

**The Commonwealth of Massachusetts
Department of Education**

**Preventing Tobacco Use Among
Massachusetts Youth:**

- I. School Programs to Prevent Youth Tobacco Use, 2000**
- II. Tobacco Use Among High School Students:
Massachusetts Youth Risk Behavior Survey, 2001**

January, 2002

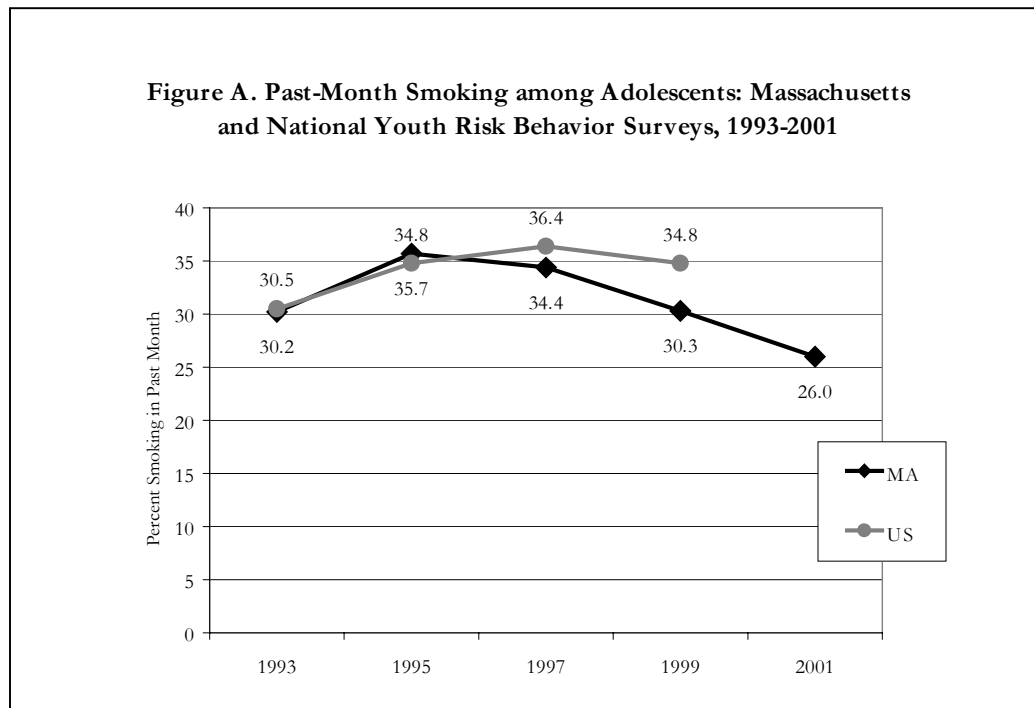
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The Massachusetts Department of Education extends its thanks to the 4204 public high school students who participated in the 2001 Youth Risk Behavior Survey, and to the teachers, principals, and superintendents of the 64 high schools these students represented.

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Massachusetts rates of adolescent cigarette smoking within the past month are based on the 1993, 1995, 1997, 1999, and 2001 Massachusetts Youth Risk Behavior Surveys. Each survey year, a representative sample of public high school students was asked “During the past 30 days, on how many days did you smoke cigarettes?” Youth who reported smoking any cigarettes in the past month were considered to be current (past-month) smokers. The drop in past-month cigarette smoking from 1995 and 1997 to 2001 is statistically significant ($p < .05$)

U.S. rates for recent smoking are based on responses to the Youth Risk Behavior Survey (YRBS) given to national samples of public high school students in 1993, 1995, 1997, and 1999.¹⁻⁴ Results of the 2001 National YRBS are not yet available. The wording of the question concerning past-month cigarette smoking was identical to that on the Massachusetts YRBS.

PREVENTING TOBACCO USE AMONG MASSACHUSETTS YOUTH: EXECUTIVE SUMMARY

In 1992, Massachusetts voters approved an excise tax on tobacco products; a significant portion of this revenue has been used for the Health Protection Fund, which supports comprehensive school health programs in Massachusetts schools. Tobacco use prevention has always been a key element in these programs. This report, which discusses Massachusetts' progress toward eliminating tobacco use among young people in the Commonwealth, consists of two parts. Part I concerns aspects of tobacco prevention programs in Massachusetts public schools, and in particular focuses on the extent to which those programs meet criteria outlined by the Centers for Disease Control and Prevention (CDC). Part II reports the tobacco-related results of the 2001 Massachusetts Youth Risk Behavior Survey.

Part I: Massachusetts School Programs to Prevent Youth Tobacco Use

Introduction: In 1994, the CDC outlined seven criteria for effective school-based tobacco prevention programs. These seven criteria, plus an eighth added by Massachusetts (peer involvement), are the standards against which school tobacco prevention programs in the Commonwealth are judged. Part I of this report uses information collected in the spring of 2000 from secondary school principals and health teachers and from district health coordinators to evaluate the current status of school tobacco prevention efforts in Massachusetts. Key findings, organized by the eight standards for effective programs, are presented below.

- ◆ **Schools should . . . develop and enforce a school policy on tobacco use.**
Currently, all Massachusetts school districts have some policy preventing tobacco use, and most have policies that specify the kinds of tobacco prohibited, the areas and events covered by the policy, and the consequences for student violations. Vigorous and consistent enforcement of policies remains difficult; although smoking on school property has dropped significantly, nearly half of student smokers have smoked on school property in the past month.
- ◆ **Schools should . . . provide tobacco use prevention education in kindergarten through 12th grade. This instruction should be especially intensive in junior high or middle school and should be reinforced in high school.**
In Massachusetts schools, tobacco prevention education occurs in all grade levels, and is most intensive in the middle school years. Nine out of ten secondary schools have at least one required course that includes tobacco education. Health coordinators estimate that from kindergarten to 12th grade Massachusetts students receive nearly 40 hours of tobacco prevention education.

- ◆ **Schools should . . . 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.**

Most important topics related to tobacco prevention are being covered by virtually all health teachers. The use of effective skills-based approaches is common, but far from universal; approximately one quarter to one third of teachers appear to be using primarily didactic, information-only teaching methods.

- ◆ **Schools should . . . provide program-specific training for teachers.**

Health education is the primary area of academic preparation for most health teachers. Most have received recent training on tobacco prevention topics. Though many health teachers have had recent training on using interactive teaching methods and teaching skills for behavior change, the majority would like more training on these methods.

- ◆ **Schools should . . . involve parents or families in support of school-based programs to prevent tobacco use.**

Virtually all districts have parents as members of their School Health Advisory Committee, and teachers use various methods (especially sending home newsletters or other materials) to involve parents. Even so, teachers appear to want more help in involving parents and community members in health education.

- ◆ **Schools should . . . support cessation efforts among students and school staff who use tobacco.**

Two-thirds of high schools and one quarter of middle schools offer on-site tobacco cessation programs for students, and most offer referrals to students and staff for off-site programs. Health coordinators estimate that roughly one quarter of participants either quit or cut down on smoking, though without standard follow-up procedures it is difficult to judge the accuracy of these reports.

- ◆ **Schools should . . . assess the tobacco use prevention program at regular intervals.**

Very few districts (8%) have any standardized system in place for assessing student knowledge and skills regarding tobacco prevention or other health topics and few if any have attempted to measure students' attitudes, values or beliefs about tobacco use. On the other hand, most secondary schools have collected at least one wave of student self-reports about tobacco use, often using the YRBS or a similar survey. These surveys provide useful data for local program evaluation.

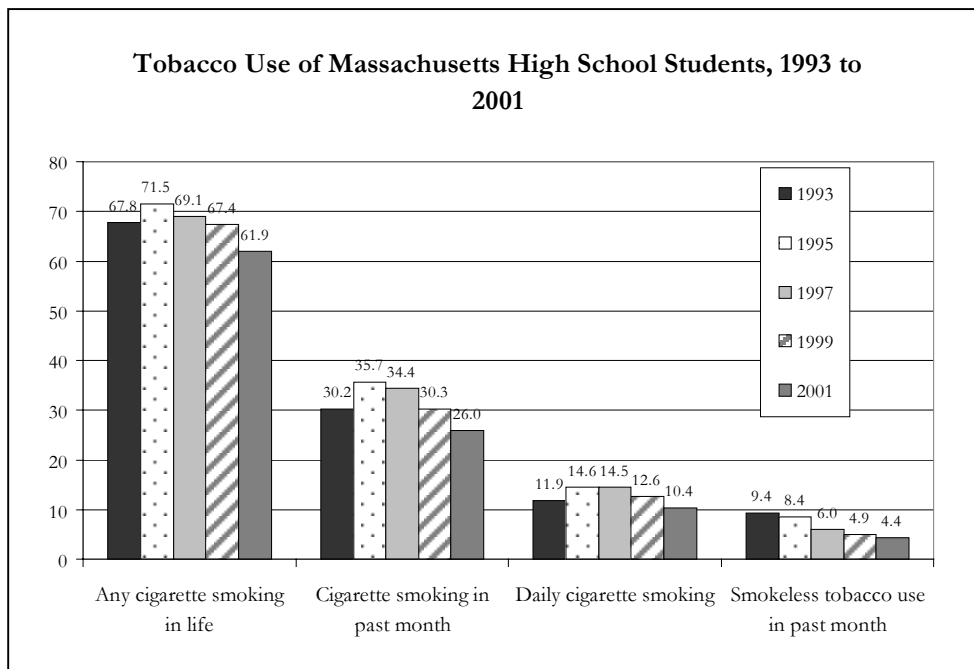
- ◆ **Schools should . . . foster strong peer involvement in tobacco prevention efforts.**

Over half of all Massachusetts secondary schools use peer educators for some kind of health education; 40% of schools use peer educators for tobacco prevention education specifically. The great majority of health coordinators list developing peer education programs and increasing student involvement as two of their major goals.

