tobacco related information, exposure to lessons, having a guest speaker, and having an assembly about tobacco use.

Table 7.15 School-wide Tobacco Prevention Activities and Student Reports of Exposure to Program Services in Grantee and Non-grantee High Schools

	School-wide Activities (Teacher)			
	Non-grantee		Grantee	
Outcome variable	OR	p-value	OR	p-value
Received information about tobacco at school	1.24***	<0.01	1.08**	0.04
Tobacco information helpful	1.08*	0.08	1.02	0.62
Tobacco lessons	1.30***	<0.01	1.10*	0.06
Taught about why people smoke	1.18***	<0.01	1.15***	0.01
Taught about smoking prevalence	1.22***	<0.01	1.13***	0.01
Taught about physical harm from smoking	1.20***	<0.01	1.10**	0.02
Taught about secondhand smoke	1.19***	<0.01	1.11**	0.01
Refusal skills training	1.20***	<0.01	1.10***	0.01
Guest Speaker	1.27***	<0.01	1.00	0.95
Assembly about tobacco use	1.37***	<0.01	1.10*	0.10
Peer abstinence training	1.16***	<0.01	1.17***	0.01
Cessation Classes	1.24***	<0.01	1.31***	0.01

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Tobacco Use Prevention/Intervention Resources, Support from the School District, and Priority of Tobacco Use Prevention/Intervention

We found no evidence that perceived changes in tobacco use prevention resources and the priority placed on tobacco use prevention at the school were related to students' exposure to program services differently in grantee and non-grantee schools. However, there were grantee/non-grantee differences in the associations between coordinator perceptions of support from the district and student receipt of tobacco related information, lessons, and lessons content. As shown in Table 7.16, students in grantee schools where coordinators report high levels of support from their district are more likely to receive information about tobacco, be exposed to lessons, and be taught about the physical consequences of tobacco use. Such differences are not apparent in non-grantee schools.

Table 7.16 Support from District and Student Reports of Exposure to Program Services in Grantee and Non-grantee High Schools

	Support from District (Coordinator)			
	Non-grantee		Grantee	
Outcome variable	OR	p-value	OR	p-value
Received information about tobacco at school	0.99	0.96	1.74***	<0.01
Tobacco lessons	0.77	0.26	1.37**	0.02
Taught about why people smoke	1.06	0.72	1.26	0.22
Taught about physical harm from smoking	0.82	0.28	1.44***	0.01

Notes:
Results come from models that control for student gender, ethnicity, and grade level.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Summary

The purpose of this chapter was to examine how tobacco use prevention policies and practices in California schools are related to students' reported exposure to program services. We also examined differences in these relationships across high schools that received competitive TUPE grants and those that did not receive such grants. We focused on five broad areas of tobacco use prevention/ interventions services: (1) tobacco No-use policies; (2) tobacco use prevention instruction; (3) school-wide anti-tobacco activities; (4) cessation activities; and, (5) governance. Overall, school-level policies and practices were associated with students' reported exposure to tobacco use prevention services.

For the most part, enforcement of No-use policies was unrelated to student exposure to prevention services, at least with respect to teacher and coordinator reports. But administrator reports of enforcement were associated with lower levels of exposure to prevention services—the higher the level of enforcement, the less likely students were to report that they received tobacco related information at schools or were exposed to lesson content. Perhaps high levels of enforcement divert resources away from other prevention activities.

We also found that supportive consequences for students caught violating the No-use policy, such as referrals to special classes, are associated with higher levels of student exposure to program services in TUPE grantee schools, at least with respect to teacher and coordinator reports of such policies.

With regards to tobacco use prevention instruction, we found that tobacco use prevention lessons, hours of instruction (teacher), infusion of tobacco related information into non-health related subjects, the use of published curricula, and teacher training were positively associated with student exposure to program services.

Students in schools that sponsored school-wide, tobacco use prevention activities reported higher levels of receipt of tobacco related information, higher levels of satisfaction with the information that they received, and greater exposure to tobacco lessons, lesson content, and other program services.

Finally, support from the school district, in terms of providing clear expectations that tobacco use prevention lessons be taught, are associated with the receipt of tobacco related information by students and positive perceptions of the usefulness of the information they receive. This suggests that better quality, more useful, tobacco related information is provided to students when district administrators expect tobacco use prevention lessons to be taught.

Few differences in the effectiveness of program implementation in reaching students were apparent between high schools with competitive grants and those without such grants. Tobacco lessons, hours of instruction, infusion of tobacco lessons into non-health related subjects, topics covered, the mode of instruction, and the presence of cessation activities were not differentially associated with students' reported exposure to program services in grantee and non-grantee schools. Overall, the preponderance of the findings suggests that anti-tobacco activities are equally effective in reaching students in grantee and non-grantee schools. Several exceptions to this were apparent, however. School coordinator preparedness to teach tobacco use prevention lessons and coordinator reports of school-wide anti-tobacco activities were more positively associated with student exposure to program services in non-grantee schools than in grantee schools, while coordinator training and support from the district were more positively associated with student exposure to services in grantee schools than in non-grantee schools.

Table 7.17 Constructs and Items Used in the Analysis (Adult Survey)

Construct	Question Number (Q)[1]	Question
Tobacco Policy		
Enforcement of No-use policy	T Q36 C Q36	In your opinion, to what extent is your school's no-tobacco use policy being enforced during school hours?
Consequences of violation		What is supposed to happen to students who are caught smoking cigarettes or using smokeless tobacco at your school? (Mark all that apply)
Punitive	T Q37_1 C Q37_1 A Q25_1	They are suspended / expelled
Supportive	T Q37_3 C Q37_3 A Q25_3	They are referred to a special class
	T Q37_4 C Q37_4A A Q25_4	They can choose to attend a special class in lieu of suspension
	T Q37_9 C Q37_8 A Q25_9	They are referred to a tobacco cessation clinic or program
	T Q37_10 C Q37_9 A Q25_10	They are required to go to a special tobacco education class (i.e., Saturday school)
Tobacco Use Prevention Instruction		
Lessons taught	T Q6 C Q6	During the last school year (2000-01), did you teach any tobacco prevention lessons?
Hours of instruction	T Q7 C Q7	During the last school year (2000-01), on average, how many classroom HOURS did you spend teaching tobacco prevention lessons to a classroom of students?[2]
Infusion of tobacco lessons into other subjects	T Q10	During the last school year (2000-01), did you teach any information about tobacco use that you infused into your subject areas (for example, discussing how many people use tobacco as part of a math lesson)?
Published curriculum	T Q11 C Q11	During the last school year (2000-01), did you teach any tobacco use prevention lessons from a PUBLISHED curriculum. (Note: By "published" curriculum, we mean those published by commercial companies, community organizations, your school district, etc.)
Topics covered		During the last school year (2000-01), which of the following topics did you cover in your tobacco prevention lessons? (Mark all that apply)
	T Q13_8 C Q13_8	Behavioral skills for resisting tobacco offers
	T Q13_9 C Q13_9	General personal and social skills

