
***Independent Evaluation of the
Massachusetts Tobacco
Control Program***

Eighth Annual Report

***January 1994
to
June 2001***

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The Massachusetts
Department of Public Health

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HIGHLIGHTS

To reduce the public health costs of tobacco use, the Massachusetts Tobacco Control Program (MTCP) has informed Massachusetts residents about tobacco risks, provided tobacco treatment services to smokers, and promoted public policies that reduce youth access to tobacco products and limit public exposure to environmental tobacco smoke. The Independent Evaluation has annually reviewed MTCP activities and the progress made toward the program's goals.

This year's report was originally intended to document progress from the program's inception in 1993 through fiscal year 2001. Funding cuts for fiscal year 2003 have eliminated all but a small fraction of MTCP activities and made it unclear whether future evaluation reports will be produced. The report has therefore been revised to include data through fiscal year 2002 wherever possible. Some of the key findings follow.

Massachusetts' adult smoking rate fell from 22.6 percent to 18.1 percent from 1993 to 2002, an estimated reduction of 219,000 adult smokers. Comparing the 1990-2000 Massachusetts trend to the trend in a comparison group of 41 states without comprehensive tobacco control programs, the Massachusetts decline was significantly greater even after accounting for demographic differences.

Per-capita cigarette sales dropped by 40 percent from 1992-2001 in Massachusetts, compared to 20 percent in other states (excluding California, which has a comparable tobacco control program).

Smoking by pregnant women declined from 17 percent in 1993 to 10 percent in 2000. The Massachusetts prevalence declined more steeply than the national prevalence over the same period.

Youth smoking rates declined from 36 percent to 26 percent from 1995-2001 in Massachusetts, while falling more slowly in the country as a whole (from 35 to 29 percent). Prior to 1995, youth smoking rates had been rising for both Massachusetts and the nation.

Smokeless tobacco use was more than halved among high school boys in Massachusetts, going from 17 percent to 7 percent between 1993 and 2001.

Exposure to environmental tobacco smoke (ETS) decreased among Massachusetts workers, from 44 percent reporting exposure in 1993 to just 15 percent in 2002. The proportion of workers in worksites with smoking bans grew from 53 percent to 80 percent.

ETS exposure at home dropped from 28 percent of Massachusetts residents in 1993 to 16 percent in 2002. The number of households with visitor smoking bans grew from 43 percent to 73 percent over the same period.

ETS exposure in restaurants fell, as the proportion of residents reporting exposure when they eat out went from 64 percent to 37 percent from 1995 to 2002.

Protection by local ordinances and regulations restricting smoking increased dramatically, from 22 percent of the Massachusetts population residing in towns with ordinances in 1993 to 85 percent in 2001. The proportion covered by **youth access provisions quadrupled** in that period, from 24 percent to 92 percent.

Retailer compliance with the prohibition on tobacco sales to youth increased sharply from 1994 to 2002. Compliance rates rose from 53 percent to 91 percent.

Public support for tobacco control keeps growing, with 60 percent or more of Massachusetts residents in 2001-2002 favoring complete smoking bans in shopping malls, indoor sports events, public buildings, and restaurants.

State-level laws and regulations were strengthened, with new excise taxes, advertising restrictions, smoking restrictions, and consumer protection policies.

Chapter 1: The Massachusetts Tobacco Control Program, 1993-2001

This report describes the structure of the Massachusetts Tobacco Control Program in fiscal year 2001 (July 2000 – June 2001) and examines the extent to which the program's goals have been achieved. The data show a comprehensive program with very substantial accomplishments.

Since the period examined in this report, budgetary pressures in Massachusetts have forced dramatic cutbacks in the program. The program budget was cut from \$34 million in FY 2002 to less than \$6 million for FY 2003. Major elements of the program have been eliminated, and the surviving elements are operating at substantially reduced levels.

The details and the effects of these budgetary changes are not covered in this report. The report was originally intended to focus on the program as it operated through the end of fiscal year 2001 (June 2001) and achievements to that point. Because it is not clear whether reports will be prepared for subsequent fiscal years (the evaluation was one casualty of the budget cuts), we have included any data for fiscal year 2002 that were available by October 2002. These data may serve as a baseline for future analyses of the effects of program cutbacks.

Program Objectives, Structure, and Services in Fiscal Year 2001

Since its inception, the Massachusetts Tobacco Control Program (MTCP) has pursued three central public health objectives:

- **Preventing** young people from using tobacco products by educating them and reducing their access to tobacco products;
- **Persuading and helping** smokers to quit smoking, thereby reducing adult smoking prevalence; and
- **Protecting** non-smokers by reducing their exposure to environmental tobacco smoke (ETS).

The intent is to reduce the toll of smoking on Massachusetts residents' lives and pocketbooks. This toll currently includes an estimated 9,300 deaths, \$2.8 billion in medical costs, and \$1.6 billion in lost productivity in Massachusetts each year.^{1,2} Notably, the estimate of lives lost due to smoking-related

causes has decreased from over 10,000 in 1996 to under 9,300 in 2000. Smoking currently accounts for 17 percent of all deaths to Massachusetts residents over age 35.¹

Working to “Make Smoking History,” MTCP integrates the efforts of public health professionals, voluntary organizations, advocates, the research community and the public and private sectors. Exhibit 1.1 depicts the advisory committees, funded programs and infrastructure through which MTCP operates. Regional Steering Committees coordinate and guide a mix of programs responding to the distinct needs of different parts of the Commonwealth. The major programmatic initiatives are described below.

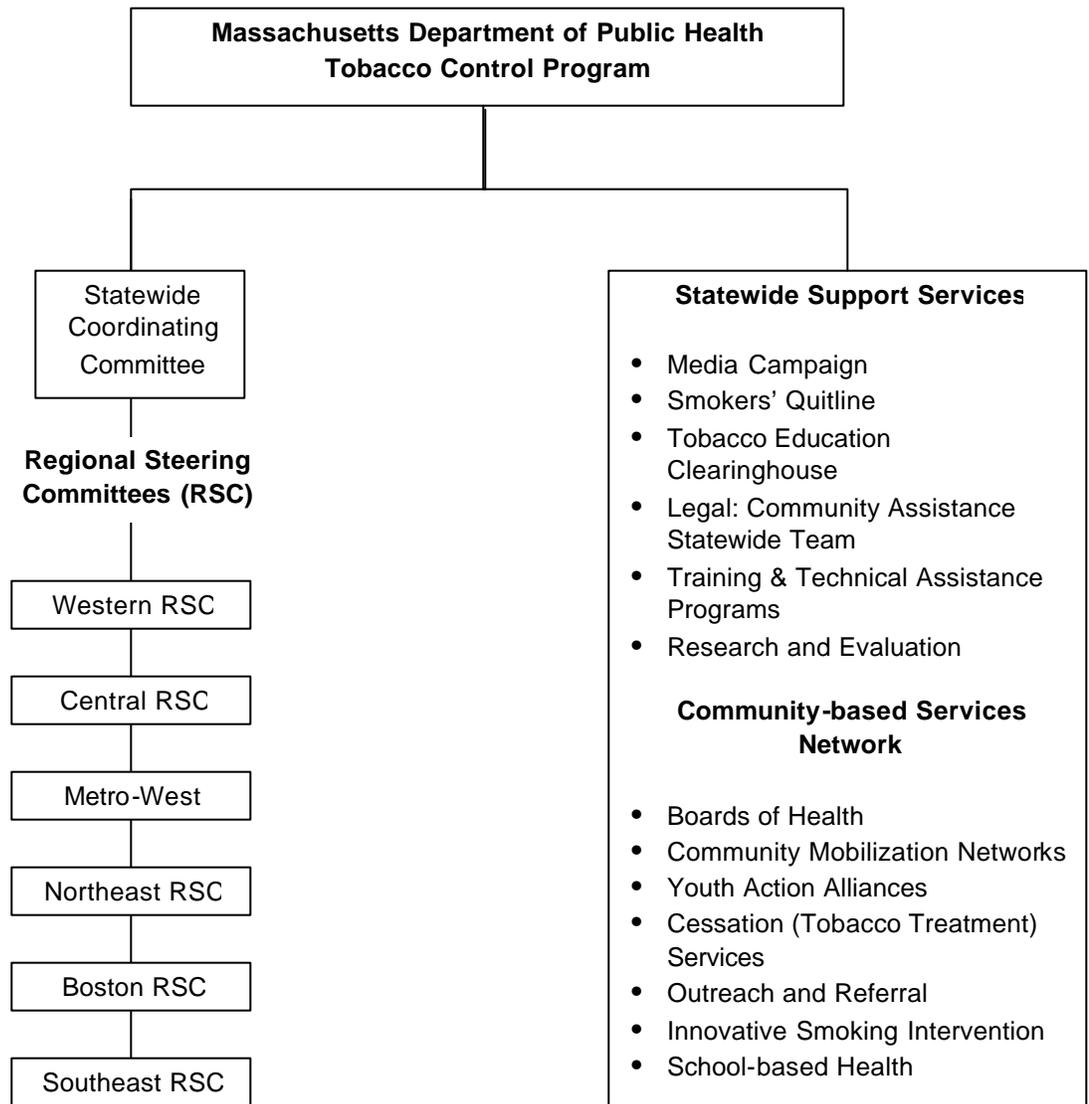
Media campaign

MTCP activities began in October of 1993 with a media campaign designed to reach large audiences and provide information about the negative health effects of smoking. Until it was largely discontinued midway through fiscal year 2001, the campaign was designed to educate Massachusetts residents about:

- the health consequences of smoking;
- resources to help smokers quit smoking;
- the danger of secondhand smoke;
- product content, i.e. the dangerous chemicals contained in the product;
- tobacco industry manipulation to increase habituation; and
- tobacco industry advertising practices that promote use, especially first use by youth.

The *Public Education Media Campaign* targeted the general population and was aimed at raising awareness of an important public health issue, tobacco control. The general campaign explained tobacco control issues to the public and communicated a “call to action.” *Strategic and Targeted Marketing* focused on selected populations, such as populations with high smoking prevalence, with customized messages. Both components of the media campaign used tailored public relations and advertising initiatives to complement community-based strategies such as working with the community’s largest vulnerable populations.

**Exhibit 1.1
Massachusetts Tobacco Control Program
Organizational Chart**



MTCP community-based programs

In late 1993 and early 1994, MTCP began funding statewide, regional, and local tobacco control programs and services. MTCP entered fiscal year 2001 with six types of local programs, organized into two categories: (1) Policy Promotion and Enforcement; and (2) Targeted Community Smoking Interventions. These program categories are described briefly below. More detail on the programs' locations and the services they provide is presented in the appendix tables, and further description of program activities can be found in previous Annual Reports.³

Policy promotion and enforcement. Three types of local programs raise public awareness about the health issues related to tobacco use, the strategies used by the tobacco industry to promote use, and the need to change social norms and public policy around tobacco use. These programs actively support tobacco control regulations and enforcement activities in their cities and towns, as described below.

- ***Boards of Health/Health Departments*** raise public awareness of the need for tobacco control public policy initiatives. Boards of Health are funded primarily to enact and enforce local ordinances and regulations designed to make it harder for youth to buy tobacco products from retail establishments and vending machines, and to protect the public from environmental tobacco smoke. In 2001, 75 Boards and collaboratives (multiple Boards acting as a group) were funded in 307 of the 351 cities and towns in Massachusetts. The budget cuts in fiscal year 2003 reduced the number of funded Boards and collaboratives to 20, covering 162 cities and towns but operating at lower levels of funding than in past years.
- ***Tobacco Free Community Mobilization Networks (CMN)*** engage in grass roots community education and mobilization to raise public awareness about the health issues related to tobacco use, the strategies used by the tobacco industry to promote use, and the need to change social norms and public policy around tobacco use. In 2001, 20 Community Mobilization Networks, each covering geographic areas with populations of 125,000 or greater, assisted local tobacco control programs to plan and coordinate activities. Eleven CMNs continued operation after the 2003 budget cuts, although at reduced levels.
- ***Youth Action Alliances*** are structured youth skill-building programs that foster youth leadership in tobacco control. Structured experiences within the 47 programs include policy-related activities such as designing and conducting attitude and behavior surveys;

community mapping of industry advertising practices; developing, passing, and enforcing a tobacco control regulation or law; and media advocacy. This program was eliminated in fiscal year 2003.

Targeted Community Smoking Intervention Programs (TCSIP). TCSIPs serve both youth and adults and target high-risk populations to engage them in the process of changing their attitudes and behaviors around tobacco use. Three types of programs have been funded.