Part II: Massachusetts Youth Risk Behavior Survey Results, 2001

Introduction: Every other year since 1993, the Massachusetts Department of Education has conducted a statewide anonymous survey of public high school students asking about their risk behavior regarding tobacco, alcohol and drug use, behavior related to intentional and unintentional injury, sexual risk behavior, dietary behavior, and physical activity. The 2001 Massachusetts Youth Risk Behavior Survey (MYRBS), administered in the spring of 2001, surveyed 4,204 students in 64 high schools. Because of high student and school response rates, results of this survey can be considered representative of all public high school students in the Commonwealth. Only those MYRBS results concerning tobacco are presented here. A complete MYRBS report discussing other adolescent risk behaviors will be published later in the year.

Key Findings: 2001 Massachusetts Youth Risk Behavior Survey



- ◆ **Smoking among Massachusetts youth has decreased steadily since 1995.** From 1995 to 2001, there was a statistically significant decline in students who reported ever having tried smoking cigarettes (from 72% to 62%) and in adolescents who smoked cigarettes in the past month (36% to 26%). Past-month cigar smoking, which was first assessed in 1999, also declined slightly from 1999 to 2001 (16% to 13%).

- ◆ **Smokeless tobacco use has also declined significantly.**
Adolescent use of smokeless tobacco (chewing tobacco or snuff) has dropped consistently every year since 1993. In 2001, only 4% of Massachusetts high school students used smokeless tobacco.
- ◆ **Adolescent smokers report less smoking at school, but nearly half still do so.**
From 1993 to 2001, significantly fewer students who had smoked any cigarettes in the past month also reported smoking on school grounds during that time (59% vs. 49%).
- ◆ **Most adolescents who have ever been regular smokers have tried to quit.**
Among youth who had ever smoked regularly, nearly three quarters (74%) have tried to quit at least once and 30% have tried to quit three or more times. Unfortunately, only 15% of ever-regular smokers who tried to quit were smoke-free at the time of the survey.
- ◆ **Cigarette smokers were more likely than their peers to report other risk behaviors.**
Tobacco use is significantly associated with use of other substances. Recent cigarette smokers were more likely than others to report recent alcohol use, marijuana use, and other illegal drug use.

PREVENTING TOBACCO USE AMONG MASSACHUSETTS YOUTH

INTRODUCTION

Tobacco use is the leading *preventable* cause of death in the United States, yet in 2000 an estimated 66 million Americans (age 12 and older) reported current use of tobacco, including cigarettes, cigars, smokeless tobacco, and pipe tobacco.⁵ Tobacco use is responsible for one in every five deaths in the United States.⁶ Tobacco-related health problems such as heart disease, cancer, stroke, and chronic respiratory illness are the leading causes of death each year. In 1999, these four causes accounted for 65% of all deaths.⁷ Additionally, smokeless tobacco use (chewing tobacco or snuff) causes oral cancer and other health problems.⁸

Tobacco use among young people poses especially serious risks. Research evidence indicates that the earlier young people begin to smoke, the greater their permanent lung damage and the more likely they are to become heavily addicted.⁹ The prevalence of cigarette smoking among U.S. high school students increased throughout the early 1990's,¹⁰ but has gradually declined since a peak in 1997.¹¹ Still, more than one third of U.S. high school students use some form of tobacco and more than 80% of tobacco users initiate use before age 18 years.¹² According to the Centers for Disease Control and Prevention (CDC), if the trend in early initiation of cigarette smoking continues, approximately 5 million children (under 18 years) will die prematurely as adults because they began smoking during adolescence.⁶ Adolescent tobacco use not only threatens health, but it is also associated with drinking and illicit drug use and with poor school performance.¹³

In 1992, Massachusetts voters approved an excise tax on tobacco products. These tax dollars, known as the Health Protection Fund, support smoking prevention and cessation programs in the Commonwealth, including the Department of Public Health's Tobacco Control Program and the Department of Education's Health Protection Fund (HPF) Grants for school districts. The HPF grants support comprehensive health education programs, which include tobacco use prevention efforts. The Commonwealth's middle and high schools have significantly increased attention to tobacco prevention education and other health education topics since 1993, the first year of the Health Protection Fund.¹⁴

Additionally, the Massachusetts Education Reform Law of 1993 made it illegal for students, school staff, and visitors to smoke on school property at any time. School districts are required to submit their local tobacco policies, including consequences for tobacco use on school property, to the Massachusetts Department of Education.

In order to monitor progress toward ensuring that Massachusetts children and adolescents become healthy, responsible, and tobacco-free adults, the Department of Education regularly collects information about school health and tobacco-prevention programs and about adolescents' health-related risk behaviors, including their tobacco use. This report presents results about both of these areas. Part I, drawing on information from principals, health teachers, and district health coordinators obtained in 2000, discusses in some detail school

policies, programs, and instruction designed to reduce tobacco use. Part II focuses on the 2001 Massachusetts Youth Risk Behavior Survey to present results concerning adolescent tobacco use in Massachusetts.

PART I: SCHOOL PROGRAMS TO PREVENT YOUTH TOBACCO USE

Since 1993, school districts throughout Massachusetts have received Health Protection Fund money, in the form of grants from the Massachusetts Department of Education, for the support of comprehensive school health programs, with a special emphasis on school-based tobacco prevention efforts. Districts have used these funds to develop health-related policies and curricula, purchase materials, and hire health education teachers. In turn, districts send information about their programs to the Department of Education on a regular basis.

Part I of this report focuses in detail on one particularly important aspect of comprehensive school health programs – tobacco prevention. In 1994, the United States Surgeon General issued a report, *Preventing Tobacco Use among Young People*,⁹ which included a thorough review of the scientific research literature on tobacco prevention as it pertained to children and adolescents. The same year, the U.S. Centers for Disease Control and Prevention (CDC) published their *Guidelines for School Health Programs to Prevent Tobacco Use and Addiction*.¹⁵ These guidelines provide the framework against which Massachusetts efforts at school-based tobacco prevention can be evaluated. The CDC's seven criteria for effectiveness are that schools should:

- ◆ **Develop and enforce a school policy on tobacco use.**
- ◆ **Provide tobacco use prevention education in kindergarten through 12th grade; this instruction should be especially intensive in junior high or middle school and should be reinforced in high school.**
- ◆ **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.**
- ◆ **Provide program-specific training for teachers.**
- ◆ **Involve parents or families in support of school-based programs to prevent tobacco use.**
- ◆ **Support cessation efforts among students and school staff who use tobacco.**
- ◆ **Assess the tobacco use prevention program at regular intervals.**

In addition to the seven criteria for effectiveness outlined by the CDC, research in Massachusetts schools has identified an eighth factor. For three years in succession, the Health Protection Fund Evaluation Reports¹⁶⁻¹⁸ found that one of the strongest and most significant correlates of reduced student tobacco use was the presence of a peer education program in health. This should not be surprising. Research has consistently found that

adolescent tobacco use (or non-use) is heavily influenced by peers. Therefore, as an additional standard for a strong school tobacco prevention program, Massachusetts believes that schools should

◆ **Foster strong peer involvement in tobacco prevention efforts**

Taken together, these eight criteria provide standards against which to assess the progress of Massachusetts schools in the development of strong and effective tobacco prevention programs.

METHOD

With these eight criteria in mind, how do Massachusetts schools stack up? Four data sources were used to provide the information discussed in this report. The first is the **2000 School Health Education Profile survey sent in Spring 2000 to the principal** (SHEP-P) in every Massachusetts public school with two or more of grades 6 through 12. Five hundred and seventy-three (573) of the 698 principals who received the survey completed it, for a response rate of 82%. The SHEP-P provided information on the details of tobacco use prevention policies and on the enforcement of those policies.

Principals, in turn, were asked to give a different survey to the person they considered to be the “lead health teacher” in their school; 563 teachers returned the **SHEP teacher survey** (SHEP-T) for a response rate of 81%. The SHEP-T provided information about the subtopics covered and methods/materials used for classroom instruction on tobacco use prevention. Additionally, this teacher survey included questions about recent staff development related to tobacco prevention instruction.

In this report, most data from the two SHEP surveys are reported for all schools combined, though in some analyses differences between middle schools and high schools are highlighted.

The **Health Coordinators’ 2000 Midyear Report**, completed by 195 district health coordinators, provided some information about health education assessment in districts as well as narrative accounts of district objectives and indications of progress. Finally, the **Health Coordinators’ 2000 End-of-Year Health Protection Fund (HPF) Form**, returned by 199 district health coordinators, provided information about classroom hours spent on tobacco topics at each grade level, about cessation programs, and about peer education efforts related to health.

Information about other school-based health programs (for example, the Department of Public Health’s Enhanced School Health Program) is not included in this report.

RESULTS

In the results reported below, information from the two health coordinator reports and the principal and health teacher SHEP surveys, all collected in the spring of 2000, is matched to the eight criteria used to assess effective school-based tobacco prevention programs.

Criterion 1: Schools should develop and enforce school policies on tobacco use.

Currently, **every school district has a written Tobacco Use Prevention Policy**. Having such a policy in place is a requirement for the district to receive Health Protection Fund dollars. The 100% of districts with a tobacco policy represents a striking improvement over 77% of districts with such a policy in 1994.

Though district tobacco policies vary in their degree of specificity, **all** prohibit smoking by students in the school building. Additionally, the great majority also explicitly prohibit:

- ◆ Student smoking on school grounds or buses (99%);
- ◆ Student tobacco use at off-campus school events (94%);
- ◆ Student use of smokeless tobacco (89%), cigars (87%), and pipes (86%); and
- ◆ Faculty/staff use of cigarettes (93%), cigars or pipes (87%), or smokeless tobacco (84%) on school property.

School tobacco policies also address environmental influences. For example, most policies explicitly prohibit:

- ◆ Any tobacco advertising in the school building (98%), on school grounds (97%), in school newspapers or publications (97%), or on school buses (96%);
- ◆ Tobacco sponsorship of any school events (91%); and
- ◆ Students from wearing tobacco brand-name apparel to school or from carrying tobacco brand-name merchandise (57%).

Slightly over half of schools (56%) have signs posted announcing that school grounds are a “tobacco-free zone.”

On the other hand, schools are often located in neighborhoods where tobacco use is promoted. Nearly four in ten (39%) of principals say that there are one or more tobacco retailers within 1000 yards of the school and 12% say there are tobacco advertisements within that range.

Policies are communicated to students, faculty/staff, and parents.