Table 7.17 (Continued)

Construct	Question Number (Q)[1]	Question
Mode of delivery		In the tobacco prevention lessons you taught last year (2000-01), how much did you use the following instructional strategies?
Traditional	T Q15A	Classroom discussion
	T Q15C	Lecture
Non-Traditional	T Q15b	Small group activities
	T Q15d	Student worksheets
	T Q15e	Role-playing
Training	T Q23 C Q23	During the past five years, have you received in-service training on tobacco prevention education?
	T Q24 C Q24	During the past five years, how much tobacco prevention training have you received?
	T Q25 C Q25	During the past five years, were you trained to deliver a specific published tobacco prevention curriculum?
	T Q26 C Q26	Overall, to what extent do you feel you are prepared to teach tobacco prevention lessons?
Barriers to teaching lessons		Which of the following have been barriers to your teaching of tobacco prevention lessons? (Mark all that apply)
	T Q18_1 C Q18_1 A Q19_1	Tobacco prevention is not part of my curriculum
	T Q18_2 C Q18_2 A Q19_2	Tobacco prevention education is not mandated in my school or school district
	T Q18_3 C Q18_3 A Q19_3	Tobacco prevention is not part of student outcomes that are assessed
	T Q18_4 C Q18_4 A Q19_5	Lack of adequate instructional materials (or curricula)
	T Q18_5 C Q18_5 A Q19_6	Lack of time

Table 7.17 (Continued)

Construct	Question Number (Q)[1]	Question
	T Q18_6 C Q18_6 A Q19_7	Our school district has not made tobacco prevention a high priority
	T Q18_7 C Q18_7 A Q19_8	Our school administrator has not made tobacco prevention a high priority[3]
	T Q18_8 C Q18_8 A Q19_9	I have not received adequate tobacco prevention training[4]
School-wide anti-tobacco activities		
Number of school-wide activities		During the last school year (2000-01), did your school do any of the following? (Mark all that apply)
	T Q32_1 C Q32_1 A Q20_1	Celebrate a special day called the "Great American Smokeout" or "Smoke Scream?"[5]
	T Q32_2 C Q32_2 A Q20_2	Hold an assembly or other event about tobacco prevention
	T Q32_3 C Q32_3 A Q20_3	Hold a contest (for example, a poster or essay contest) about tobacco
	T Q32_4 C Q32_4 A Q20_4	Sponsor an anti-tobacco club
	T Q32_5 C Q32_5 A Q20_5	Participate in tobacco prevention activities with the local health department
	T Q32_6 C Q32_6 A Q20_6	Display tobacco related posters (made by students or others)
	T Q32_7 C Q32_7 A Q20_7	Offer smoking cessation classes or programs
	T Q32_8 C Q32_8 A Q20_8	Celebrate Drug Free Week or Red Ribbon Week
Cessation Activities		
Presence of cessation services for students	T Q44 C Q44	Does your school have any special classes, groups, or programs for students who want help quitting their smoking habit?

Table 7.17 (Continued)

Construct	Question Number (Q)[1]	Question
Governance		
Support from district	T Q5 C Q5	Does your school district administration expect you to teach tobacco prevention lessons as part of your curriculum?[6]
	T Q27 C Q27 A Q10	To what extent have your school district administrators supported you in your teaching of tobacco prevention lessons?[7]
School Support	T Q3 C Q3 A Q3	In relation to other health education topics, what priority does tobacco prevention education hold at your school
Personal Support	T Q20 C Q20 A Q13	In yourz opinion, to what extent is tobacco prevention a valuable use of student time?

Notes:
For the following Notes 2–7, item varies across survey.
[1] T, C, and A refer to teacher, site-coordinator, and school administrator questionnaires, respectively.
[2] C Q7. During the last school year (2000-01), how many classroom HOURS or class periods did you spend teaching tobacco prevention lessons to a classroom of students?
[3] A Q19_8. Our school has not made tobacco prevention a high priority.
[4] A Q19_9. Our teachers have not received adequate tobacco prevention training.
[5] C Q32_1. Celebrate a special day called the "Great American Smokeout" or "Scream" or "Teens Kick Ash?"
[6] C Q5. Does your school district administration expect non-health teachers to teach tobacco prevention lessons as part of their curriculum?
[7] A Q10. To what extent has TUPE program coordinator at your school district supported the teachers at your school in their implementation of tobacco prevention lessons and other activities (e.g., provided staff development, new materials, etc.)?

Chapter 8: Relationship of School-level Policies and Practices to Student Tobacco Use Outcomes

Introduction

The results in chapter seven suggest that school-level tobacco use prevention and intervention activities are associated with students' reported exposure to program services. The purpose of this chapter is to examine how these policies and practices are related to student tobacco use outcomes. We also examine differences in program "effectiveness" in high schools that received competitive TUPE grants relative to those that did not receive such grants.

Throughout this chapter, we discuss and present associations between policies/practices and student outcomes. Although it may be tempting to make inferences about the effectiveness, or lack thereof, of policies and practices based on these associations inferences about causality should not be made. IETP utilizes a cross-sectional design. With cross-sectional data, we are unable to disentangle the reciprocal influences of school practices and student outcomes on each other. For example, we may find that a particular school practice—such as posting signs on school grounds stating that tobacco use is prohibited—is associated with greater levels of student tobacco use. This hypothetical positive association could be interpreted two ways. Posting signs may actually increase student tobacco use or, conversely, administrators who discover high numbers of students who smoke at their school may feel compelled to combat the problem by posting signs indicating that tobacco use is prohibited. Because tobacco policies and practices are undoubtedly influenced by students' tobacco use behavior, it is impossible to make strong conclusions about program effectiveness based on the cross-sectional, naturalistic data that are the basis of IETP.