- ***Tobacco Treatment Services (TTS).*** Tobacco Treatment Services are located in hospitals, health centers and other community-based agencies. The 87 programs funded in 2001 offered assistance to smokers in the form of behavioral counseling, combined with pharmacological treatments. Counselors are required to participate in an intensive, year-long certification process provided by the University of Massachusetts Medical Center. Funding for TTS programs was eliminated in fiscal year 2003.
- ***Outreach and Referral Programs (O&R)*** extend the reach of Tobacco Treatment Services by targeting hard-to-reach populations that may not take advantage of these treatment services without encouragement and support. Twenty programs were funded in 2001 to carry out individualized interventions and specific referral arrangements (e.g. appointments) that result in a completed visit to a Tobacco Treatment Specialist, and may include transportation and childcare. O&R funding was cut substantially in fiscal year 2002 and no programs were funded in FY 2003.
- ***Innovative Smoking Intervention Programs (ISI)*** are aimed at populations that are unlikely to use center-based Tobacco Treatment Services, such as homebound or institutionalized populations, women with young children, recent immigrants who do not speak English. The 31 one ISI programs funded in 2001 were to identify smokers and help them to quit smoking, working in settings that range from the smoker's home to a prison. The programs may also engage the target population and community leaders in changing social norms around tobacco use by supporting the enactment of local tobacco control regulations or laws. The ISI program modality was eliminated in FY 2003.

MTCP statewide programs and services

The Massachusetts Tobacco Control Program has funded the following statewide projects to deliver services to the general population and/or to support community-based tobacco control programs and health care providers statewide.

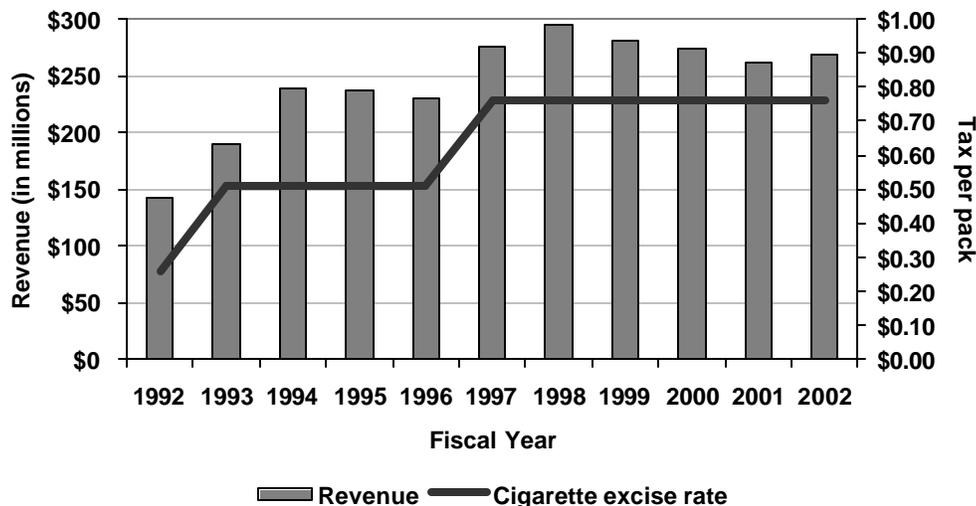
- ***The Smoker's Quitline*** (1-800-TRY-TO-STOP), operated by the John Snow Institute, Inc. as part of the MTCP Resource Center, provides free, confidential telephone information, support, and immediate counseling or referrals for callers at any phase in the quitting process. The call center also provides information to the general public on issues such as environmental tobacco smoke. The program maintains a website, www.trytostop.org, that accepts input from smokers and produces a customized, personal quit plan.
- ***QuitWorks*** is a collaboration of the Department of Public Health and all major health plans in Massachusetts, linking 12,000 health care providers and their patients to proactive telephone counseling. QuitWorks is designed to make it easier for providers to connect their patients who smoke with affordable, evidence-based tobacco treatment. QuitWorks features a standardized patient referral form, an Office Practice Implementation Kit, physician feedback reports on patient progress, and summary reports to health plans. Because QuitWorks began in May 2002, its effects are not included in the outcome measures presented in this report.
- ***The Tobacco Education Clearinghouse***, the other part of MTCP Resource Center, assesses and acquires new tobacco education materials from sources nationally; develops materials to meet MTCP needs; and fills orders for tobacco education materials, shipping within the state and nationally. The Clearinghouse also offers training and technical assistance on educational materials development to community-based programs.
- ***Institutional Capacity Building Projects*** educate their memberships or their constituencies to support tobacco control initiatives. For example, ten Regional Prevention Centers and the Tobacco Control Statewide Training Center provide technical support to local tobacco control programs, regional Steering Committees, and public schools. The Community Assistance Statewide Team (CAST) provides technical assistance to local boards of health and health departments as they pass tobacco control regulations in their communities and work to change social norms around tobacco use.
- ***Community Marketing Initiative*** grants of up to \$60,000 were available to collaborative groups of MTCP programs. The grants enable programs to reach large areas with similar messages through innovative media such as buses shrink-wrapped with tobacco control messages, pre-movie advertising, and sequential advertising in weekly newspapers. No grants were available in FY 2003.

The tobacco excise tax

Complementing the program activities of the MTCP, the tobacco excise tax is an important part of Massachusetts' tobacco control effort. The tax has the effect of raising the price of the taxed tobacco products. Taxes and tobacco control programming have both been shown to reduce tobacco consumption.⁴ Massachusetts' cigarette excise tax was raised from \$0.26 per pack to \$0.51 per pack in 1993, following the Question 1 referendum, to \$0.76 in 1996, and to \$1.51 in 2002. The tax on smokeless tobacco, which was 25 percent of the wholesale price before Question 1, was raised to 50 percent in 1993, to 75 percent in 1996, and to 90 percent in 2002. A cigar excise tax of 15 percent of the wholesale price was established in 1996 and raised to 30 percent in 2002.

The excise taxes play the dual role of discouraging tobacco use and providing revenue to the Commonwealth of Massachusetts. In fiscal year 2002, the cigarette tax generated revenue of \$269 million, with another \$6 million coming from the smokeless tobacco and cigar and smoking tobacco taxes. Exhibit 1.2 shows the cigarette excise tax rates and revenues since 1992 (the most recent increases took effect in July 2002, which is in fiscal year 2003 and not shown on the chart).

Exhibit 1.2
Massachusetts cigarette excise tax rates and revenues, 1992-2001



Source: Massachusetts Department of Public Health

Funding and Budget

MTCP is funded mainly by appropriations from the Health Protection Fund, which receives revenue from a 25 cent component of the excise tax on each pack of cigarettes and each unit of smokeless tobacco sold in the Commonwealth. The Massachusetts legislature appropriates funds from the Health Protection Fund each year. The establishing legislation specifies that the funds may be used for various tobacco control activities, for monitoring tobacco-related mortality and morbidity, and for the incorporation of tobacco-related activities into comprehensive school health education programs, community health centers, and prenatal and maternal care programs.⁵

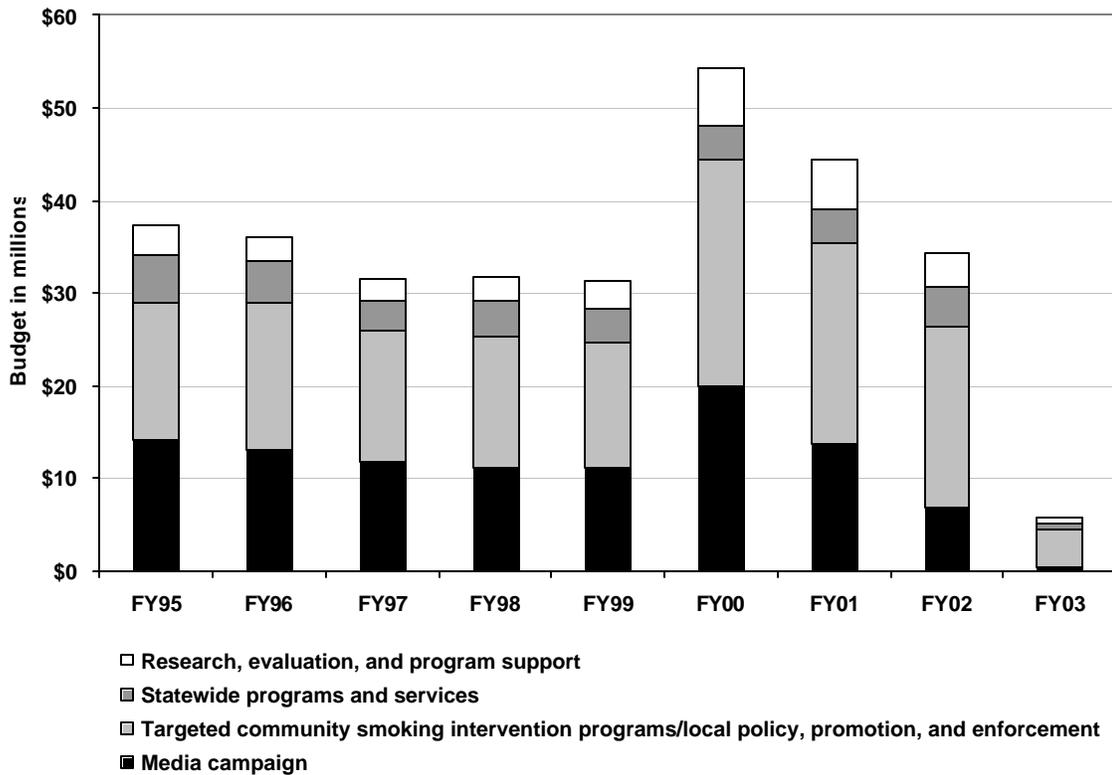
Appropriations from the Health Protection Fund, which ranged from \$113 million to \$130 million annually from 1994-2001, target a range of health protection programs including tobacco education and surveillance. The MTCP budget accounts for only a portion of the Fund's appropriation, however, ranging from \$37 million to \$31 million from 1995 through 1999.⁶ Beginning in 1999, some funding was received from the Centers for Disease Control and Prevention. In 2000, the MTCP budget grew to \$54 million because of additional funding from the Master Settlement Agreement between the attorneys general of 46 states, including Massachusetts, and the four largest tobacco companies.

The MTCP budget fell back to \$44 million in fiscal year 2001. This represented an 18 percent decline from the 2000 budget, but was still above the level of earlier years. Fiscal Year 2002 began with a budget of \$48 million, but this was cut to \$34 million midway through the year. The budget was cut even more drastically during the fiscal year, to \$5.7 million. The 2003 budget is approximately one-tenth of the budget in 2000. Moreover, since the 2003 cuts occurred about midway through the year, the monthly funding level for the second half of the year is substantially below the level suggested by the full year's budget. The budget trajectory for 1995-2003 is shown in Exhibit 1.3.⁷

Comparing 2003 to 2000, the largest cuts in dollar value were applied to the media campaign and community based programs, which had been the two largest components of the budget throughout the MTCP's history. The media campaign went from about \$20 million in 2000 to near zero in 2003, while local program funding dropped from \$24 million to \$4 million. Four of the six types of local programs were eliminated entirely during 2003, after having been funded at the level of \$12 million in 2000.

Even at the peak in 2000, MTCP funds for reducing tobacco use paled in comparison to tobacco industry advertising and promotional expenditures. Federal Trade Commission figures show that tobacco industry expenditures for advertising and promotion in 2000 totaled \$9.57 billion, or about \$34 for every man, woman, and child in the United States.⁸ The MTCP budget for the same year represented less than \$9 per Massachusetts resident.

Exhibit 1.3
Budget for MTCP, excluding School Health Services, 1995-2003



Source: Massachusetts Department of Public Health. Excludes funding for school health services of approximately \$5.2 million annually for 1995-2002, which has been included in some prior reports. This funding comes from the Health Protection Fund, but is not operationally part of the MTCP and is not principally directed to tobacco-related activities.

Research and Evaluation

The MTCP not only implements tobacco control programming based on existing knowledge, but also supports research to expand that knowledge. Much of the research carried out in 2001 was featured in a special issue of *Tobacco Control*, an international peer-reviewed journal, which focused on the Massachusetts program.⁹

To assess the effectiveness of Massachusetts' tobacco control efforts, the Department of Public Health funds an external evaluation of the program's overall impact as well as surveys and other related research efforts that focus on individual initiatives. Abt Associates Inc. was selected to carry out the independent evaluation, which began in November 1993.

The remainder of Chapter 1 provides an overview of the substantial progress that has occurred on the key outcomes that MTCP is monitoring. These include three main outcomes measured at the individual level: adult tobacco use, youth tobacco use, and exposure to environmental tobacco smoke. The chapter also reviews progress on tobacco control policies at the local and statewide level.