- ◆ Tobacco prevention policies are communicated to students primarily as written documents. For example, the policy is almost always included in the student handbook (99%).
- ◆ Ninety-one percent (91%) of principals indicate that the policies are communicated verbally directly to students.
- ◆ Over half of principals say that tobacco policies are announced at school events (56%).
- ◆ Also, policies are often communicated to faculty/staff and parents, who are expected to discuss and reinforce the importance of the policy with students.

Enforcement of tobacco policies rests primarily with administrators (100%) and teachers (99%), but in many schools is also shared with coaches (88%), bus drivers (85%), security guards (26%), other school staff (83%), school volunteers (31%), law enforcement officers (48%), and parents (40%).

Little information is available on how *vigorously* tobacco prevention policies are enforced. Schools informally report a number of strategies to ensure that school grounds are tobacco free. Most often, teachers are asked to monitor rest rooms or other areas where students may be smoking. Some school districts use non-HPF funds to install smoke detectors or to hire additional monitors.

One disturbing finding from the Massachusetts 2001 Youth Risk Behavior Survey (Part II of this report), however, is that nearly half (49%) of current adolescent smokers in Massachusetts have smoked *on school property* in the past month. Although this represents a decline since 1993, when 59% of adolescent smokers in the state smoked on school property, it is nevertheless much higher than the 40% reported in the most recent National YRBS.⁴ These figures suggest that rules against smoking at school are being enforced more rigorously now than in the past, but that enforcement may not be as stringent here as in the rest of the country. Additionally, half of Massachusetts youth who use smokeless tobacco (50%) report using it on school grounds.

The most commonly mentioned consequence for student infractions of tobacco policy is being referred to a school administrator: 94% of principals indicated that this “always or almost always” occurred when students were apprehended for tobacco violations. Parents are notified by 91% of schools. Also,

- ◆ 35% of schools usually encourage student violators to participate in tobacco education or cessation programs; another 17% usually require them to do so;
- ◆ 29% of schools usually place student violators in detention;
- ◆ One quarter (25%) give these students in-school suspension; and
- ◆ 31% always or almost always suspend them from school.

No data are available on other penalties, such as use of fines.

The most common consequences for faculty/staff violations of tobacco policy are being referred to a school administrator (51%) and being given a verbal or written reprimand (52%). Over one quarter of schools (28%) routinely encourage these faculty/staff to attend a tobacco cessation program.

Virtually all (97%) of principals strongly support their school's tobacco prevention policy and nine out of ten (90%) believe that their faculty/staff strongly support the policy as well.

Criterion 2: Schools should provide tobacco use prevention education in kindergarten through 12th grade. This instruction should be especially intensive in junior high or middle school and should be reinforced in high school.

Effective approaches to school-based tobacco prevention not only cover important subtopics, but they must also be repeated and reinforced across different settings and throughout the school years.

Since the beginning of the Health Protection Fund, **there has been a striking increase in required school health education and tobacco prevention education.**

Specifically,

- ◆ In 1994, 74% of secondary schools had a required health education course, and 76% of lead health teachers included knowledge about tobacco prevention in such a course. Thus, we can estimate that only slightly over half of all secondary schools ($74\% \times 76\% = 56\%$) had a required course including tobacco prevention at that time.
- ◆ In contrast, in 2000, 90% of secondary schools required a health education course, and 99% of schools with such a course reported teaching about tobacco prevention. Thus, nearly nine out of ten schools ($90\% \times 99\% = 89\%$) teach tobacco prevention in a required course.

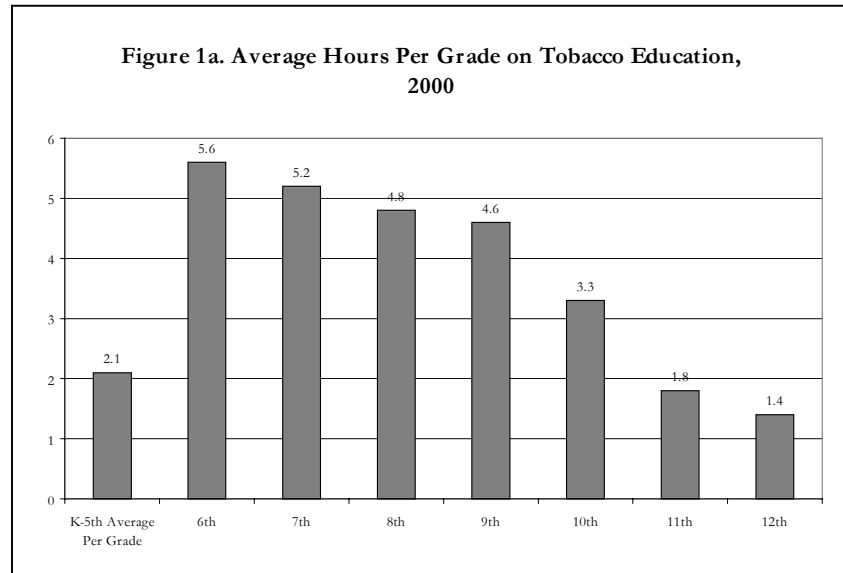
In addition to tobacco prevention taught in health classes, **many schools also include required tobacco use units or lessons in other subjects** such as Science (20%), Family and Consumer Sciences (21%), Physical Education (29%), Family Life Education or Life Skills (24%), and/or Special Education (18%).

A majority of schools (61%) also report that non-classroom programs or activities were used to teach tobacco prevention. Although teachers did not specify which activities they used, such activities might include assemblies, health fairs, participation in community tobacco prevention projects, or tobacco cessation programs.

Teachers indicate that some tobacco prevention information is presented in every grade in most schools. More than nine out of ten secondary schools provide tobacco information in 6th, 7th, and 8th grades (91%, 90%, and 92%, respectively). The percentage

of schools providing tobacco information declines with grade level, however, from 9th grade (88%) to 10th (81%), 11th (72%), and 12th grade (63%).

Figure 1a, below, shows the average number of hours spent on tobacco prevention education at each grade, as reported by health coordinators.



As recommended by CDC standards, the **most intensive tobacco prevention education occurs in the middle school years**, particularly in 6th and 7th grades. The least tobacco prevention occurs during the final two years of high school. Unfortunately, current cigarette smoking rises from 20% in 9th grade to over one third (36%) among seniors (Part II, this report), so reaching upper grade adolescents is especially important.

On average, from kindergarten through the senior year of high school, health coordinators estimate that Massachusetts students receive nearly forty (39.5) hours of tobacco prevention education in schools.

Criterion 3: Schools should 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.

For decades, classroom health educators have taught their students about tobacco in an effort to discourage youth tobacco use. All too often, however, their attempts to influence adolescent behavior through education have met with little success. Fortunately, recent research has identified the essential elements of *effective* school smoking prevention programs.^{15,19}

A “social influences” approach appears to be most likely to have a significant impact on youth smoking.⁹ That is, classroom tobacco prevention programs that work are those

that: (1) help young people recognize the social pressures that lead to smoking (including peer pressure, advertising, and the influence of smokers in the family or community); (2) emphasize not just the long-term physical effects of tobacco use but also the short-term effects (such as bad breath and reduced athletic ability) that youth care about; (3) make students aware that most people, including their peers, do not use tobacco; and (4) explicitly teach skills for refusing tobacco use. Massachusetts middle and high school teachers provided details of their tobacco prevention instruction.

As Figure 1b (next page) illustrates, **in schools that have required health classes virtually all important topics – including those related to social influences – are covered during classroom sessions on tobacco.** With one exception (how to find information on tobacco prevention or cessation), tobacco topics were somewhat more likely to be covered in middle school classrooms than in high schools, though differences between school levels were small.

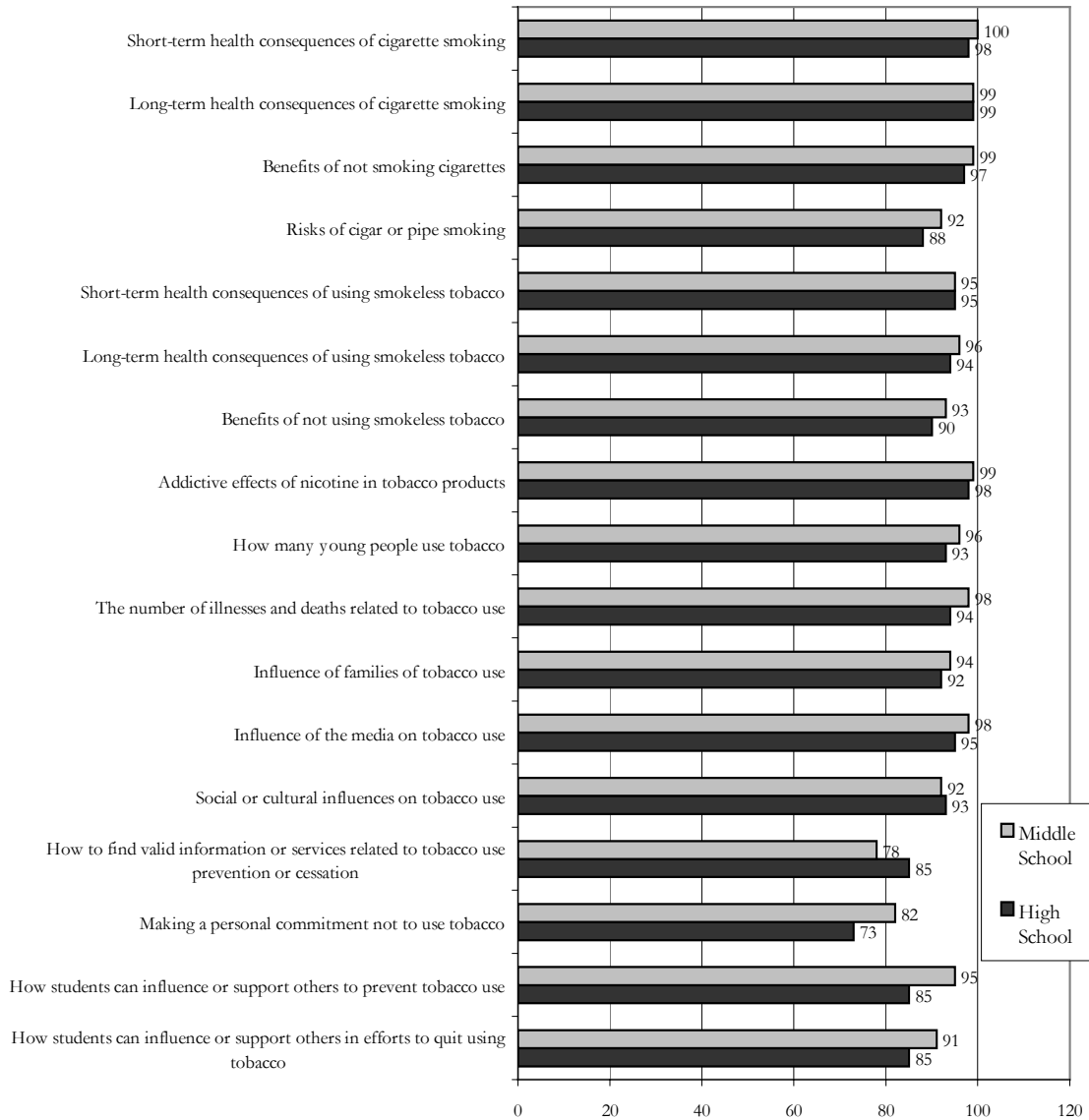
Teaching Methods. Simply presenting young people with information may increase their factual knowledge, but is rarely sufficient to change personal behavior. Rather, skills-based approaches to teaching are necessary. These approaches help youth personalize instruction and emphasize role-playing, simulation, rehearsal, communication skills, and advocacy.