Care should also be taken in interpreting differences in associations between school practices and student outcomes across high schools that received TUPE competitive grants and those that did not receive such grants. Tobacco policies and practices may be more heavily influenced by students' tobacco use behavior in grantee schools simply because grantee schools have more funds to mobilize

prevention resources. If this is the case, we would be more likely to find that a particular school practice aimed at reducing tobacco use is more likely to be associated with higher tobacco use in grantee schools than in non-grantee schools. In short, schools are not randomly assigned to grantee and non-grantee conditions. Nor are schools randomly assigned to deliver different dosages and/or different types of tobacco use prevention and intervention services. IETP data are naturalistic and cross-sectional, so inferences about program effectiveness should be made with caution.

Despite these limitations, the analyses reported herein are still valuable in that they illustrate how different tobacco policies and practices may affect student tobacco use and the precursors to use.

Analytic Strategy

The analytic strategy used in this chapter is almost identical to that used in chapter seven except we examine students' reports of tobacco use and precursors to tobacco use instead of students' reports of program exposure. Using logistic or ordinary least squares regression models, we modeled each tobacco outcome as a function of policies and practices, grade in school, gender, and a set of dichotomous variables representing racial/ethnic group membership. As with all the analyses in this report, the estimation procedures take into account sample weighting, clustering, and stratification.

Measures

Tobacco Use Policies and Practices

We use the same tobacco use policy and practice measures as were used in chapter seven (see Table 7.1 and Appendix Table A7.1).

Student Tobacco Use, and Precursors to Tobacco Use

We examined five measures of smoking prevalence—lifetime cigarette use, lifetime regular cigarette use (100+ cigarettes), 30-day cigarette use (current smoker), frequent cigarette use (20+ days in past 30 days), and 30-day cigarette use on school property. We also examined how factors known to be associated with future smoking (i.e., low endorsement of items assessing the social desirability of smoking)—such as intentions to smoke, peer cigarette use, and beliefs about the negative consequences of smoking—are associated with tobacco programs and policies. These measures are described in more detail in chapter three.

School Tobacco Policies, Practices, and Student Tobacco Outcomes— No-use Tobacco Policy

Enforcement of No-use Policy and Consequences for Students Who Violate Policy

Although student prohibitions against smoking on school grounds are almost universal in California schools, there is some variation across schools in the level of enforcement of these prohibitions. Overall, neither teacher nor coordinator reports of the level of enforcement of No-use policies were related to student reports of smoking or the precursors to smoking. And for the most part, punitive and supportive policies regarding the consequences for students who are caught violating the no-smoking policy were not related to student tobacco outcomes. The relationships between punitive/supportive responses to student tobacco outcomes are presented in Table 8.1. An examination of

the table indicates that the vast majority of tobacco outcomes were unaffected by what happens to students caught smoking on school grounds. Several statistically significant associations were evident however. Based on teachers' reports, suspension policies were associated with lower student rates of smoking on school property, while supportive policies were associated with higher rates of smoking at school. Similarly, coordinator reports of punitive policies were associated with lower student rates of frequent cigarette use, and coordinator and site administrator reports of supportive policies were associated with increased rates of lifetime, regular use. Although some may interpret these results as suggesting that punitive policies actually deter smoking among students, while supportive policies encourage smoking, it could be that schools with more students that smoke are more likely to shelve their suspension policies and implement more supportive policies to combat student smoking, or that tobacco consuming students drop out of zero-tolerance schools at a greater rate.

Differences by Competitive Grant Status

The relationship between the level of enforcement of No-use policies and student tobacco outcomes did not differ by TUPE competitive grantee status. Nor, for the most part, were student tobacco outcomes differentially related in grantee and non-grantee high schools to punitive and supportive policies regarding the consequences for students who are caught smoking, although teacher reports of punitive policies were negatively related to student reports. Consequently smoking on school premises in non-grantee high schools is positively related to smoking at school in grantee high schools (not shown).

Table 8.1 Relationship of Consequences of Violation of No-use Policy to Student Tobacco Outcomes

	Teacher				Site Coordinator				Site Administrator			
	Punitive		Supportive		Punitive		Supportive		Punitive		Supportive	
	OR/ß	p-val	OR/ß	p-val	OR/ß	p-val	OR/ß	p-val	OR/ß	p-val	OR/ß	p-val
Lifetime cigarette use	0.98	0.84	0.85	0.56	1.09	0.15	0.95	0.74	1.10	0.16	0.96	0.78
Lifetime 100+ cigarette use	0.97	0.85	1.74	0.19	0.85	0.39	1.43**	0.03	0.94	0.61	1.87***	0.01
Current cigarette use	0.92	0.48	1.04	0.91	0.99	0.87	1.22	0.24	0.92	0.38	1.01	0.95
Frequent cigarette use (20+ days)	0.85	0.46	2.29	0.13	0.70**	0.03	1.30	0.41	0.86	0.41	1.51	0.13
Smoke at school	0.72**	0.05	3.01**	0.02	0.86	0.20	1.56	0.14	0.84	0.39	1.02	0.95
Intent to smoke	0.95	0.69	1.00	0.99	1.04	0.62	1.25	0.15	1.10	0.22	1.17	0.31
Ease of cigarette refusal	0.90	0.38	1.13	0.66	0.92	0.18	0.84	0.25	0.88**	0.05	0.89	0.41
Peer cigarette use	1.18	0.12	1.50	0.14	1.07	0.25	1.09	0.51	0.99	0.92	1.03	0.79
Accurate smoking norms	0.90	0.33	1.12	0.66	1.01	0.91	1.27*	0.08	0.98	0.78	1.01	0.93
Beliefs about the negative consequences of smoking	0.092	0.32	-0.103	0.54	0.013	0.74	-0.117	0.15	0.003	0.95	-0.121*	0.09
Anti-cigarette industry norms	0.048	0.34	0.019	0.87	-0.055*	0.09	0.120*	0.07	-0.054**	0.05	0.046	0.52
Perceived physical harm from smoking	0.068	0.39	0.005	0.97	-0.024	0.48	0.050	0.49	-0.035	0.38	-0.010	0.90

Notes:
Results come from models that control for student gender, ethnicity, and grade level. Coefficients for "beliefs about the negative consequences of smoking," "anti-cigarette industry norms," and "perceived physical harm from smoking" come from ordinary least squares regression models. All the other coefficients come from logistic regression models and are expressed as odds ratios.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Tobacco Related Instruction

Tobacco Lessons, Hours of Instruction, and Infusion of Tobacco Related Topics

Teacher and coordinator reports of tobacco lessons and total hours of tobacco related instruction were not found to be associated with most of the student tobacco outcome measures assessed. Teacher reported lessons were associated with greater student endorsement of anti-cigarette industry norms, perceived physical harm from smoking, and lower reported peer use. These results are shown in Table 8.2. Teacher total instruction time was positively associated with anti-cigarette industry norms, but negatively associated with beliefs about the negative consequences of smoking. Overall however, there is little evidence that schools that delivered more frequent tobacco related instruction had lower levels of student tobacco use.