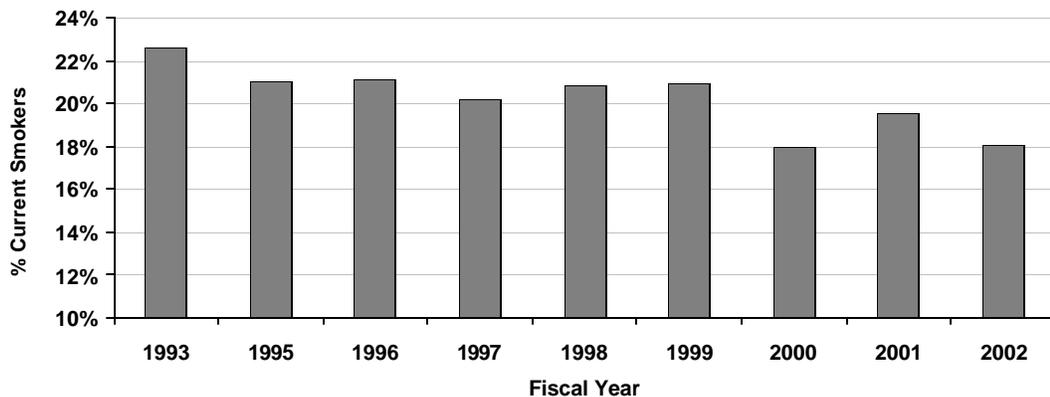
Part 2 of this report presents three analyses exploring the extent to which the observed progress can be attributed to Massachusetts' tobacco control efforts. Chapter 2 updates a previous analysis of adult smoking prevalence, which indicates that smoking prevalence has declined more rapidly in Massachusetts than in states without comprehensive tobacco control programs. Chapter 3 examines the effect of local ordinances that restrict smoking in restaurants, and finds that these restrictions lead to reductions in reported exposure to environmental tobacco smoke. Chapter 4 examines factors associated with successful quitting behavior in Massachusetts, and finds the highest success rates among people who participated in a counseling program and received nicotine replacement therapy.

Decline in Adult Smoking

Adult smoking in Massachusetts has declined since MTCP began in 1993. About 18.1 percent of Massachusetts adults were current smokers in 2002, according to a statewide survey.¹⁰ This represents a reduction of more than 4 percentage points from the 22.6 percent prevalence rate found in 1993,¹¹ a 20-percent decrease which is statistically significant.¹² Based on the U.S. Census Bureau estimate of the state's population in 2001 (4.87 million over the age of 18),¹³ this difference in adult prevalence would amount to 219,000 fewer adult smokers in the Commonwealth.

Prevalence levels found in the Massachusetts surveys have trended downward since 1993, with some year-to-year fluctuation in the estimates, as indicated in Exhibit 1.4.¹⁴

Exhibit 1.4
Adult smoking prevalence in Massachusetts



Source: Massachusetts Tobacco Survey (1993), Massachusetts Adult Tobacco Survey (1995-2001), UMass Tobacco Study (2001-2002).

Adult smoking prevalence declined faster in Massachusetts than in most of the United States.

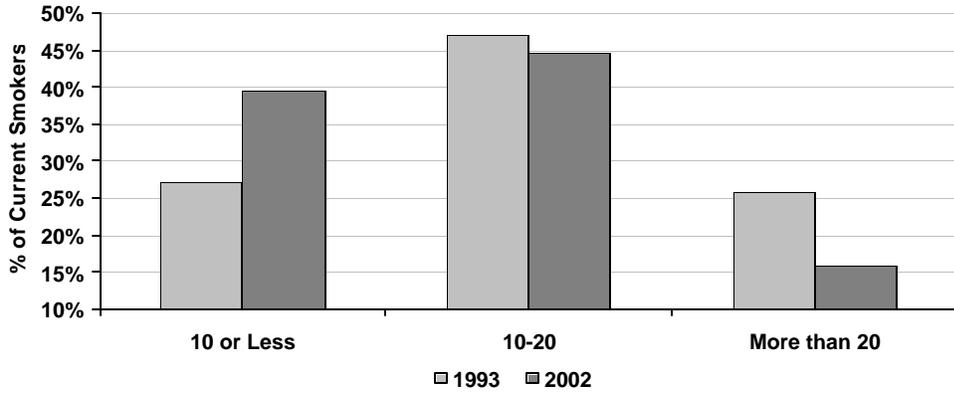
From 1990-2000, the downward prevalence trend in Massachusetts was significantly different from the trend in states that did not have comprehensive tobacco control programs during for most of he period (Chapter 3 presents this analysis, which is based on the data from the national Behavioral Risk Factor Surveillance System). This analytic result means that the smoking reduction in Massachusetts can be attributed to the Commonwealth's tobacco control efforts, not to national trends or to changes in the demographic composition of the population. The analysis focuses on the effect for Massachusetts as a whole and therefore does not separate out the contributions of the various tobacco control initiatives, such as the excise tax, the media campaign, and the community-based programs.

Smokers are smoking fewer cigarettes per day. In 2002, 40 percent of Massachusetts' adult smokers reported smoking half a pack of cigarettes or less per day (Exhibit 1.5). This represents a statistically significant improvement from 1993, when only 27 percent smoked less than half a pack a day. Meanwhile, the number of heavy smokers has decreased. Only 16 percent smoked more than a pack a day in 2002, compared to 26 percent in 1993. The average daily number of cigarettes for smokers fell from 19.8 in 1993 to 16.5 in 2002. All of these differences are statistically significant.

Massachusetts' per capita cigarette sales fell sharply. In 1990, cigarette sales in Massachusetts amounted to 126 packs for every resident over age 18. That number declined slightly to 118 packs in 1992. In the following years, when the tobacco control programming and tobacco excise tax mandated by Question 1 were implemented, sales fell dramatically, reaching a level of 72 packs per adult in 2001.

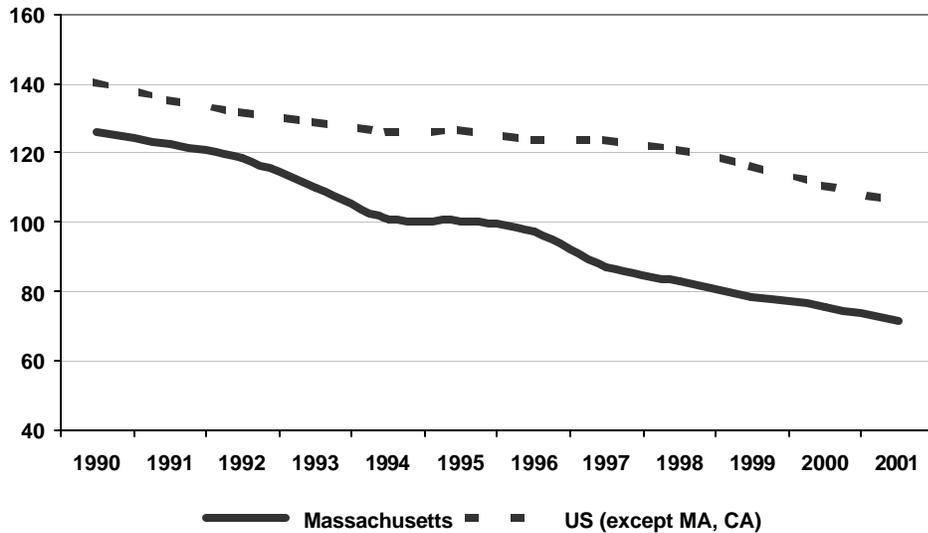
Massachusetts' drop in cigarette consumption was double the size of the decline in the rest of the country. Consumption fell by 40 percent from 1992-2001 in Massachusetts, but by only 20 percent in the other states, as shown in Exhibit 1.6 (California, which also had a comprehensive tobacco control program during this period, is excluded from the comparison).

Exhibit 1.5
Cigarettes smoked per day by adult smokers (age 18+)



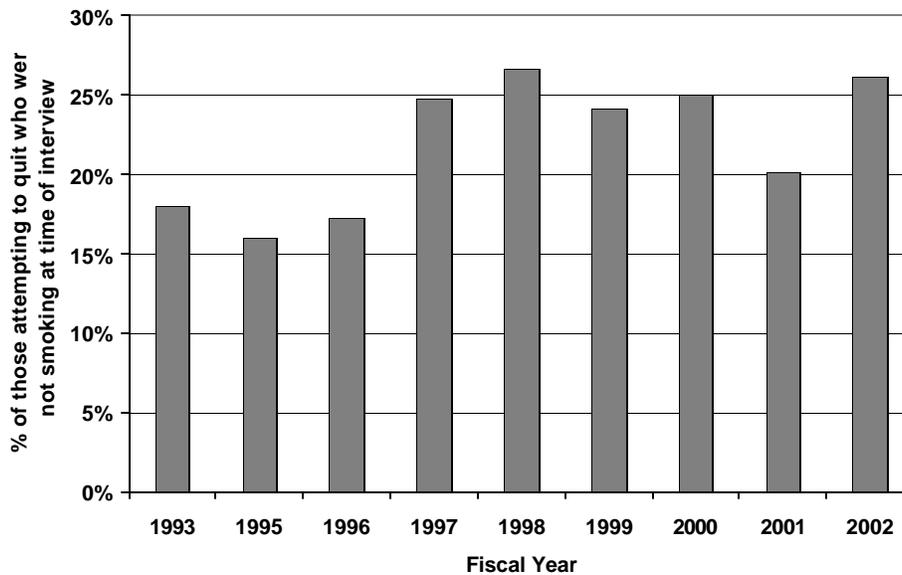
Source: Massachusetts Tobacco Survey (1993), UMass Tobacco Study (2002).

Exhibit 1.6
Packs of cigarettes sold annually per adult (age 18+)



Source: Cigarette purchases from *The Tax Burden on Tobacco*, Vol. 35, 2000. Population estimates from U.S. Bureau of the Census.

Exhibit 1.7
Quit success among those attempting to quit in last year



Source: Massachusetts Tobacco Survey (1993), Massachusetts Adult Tobacco Survey (1995-2001), UMass Tobacco Study (2001-2002).

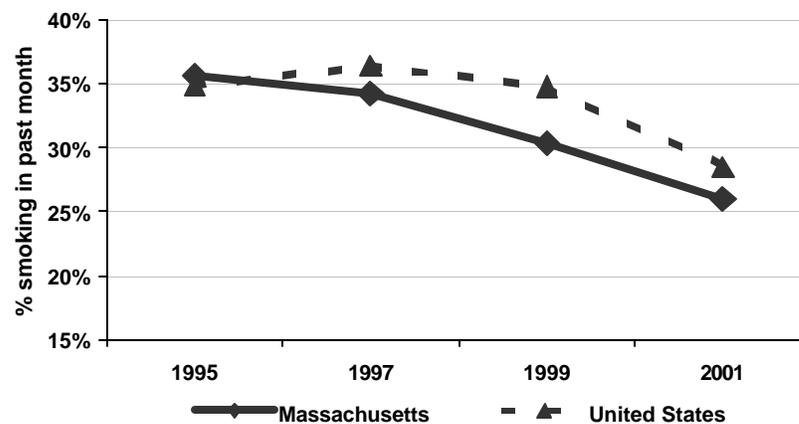
Quit success has grown. Each year approximately half of all Massachusetts smokers quit for at least one day, a proportion that has remained roughly consistent since 1993. Those who attempt to quit have become more successful, however. In the 1993 survey, 18 percent of those who tried to quit in the 12 months prior to their interview were still not smoking at the time of the interview. That proportion has grown with some year-to-year fluctuation, and stood at 26 percent in 2002 (Exhibit 1.7).

Fewer pregnant women are smoking. Vital statistics indicate that smoking prevalence among pregnant women in Massachusetts fell from 17 percent in 1993 to 10 percent in 2000.¹⁵ This 39-percent decline is much steeper than the national decline of 24 percent during the same period.

Youth Smoking Reduction

Declining youth smoking prevalence. According to the 2001 Massachusetts Youth Risk Behavior Survey (YRBS), 26 percent of Massachusetts high school students smoked within the month prior to the survey (Exhibit 1.8).¹⁶ This represents a substantial and statistically significant improvement from the 36 percent smoking rate reported in 1995, and also from the 30 percent rate found for 1999.

Exhibit 1.8
Prevalence of current smoking among high school students



Source: Youth Risk Behavior Survey. Massachusetts Youth Risk Behavior Survey.

Smoking prevalence declined for each grade from 9 through 12, with the greatest reductions observed for the younger grades. This pattern offers hope that the downward trend will continue in future years.

Massachusetts' reduction in youth smoking prevalence has outpaced the decline in the United States as a whole. The Massachusetts and national YRBS prevalence grew in the early 1990s and were about the same in 1995. Since 1995, prevalence has fallen farther and more quickly in Massachusetts.¹⁷ A substantial reduction in the national prevalence from 1999-2001 still left the national rate at 29 percent, compared to 26 percent in Massachusetts.