Most, but certainly not all, health teachers use skills-based approaches that have been proven to be effective. On average, 74% of health teachers reported using role-playing, simulations, and skills practice to teach tobacco prevention. These methods are associated with a greater likelihood of actually influencing behavior than is true of purely informational approaches. Middle and high school teachers differed in this regard, with middle school teachers more likely than high school teachers to use these skills-based approaches (83% vs. 62%) in tobacco lessons.

Middle and high school teachers differed in their methods in other ways as well. Specifically, compared to high school teachers, middle school teachers were:

- ◆ more likely to give their students seat work (96% vs. 83%);
- ◆ less likely to bring in adult guest speakers (53% vs. 63%) or use peer educators (33% vs. 45%); and
- ◆ less likely ever to have their students do work concerning tobacco on the Internet (39% vs. 53%).

Figure 1b. Topics Covered in Tobacco Prevention Classes, SHEP-T 2000



Criterion 4: Schools should provide program-specific training for teachers.

Strong school tobacco prevention programs require well-trained teachers. Such training needs to include not only up-to-date knowledge about topics related to tobacco prevention, but also skill in using teaching methods that have been proven effective in influencing actual behavior.

Most, but not all, lead health teachers list health education as their primary area of academic preparation.

- ◆ Overall, seven out of ten (70%) health teachers indicate that training in either health education alone (23%) or health and physical education (47%) was their primary academic background.
- ◆ High school health teachers were more likely than middle school teachers to list health (or health and physical education) as their academic background (77% vs. 66%).
- ◆ Most health teachers have considerable experience. Nearly three quarters (72%) have over five years experience teaching health education and over one-third (35%) have more than fifteen years experience.

Massachusetts health teachers are more likely to have received recent staff training on tobacco topics than has been true in the past.

- ◆ In 2000, slightly over half of lead health teachers (51%) reported having received training on tobacco prevention topics within the previous two years, significantly more than was reported in 1994 (43%), 1996 (44%), or 1998 (44%).
- ◆ Also, nearly two-thirds of teachers (65%) in 2000 indicated a desire for more training on tobacco prevention education, a significant increase over 1994 (30%), 1996 (58%), and 1998 (39%).

Many teachers have been trained to use interactive, skills-based methods, and most would like more training in these areas.

- ◆ Six out of ten (61%) health teachers reported receiving recent (past two years) training on how to use interactive teaching methods such as role play or cooperative group activities. Half (50%) had also received training on how to teach skills for behavior change.
- ◆ The majority of teachers desired more training in interactive methods (71%) and in teaching skills for behavior change (85%).

Teachers varied in their use of curriculum materials. Prepared teachers also need suitable curriculum materials. Middle and high school health teachers were asked about the availability of and their use of different kinds of supportive material in teaching about tobacco.

- ◆ Four out of five teachers (80%) reported using the Massachusetts state curriculum framework; 8% said it “wasn’t available.” Additionally, 81% used a school health education framework to plan tobacco lessons.
- ◆ In teaching about tobacco, nine out of ten teachers (90%) used materials from community agencies such as the American Cancer Society or American Lung Association.
- ◆ Fewer than half of health teachers (46%) used a commercially developed student textbook to teach about tobacco prevention. Over one third (37%) said no such text was available.
- ◆ 61% used commercial teachers’ guides to teach about tobacco; 24% said no such guides were available.

Criterion 5: Schools should involve parents or families in support of school-based programs to prevent tobacco use.

Parents are among the strongest influences on adolescents’ tobacco use.²⁰ Parent involvement in school health programs, especially programs involving tobacco prevention, is very important. Parents and families can provide valuable feedback to schools about the approach to tobacco prevention being taken by the school. They can also reinforce at home the messages about tobacco prevention that young people learn in school. For three years in succession, the Health Protection Fund Evaluation found parental involvement to be a significant predictor of reductions in adolescent tobacco use.¹⁶⁻¹⁸

Teachers made a number of efforts to increase parent and family involvement in school tobacco prevention work. Specifically, many teachers:

- ◆ Send home materials and information related to tobacco prevention (70%);
- ◆ Meet with parents/guardians regarding student tobacco use (22%);
- ◆ Have had parents or guardians observe tobacco prevention lessons in their classes (6%); and
- ◆ Involved parents in other ways (37%).

Teachers want more help in involving family and communities in health education. Most teachers (75%) indicated a desire for staff development on how to involve families and communities, but only one third (34%) had received such training in the past two years.

Most districts involve parents in an advisory capacity.

- ◆ Almost all health coordinators (96%) reported that parents were among the members of their School Health Advisory Council.

- ◆ Additionally, over half of secondary school principals (52%) indicated that parents had been involved in the development of the school tobacco prevention policy. In 40% of schools, parents were among those listed as responsible for enforcing that policy.

Criterion 6: Schools should support cessation efforts among students and school staff who use tobacco.

Cessation programs are another key component in tobacco use prevention. In 2001, one out of five adolescents (20%) reported ever having been “regular” (that is, daily) cigarette smokers (Part II, this report). Almost all of these “ever-regular” smokers, nearly three quarters (74%) had tried to quit at least once, and many (30%) had tried to quit three or more times. Unfortunately, even among ever-regular smokers who had tried to quit, 85% had failed and reported still smoking cigarettes in the month prior to the survey. The nicotine found in tobacco is addictive; once a young person establishes a habit of regular tobacco use, quitting becomes very difficult. Cessation programs, in or out of school, can give structured support to adolescents who are trying to stop using tobacco. According to teachers and health coordinators, **many secondary schools do have tobacco cessation programs.**

- ◆ Over four out of ten (42%) public secondary schools have on-site tobacco use cessation programs for students. School level was a key factor: cessation programs were reported by nearly two-thirds (65%) of high schools, but only one quarter (24%) of middle schools, probably because regular tobacco use is significantly lower in younger grades
- ◆ Referrals for off-site cessation programs are provided to students in 62% of secondary schools.
- ◆ Also, 85% of lead health teachers report that students in their school are provided with information about where they could go if they wanted help quitting tobacco use.

Health coordinators provided more detailed information about school-based tobacco cessation programs. In schools that had cessation programs,

- ◆ Health teachers were most frequently the leaders (49% in middle schools, 29% in high schools), but school nurses, community based organization staff, or others also ran cessation groups.
- ◆ Groups were evenly split between those held during and after the school day (roughly 45% each), with a much smaller percent held before school or on weekends.
- ◆ Many reported no participants in the previous year (42% in middle schools, 13% in high schools), that is, programs were offered but were not active.

- ◆ In schools with active cessation groups, the average number of participants in 2000 was ten in middle schools and nineteen in high schools.
- ◆ In both middle and high schools with cessation programs, health coordinators estimated that over one quarter (27%) of student participants either quit smoking or cut down. Without standard follow-up procedures, however, it is difficult to judge the accuracy of these estimates.

Cessation programs for staff are important as well, not only in order to promote staff wellness, but also because teachers and other school staff can serve as role models for adolescents. According to principals and health teachers,

- ◆ About one fifth of schools (20%) offer on-site cessation programs for faculty and staff, and
- ◆ Over half (55%) offer staff referrals for off-site programs.

Criterion 7: Schools should assess the tobacco use prevention program at regular intervals.

Preventing tobacco use among youth begins with implementing effective prevention programs. These programs, in turn, should result in higher levels of student knowledge and skills, in improved attitudes regarding not using tobacco, and ultimately, in lower rates of actual tobacco use. Periodically evaluating program implementation and cognitive, attitudinal, and behavioral outcomes is necessary to know if progress is being made.

All districts are engaged in some evaluation of their tobacco prevention program development and implementation, as this is a requirement for receiving Health Protection Fund grant money. In both the Midyear and the End-of-Year Reports, health coordinators discuss current objectives for the comprehensive school health programs in their district, and explain in some detail how they are measuring progress toward those objectives. They also discuss progress in their tobacco control programs and tobacco cessation programs. Thus, although specific program objectives differ by district – for example, one district may be working on an updated tobacco policy while another focuses on using more skills-based classroom teaching – the reporting process ensures that districts are engaged in some regular evaluation of their program development and implementation. Additionally, on a checklist of progress in various areas of comprehensive school health programming, 49% of health coordinators indicated that major progress had been made and 33% said that minor progress had been made in their districts' tobacco control program.