Table 8.2 Relationship of Hours of Instruction and Lessons to Student Tobacco Outcomes

	Teacher			
	Hours of Instruction		Lessons	
	OR/ß	p-value	OR/ß	p-value
Lifetime cigarette use	0.99	0.35	0.88	0.23
Lifetime 100+ cigarette use	1.00	0.74	0.87	0.45
Current cigarette use	1.00	0.90	0.90	0.56
Frequent cigarette use (20+ days)	1.02	0.20	1.29	0.35
Smoke at school	1.02	0.31	1.13	0.75
Intent to smoke	0.99	0.58	0.79*	0.07
Ease of cigarette refusal	1.00	0.82	1.21*	0.09
Peer cigarette use	0.98	0.13	0.75**	0.02
Accurate smoking norms	0.99	0.39	0.93	0.57
Beliefs about the negative consequences of smoking	-0.018**	0.03	-0.046	0.61
Anti-cigarette industry norms	0.008**	0.01	0.139**	0.02
Perceived physical harm from smoking	0.002	0.81	0.133**	0.03

Notes:
Results come from models that control for student gender, ethnicity, and grade level. Coefficients for "beliefs about the negative consequences of smoking," "anti-cigarette industry norms," and "perceived physical harm from smoking" come from ordinary least squares regression models. All the other coefficients come from logistic regression models and are expressed as odds ratios.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

However, we found some evidence that the infusion of tobacco related topics into non-health related subjects was associated with lower rates of tobacco use in schools. As shown in Table 8.3, students from schools where teachers reported that they integrate tobacco related topics into their general teaching reported lower levels of lifetime cigarette use and a trend toward less regular lifetime use, smoking at school, intentions to smoke in the future, and increased ease in refusing an offer of cigarettes. Although far from conclusive, the results suggest that the infusion of tobacco related topics was associated with lower rates of smoking.

Table 8.3 Relationship of Tobacco Lesson Infusion to Student Tobacco Outcomes

	Teacher reports	
Outcome variable	OR/ß	p-value
Lifetime cigarette use	0.76**	0.01
Lifetime 100+ cigarette use	0.74**	0.05
Current cigarette use	0.84	0.26
Frequent cigarette use (20+ days)	0.92	0.77
Smoke at school	0.60**	0.05
Intent to smoke	0.75**	0.02
Ease of cigarette refusal	1.27**	0.01
Peer cigarette use	0.89	0.30
Accurate smoking norms	1.05	0.71
Beliefs about the negative consequences of smoking	0.052	0.48
Anti-cigarette industry norms	0.034	0.50
Perceived physical harm from smoking	0.087	0.16

Notes:
Results come from models that control for student gender, ethnicity, and grade level. Coefficients for "beliefs about the negative consequences of smoking," "anti-cigarette industry norms," and "perceived physical harm from smoking" come from ordinary least squares regression models. All the other coefficients come from logistic regression models and are expressed as odds ratios.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Differences by Competitive Grant Status

Teacher and coordinator reports of tobacco lessons and infusion of tobacco related topics into non-health related subjects, were not found to be differentially related to student tobacco outcomes by high school competitive grant status (not shown). The relationship of teacher reported "hours of tobacco related instruction" to student tobacco use and its precursors did differ by grantee status, however. As shown in Table 8.4, hours of instruction appeared to be positively associated with current cigarette use, frequent cigarette use, and smoking at school in high schools with competitive TUPE grants, but not in non-grantee schools. These grantee/non-grantee differences were statistically significant for lifetime regular use, 30-day use, frequent use, smoking at school, and peer use. Additionally, beliefs about the negative consequences of smoking were negatively related to hours of instruction in grantee schools, but not so in non-grantee schools. Conversely, hours of instruction were positively and more strongly related to anti-cigarette industry norms and perceived harm in grantee schools than in non-grantee schools. Thus, hours of instruction is associated with higher levels of social desirability of smoking (i.e., "smoking cigarettes makes young people look cool or fit in"), but is associated with more negative opinions of the tobacco industry and greater cognizance of the deleterious physical consequences of smoking.

Table 8.4 Relationship of Hours of Instruction to Student Tobacco Outcomes by Grantee Status

	Hours of Instruction (teacher report)			
	Non-grantee		Grantee	
	OR/ß	p-value	OR/ß	p-value
Lifetime cigarette use	1.01	0.25	1.01	0.31
Lifetime 100+ cigarette use	0.98	0.11	1.02	0.14
Current cigarette use	0.96**	0.02	1.04**	0.04
Frequent cigarette use (20+ days)	0.97	0.21	1.06**	0.03
Smoke at school	0.95	0.12	1.06***	<0.001
Intent to smoke	0.96	0.11	1.00	0.78
Ease of cigarette refusal	1.00	0.79	1.00	0.80
Peer cigarette use	0.96**	0.03	1.00	0.62
Accurate smoking norms	0.99	0.42	0.99	0.32
Beliefs about the negative consequences of smoking	-0.005	0.33	-0.027***	<0.001
Anti-tobacco industry norms	0.007***	0.01	0.021***	<0.001
Perceived health consequences from smoking	-0.003	0.43	0.016**	0.03

Notes:
Results come from models that control for student gender, ethnicity, and grade level. Coefficients for "beliefs about the negative consequences of smoking," "anti-cigarette industry norms," and "perceived physical harm from smoking" come from ordinary least squares regression models. All the other coefficients come from logistic regression models and are expressed as odds ratios.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Use of Published Tobacco Use Prevention Curriculum, Topics Covered, and Mode of Delivery

Overall, we found little evidence that the use of a published tobacco use prevention curriculum was consistently associated with student tobacco outcomes. Nor did we find that the teacher- or coordinator-reported topics covered in their classes were consistently related to these outcomes.