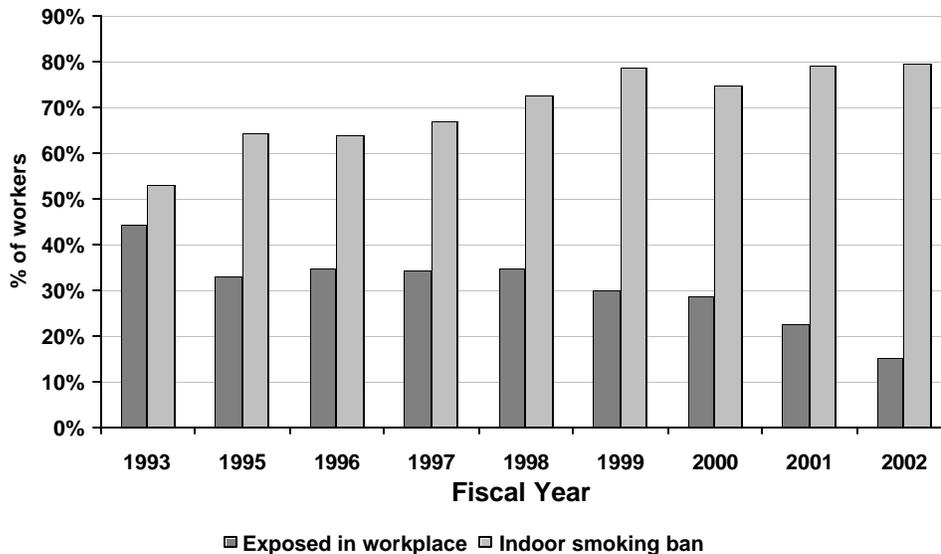
Smokeless tobacco use also fell in Massachusetts. Among high school boys, 7 percent reported using smokeless tobacco during the past month in the 2001 YRBS, compared to 17 percent in 1993.

Decreased ETS Exposure

Workplace exposure has been cut substantially. In 2001, 15 percent of Massachusetts residents employed indoors, and outside their home, reported some exposure to other people's tobacco smoke in the week before the surveys (Exhibit 1.9). This represents a reduction of nearly two-thirds from the 44 percent who reported workplace ETS exposure in the 1993 survey. The average weekly exposure in the workplace fell from 4.5 hours to 1.3 hours in the same period. These improvements are statistically significant.

The increase in workplace smoking bans over the 1993-2001 period almost certainly contributes to this reduction. Nearly 80 percent of workers indicated that their workplace had an official policy prohibiting smoking through the building in 2001. This represents a large, statistically significant increase from the 53 percent found in the 1993 survey.

Exhibit 1.9
ETS exposure in the workplace



Source: Massachusetts Tobacco Survey (1993), Massachusetts Adult Tobacco Survey (1995-2001), UMass Tobacco Study (2001-2002)

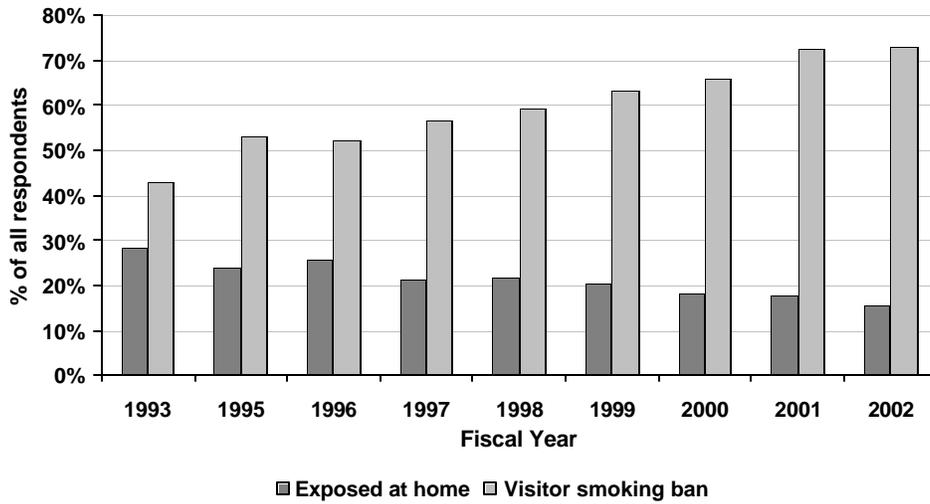
Exposure at home reduced by more than a third. Just 16 percent of Massachusetts residents said they were exposed to other people's tobacco smoke in their home during the week before the 2002 surveys (Exhibit 1.10). This is a reduction of more than one third from the exposure level reported in the 1993 survey (28 percent), a statistically significant difference. The average hours of weekly exposure dropped from 4.7 to 2.4 over that period

The reduced in-home exposure corresponds to a substantial increase in household policies restricting smoking by visitors. In 1993 fewer than half of all Massachusetts residents reported that they forbid smoking by visitors in their homes. This number climbed to 73 percent of households in 2002, a statistically significant improvement.

Exposure in restaurants is declining. In a 2002 survey of Massachusetts residents who eat at restaurants, 37 percent report that they are sometimes, often, or always exposed to other people's tobacco smoke when they eat out (Exhibit 1.11). This a reduction of two-fifths from the 64 percent exposure rate reported by respondents to the 1995 survey, when the question was first asked. This improvement is statistically significant.

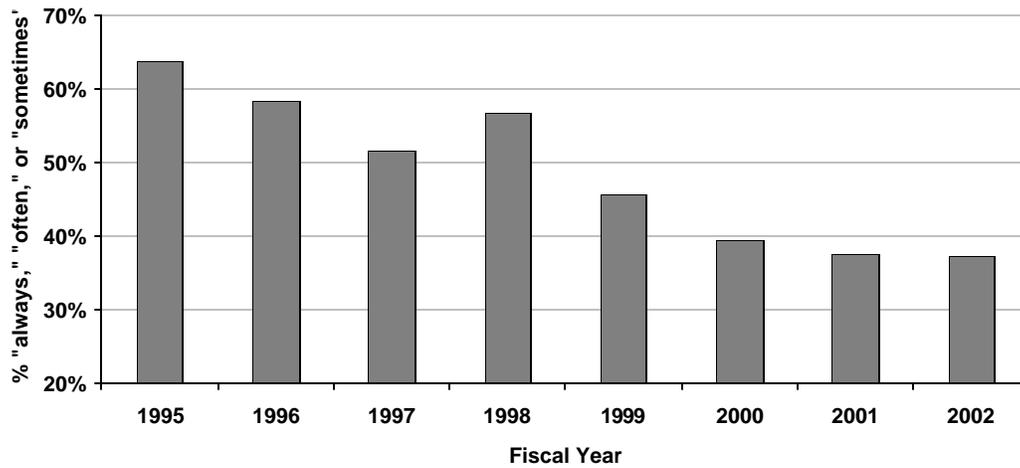
The continued adoption of local ordinances and regulations restricting smoking in restaurants helps bring exposure down. Between 1995 and 2001, the population covered by such restrictions increased from 26 to 78 percent of all Massachusetts residents. Analysis reported in Chapter 3 shows that, after a town adopts a restaurant smoking ordinance, residents of the town report lower levels of exposure to ETS.

Exhibit 1.10
ETS exposure at home



Source: Massachusetts Tobacco Survey (1993), Massachusetts Adult Tobacco Survey (1995-2001), UMass Tobacco Study (2001-2002).

Exhibit 1.11
ETS exposure in restaurants



Source: Massachusetts Tobacco Survey (1993), Massachusetts Adult Tobacco Survey (1995-2001), UMass Tobacco Study (2001-2002).

Increased Local Policy Adoption and Enforcement

Youth access restrictions have become nearly universal. Most Massachusetts towns have now adopted local ordinances or regulations intended to reduce young people's ability to purchase tobacco products and their exposure to local tobacco marketing. By the end of 2001, 252 towns and cities, home to 92 percent of Massachusetts residents, had one or more youth access provisions in place (Exhibit 1.12). This is quadruple the 24 percent population coverage by these provisions in 1993. Analysis reported previously shows that towns that received MTCP funding were significantly more likely than comparable non-funded towns to adopt such provisions.³

Establishing licensing requirements for retailers who sell tobacco products is the most common approach to local restriction of youth access, with 87 percent population coverage by the end of 2001. Often these requirements are supplemented by provisions authorizing fines for retailers who sell tobacco to youth under age 18. Many towns also have adopted some form of restriction on vending machine sales, such as a requirement for lockout devices (52 percent population coverage), a ban on vending machine sales of tobacco except in adult-only establishments (32 percent population coverage), or a complete ban on vending machines (25 percent population coverage).

Retailer compliance has improved dramatically. Since 1993, MTCP-funded local boards of health have supervised young people attempting to purchase cigarettes in order to test retailers' compliance with the law prohibiting tobacco sales to persons under age 18. The violation rate—the percentage of purchase attempts resulting in an illegal sale—dropped sharply over time and reached its lowest level in 2002, at 9 percent (Exhibit 1.13). Part of the story is stronger enforcement: local boards of health have increased both their monitoring intensity and their use of penalties (citations, fines, or license suspensions) when they find violations.

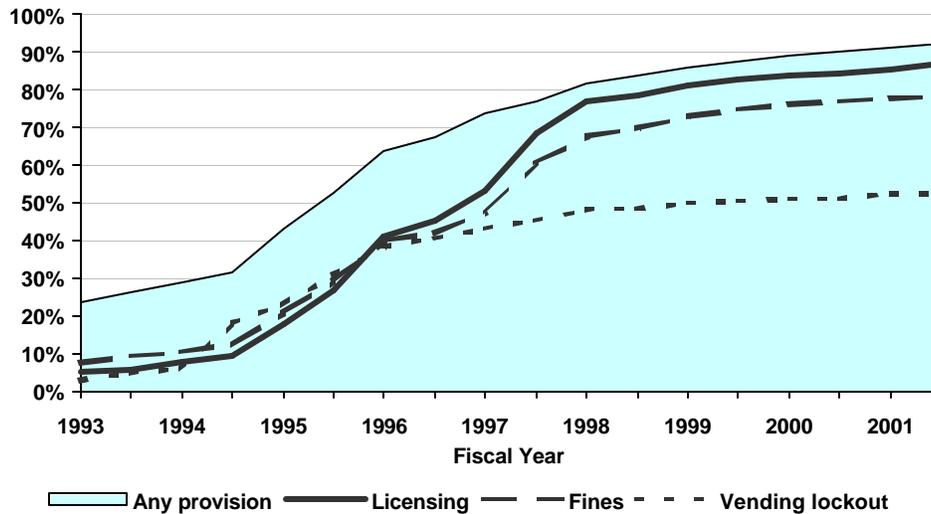
Local ETS restrictions have dramatically increased. By the end of fiscal year 2001, 85 percent of Massachusetts residents lived in a town with some form of restriction on smoking in public places (Exhibit 1.14). This is four times the 22 percent who were protected in 1993, when MTCP began.

Restaurant smoking restrictions protected 78 percent of Massachusetts residents in 182 cities and towns, making this the single most common type of local ETS policy. Complete restaurant smoking bans were in place in 127 of those towns, covering 53 percent of the state's population.

Continued public support for strong clean indoor air policies. Support for smoking bans in public places keeps growing, as can be seen in Exhibit 1.15. By 2001-2002, 60 percent or more of

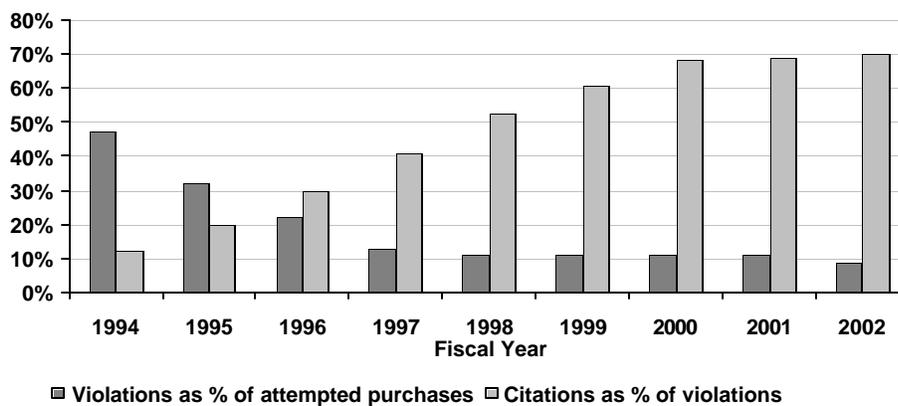
Massachusetts residents supported complete smoking bans in shopping malls, public buildings, indoor sporting events, and restaurants. Support for each of these policies has increased significantly since 1995.

Exhibit 1.12
Percent of population covered by youth access provisions



Source: Massachusetts Department of Public Health.

Exhibit 1.13
Results of underage purchase attempts



Source: MTCP Management Information System.