Very few districts have developed a standardized system for assessing student knowledge and skills in health education. Although virtually all schools with a required health education course include many tobacco-related topics in their curriculum (See Figure 1b, p. 10), processes for assessing student knowledge and skills vary widely

and are often left up to the individual teacher. Information concerning health education assessment is mixed:

- ◆ On one hand, 44% of health coordinators indicated that assessing student knowledge and skills in health was a major focus when they were evaluating their own programs. In fact, assessing knowledge was more likely to be named a major evaluation focus than any other topic.
- ◆ On the other hand, health coordinators seemed discouraged about their own progress in developing student assessment systems for health. Over one fifth (22%) indicated that obstacles had prevented progress in this area, and only 26% believed that their district had made major progress in assessment.
- ◆ Only one fifth (20%) of districts had developed a complete set of written standards for health education – a necessary precondition for any standardized assessment system. An additional two-thirds of districts (66%) were in the process of writing such standards.
- ◆ A very small number of districts (8%) had developed and put into practice a system for assessing student knowledge and skills in health. An additional 45% were in the process of developing such a system, but the largest group (47%) left assessment entirely up to individual teachers.

Most districts do try to measure actual student tobacco use. To have a solid basis for program planning and evaluation, districts are expected to collect behavioral needs assessment data concerning the prevalence of risk behaviors, including tobacco use, among adolescents in their schools. Many districts use the Youth Risk Behavior Survey or similar behavior surveys to collect anonymous self-report information from students. Use of the YRBS has the obvious advantage of enabling districts to compare local adolescent tobacco use rates to those across the state.

- ◆ Of districts including grades 7 or 8, seven out of ten (71%) had conducted at least one middle school student survey since 1994 that included questions about tobacco use. Half (50%) had conducted two or more such surveys, enabling them to chart progress in reducing tobacco use.
- ◆ Of districts including any high school grades, 82% had conducted a high school survey including questions on tobacco use and most (63%) had surveyed students twice or more and could thus track progress in changing student behavior.

Criterion 8: Schools should foster peer involvement in tobacco prevention programs.

Young people influence each other in all areas of health behavior, and peers are a particularly strong influence on tobacco and other substance use. One recent study identified perceptions of peer norms for smoking to be the single strongest influence on adolescent tobacco use.²¹ Thus, peer involvement in health-related education and prevention activities can have a strong positive effect on adolescent behavior.

Peer education for health is used in many Massachusetts schools.

- ◆ Over half of all secondary schools (60%) report using peer educators as part of a required health education class. Rates for middle schools and high schools were similar (58% and 64%, respectively).
- ◆ When use of peer educators was expanded to include other health-related activities in addition to required classes, even higher rates of peer education were reported. According to health coordinators, peer educators were used at the elementary level in 38% of districts, at the middle school level in 65% of districts, and in high schools of 84% of districts.
- ◆ The great majority of health coordinators (84%) listed “developing peer education programs and involving students in health activities” as a major goal for their program. Four out of ten (39%) thought that they had made major progress in this area and an additional 24% had made minor progress.

Some schools use peer education for *tobacco prevention* specifically.

- ◆ Nearly four in ten (39%) of secondary health teachers reported that peer educators were used in their school for tobacco prevention education or activities.
- ◆ Tobacco prevention peer education was more common in high schools (45%) than in middle schools (33%).
- ◆ In districts with any peer health education, on average peer educators in elementary schools spent about 22% of their time on tobacco prevention. Tobacco was the focus of approximately 19% of peer health education in middle schools and about 16% in high schools.

Additionally, classroom health education itself often emphasizes peer involvement.

- ◆ In teaching about tobacco, many health teachers (74%) use teaching methods such as role play or simulation that involve students interacting with each other.
- ◆ Most teachers also include in their tobacco prevention lessons some instruction on how students can influence or support others to prevent tobacco use (91%) and on how students can influence or support others in efforts to quit using tobacco (88%).

CONCLUSIONS: School Programs to Prevent Youth Tobacco Use - Achievements and Opportunities

Achievements: Evidence from the 2001 Massachusetts Youth Risk Behavior Survey (Part II of this report) indicates that tobacco prevention programs are having a significantly positive effect. Since the beginning of the Health Protection Fund in the 1993-1994 school year, Massachusetts schools have made tremendous progress in putting in place the components of effective school-based tobacco prevention programs. Measured against CDC criteria for effective tobacco prevention programs in schools, schools in the Commonwealth can take pride in their achievements. Most notably,

- ◆ All districts have tobacco prevention policies.
- ◆ Almost all secondary schools (89%) have required health education courses that include tobacco prevention. This represents a sharp and significant increase from the 56% reported in 1994, when the Health Protection Fund was first put into place.
- ◆ Classroom prevention education covers virtually all important topics related to tobacco.
- ◆ On average students receive nearly 40 hours of tobacco prevention education during their school years. As recommended, the most intensive instruction occurs during the middle school years.
- ◆ Teachers are receiving more staff development and training about tobacco prevention topics than has been true in the past.
- ◆ The majority of secondary schools have begun to collect behavioral data from students that will allow them to monitor the effectiveness of their programs.
- ◆ Many districts have developed peer education programs that involve students in tobacco prevention.

Opportunities: Despite Massachusetts' clear record of success in reducing adolescent tobacco use, there are still areas in which school-based prevention programs can be improved.

- ◆ Although most secondary schools include a health course as a required part of their curriculum, the few that do not should be strongly encouraged to do so.
- ◆ Schools need to do a better job of enforcing the tobacco policies that are in place. Policies without strong enforcement efforts are "toothless." Both students and staff deserve a school environment that is totally tobacco-free.
- ◆ Health teachers should be given more training and support for using interactive skills-based approaches to teaching about tobacco prevention and other important health-related topics.

- ◆ Teachers and health coordinators indicate a desire to develop peer education programs and involve parents in prevention programs, but they may need more training, encouragement, and support to do so.
- ◆ Tobacco prevention messages need to be strengthened in the upper grades of high school. However, since many students have already developed a tobacco use habit by late adolescence, prevention efforts in the upper grades of high school should also include information and resources about smoking cessation.
- ◆ Many districts do not currently have any standard system in place for assessing students' knowledge and skills in health education. Schools need to be given the instruments and staff training necessary to measure student knowledge and skills in tobacco prevention and other health-related areas.

Taken as a whole, Massachusetts schools have reason to be proud of their efforts to educate as tobacco-free generation of students. Although much remains to be done to ensure continued movement toward this goal, the Commonwealth should be heartened by the results of its investment in this area.

PART II: TOBACCO USE AMONG HIGH SCHOOL STUDENTS

2001 Massachusetts Youth Risk Behavior Survey Results

Every two years, the Massachusetts Department of Education (Department) conducts the Massachusetts Youth Risk Behavior Survey (MYRBS) to monitor rates of adolescent health risk behaviors, including rates of tobacco use. The 2001 MYRBS, administered in randomly selected public high schools, included questions about lifetime and recent use of cigarettes, smokeless tobacco (both on and off school property), and recent cigar use. The survey also asked about students' attempts to quit smoking and about their customary method of obtaining cigarettes. Because these data were obtained from a representative sample of high school youth and because both school and student response rates were high, the results included in this report can be considered to accurately represent tobacco use among Massachusetts public high school students as a whole.

METHOD

The standard youth risk behavior survey instrument was developed by the Centers for Disease Control and Prevention (CDC) to monitor adolescent risk behaviors associated with the leading causes of morbidity and mortality among youth and adults. Since 1990, the Department has administered the MYRBS in a scientifically selected sample of public high schools across the Commonwealth. Since 1993, the survey has included students from Boston schools as well as from other districts, and has had high enough school and student response rates to be considered representative of the state as a whole.

The 2001 MYRBS employed a two-stage cluster sample design to produce a representative sample of Massachusetts public high school students. At the first sampling stage, 67 schools were randomly selected with probability proportional to school enrollment size. The second stage of the sampling consisted of randomly selecting three to five classes of a required course (e.g., English or 2nd period). All students in the selected classes were eligible to participate in the survey. Beginning in March 2001 and continuing through June of the same year, the MYRBS was administered by Department staff in 64 cooperating Massachusetts public high schools. The survey was completed by 4,204 students in grades 9 through 12. Student participation was anonymous and voluntary.

The data collected were weighted to ensure that the results would accurately reflect the actual population of Massachusetts public high school students. Initial frequency analyses were conducted by the CDC, and subsequent statistical analyses were conducted by the Department.

SAMPLE

A total of 4,204 students from 64 public high schools completed the MYRBS. The sample was evenly distributed across gender; roughly 51% were male and 49% were female. There were slightly fewer seniors than students in other grades. The majority (77%) of students were white. The demographic characteristics of the sample are presented in Table 1.

Table 1. Demographic Characteristics of the 2001 Massachusetts Youth Risk Behavior Survey Student Sample (N=4,204)			
		<u>Number</u>	<u>Percent^a</u>
Gender	Female	2043	49.3
	Male	2147	50.7
	Missing	14	---
Grade	9 th	1336	29.2
	10 th	1091	25.4
	11 th	1046	23.7
	12 th	685	21.3
	Ungraded or Other	17	0.4
	Missing	29	---
Race/ Ethnicity^b	White	2969	77.0
	Black or African American	264	8.5
	Hispanic or Latino	399	10.1
	Asian or Pacific Islander	270	2.3
	Other or Multiple Races	241	2.1
	Missing	61	---
<p>^a "Number" is the raw number of students in each category; "Percent" is the percent of students <i>as weighted by the CDC</i>. Missing values are not included in percentage calculations.</p> <p>^b Students were allowed to indicate multiple ethnic categories. If Hispanic/Latino was indicated as an ethnic identification, whether alone or in combination with other ethnic categories, the student was categorized as Hispanic/Latino. The Other/Mixed Ethnicity category above represents 62 American Indians or Alaskan Natives and 179 students indicating several ethnicities that did not include Hispanic.</p>			

RESULTS

The 2001 survey asked about six tobacco use behaviors defined in the following ways:

Lifetime cigarette smoking – ever tried cigarette smoking, even just one or two puffs

Current cigarette smoking – smoked cigarettes at least once in the 30 days prior to the survey