Teacher reports of the methods they used to deliver tobacco lessons (e.g., lectures, class discussions) were unrelated to student tobacco use and the precursors to tobacco use. However, the results based on coordinator reports suggest that students who attend schools where coordinators primarily relied on classroom discussions to deliver lessons exhibited higher smoking rates than others. As shown in Table 8.5, students in schools where coordinators relied on classroom discussion strategies for prevention instruction reported higher levels of lifetime cigarette use, current smoking, and intentions to smoke. They also reported lower refusal skills and beliefs about the negative consequences of smoking. At first glance, it might appear that coordinators caused students to experiment with smoking. A more plausible explanation, however, is that coordinators were more likely than other teachers to be invited to present tobacco use prevention lectures to classes where tobacco use by students had been discovered to be unusually high.

Differences by Competitive Grant Status

We found little evidence that the use of published vs. unpublished curricula, topics covered, or methods of instruction were differentially related to student tobacco outcomes across high schools with competitive grants and those without such grants.

Table 8.5 Relationship of Using Classroom Discussion in Prevention Lessons to Student Tobacco Outcomes

	Teacher reports	
Outcome variable	OR/ß	p-value
Lifetime cigarette use	1.13**	0.03
Lifetime 100+ cigarette use	1.17**	0.05
Current cigarette use	1.36***	<0.01
Frequent cigarette use (20+ days)	1.23*	0.10
Smoke at school	1.22	0.19
Intent to smoke	1.26***	0.01
Ease of cigarette refusal	0.86***	0.01
Peer cigarette use	1.08	0.11
Accurate smoking norms	0.92	0.13
Beliefs about the negative consequences of smoking	-0.075**	0.02
Anti-cigarette industry norms	0.025	0.46
Perceived physical harm from smoking	0.006	0.85

Notes:
Results come from models that control for student gender, ethnicity, and grade level. Coefficients for "beliefs about the negative consequences of smoking," "anti-cigarette industry norms," and "perceived physical harm from smoking" come from ordinary least squares regression models. All the other coefficients come from logistic regression models and are expressed as odds ratios.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

School-wide Anti-tobacco Activities

Number of School-wide Anti-tobacco Activities

Our analysis suggests that the number of school-wide tobacco use prevention activities that took place at schools during the year prior to the survey was unrelated to most of the student tobacco use outcomes, regardless of whether the report came from a teacher, school coordinator, or school administrator. However, as shown in Table 8.6, the number of school-wide tobacco use prevention activities was positively associated with students' endorsement of anti-cigarette industry norms—suggesting that school-wide activities are linked to students' attitudes about the tobacco industry.

Differences by Competitive Grant Status

No evidence was found to support the number of school-wide tobacco use prevention activities were related to student tobacco outcomes differently in grantee and non-grantee high schools.

Table 8.6 Relationship of School-wide Activities to Selected Student Tobacco Outcomes

	Teacher		Site Coordinator		Site Administrator	
	ß	p-value	ß	p-value	ß	p-value
Beliefs about the negative consequences of smoking	-0.061	0.68	-0.174**	0.03	-0.069	0.42
Anti-cigarette industry norms	0.202**	0.01	0.163***	0.01	0.154**	0.03
Perceived physical harm from smoking	0.082	0.47	0.018	0.78	0.068	0.46

Notes:
Results come from models that control for student gender, ethnicity, and grade level. Coefficients for "beliefs about the negative consequences of smoking," "anti-cigarette industry norms," and "perceived physical harm from smoking" come from ordinary least squares regression models. All the other coefficients come from logistic regression models and are expressed as odds ratios.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Governance

Support from District, and Priority of Tobacco Use Prevention at School

We next examine how issues surrounding the governance of tobacco use prevention education at schools were related to student tobacco outcomes, focusing on the level of support received from the district and the priority of tobacco use prevention at the school. Surprisingly, our analyses suggest that the perceived priority of tobacco use prevention education at the school was not related to student tobacco outcomes. Students exhibited similar tobacco use rates and similar tobacco use risk profiles regardless of the degree to which tobacco use prevention education was prioritized at the school.

We did find, however, that perceived tobacco use prevention education support from the district was related to some of the student outcomes assessed. As presented in Table 8.7, students in schools where teachers reported that the district expects them to teach tobacco use prevention lessons exhibited lower levels of lifetime cigarette use, and a trend toward reporting lower cigarette use by peers and higher anti-cigarette industry attitudes than other students. Additionally, teacher overall ratings of support from district administrators were associated with lower student rates of lifetime cigarette use, greater refusal skills, and higher anti-cigarette industry norms and perceived harm from smoking. Although the results suggest that teachers' perceptions of support from the district were linked to student tobacco outcomes, the results for site coordinator reports in Table 8.7 do not show a consistent pattern. And we found no relationship between site administrator reports of district support and student tobacco outcomes.

Table 8.7 Relationship of Support from District to Student Tobacco Outcomes

	Teacher				Site Coordinator			
	Expected to teach		Level of support		Expected to teach		Level of support	
	OR/ß	p-value	OR/b	p-value	OR/ß	p-value	OR/ß	p-value
Lifetime cigarette use	0.77***	0.01	0.78**	0.02	1.01	0.89	1.00	0.99
Lifetime 100+ cigarette use	1.04	0.84	1.03	0.87	1.04	0.75	1.44**	0.03
Current cigarette use	0.75*	0.07	0.77	0.11	0.94	0.52	1.04	0.73
Frequent cigarette use (20+ days)	1.34	0.23	1.03	0.91	1.06	0.72	1.27	0.28
Smoke at school	1.12	0.71	1.01	0.97	0.97	0.88	1.13	0.51
Intent to smoke	0.94	0.57	0.87	0.20	0.94	0.53	1.13	0.26
Ease of cigarette refusal	1.05	0.65	1.29***	0.01	0.96	0.62	0.86*	0.07
Peer cigarette use	0.79**	0.03	0.81*	0.06	1.01	0.86	1.00	0.97
Accurate smoking norms	0.99	0.93	0.90	0.30	1.07	0.43	0.96	0.67
Beliefs about the negative consequences of smoking	-0.021	0.77	0.009	0.92	-0.077*	0.09	0.159***	0.01
Anti-cigarette industry norms	0.132**	0.02	0.170***	0.01	0.016	0.65	0.001	0.98
Perceived physical harm from smoking	0.087	0.15	0.118**	0.02	-0.022	0.62	-0.036	0.41