Stronger State-level Policies

Since the Massachusetts electorate supported Question 1 in 1992, tobacco control policies in Massachusetts have strengthened remarkably. Legislation, regulation, litigation, and persuasion have led to a broad array of governmental and private sector policies designed to reduce the tobacco-related public health risk. Some of these policy changes occurred as the direct result of MTCP actions. Most were influenced or facilitated by the changes in public attitudes described in this report. The list below suggests the breadth of the policy activity:

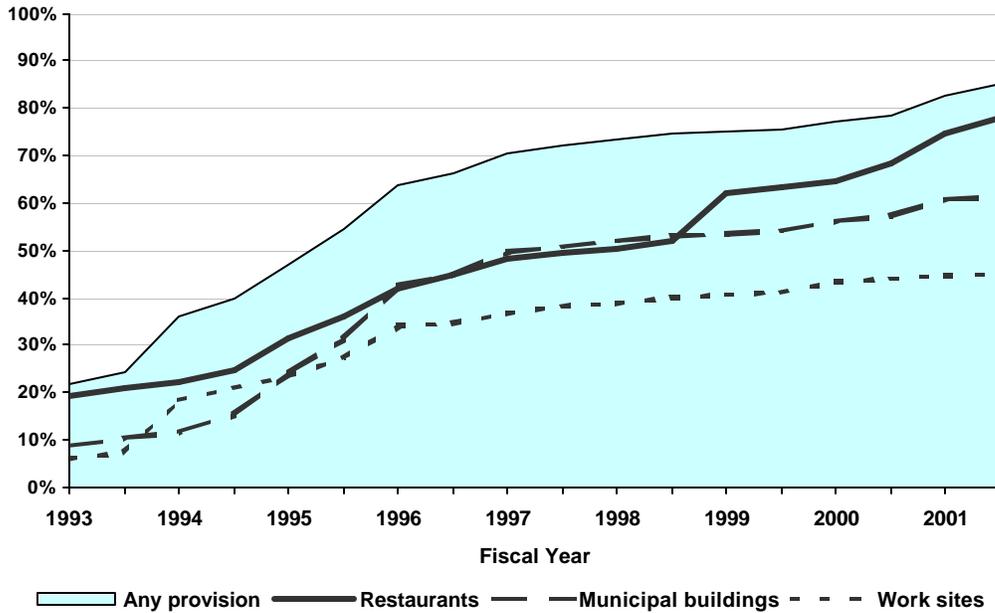
Tax and economic policies

- Cigarette excise tax increases of \$0.25 per pack in 1993 and 1996, and \$0.75 in 2002;
- Smokeless tobacco excise tax increases of 25 percent of wholesale price in 1993 and 1996 and 15 percent in 2002;
- New cigar excise tax of 15 percent in 1996, increased to 30 percent in 2002;
- State pension fund prohibited from investing in tobacco companies in 1998; and
- Increase in cigarette prices resulting from Master Settlement Agreement in 1998.¹⁸

Tobacco product advertising restrictions

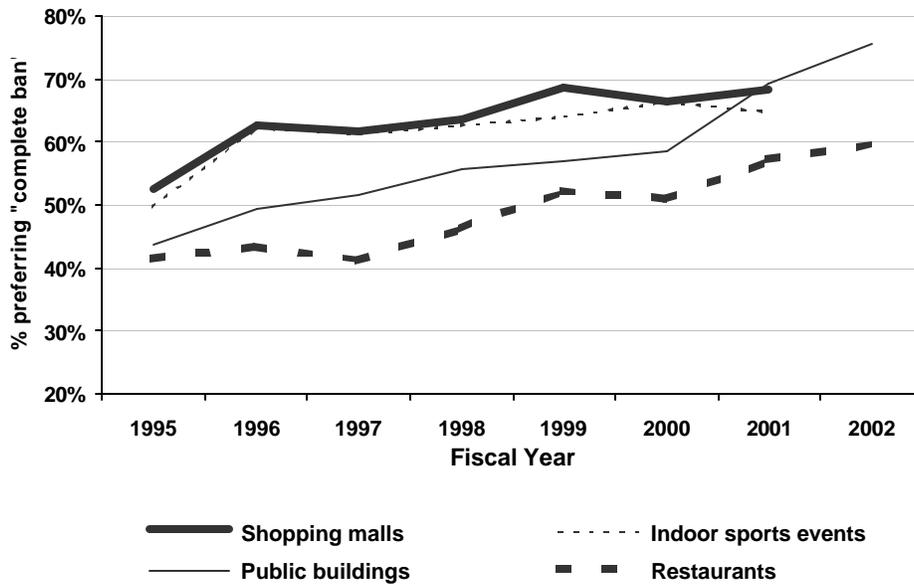
- Elimination of stadium tobacco advertising by the Boston Red Sox and the New England Patriots, upon DPH request (1995);
- Ban on outdoor tobacco advertising as part of Master Settlement Agreement, with Massachusetts playing a strong role in 46-state negotiations (1998);
- Boston Globe refuses to accept cigarette advertising upon DPH request (2000); and
- Phillip Morris, Brown & Williamson, and Lorillard agree to drop advertising in magazines with 15 percent or more youth readership, after DPH research shows that such advertising increased after the MSA (2000). Similarly, US Smokeless Tobacco curtails advertising in the wake of DPH research and a California court case (2000).

Exhibit 1.14
Percent of population covered by ETS provisions



Source: Massachusetts Department of Public Health.

Exhibit 1.15
Public support for clean air policies



Source: Massachusetts Adult Tobacco Survey (1995-2001); UMass Tobacco Study (2001-2002) for questions on restaurants and public buildings; questions on indoor sports events and shopping malls not asked.

Smoking restrictions in public places

- Educational Reform Act prohibits smoking by any person in public and secondary schools (1993);
- New England Shopping Mall Associates bans smoking in the 13 largest malls in Massachusetts, upon DPH request (1995);
- Boston Red Sox and New England Patriots ban smoking in stadiums after DPH request (1995), and Red Sox extend the ban to the entire park (2000); and
- Massport bans smoking in the three airports it manages: Logan, Hanscom, and Worcester (1996).

Consumer protection

- Tobacco product disclosure law requires manufacturers to report on cigarette nicotine and additives (1996, still in litigation);
- DPH proposes regulations requiring manufacturers to report levels of toxic ingredients in cigarettes (1999, still in negotiation);
- Attorney General promulgates regulation requiring cigar package warnings, contributing to national consent agreement for warnings on packages and magazine advertising (1999); and
- Attorney General promulgates regulation prohibiting self-service displays of tobacco products and requiring a photo ID verification of purchases by persons appearing to be under 27 years of age (1999).

The Role of the MTCP in Achieving Gains

The preceding sections demonstrate substantial progress in achieving the goals of the Massachusetts Tobacco Control Program. This includes all three of the program's primary goals—reducing adult tobacco use, reducing youth tobacco use, and reducing exposure to environmental tobacco smoke. In addition, progress is evident on a broad array of secondary objectives such as reducing retail tobacco sales to youth, restricting smoking in public places, and moving public attitudes and social norms towards less acceptance of tobacco use.

This progress is extremely important by itself. But it is also important to ask whether the progress resulted from Massachusetts' tobacco control efforts, or whether it would have occurred even in the absence of those efforts.

Research has revealed strong evidence of a “Massachusetts effect” on the main measures of tobacco use. Analyses conducted as part of the evaluation show that both adult and youth smoking prevalence have declined faster in Massachusetts than in the nation as a whole, even after adjusting for differences in demographic composition.¹⁹ National statistics also show steeper declines in Massachusetts than the nation for smoking during pregnancy and per-capita cigarette sales.

What are the specific causes of the Massachusetts effect? Past research has indicated that taxes, statewide and local regulations, media campaigns, and local tobacco control programs can all contribute to improved tobacco outcomes. Moreover, these factors probably reinforce one another. For example, the recently adopted tobacco tax increases and local regulations might not have been possible without the growth in public support for tobacco control that occurred since 1993. The educational efforts of the media campaign and the local programs most likely contributed to that growth in public support.

Only a few analyses have attempted to untangle this web of possible causes. One analysis found that both the level of excise taxes and the level of tobacco control program expenditures (combining all program components) have had significant impact on per-capita cigarette sales.²⁰ The author estimated that 55 percent of the Massachusetts decline in cigarette sales from 1992-1998 resulted from the programmatic activities.²¹ Other analyses have shown that MTCP funding for local programs increases the likelihood that a town will adopt tobacco control ordinances and regulations,²² and the analysis presented in Chapter 3 indicates that such ordinances have resulted in reduced ETS exposure. The ordinance analysis shows a significant effect of a single program component, namely the funding of local Boards of Health.

In short, it is clear not only that important progress has occurred in Massachusetts, but that this progress did not simply mirror national trends that were happening at the same time. The evidence suggests that multiple Massachusetts initiatives—at least the excise tax increases, the MTCP programming as a whole, and the activities of local Boards of Health—have contributed to this favorable result. It will be important for further research to explore the question of which program components contributed which effects, and what happens when the program components are terminated or drastically reduced.

Endnotes

- ¹ *Smoking-Attributable Mortality, Morbidity, and Economic Costs. Massachusetts, 2000* and similar reports for 1996, 1997, and 1998. Jayne West and Bruce Cohen. Bureau of Health Statistics, Research and Evaluation, Massachusetts Department of Health. April 2002.
- ² *Investment in Tobacco Control - State Highlights 2001*. A report of the Centers for Disease Control and Prevention, Office on Smoking and Health (OSH). 2001. Available at http://www.cdc.gov/tobacco/statehi/statehi_2001.htm Accessed March 26, 2001.
- ³ Hamilton W, Norton G, Weintraub J. *Independent Evaluation of the Massachusetts Tobacco Control Program. Seventh Annual Report. January 1994 to June 2000*. Cambridge, MA. Abt Associates Inc. 2002.
- ⁴ Farelly MC, Chaloupka FJ, and Pechacek TF. The Impact of Tobacco Control Program Expenditures on Aggregate Cigarette Sales: 1981-1998. NBER Working PaperNo. 8691. December 2001.
- ⁵ Massachusetts General Laws, Chapter 29, Section 2GG.
- ⁶ These totals exclude the portion of the Health Protection Fund allocated to the School Health Services program, which funds comprehensive health care clinics. That allocation, amounting to \$5.2 million annually from 1995-2002, is sometimes reported as part of the tobacco control budget. Figures reported here also exclude “earmarked” programs, which are mandated by the legislature as expenditures from the tobacco control budget but are not controlled or administered by the MTCP. Funding for earmarked programs amounted to \$0.5 million in FY 2002 and \$0.2 million in FY 2003.
- ⁷ Fiscal Year 1994, not shown in the table, had a nominal budget of \$57 million. Because most program activities did not begin until late in the fiscal year, however, actual spending was much less than the budgeted amount. Expenditures were quite close to the budget figures shown for subsequent years, except that budget reductions midway through 2002 meant that expenditures were considerably less than the budget.
- ⁸ *Federal Trade Commission Cigarette Report for 2000*. Issued in 2002. Washington, DC: Federal Trade Commission. U.S. and Massachusetts population figures used in calculating per capita expenditures are from the 2000 Census.
- ⁹ Tobacco control in Massachusetts: making smoking history. *Tobacco Control* 2002; 11 (Suppl II).
- ¹⁰ This estimate is based on data from UMass Tobacco Study, conducted by the Center for Survey Research at the University of Massachusetts, Boston. The survey was conducted from January 2001 through June 2002. The study design is described in Biener L and Hamilton W. *The Relationship of Town Characteristics To Perceived Social Norms*. Boston: University of Massachusetts, Boston. Forthcoming.
- ¹¹ The 1993 estimate comes from the Massachusetts Tobacco Survey (MTS). This survey, also conducted by the Center for Survey Research at the University of Massachusetts, Boston, is documented in Biener, L., Fowler FJ Jr., and Roman AM, 1993 Massachusetts Tobacco Survey: Tobacco Use and Attitudes at the Start of the Massachusetts Tobacco Control Program. 1994, Center for Survey Research, University of Massachusetts: Boston, MA.
- ¹² Statements regarding statistical significance refer to probabilities of 0.05 or less unless otherwise noted.
- ¹³ The estimated Massachusetts population for 2001 is 6,379,304. Estimates by age were not available for 2001, so the total was multiplied by the proportion of Massachusetts population aged 18 or more in the 2000 census (76.4 percent).
- ¹⁴ Estimates for 1995-2000 are based on the Massachusetts Adult Tobacco Survey (MATS). The MATS was conducted from March 1995 through December 2000 by the Center for Survey Research at the University of Massachusetts, Boston. The MATS design is documented in Biener L, Nyman AL, Roman AM, et al. *2000 Massachusetts Adult Tobacco Survey: Technical Report and Tables*. Boston MA: Center for Survey Research, University of Massachusetts. 2002. The estimate for fiscal year 2001 combines data from the MATS (for July-December 2000) and from the UMass Tobacco Study survey described earlier (January-June 2001).