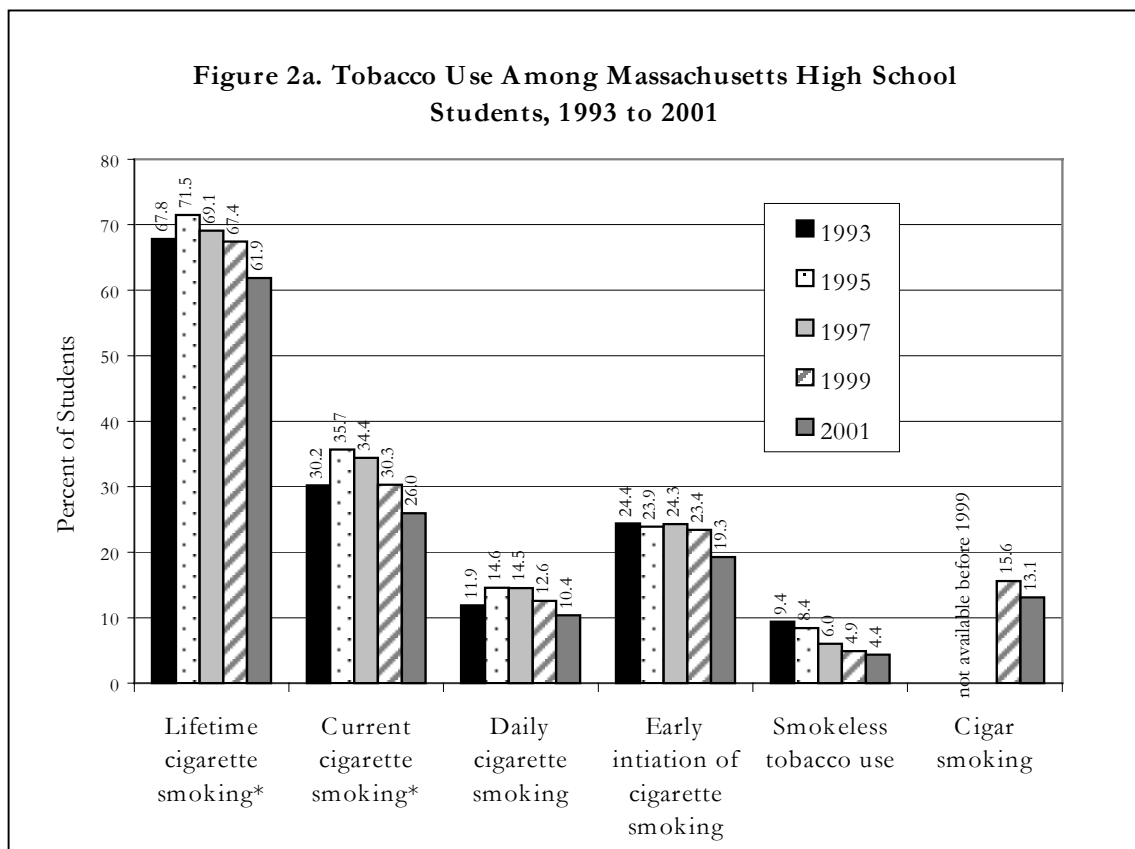
Daily cigarette smoking – smoked cigarettes each day in the 30 days prior to the survey

Early initiation of cigarette smoking – smoked a whole cigarette before age 13 years

Cigar smoking – smoked a cigar at least once in the 30 days prior to the survey

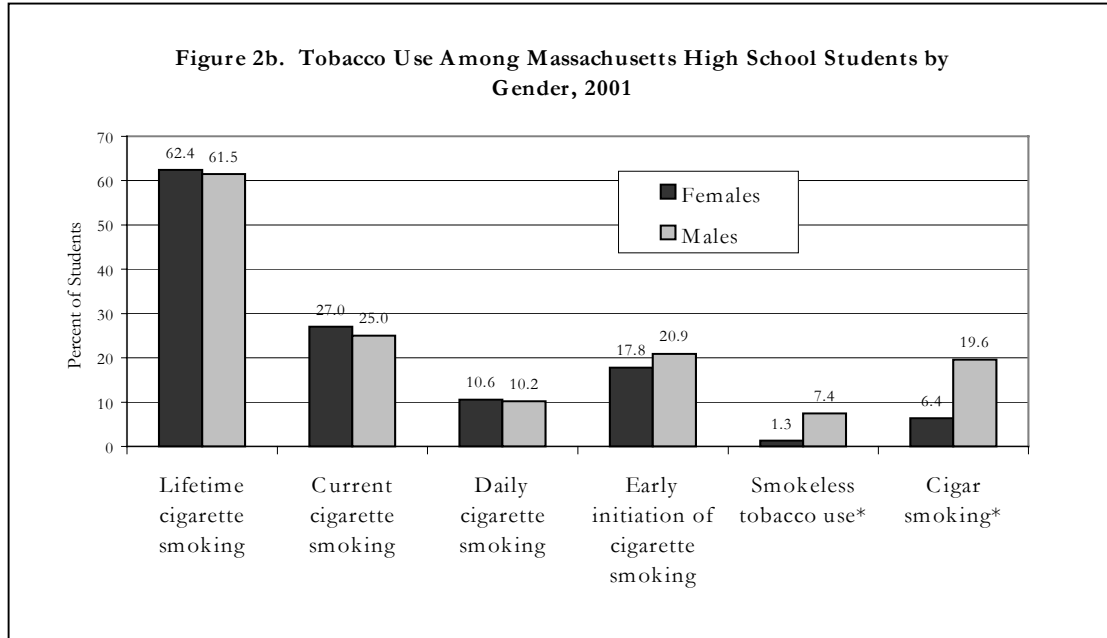
Smokeless tobacco use – used smokeless tobacco at least once in the 30 days prior to the survey

Figure 2a presents the prevalence rates for 1993 – 2001 of each tobacco use behavior.



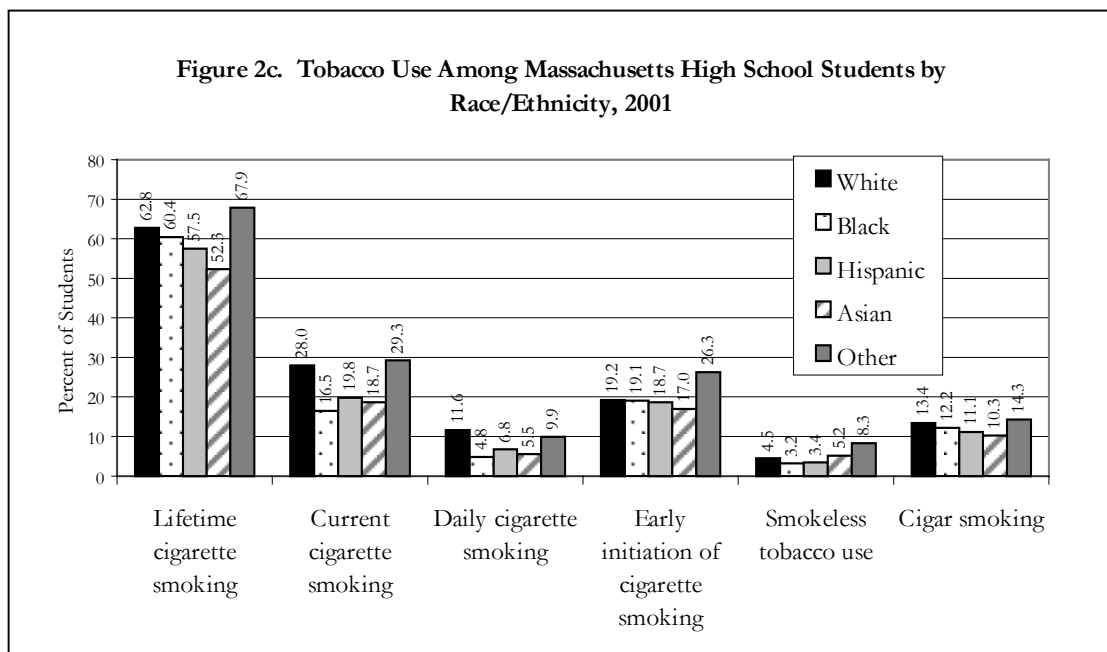
* Statistically significant decline from 1997 to 2001, $p < .05$.

Male and female students were equally as likely to report lifetime, recent, and daily cigarette smoking. However more male students than female students reported cigarette smoking before age 13, cigar smoking, and smokeless tobacco use (see Figure 2b, next page).



* Statistically significant difference between male and female students, $p < .05$.

White students had slightly higher rates of tobacco use behaviors than Black, Hispanic, and Asian students. Students of Other or Multiple Ethnicity has consistently higher rates of tobacco use behaviors than students of other ethnic groups (see Figure 2c).

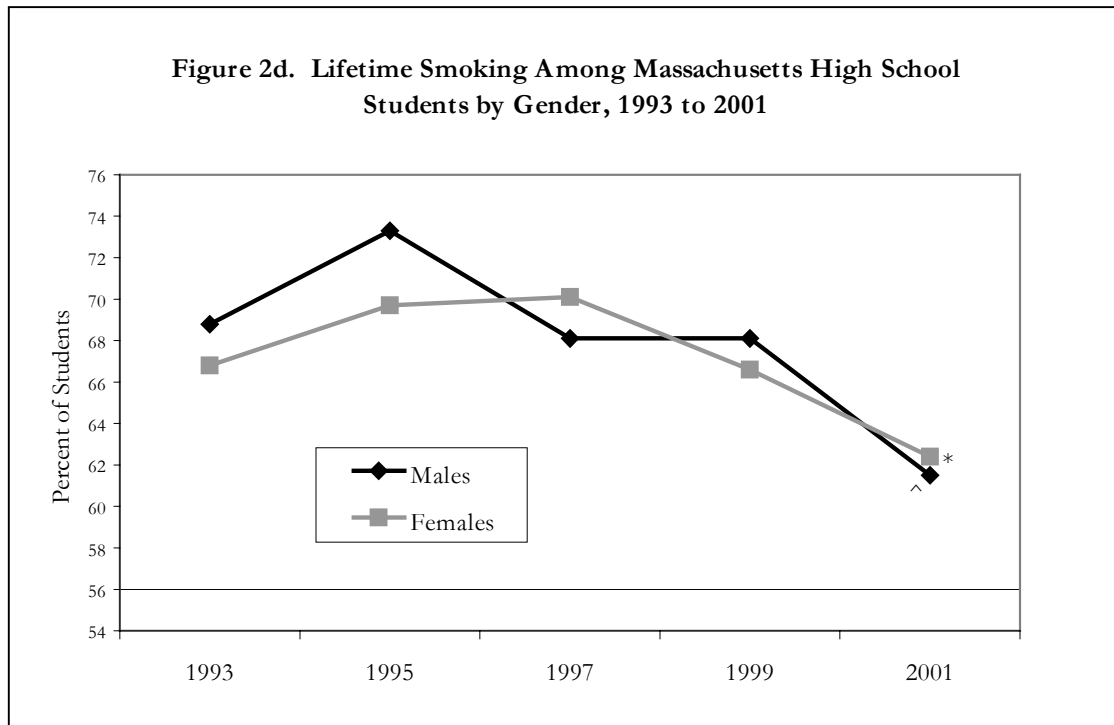


The following are detailed results related to cigarette smoking, cigar smoking, smokeless tobacco use, tobacco use on school property, smoking cessation, and the relationship of tobacco use to other risk behaviors.