Notes: Results come from models that control for student gender, ethnicity, and grade level. Coefficients for "beliefs about the negative consequences of smoking," "anti-cigarette industry norms," and "perceived physical harm from smoking" come from ordinary least squares regression models. All the other coefficients come from logistic regression models and are expressed as odds ratios.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.01$

Differences by Competitive Grant Status

In terms of support from the district for tobacco use prevention, no differences were apparent between grantee and non-grantee high schools in associations with student tobacco outcomes. Nor were grantee/non-grantee differences apparent in the relationships between teacher and coordinator reports of the priority of tobacco use prevention to student tobacco use outcomes. However, administrator perceptions of the importance of tobacco use prevention education were differentially related to student tobacco use in grantee and non-grantee high schools. The results presented in Table 8.8 show that administrator perceptions of the value of tobacco use prevention education were positively associated with current cigarette use, frequent cigarette use, and smoking at school in grantee schools, but were not related to these outcomes in non-grantee schools. The results suggest that administrators in grantee schools may be more aware of the importance of tobacco use prevention education when their students exhibit high levels of tobacco use than is the case in non-grantee schools.

Table 8.8 Relationship of Hours of Instruction to Student Tobacco Outcomes by Grantee Status

	Tobacco use prevention education is a valuable use of student time (administrator report)			
	Non-grantee		Grantee	
	OR	p-value	OR	p-value
Lifetime cigarette use	0.63	0.16	1.24	0.11
Lifetime 100+ cigarette use	2.07**	0.02	2.01*	0.06
Current cigarette use	0.98	0.90	1.51**	0.01
Frequent cigarette use (20+ days)	0.97	0.93	3.59***	0.01
Smoke at school	0.96	0.89	4.37***	0.01

Notes:
Results come from models that control for student gender, ethnicity, and grade level. All coefficients come from logistic regression models and are expressed as odds ratios.
* $0.05 < p < 0.10$
** $p < 0.05$
*** $p < 0.z01$

Summary

This chapter examined how tobacco use prevention policies and practices in California schools are related to student tobacco use and precursors to tobacco use. We also examined differences in these relationships across high schools that received competitive TUPE grants and those that did not receive such grants. For the most part, significant grantee/non-grantee differences were rare and were difficult to interpret. We therefore do not discuss these differences in the summary.

Overall, school-level policies and practices were not often related to student tobacco use and tobacco use precursors. Enforcement of no-smoking policies, punitive and supportive consequences for students caught smoking, tobacco lessons, hours of instruction, the use of a published curriculum, and teacher tobacco use prevention training were not related to student tobacco use or precursors to use. And for the most part, students in schools that sponsored school-wide, tobacco use prevention activities did not smoke less or exhibit lower smoking risk than students in other schools—although they were more likely to endorse anti-cigarette industry norms than students in other schools.

Only in the areas of infusion of tobacco related topics into the non-health curriculum and district support for tobacco use prevention activities was there consistent evidence that tobacco policies and practices were related to lower levels of student smoking. The infusion of tobacco related topics into non-health courses was associated with lower levels of lifetime cigarette use, regular lifetime use, smoking at school, and intentions to smoke. Support from the school district, in terms of providing clear expectations that tobacco lessons were required to be taught, was associated with lower levels of lifetime cigarette use, lower perceptions of peer use, and higher anti-cigarette industry norms. Finally, teacher overall ratings of support from district administrators were associated with lower student rates of lifetime cigarette use, greater refusal skills, higher anti-cigarette industry norms, and higher perceptions of the harm caused by smoking.

Although at first glance the overall lack of relationships of tobacco policies and practices to student tobacco use might suggest that tobacco use prevention activities are not effective, the cross-sectional, survey data that are the basis of these analyses precludes making such a judgment. With cross-sectional data, inferences about causality, or lack thereof, should not be made.

Chapter 9: Conclusions and Recommendations

This evaluation focused on three broad research questions with regard to youth tobacco use and prevention in California:

1. What is the prevalence of tobacco related behavior, attitudes, and knowledge and awareness about tobacco and tobacco use prevention among California students?
2. What types of school-based tobacco use prevention and intervention policies and practices are being implemented in California schools and to what level and consistency are they being implemented?
3. Is program exposure associated with lower levels of student tobacco use and lower levels of factors known to be precursors to tobacco use (e.g., pro-smoking attitudes)?

The foregoing chapters have reviewed 2001–02 tobacco use patterns observed in California in-school youth and related this epidemiological information to school district staff information about TUPE-funded activities conducted in the recent past. Both school-level and district-level influences on students' rates of tobacco use were examined.

The observed student tobacco use prevalence rates reported here reflect the complex survey design used to collect the data and were cross-validated against the rates observed in a parallel random sample survey conducted in the same population during the same time interval. The rates were also compared with four sets of California youth smoking prevalence rates obtained periodically since 1995–96 (Rohrbach et al., 2002). These rates were also compared to corresponding rates observed in randomly sampled in-school youth across the U.S. Especially for middle school tobacco use rates, the current tobacco use rates observed in California youth are the lowest ever recorded in the state and lower than national rates. Beliefs and attitudes reported by California youth are consistent with these observed behavioral differences. This is clearly good news. Prevention of tobacco use in school children appears to be working in California, relative to past years and relative to the rest of the U.S. The lower observed rates of cessation of smoking California youth, relative to smoking youth elsewhere, deserve further study. Overall, however, California youth appear to be well-protected against tobacco use.

The findings relative to the second and third goals of this evaluation are mixed. Based on the cross-sectional data reported here, one can only speculate about the reasons for the success of tobacco use prevention in California school youth. Elements of TUPE-funded activities appear to be related to increased awareness by youth of the dangers associated with tobacco use. But the students' awareness of the dangers of tobacco use probably benefit from the influence of community-level tobacco control efforts, as well (Flay, 2000).