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- ¹⁵ Rates for 1990-1996 are taken from: Matthews T. Smoking During Pregnancy, 1990-1996. *National Vital Statistics Reports*. 1998; 47-10, 1-11. Figures for 1997-1999 come from: Mathews, T. Smoking During Pregnancy in the 1990s. *National Vital Statistics Reports* 2001; 49-7,1-12. Figures from 2000 are from: Centers for Disease Control and Prevention. DATA 2010: the Healthy People 2010 Database, September 2002 Edition.. Available at <http://wonder.cdc.gov>. Accessed on December 12, 2002.
- ¹⁶ Abbruzzese B, Goodenow C. *Preventing Tobacco Use Among Massachusetts Youth: Programs and Results*. Malden, MA: Massachusetts Department of Education, 2002.
- ¹⁷ Centers for Disease Control and Prevention. Trends in Cigarette Smoking Among High School Students – United States, 1991-2001. *MMWR* 2002; 51: 409-412.
- ¹⁸ Donovan, D. The Giant Tobacco Robbery. *Forbes Magazine*. January 22, 2001. The author estimates that tobacco company payments to states amount to \$0.49 per pack and that price increases since November 1998 amount to \$0.96 per pack.
- ¹⁹ The analysis of adult prevalence is presented in Chapter 2. The analysis of youth prevalence was presented in Hamilton W, Norton G, Weintraub J. *Independent Evaluation of the Massachusetts Tobacco Control Program. Seventh Annual Report. January 1994 to June 2000*. Cambridge, MA. Abt Associates Inc. 2002.
- ²⁰ Farrelly MC, Chaloupka FJ, Pechacek, TF. The Impact of Tobacco Control Program Expenditures on Aggregate Cigarette Sales: 1981-1998. NBER Working Paper No. 8691. December 2001.
- ²¹ Farrelly MC. Antismoking campaigns work, data show. Letter to the editor. *Boston Globe*. December 9, 2002.
- ²² Bartosch WJ, Pope GC. Local Enactment of Tobacco Control Policies in Massachusetts. *Am J Public Health* 2002 92: 941-943. Hamilton W, Norton G, Weintraub J. 2002, op. cit.

Chapter 2: Trends in Adult Smoking Prevalence: An Update

The analysis reported in this chapter updates work that was presented in our last Annual Report¹ and in published articles.² The previous analysis found that, from 1990 through 1999, adult smoking prevalence declined faster in Massachusetts than in states without comprehensive tobacco control programs, and that this pattern could not be explained by demographic factors alone. It also showed that the “Massachusetts effect” was most pronounced for males, for persons aged 18-34, for persons who graduated from high school but were not college graduates, and for white non-Hispanic persons. The updated analysis, adding data for 2000, confirms the previous findings.

Introduction

A primary goal of the MTCP and other tobacco control programs is to reduce the prevalence of cigarette smoking by adults. Progress on this goal is slow to occur and difficult to measure. Even when smoking rates decline, it is difficult to be sure that the decline results from the tobacco control program. A decreasing smoking rate in Massachusetts might be caused by the Commonwealth’s tobacco control efforts. Alternatively, a decline might result from a national trend. Or a decline might reflect a change in population composition, such as an increase in the proportion of highly educated people or elderly people, who are known to have lower than average smoking prevalence.

Last year’s Annual Report examined the question of whether national patterns or demographic factors were causing the pattern of declining prevalence that had been observed in Massachusetts. That analysis compared 1990-1999 trends in adult smoking prevalence rates for Massachusetts and a group of 41 comparison states that did not have comprehensive tobacco control programs for most of the study period. The analysis used data from the Behavioral Risk Factor Surveillance System (BRFSS) and controlled for individuals’ demographic characteristics.

Trend analyses for relatively short time series, such as the ten annual observations used in the previous analysis, can yield apparent trends that disappear when a longer period is examined. The principal objective of this year’s analysis was therefore to test the stability of the previous findings. The analysis replicates the previous methodology, extending the time period to 2000.

Data Sources and Methods

The data sources and methodology for this analysis replicate those reported last year, except that data for the year 2000 have been added. Data come from the core samples for the Behavioral Risk Factor Surveillance System (BRFSS) for 1990-2000. The BRFSS is a standardized, state-based, random digit-dialed telephone survey of non-institutionalized adults 18 years of age and above. The survey is coordinated by the Center for Disease Control and Prevention (CDC) and conducted by each state.^{3,4}

A total of 157,387 respondents from the 2000 BRFSS data for Massachusetts and other states were added to the previous annual BRFSS data from 1990 to 1999. The total 1990-2000 sample included 1,123,858 respondents, of whom 30,289 (2.9 percent) were in Massachusetts and 1,093,569 (97.1 percent) in 41 comparison states. As in the previous analysis, we excluded data from California, which had a comprehensive tobacco control program similar to that in Massachusetts during the period, and seven other states that did not participate in the BRFSS for one or more years between 1990 and 2000. The eight excluded states are thus Alaska, Arkansas, California, Kansas, Nevada, New Jersey, Rhode Island, and Wyoming. In addition, subjects with missing data on one or more demographic variables were excluded from the analysis (1.1 percent).

Respondents in the 41 comparison states represent a population that was not subject to comprehensive tobacco control programming for most of the study period. However, tobacco control programming was not entirely absent from the comparison states. Most states implemented tobacco control initiatives after funds became available from the Master Settlement Agreement between the states and the major tobacco companies, with implementation typically beginning in 2000.⁵ Several states— notably Arizona, Florida, and Oregon—began programs in 1996-1997. In addition to these comprehensive statewide programs, many states have implemented selected tobacco control initiatives or implemented comprehensive programs on a less than statewide basis. Prevalence trends in the comparison states may therefore reflect some influence of tobacco control programming, particularly in the final year or two of the analysis period.

To be consistent with the previous analysis, current smokers in 2000 were defined as those subjects who answered either “every day” or “some days” to the question: “Do you smoke cigarettes every day, some days or not at all?” The BRFSS wording of the smoking question changed slightly in 1996, and the previous analysis suggested that the new wording led to an increase in self-reported smoking prevalence. Because the change occurred for all states, including Massachusetts, it should have little or no effect on the comparison of trends between Massachusetts and the 41 states.

As in the previous report, this analysis tests the null hypothesis that there was no difference in the time trends of current smoking prevalence between Massachusetts and the 41 comparison states, controlling for demographic factors. The analysis then tests the sub-hypotheses that there were no differences between Massachusetts and the comparison states in the trends for demographic subgroups defined in terms of sex, age, race, and education level.

Multiple logistic regression models were used for the analysis. Conclusions regarding statistical significance are based on tests of the model coefficients. The models were then used to construct standardized prevalence estimates, which are shown in the tables and graphs in this chapter. The standardized estimates take into account differences in demographic composition (differences between Massachusetts and the 41 comparison states, and differences over time) by imposing a common demographic composition, which was directly calculated from the combined sample of Massachusetts and the comparison states. Proc Logistic from SUDAAN was used in analyses to account for the stratified sampling design of the BRFSS. More detailed descriptions of the data sources and methods can be found in the previous report.¹

Prevalence Trends in Massachusetts and the 41 Comparison States

Current smoking prevalence declined more rapidly in Massachusetts than in the 41 comparison states from 1990-2000, and the difference in trends is statistically significant ($p = 0.01$) (Exhibit 2.1). This finding was unchanged from the 1990-1999 analysis even though the estimated prevalence for Massachusetts and the 41 states converged somewhat from 1999 to 2000. For the period as a whole, Massachusetts experienced an 0.9 percent annual decline ($p^{\text{trend}} < 0.10$) in the adjusted smoking prevalence while the 41 comparison states experienced a 0.4 percent annual increment ($p^{\text{trend}} < 0.01$) in the same smoking prevalence measure. The difference between the two is statistically significant ($p < 0.01$).

Exhibit 2.1

Adjusted smoking prevalence and trends: Massachusetts and US (41 comparison states)^a

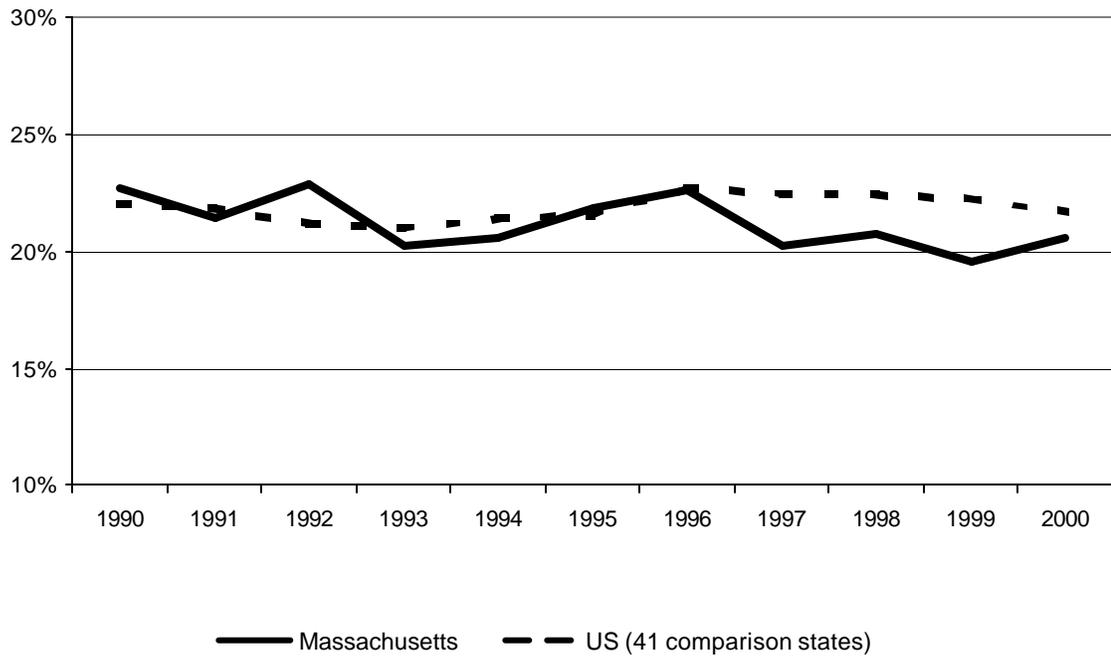
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Massachusetts											
Adjusted prevalence	22.7%	21.4%	22.9%	20.2%	20.6%	21.8%	22.6%	20.2%	20.8%	19.5%	20.5%
Relative to 1990	-	-5.6%	0.8%	-10.9%	-9.4%	-3.9%	-0.3%	-11.0%	-8.5%	-13.9%*	-9.5%
US (41 States)											
Adjusted prevalence	22.0%	21.8%	21.2%	21.0%	21.4%	21.5%	22.7%	22.4%	22.4%	22.2%	21.7%
Relative to 1990	-	-0.9%	-3.9%**	-4.8%**	-2.9% [†]	-2.2%	3.1%*	1.9%	1.7%	0.9%	-1.6%
1990-2000 Trends	MA trend		US Trend			Trend comparison^b					
Odds ratio	0.989 [†]		1.004**			0.984**					
Avg. annual change ^c	-0.86%		0.31%								

a Adjusted for sex, age, education, and race/ethnicity

b Odds ratio of interaction term (Massachusetts by year)

c Derived from coefficient on trend variable, not from annual adjusted prevalence

p-value of logit coefficients: [†] = <0.10, * = <0.05, ** = <0.01



Trends by Sex

The adjusted smoking prevalence trended significantly downward for Massachusetts men from 1990-2000 ($p^{\text{trend}} < 0.05$) (Exhibit 2.2). The trend for Massachusetts women was also downward, but the trend was not statistically significant at conventional levels. In contrast, the trends for men and women in the 41 comparison states were virtually identical to each other (a separate analysis comparing the trends for men and women in Massachusetts found them to be significantly different). The trends for Massachusetts and the 41 comparison states are significantly different for men ($p < 0.05$), but not for women.

Again these patterns are consistent with those presented in the previous report. The adjusted prevalence estimate was slightly higher in 2000 than 1999 for both men and women in Massachusetts, but the trends over the period as a whole remained the same.

Trends by Age Group

The youngest of the three age groups (age 18-34, 35-54, and 55+) showed a significant difference between the adjusted prevalence trends in Massachusetts and the 41 states (Exhibit 2.3). The Massachusetts decline from 1990-2000 was small and not statistically significant. However, it contrasted sharply with the increasing trend observed in the 41 comparison states ($p < 0.01$).

The oldest group actually showed the strongest decline in adjusted smoking prevalence from 1999-2000. In Massachusetts, the trend for persons age 55+ amounted to a reduction of 2.5 percent per year ($p^{\text{trend}} < 0.05$). However, this group was also experiencing a strong decline in the 41 comparison states (1.3 percent per year, $p^{\text{trend}} < 0.01$). Although the estimated decline in Massachusetts is greater, the difference is not statistically significant.

Trends by Education Level

Consistent with previous analysis, the downward trend in adjusted smoking prevalence was observed most strongly in Massachusetts for respondents who had graduated from high school but not from college ($p^{\text{trend}} < 0.05$) (Exhibit 2.4). For this group, the downward trend in Massachusetts was significantly different from the slight upward trend in the 41 comparison states ($p < 0.01$). This pattern remained the same as reported previously despite some convergence of the Massachusetts and 41-state adjusted prevalence estimates in 2000.