CIGARETTE SMOKING

Lifetime Smoking:

- ◆ Roughly 62% of Massachusetts public high school students have ever tried cigarette smoking, even just one or two puffs (i.e., lifetime use). **The rate of lifetime cigarette smoking decreased from 67% in 1999 to 62% in 2001.** Lifetime cigarette smoking has decreased steadily since 1995 (see Figure 2a, page 21).
- ◆ The lifetime smoking rates of young men and women were equivalent (62% for both genders). The lifetime smoking rate among young men, which hadn't changed since 1997, decreased significantly from 68% in 1999. The lifetime smoking rate among young women has dropped steadily since 1997 (see Figure 2d).



* Statistically significant decline from 1997 to 2001, $p < .05$.

^ Statistically significant decline from 1999 to 2001, $p < .05$.

- ◆ The rate of lifetime smoking increases with grade in school: Fewer freshmen (53%) report lifetime smoking than do sophomores (59%), juniors (67%), and seniors (73%). Since 1999, lifetime smoking rates dropped significantly among students in younger grades: sophomores (69% to 59%) and freshmen (63% to 53%).

- ◆ The lifetime smoking rate of White students (63%) was roughly equivalent to that of Black students (60%), and only slightly higher than the rates among Hispanic and Asian students (58% and 52%, respectively). Students who indicated Other or Multiple Ethnicity had somewhat higher lifetime smoking rates than all other students (68%).

Current Smoking:

- ◆ Roughly one-quarter of high school students (26%) smoked cigarettes in the 30 days prior to the survey. **The rate of current smoking has decreased steadily and significantly since 1995.**
- ◆ There were no significant gender differences in current smoking. Twenty-seven percent of females and 25% of males reported current use. Since 1997, current smoking has dropped significantly among both male and female students.
- ◆ Significantly more students in older grades (35% of seniors and 28% of juniors) reported current smoking than did students in younger grades (22% of sophomores and 20% of freshmen). Current smoking rates decreased among all four grades. The percent of sophomores who reported current smoking (22%) decreased significantly since 1997.
- ◆ From 1999 to 2001, current cigarette smoking decreased among all ethnic groups. The rate of current cigarette smoking remained significantly higher among White students (28%) than among Black (17%), Hispanic (20%), and Asian (19%) students.
- ◆ Approximately 16% of current smokers consumed more than half a pack per day (11 or more cigarettes) on the days that they smoked. However, the single largest group of current smokers (32%) consumed an average of 2 to 5 cigarettes per day on the days that they smoked.
- ◆ Thirteen percent of students smoked cigarettes frequently (on at least 20 of the past 30 days).

Daily Smoking:

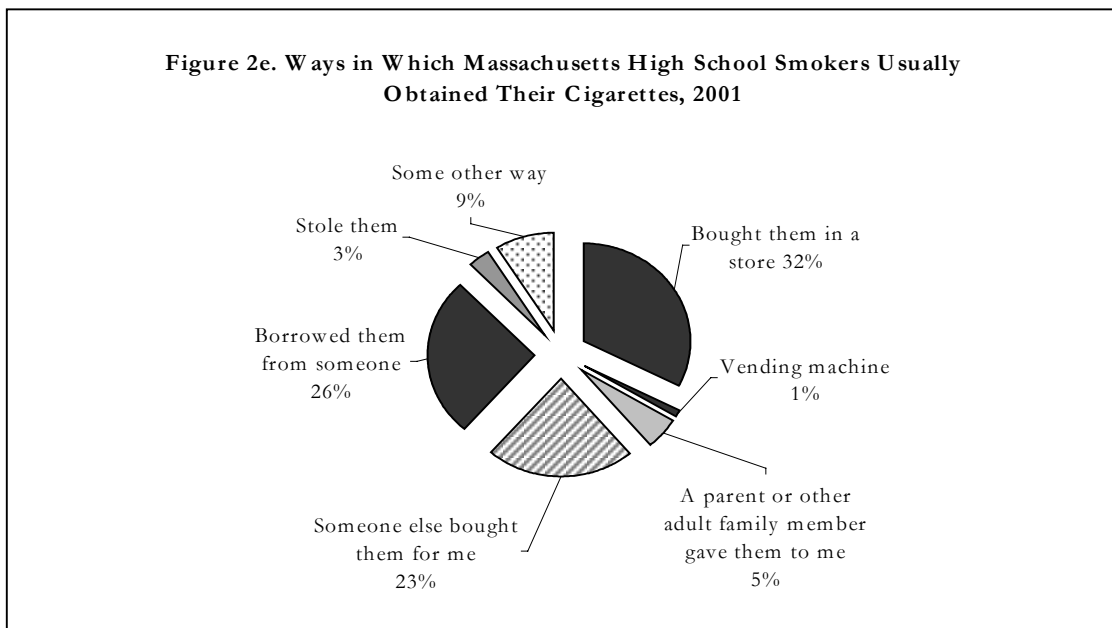
- ◆ **The rate of daily smoking decreased from 13% in 1999 to 10% in 2001.**
- ◆ There was no significant difference in the rates of daily smoking among male and female students (10% and 11% respectively). Daily smoking rates have decreased steadily among both genders since 1997.
- ◆ Daily smoking increased with grade level, from 6.6% among 9th grade students to 17% among high school seniors.

- ◆ In 2001, White students had the highest rate of daily smoking (12%). Daily smoking rates decreased among all ethnic groups. After steadily rising from 1995 to 1999, daily smoking decreased substantially among Asian students and students with Other and Multiple Ethnicity.
- ◆ Among students who smoked every day, 38% smoked at least half a pack a day, a slight decline from 42% in 1999.

Early Initiation of Smoking:

- ◆ **Just under 20% of Massachusetts students reported smoking their first whole cigarette before age 13.** After remaining virtually unchanged since 1993, early (pre-teen) smoking decreased slightly from 23% in 1999.
- ◆ Male students were somewhat more likely than female students to have smoked their first cigarette before age 13 (21% vs. 18%, respectively).
- ◆ Cigarette smoking before age 13 was more common among students of Other and Mixed Ethnicity (26%) than students of all other ethnic groups. White, Black, and Hispanic students were equally as likely to report early smoking (19% of each group).
- ◆ Of all students who had ever smoked a whole cigarette, those who first did so before age 13 were significantly more likely than their peers who started later to be daily smokers (31% vs. 17%), recent cigar smokers (28% vs. 20%), and smokeless tobacco users (10% vs. 5%).

Obtaining Cigarettes:



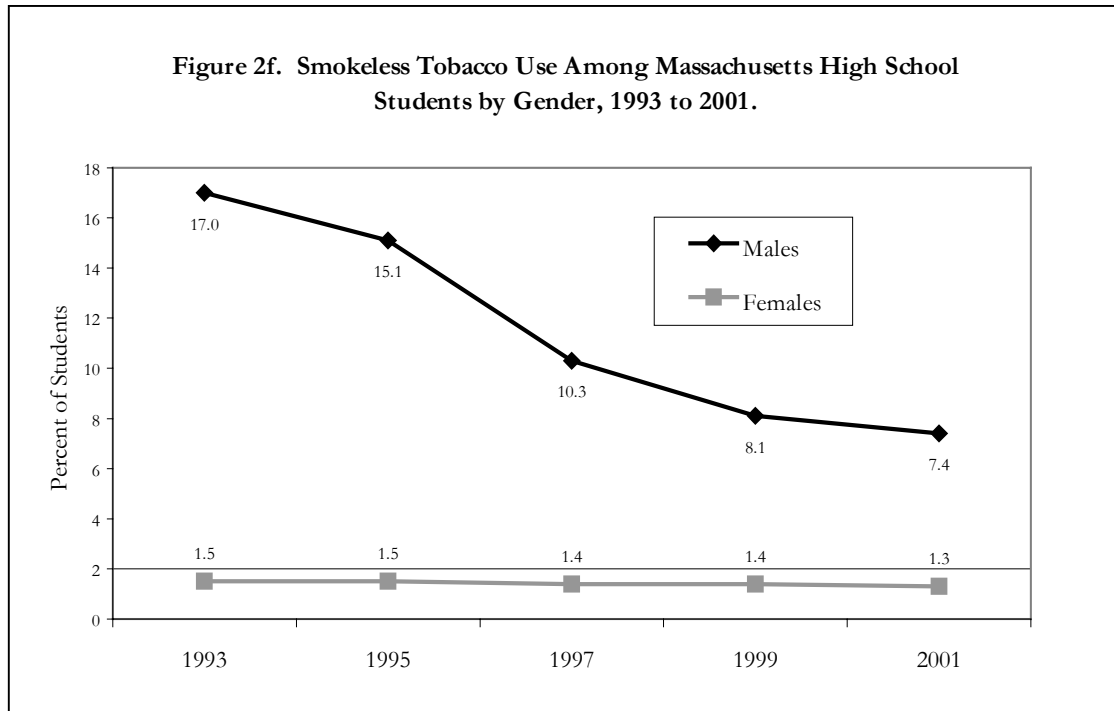
- ◆ Current smokers were more likely to buy their cigarettes in a store (such as a convenience store, gas station, or supermarket) than to obtain them any other way (see Figure 2e). The percentage of current smokers who bought cigarettes in a store decreased from 36% in 1999 to 32% in 2001. Twenty-six percent of students borrowed them from someone else. Only 1% of smokers got cigarettes from a vending machine.
- ◆ Fifty-eight percent of smokers were asked to show proof of age when they tried to buy cigarettes in a store. This represents an increase from 55% in 1999, and a significant increase from 49% in 1995. Similarly, the percentage of smokers under the age of 18 who bought cigarettes in a store decreased from 27% in 1999 to 20% in 2001.