Neither students nor teachers reported as much knowledge about tobacco control as would be expected if TUPE programs adhered to all of the recommendations of CDC school-based tobacco control guidelines. Students tended to report higher levels of knowledge about refusal skills, the harmfulness of secondhand smoke, more accurate smoking prevalence statistics and about what motivates people to smoke when their teachers were well-trained and when their school district and school administrators strongly supported TUPE instruction. Unfortunately, the teachers who were surveyed reported disappointingly low rates of TUPE training, even those whose teaching subject (e.g., health) lent itself to TUPE instruction. These low rates of training appear not to reflect teachers' overwhelming consensus that tobacco use education is a valuable way to spend class time. The teachers reported that lack of district (and state) support for TUPE was an important barrier to school-based tobacco control efforts. The less-than-desirable levels of TUPE training may reflect lack of support from the administrators to whom these teachers report. Administrators expressed high levels of support for TUPE instruction; however, it may be that concern with maximizing student academic achievement test scores supersedes their support for TUPE instruction.

The data suggested that tobacco use prevention lessons, hours of instruction (teacher), infusion of tobacco related information into non-health-related subjects, and the use of published tobacco use prevention curricula were positively associated with student exposure to tobacco use prevention services. More generally, students reported receiving higher levels of TUPE instruction and perceived TUPE information that they received to be more personally helpful when district administrators expected tobacco lessons to be taught.

A pattern emerged from the data that suggests a cautionary message for district administrators. District administrators may turn to punitive enforcement of no-tobacco-use policies as the principal method of discouraging tobacco use among students in lieu of supporting TUPE programming. District administrator reports of enforcement were found to be associated with lower levels of exposure to prevention services—the higher the level of enforcement, the less likely students were to report that they received tobacco related information at schools or were exposed to lesson content. On the other hand, when students caught violating the No-use policy were given referrals to special classes in lieu of suspension, teachers and coordinators' reports were associated with higher levels of exposure to program services.

The data were particularly problematic in trying to assess the impact of TUPE grant funding on student learning, because of the cross-sectional nature of the data and because of the patterns of the results. The safest conclusion is to say that prospective longitudinal research is required to be able to draw causal inferences from the data collected. With this caveat in mind, the most striking feature of the results was the lack of association between a school's TUPE funding status and student outcomes. Tobacco lessons, hours of instruction, infusion of lessons into non-health-related subjects, topics covered, mode of instruction, and the availability of smoking cessation resources on campus were all equally effective in affecting

students' reported exposure to tobacco control program services in grantee and non-grantee schools. The preponderance of the evidence suggests that anti-tobacco use activities are equally effective in reaching students attending grantee and non-grantee schools.

Another implication emerging from the data was that schools' anti-tobacco efforts may need some retooling in order to be maximally effective with older adolescents. Respondents in the high school grade levels tended to report tobacco control messages as being less helpful than did middle school respondents. The tendency of teachers to prefer addressing the physical health consequences of tobacco use rather than the social consequences of tobacco use may have suited students in grades six and seven but perhaps did not meet with as much approval by students in grades 11 and 12. There is increasing recognition that additional tobacco control resources specifically targeting older adolescents and younger adults are needed (e.g., Everett et al., 1999).

Especially pertinent for the older adolescent smoker is the issue of access to smoking cessation resources. More research is needed to understand the relatively low rates of cessation recorded among in-school California youth. Past research suggests that youth who smoke regularly are relatively unresponsive to cessation programs, at least compared to adults (e.g., Moolchan et al., 2000), but presumably there is something about the current situation in California that is potentially modifiable and contributes to the lower observed rates of cessation among in-school youth observed in this study compared to rates observed elsewhere in the U.S. On the other hand for the variations in access to cessation shown here, there were no significant differences between access and student level reported cessation.

With respect to the third evaluation goal, evaluating the impact of program exposure on student tobacco use behavior, not much can be concluded. Few differences in student tobacco use were observed in comparisons involving TUPE grantee schools and non-grantees. What significant differences were observed proved difficult to interpret. Even when grantee versus non-grantee status was ignored, there were few significant relationships observed between intensity of TUPE instruction and student tobacco use outcomes. Only in the areas of infusion of tobacco related topics into the non-health curriculum and district support for TUPE activities was there consistent evidence that tobacco policies and practices are related to lower levels of student tobacco use. Because these data represent at best a snapshot in time, causal inferences about TUPE activities "working" or "not working" are premature.

Specific to the potential for teachers to influence student tobacco use, the findings reviewed especially in chapters four, five, six, seven, and eight suggest the following recommendations:

- School district administrators need to publicly support TUPE activities, to publicize this support regularly, and to indicate that TUPE instruction is as important as other academic instruction. Teacher efforts will be more effective when they know that they have support from their administrators for their TUPE activities. District administrators need to be discouraged from the temptation to rely on stronger enforcement of punitive no-tobacco-use policies in lieu of stronger reliance on TUPE programming.
- More teachers need training in tobacco use prevention education. Even when the teachers reported not feeling well prepared to teach tobacco control, those exposed to formal training appeared to be more successful in discouraging student tobacco use. Unfortunately, there is no existing literature to corroborate this finding.

- The state, school districts, and schools should encourage teachers to use CDC-recommended, integrated tobacco use prevention programs in preference to cherry-picking the components of diverse prevention programs that they happen to like. Only by using an entire off-the-shelf, CDC-recommended program can students be assured exposure to the full array of effective tobacco control messages and strategies.
- Teachers in the older grades need to make sure that they are providing grade-appropriate material, shifting the focus away from the physical health consequences of adolescent tobacco use and towards greater attention to the social and emotional consequences of adolescent tobacco use. The declining satisfaction that older students report with the perceived helpfulness of tobacco use prevention lessons as compared with younger students might be attenuated by tobacco use prevention content that better addressed the social and emotional needs typical of older adolescents.
- Schools and school districts need to publicize their no-tobacco-use policies regularly. School and district no-smoking policies do make a difference but obviously cannot be expected to be helpful if teachers (and students) are not aware of them. Students in schools where the teachers reported no awareness of an existing no-tobacco-use policy appeared to be more vulnerable to tobacco use as measured by lifetime use, smoking at school, and higher rates of intending to smoke in the future.