For the other two education groups, 1990-2000 trends in Massachusetts did not differ significantly from those in the 41 comparison states. Within Massachusetts, the trend estimate was not statistically

significant either for those with less than a high school education or for those who had a college degree or higher.

Trends by Race/Ethnic Group

Non-Hispanic Whites experienced a significantly greater decline in smoking prevalence in Massachusetts than in the 41 US comparison states during the 11 year period ($p < 0.01$) (Exhibit 2.5). This trend difference was particularly evident in the last four years of the period. For the period as a whole, Massachusetts showed a marginally significant decline ($p^{\text{trend}} < 0.10$), while the trend for the 41 states was upward. This result is that previously seen for the 1990-1999 period.

For the Black non-Hispanic and the Hispanic groups, small sample sizes in Massachusetts make it difficult to see trends. Comparative analyses found no significant differences between the Massachusetts and 41-state prevalence trends for these two groups.

Exhibit 2.2

Adjusted smoking prevalence and trends by sex: Massachusetts and US (41 comparison states) ^a

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Males											
Massachusetts											
Adjusted prevalence	25.0%	21.4%	24.8%	20.4%	22.6%	22.8%	23.1%	21.6%	22.2%	19.5%	20.6%
Relative to 1990	-	-14.2%	-0.6%	-18.2% [†]	-9.6%	-8.7%	-7.3%	-13.4%	-11.1%	-21.8%*	-17.3%*
US (41 states)											
Adjusted prevalence	23.8%	23.9%	23.1%	22.8%	23.0%	23.9%	24.9%	24.8%	24.7%	24.3%	23.2%
Relative to 1990	-	0.3%	-3.1%	-4.2%*	-3.7% [†]	0.1%	4.5%*	4.0% [†]	3.5% [†]	2.1%	-2.5%
1990-2000 Trends			MA trend			US Trend			Trend comparison ^b		
Odds ratio				0.982*			1.004*			0.978*	
Avg. annual change ^c				-1.38%			0.33%				
Females											
Massachusetts											
Adjusted prevalence	20.6%	21.2%	21.1%	20.1%	18.8%	20.9%	22.1%	19.0%	19.4%	19.6%	20.4%
Relative to 1990	-	3.0%	2.2%	-2.6%	-8.9%	1.6%	7.0%	-7.9%	-5.7%	-5.0%	-1.1%
US (41 states)											
Adjusted prevalence	20.4%	20.0%	19.4%	19.3%	20.0%	19.5%	20.7%	20.4%	20.4%	20.3%	20.2%
Relative to 1990	-	-2.1%	-4.8%*	-5.4%**	-2.1%	-4.6%*	1.7%	-0.2%	-0.1%	-0.5%	-0.7%
1990-2000 Trends			MA trend			US Trend			Trend comparison ^b		
Odds ratio				0.996			1.004*			0.990	
Avg. annual change ^c				-0.35%			0.29%				

a Adjusted for age, education, and race/ethnicity

b Odds ratio of interaction term (Massachusetts by year)

c Derived from coefficient on trend variable, not from annual adjusted prevalence

p-value of logit coefficients: [†] = <0.10, * = <0.05, ** = <0.01

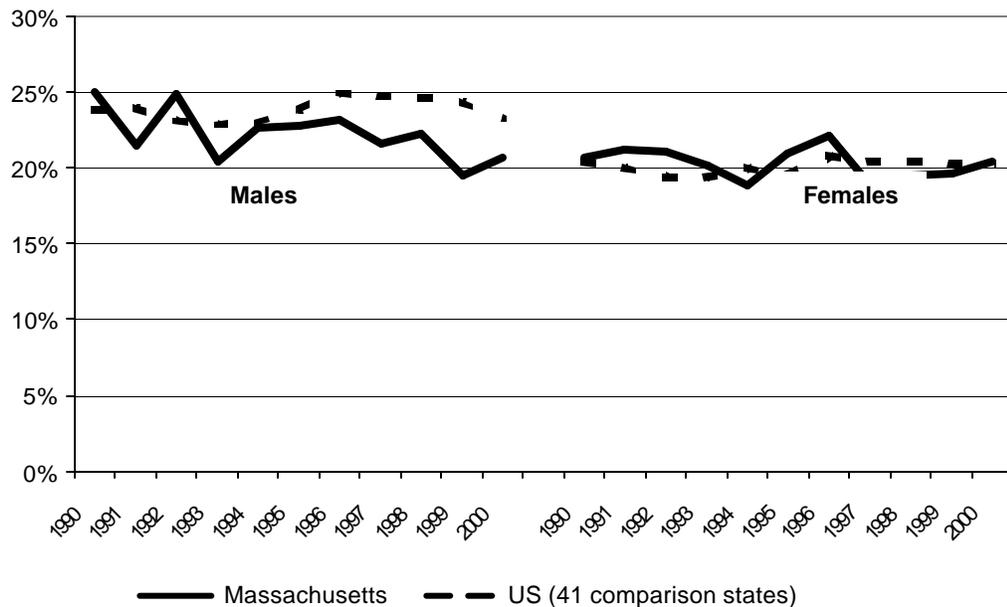


Exhibit 2.3

Adjusted smoking prevalence and trends by age: Massachusetts and US (41 comparison states) ^a

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Age 18-34											
Massachusetts											
Adjusted prevalence	24.7%	26.0%	26.2%	24.7%	20.8%	25.3%	24.0%	22.5%	25.8%	22.4%	25.7%
Relative to 1990	-	5.6%	6.2%	0.2%	-15.5%	2.6%	-2.8%	-8.8%	4.7%	-9.2%	4.1%
US (41 states)											
Adjusted prevalence	23.4%	23.8%	23.3%	23.7%	23.7%	24.3%	26.2%	26.4%	26.0%	26.4%	26.0%
Relative to 1990	-	1.7%	-0.4%	1.3%	1.3%	3.9%	12.2%**	12.9%**	11.5%**	12.9%**	11.4%**
1990-2000 Trends			MA trend			US Trend			Trend comparison ^b		
Odds ratio				0.9952			1.0195*			0.9744**	
Avg. annual change ^c				-0.36%			1.46%				
Age 35-54											
Massachusetts											
Adjusted prevalence	26.3%	24.2%	25.5%	23.8%	26.7%	27.4%	26.0%	26.1%	25.0%	22.3%	23.9%
Relative to 1990	-	-8.0%	-2.7%	-9.3%	1.6%	4.5%	-0.8%	-0.6%	-4.9%	-15.1%	-9.1%
US (41 states)											
Adjusted prevalence	26.3%	25.6%	25.1%	24.4%	25.1%	25.3%	26.5%	26.1%	25.8%	25.4%	24.9%
Relative to 1990	-	-2.7%	-4.4%*	-7.1%**	-4.5%*	-3.9% [†]	0.7%	-0.8%	-1.9%	-3.4% [†]	-5.4%**
1990-2000 Trends			MA trend			US Trend			Trend comparison ^b		
Odds ratio				0.9921			0.9993			0.9919	
Avg. annual change ^c				-0.60%			-0.05%				
Age 55 and above											
Massachusetts											
Adjusted prevalence	18.1%	14.6%	17.8%	13.1%	15.6%	13.6%	19.6%	12.5%	12.2%	14.9%	12.9%
Relative to 1990	-	-19.4%	-1.7%	-27.6% [†]	-13.9%	-25.2%	8.0%	-30.9%*	-32.8%*	-18.0%	-29.0%*
US (41 states)											
Adjusted prevalence	16.8%	16.2%	15.0%	14.7%	15.1%	14.7%	15.1%	14.4%	14.9%	14.4%	13.4%
Relative to 1990	-	-3.4%**	-10.5%**	-12.3%**	-10.2%**	-12.7%**	-10.2%**	-14.3%**	-11.1%**	-14.1%**	-20.4%**
1990-2000 Trends			MA trend			US Trend			Trend comparison ^b		
Odds ratio				0.9750*			0.9867**			0.9902	
Avg. annual change ^c				-2.13%			-1.53%				

a Adjusted for sex, education, and race/ethnicity

b Odds ratio of interaction term (Massachusetts by year)

c Derived from coefficient on trend variable, not from annual adjusted prevalence

p-value of logit coefficients: [†] = <0.10, * = <0.05, ** = <0.01

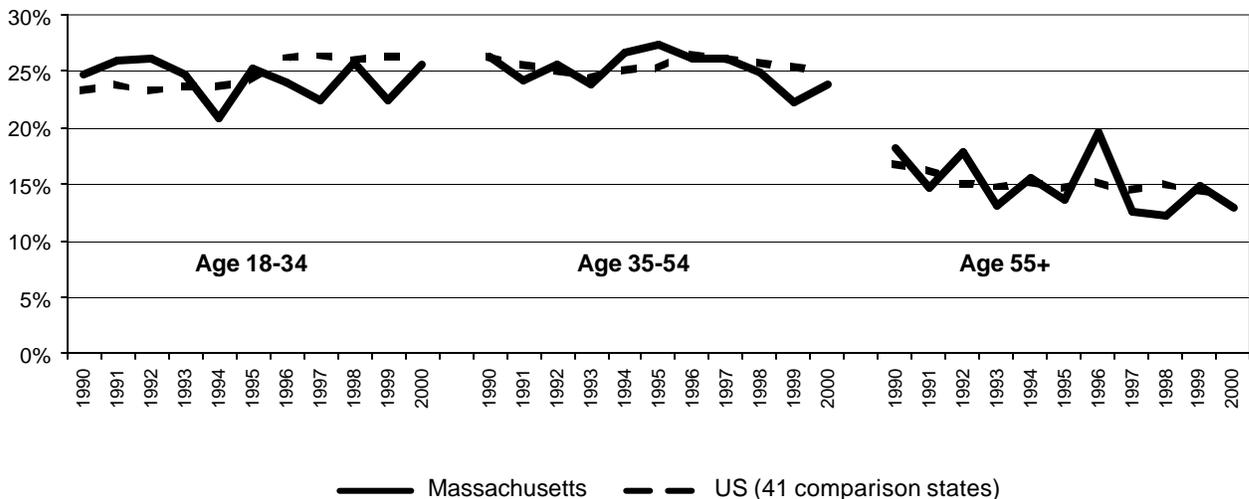


Exhibit 2.4

Adjusted smoking prevalence and trends by education: Massachusetts and US (41 comparison states) ^a

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Less than high school											
Massachusetts											
Adjusted prevalence	28.8%	22.1%	26.1%	27.2%	29.8%	25.0%	29.2%	25.1%	28.5%	28.0%	26.7%
Relative to 1990	-	-23.5%	-9.5%	-5.6%	3.3%	-13.5%	1.2%	-12.9%	-1.1%	-2.9%	-7.5%
US (41 states)											
Adjusted prevalence	26.9%	26.9%	27.8%	27.9%	25.6%	26.3%	30.8%	29.4%	30.1%	29.2%	28.0%
Relative to 1990	-	-0.1%	3.1%	3.6%	-4.9%	-2.2%	14.3%**	9.2%**	11.7%**	8.3%*	4.0%
1990-2000 Trends			MA trend			US Trend			Trend comparison ^b		
Odds ratio				1.010			1.013**			0.996	
Avg. annual change ^c				0.72%			0.94%				
High school but not college graduates											
Massachusetts											
Adjusted prevalence	25.5%	25.6%	27.1%	23.2%	22.9%	26.3%	26.5%	22.5%	23.8%	21.3%	22.9%
Relative to 1990	-	0.4%	6.0%	-9.3%	-10.1%	3.0%	3.8%	-12.0%	-6.7%	-16.5%*	-10.3%
US (41 states)											
Adjusted prevalence	25.5%	25.3%	24.3%	24.4%	25.1%	25.3%	26.2%	26.1%	26.0%	26.0%	25.4%
Relative to 1990	-	-0.6%	-4.5%**	-4.3%*	-1.5%	-0.6%	2.7%	2.2%	2.1%	2.0%	-0.2%
1990-2000 Trends			MA trend			US Trend			Trend comparison ^b		
Odds ratio				0.984*			1.006**			0.976**	
Avg. annual change ^c				-1.17%			0.41%				
College graduates and above											
Massachusetts											
Adjusted prevalence	13.0%	12.5%	11.1%	11.6%	12.1%	11.1%	11.3%	11.4%	11.8%	10.6%	11.5%
Relative to 1990	-	-3.7%	-14.8%	-10.6%	-6.7%	-15.0%	-13.6%	-12.2%	-9.2%	-19.0%	-11.6%
US (41 states)											
Adjusted prevalence	14.6%	14.1%	13.1%	12.3%	13.4%	12.9%	13.3%	13.2%	12.8%	12.6%	12.4%
Relative to 1990	-	-3.7%	-10.0%**	-16.1%**	-8.4%*	-11.6%**	-8.8%**	-9.8%**	-12.3%**	-13.9%**	-15.0%**
1990-2000 Trends			MA trend			US Trend			Trend comparison ^b		
Odds ratio				0.993			0.987**			1.007	
Avg. annual change ^c				-0.59%			-1.10%				