Smoking Cessation:

- ◆ One fifth of all students (20%) reported having ever been “regular smokers,” that is, at some time they had smoked daily for at least a month.
- ◆ Almost three-quarters (74%) of these “ever-regular” smokers had tried to quit smoking at least once. The majority of these adolescents (85%) were still smoking at the time of the survey (i.e., they had smoked at least once in the 30 days prior to the survey) and more than half (54%) were still regular smokers.
- ◆ Roughly 30% of the “ever-regular” smokers had tried to quit three or more times. These students had even lower quitting success rates: only 7% had not smoked in the 30 days prior to the survey. Nearly two thirds (66%) were still regular smokers.

SMOKELESS TOBACCO USE

- ◆ **Smokeless tobacco (chewing tobacco or snuff) was used by 4% of students in the 30 days prior to the survey.**
- ◆ There has been a steady and significant decline in adolescent smokeless tobacco use from 1993 (9%) to 2001 (4%).
- ◆ Male students were significantly more likely than female students to report smokeless tobacco use (7% vs. 1%, respectively). However, among males, the rate of smokeless tobacco use has been cut in half since 1993 (17% in 1993 to 7% in 2001). Female rates have remained low and virtually unchanged (see Figure 2f).



- ◆ Rates of smokeless tobacco use were relatively “flat” across grade levels; students in each grade were within one percent of the 4% average rate.
- ◆ Students of Other or Mixed Ethnicity reported more smokeless tobacco use (8%) than did White (5%), Black (3%), Hispanic (3%), and Asian (5%) students.
- ◆ Most adolescents who had smoked cigars (67%) or used smokeless tobacco (63%) in the past month were also current cigarette smokers.

CIGAR SMOKING

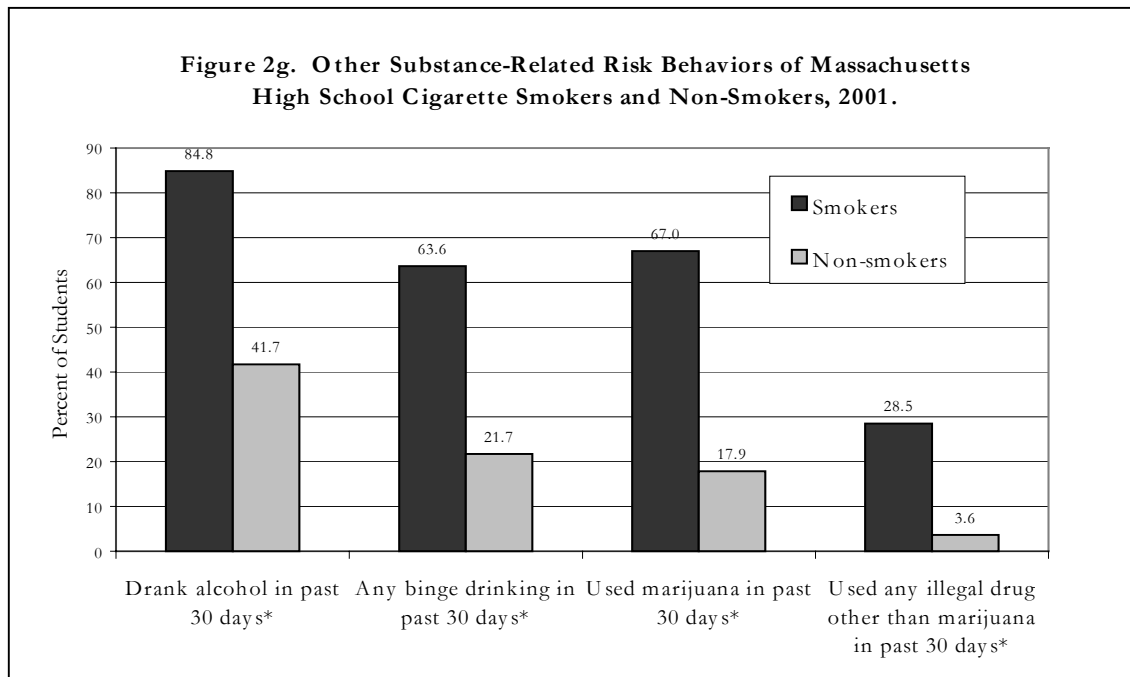
- ◆ **Thirteen percent of students reported smoking cigars or cigarillos in the 30 days prior to the survey.** This represents a slight decrease from 16% in 1999. The Massachusetts YRBS did not include a question concerning cigar smoking before 1999.
- ◆ Males were significantly more likely than females to have smoked cigars or cigarillos recently (20% vs. 6%, respectively).
- ◆ In 1999, students of Other or Multiple Ethnicity were significantly more likely than students of all other ethnic groups to report past month cigar smoking. However, between 1999 and 2001, the rate of cigar smoking among students of Other or Multiple Ethnicity dropped substantially (26% to 14%). In 2001, these students were no more likely than their peers to report past month cigar use.

TOBACCO USE ON SCHOOL PROPERTY

- ◆ Roughly 12% of all Massachusetts high school students smoked on school property in the 30 days prior to the survey. This represents a significant decrease since 1997, when 19% of students had smoked on school property.
- ◆ The percent of current smokers who smoked on school property decreased from 59% in 1993 to 49% in 2001. Fourteen percent (14%) of current smokers smoked every day on school property in the 30 days prior to the survey.
- ◆ Of all high school students, 2% used smokeless tobacco on school property. This number is 48% of the students reporting any smokeless tobacco use.

TOBACCO USE AND OTHER RISK BEHAVIORS

- ◆ Compared to students who had never tried cigarette smoking, those who had tried smoking in their lifetime were significantly more likely to report having ever used marijuana (74% vs. 14%) or any other illegal drug (40% vs. 8%) in their lifetime. Students who had tried cigarette smoking were also more likely than those who had not tried smoking to report having ever consumed alcohol (95% vs. 58%).
- ◆ Current smokers were more likely than those who had not smoked recently (i.e., non-smokers) to report drinking, binge drinking, marijuana use, and other illegal drug use in the 30 days prior to the survey (see Figure 2g).



* Statistically significant difference between current smokers and non-smokers, $p < .05$.

SUMMARY OF RESULTS

Every measure of tobacco use among Massachusetts high school students has decreased steadily since 1995. Cigarette smoking among Massachusetts high school students, which had risen in the early 90's, decreased significantly in the past six years. Smokeless tobacco use among adolescents has continued to drop steadily and significantly since 1993. Smoking cigarettes and using smokeless tobacco on school property have also declined.

Male and female students have similar levels of cigarette smoking, but males are much more likely to report smoking cigars or using smokeless tobacco. Most measures of tobacco use are higher among White youth and those of Other/Mixed Ethnicity than among Black, Hispanic, or Asian adolescents.

Adolescent cigarette smokers were less likely in 2001 than in 1995 to get their cigarettes by buying them in stores, and more likely to be asked to show proof of age when buying cigarettes. Also, in 2001 fewer smokers smoked on school property than in previous years. Most high school students who do smoke have made one or more attempts to stop, however most of these attempts appear to have not been successful.

IMPLICATIONS AND RECOMMENDATIONS

The 2001 MYRBS results highlight continued progress in reducing tobacco use among Massachusetts youth. National reports suggest that the rates of current smoking nationwide are decreasing,²² however Massachusetts' rates have been consistently below the national average since 1997.^{3,4} The significant drop in current smoking in Massachusetts is especially notable. Massachusetts can also be encouraged about the decline in adolescent smokeless tobacco use, which has been cut almost in half since 1995. Unfortunately, however, unacceptably high numbers of Massachusetts youth continue to endanger their health by using tobacco products.

The findings reported here emphasize the importance of early and repeated tobacco prevention education, beginning well before high school and reinforced at every grade level. Tobacco tax revenues approved by Massachusetts voters in 1992 have supported stronger youth tobacco prevention and comprehensive school health programs across the state. Currently, virtually all districts have required health education courses which include tobacco prevention components. It is encouraging that in 2001, 9th and 10th grade students, whose exposure to school and community anti-smoking messages is likely to have started earliest and been most consistent, reported lower prevalence of lifetime and current smoking than in 1999.

Changing widespread patterns of tobacco use among adolescents is a difficult and complex task, but 2001 MYRBS results support the view that such changes are taking place. Research evidence suggests that providing information about the harmful effects of tobacco use is rarely enough, by itself, to curb adolescent smoking.²³ Rather, effective tobacco prevention education programs are those that focus on helping students recognize peer and media pressure and on helping them develop the skills to resist such pressure. Additionally, because

tobacco use is associated with other risk behaviors, tobacco prevention education should be integrated into comprehensive school health programs. The *Massachusetts Comprehensive Health Curriculum Framework*²⁴ and the CDC's *Guidelines for School Health Programs to Prevent Tobacco Use and Addiction* are useful starting places to help districts develop school health education programs that encourage young people to make healthy choices.

In addition to classroom instruction about tobacco, vigorous enforcement of regulations concerning tobacco purchasing and use are also important. The shift downward in the percentage of students who buy their cigarettes in stores is evidence that ordinances outlawing the sale of tobacco products to minors are being enforced with increasing rigor, though not perfectly. There is still a high number of youth buying cigarettes without being asked for proof of age. The decrease in the percent of smokers who smoked on school property in 2001, indicating that enforcement efforts have increased, is also encouraging. To further this success, it is critical to maintain strong enforcement of tobacco-free school campuses.

Most students who smoke, especially those who have ever developed a regular smoking habit, have tried to quit at least once. Unfortunately, most of these attempts have not been successful. School- and/or community-based cessation programs aimed at adolescents would offer these students more support and guidance. Although nearly two-thirds of school districts currently offer cessation programs, relatively few adolescent tobacco users take advantage of these programs; they should be encouraged to do so.

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