The results of examining the impact of teacher-level and district staff-level information on student-level tobacco use help to illuminate the contextual nature of student tobacco use. The findings reviewed in chapter eight illustrate especially well that knowing whether or not a tobacco control policy has been implemented or not in a school is not enough to know whether that policy will beneficially or adversely affect students' tobacco use. The existence of a no-tobacco-use school policy may have beneficial or adverse effects depending on whether the consequences of violating that policy are punitive or "supportive." The relationship between teacher preparedness and student tobacco use was also conditioned by whether the school received TUPE funding or not. There is probably no single magic bullet tobacco control policy that will work in all schools all the time with all types of students. In the meantime, the consensus school guidelines promulgated by CDC (1994) serve as a good model for effective tobacco use prevention while we wait for future research to reveal how better to meet the needs of specific school populations and how better to mobilize school-level resources to help students achieve the ultimate goal of eliminating tobacco use dependence.

This evaluation of California in-school youth must, of course, be understood in the context of the large backdrop of tobacco use prevention education occurring at the community, state, and national level. A demonstrably beneficial statewide policy change has been the 50 percent rise in the price of cigarettes observed between 1999 and 2002. This price rise occurred as a result of a 1999 rise of 50¢ in the state tobacco excise tax and by accompanying tobacco industry price increases (reviewed in Rohrbach et al., 2002). All ages and ethnic groups reduce tobacco use as prices of tobacco products rise, but younger adolescents and African Americans are the most responsive (e.g., Chaloupka and Pacula, 1999).

With recent progress in the development of multi-level statistical models (e.g., Raudenbush and Bryk, 2002) and with the pioneering collection of community-wide tobacco control data by the state of California, it is becoming possible to evaluate more rigorously than was once possible the separate contributions of schools, communities, and statewide policies to successful (or unsuccessful) tobacco use outcomes. The time and analytical expertise required to capitalize on these new techniques and enlarged database unfortunately exceeded the time frame permitted for the publication of this report, so further analyses of the data described in this report would be warranted.

This report covered only some of the epidemiological information that could potentially be extracted from the data collected and reported here. Future analyses of these data by other investigators may illuminate measured influences not addressed here. As a one-time snapshot of the tobacco use status of in-school youth, these data do not permit causal inferences to be made with any confidence. When viewed in light of recent past and future tobacco use data also collected from in-school California youth, causal inferences can be made with more confidence. No single study can capture all of the major influences on adolescent tobacco use. The reader is encouraged to review the epidemiological findings reported here in light of the changing conception of adolescent tobacco use behavior emerging in the scientific literature (e.g., DiFranza et al., 2002).

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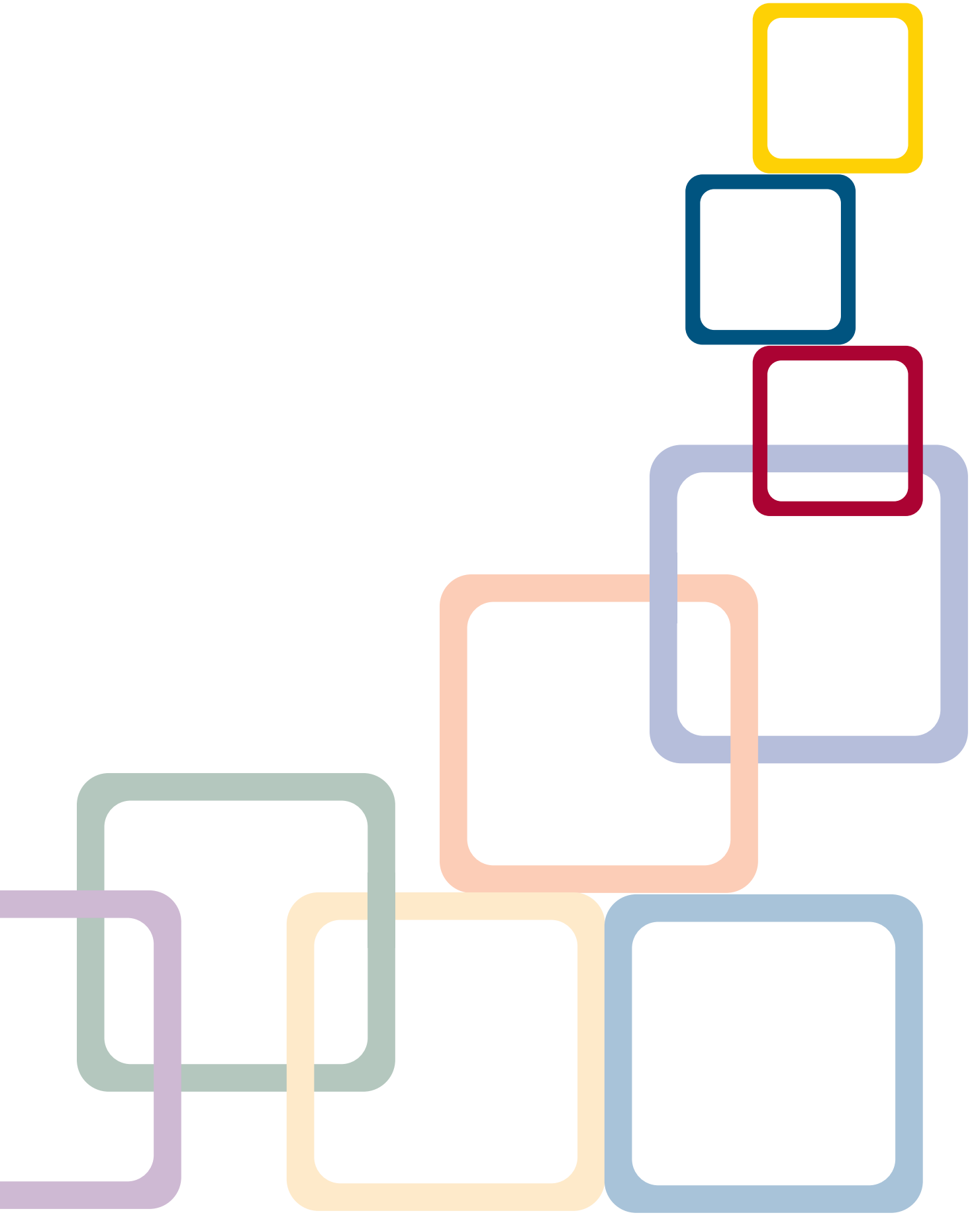

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