a Adjusted for sex, age, and race/ethnicity

b Odds ratio of interaction term (Massachusetts by year)

c Derived from coefficient on trend variable, not from annual adjusted prevalence

p-value of logit coefficients: † = <0.10, * = <0.05, ** = <0.01

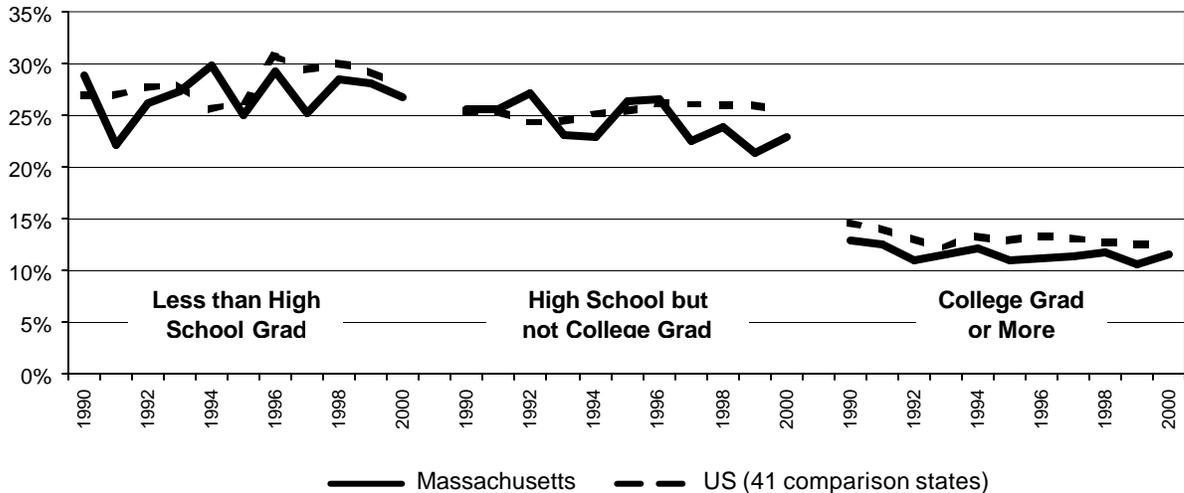


Exhibit 2.5

Adjusted smoking prevalence and trends by race: Massachusetts and US (41 comparison states) ^a

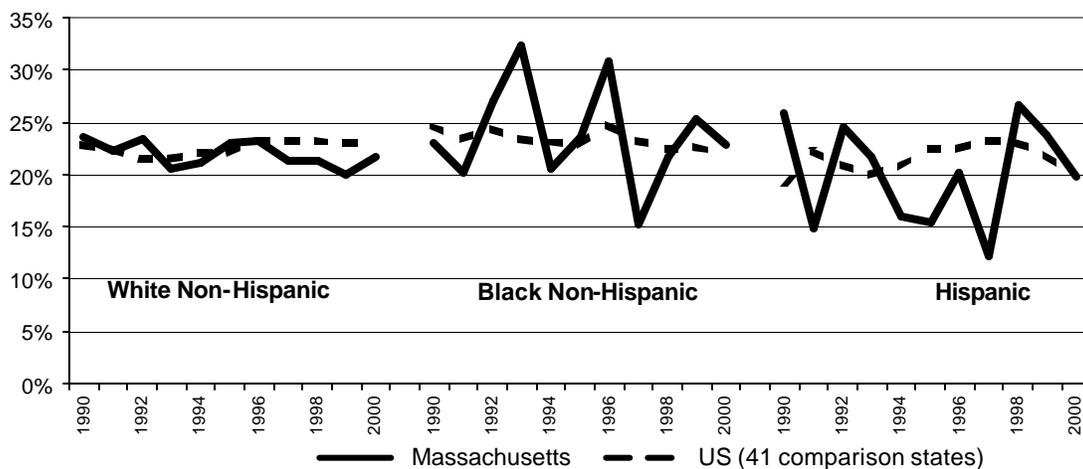
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
White non-Hispanic											
Massachusetts											
Adjusted prevalence	23.6%	22.3%	23.4%	20.6%	21.2%	23.0%	23.2%	21.3%	21.3%	20.0%	21.7%
Relative to 1990	-	-5.4%	-0.7%	-12.6%	-10.3%	-2.4%	-1.8%	-9.6%	-9.5%	-15.1% [†]	-8.2%
US (41 states)											
Adjusted prevalence	22.8%	22.4%	21.6%	21.5%	22.0%	22.1%	23.3%	23.2%	23.2%	23.1%	22.8%
Relative to 1990	-	-1.5%	-5.2%**	-5.4%**	-3.3%*	-2.9% [†]	2.4%	1.9%	1.8%	1.4%	0.2%
1990-2000 trends			MA trend			US Trend			Trend comparison ^b		
Odds ratio			0.9890 [†]			1.0064**			0.9823**		
Avg. annual change ^c			-0.86%			0.49%					
Black non-Hispanic											
Massachusetts											
Adjusted prevalence	23.1%	20.1%	26.9%	32.3%	20.6%	23.7%	30.7%	15.3%	21.7%	25.3%	22.8%
Relative to 1990	-	-12.9%	16.7%	40.0%	-10.7%	2.6%	33.2%	-33.7%	-5.8%	9.5%	-1.2%
US (41 states)											
Adjusted prevalence	24.7%	23.4%	24.3%	23.4%	23.1%	22.9%	24.7%	23.3%	22.4%	22.6%	22.0%
Relative to 1990	-	-5.3%	-1.3%	-5.1%	-6.3%	-7.1%	0.2%	-5.7%	-9.0%*	-8.5% [†]	-10.7%*
1990-2000 trends			MA trend			US Trend			Trend comparison ^b		
Odds ratio			0.9912			0.9893**			0.9982		
Avg. annual change ^c			-0.67%			-0.77%					
Hispanic											
Massachusetts											
Adjusted prevalence	25.9%	14.8%	24.5%	21.7%	15.9%	15.5%	20.1%	12.1%	26.6%	23.8%	19.9%
Relative to 1990	-	-43.0%	-5.3%	-16.3%	-38.6%	-40.2%	-22.2%	-53.3% [†]	2.5%	-8.0%	-23.3%
US (41 states)											
Adjusted prevalence	19.2%	22.2%	21.0%	20.0%	20.8%	22.4%	22.5%	23.2%	23.1%	21.9%	19.8%
Relative to 1990	-	15.6% [†]	9.1%	3.8%	8.1%	16.7%*	17.0%*	20.9%**	20.0%*	13.8% [†]	2.8%
1990-2000 trends			MA trend			US Trend			Trend comparison ^b		
Odds ratio			1.0005			1.0027			0.9986		
Avg. annual change ^c			0.04%			0.23%					

a Adjusted for sex, age, and education.

b Odds ratio of interaction term (Massachusetts by year)

c Derived from coefficient on trend variable, not from annual adjusted prevalence

p-value of logit coefficients: [†] = <0.10, * = <0.05, ** = <0.01



Discussion

The analysis indicates that the patterns reported in the previous annual report remain stable with the addition of the BRFSS data for 2000. For the 1990-2000 period, current smoking prevalence declined in Massachusetts at a rate that was not only statistically significant, but was significantly different from the trend in 41 states that did not have comprehensive tobacco control programs for most of the period. Massachusetts showed significantly greater declines than the comparison states for the population as a whole and for four specific subgroups: males, persons aged 18-34, persons who had graduated from high school but did not have a college degree, and white non-Hispanic persons.

It is reasonable to conclude that the significant difference between Massachusetts and the 41 comparison states results from the tobacco control initiatives that Massachusetts implemented beginning in 1993. The analysis shows that the faster decline in Massachusetts did not stem from national trends, from demographic changes over time, nor from differences between the demographic composition of Massachusetts and the comparison states. However, because Massachusetts implemented many tobacco control actions during the study period—including tobacco tax increases, media campaigns, community-level education and service programs, and extensive new local and statewide policies—the analysis cannot determine which actions contributed most to the overall result.

The analysis suggests that, although Massachusetts' efforts have had important positive results, they have not been equally effective for all populations. It should be noted, however, that the trend differences across Massachusetts subgroups were not tested for statistical significance (the tests only compared the Massachusetts and comparison state trends for each subgroup). If further analysis shows these differences to be significant, it will be important to seek ways to more effectively reach females, persons age 35-54, persons with less than a high school education, and racial and ethnic minorities.

It is interesting to note that the adjusted prevalence estimate for the 41 comparison states declined by 0.5% from 1999 to 2000, the largest one-year decline since 1991-92. Preliminary examination of the data for 2001, which were released after this analysis was completed, suggests that the prevalence for the 41 states increased in 2001 (the unadjusted prevalence increased from 2000 to 2001 for 29 of the 41 states). Thus there is no evidence that the widespread implementation of new tobacco control programs had moved the national trend downward through 2001. Meanwhile, the unadjusted Massachusetts prevalence declined in 2001, suggesting that the difference between the Massachusetts and US trends probably continued through that year.

Endnotes

- ¹ Hamilton WL, Norton G, Weintraub JM. *Independent Evaluation of the Massachusetts Tobacco Control Program: Seventh Annual Report*. Cambridge, MA: Abt Associates, Inc. 2002.
- ² Weintraub JM, Hamilton WL. Trends in prevalence of current smoking, Massachusetts and states without tobacco control programmes, 1990 to 1999. *Tobacco Control* 2002; 11: ii8-ii13
- ³ Gentry EM, Kalsbek WD, Hogelin GC, et al. The Behavioral Risk Factor Surveys: II. Design, methods, and estimates from combined data. *Am J Prev Med* 1985.
- ⁴ Centers for Disease Control and Prevention. *Behavioral Risk Factor Surveillance System User's Guide*. Department of Health and Human Services, Centers for Disease Control and Prevention. 1998.
- ⁵ Centers for Disease Control and Prevention. State Highlights 2001: Investment in Tobacco Control. Available at http://www.cdc.gov/tobacco/statehi/statehi_2001.htm. Accessed on June 28, 2002.

Chapter 3: The Effect of Local Restrictions on Restaurant Smoking on Residents' Exposure to Environmental Tobacco Smoke

In this chapter logistic regression analysis is used to determine whether local restaurant smoking ordinances reduce the likelihood that people will be exposed to environmental tobacco smoke (ETS) when they dine out. Controlling for demographic characteristics and time trends, ordinances both in a resident's home town and ordinances elsewhere in the state are shown to have statistically significant negative effects on the likelihood of reported exposure. The analysis is based on data from the Massachusetts Adult Tobacco Survey (MATS) and the Massachusetts Tobacco Control Program Ordinance Tracking System (MTCP-OTS).

Background

Environmental tobacco smoke is known to have adverse health effects on non-smokers who are subjected to exposure. ETS contains thousands of chemicals including 43 known carcinogens. The known health impacts from exposure to ETS include lung cancer, nasal sinus cancer, and heart disease in non-smoking adults, as well as developmental and childhood disorders sudden infant death syndrome, bronchitis, and heart disease.^{1,2} The California Environmental Protection Agency estimates that each year in the United States, ETS causes up to 3,000 deaths due to lung cancer, up to 62,000 deaths due to ischemic heart disease, and up to 2,700 deaths due to sudden infant death syndrome. In infants and children ETS is responsible for 9,700 to 18,600 cases per year of low birth weight infants, 8,000 to 26,000 new cases per annum of asthma in children, and 150,000 to 300,000 cases per year of bronchitis or pneumonia in children under 18 months.³

ETS can also cause irritation of the eyes, nose and throat, which results in redness, itching, swelling, coughing and sore throat.⁴ The discomfort experienced by non-smokers from ETS exposure is well documented in analyses focusing on occupational health hazards resulting from exposure to tobacco smoke in the workplace. A survey of restaurant and bar workers in Wellington, New Zealand found that over half the staff exposed to tobacco smoke at work reported throat or lung irritation caused by ETS.⁵

Studies show that few people are actually able to avoid exposure to ETS and up to 80 percent of non-smokers are susceptible to ETS exposure on a daily basis, in workplaces and public areas where smoking is not restricted, such as restaurants and bars.⁶ A real time measurement of indoor particulate matter resulting from ETS found that it adds to indoor particulate pollution, causing particulate matter concentrations to exceed air quality standards.⁷

Concentrations of ETS are particularly problematic in restaurants where smoking is permitted. Studies show that regular patrons and restaurant workers are disproportionately affected by exposure to ETS.⁸ Even with restrictions that limit smoking to certain areas within the restaurant, patrons may not have complete protection against exposure. An investigation into ETS concentrations in non-smoking sections of restaurants found mean concentrations of respirable suspended particles and nicotine in non-smoking areas amounting to 60 percent and 35 percent, respectively, of the levels in smoking areas.⁹ In a meta-analysis, Siegel found that ETS levels in restaurants were 1.6-2.0 times higher than in other workplace and business environments and 1.5 times higher than in home environments with at least one smoker.¹⁰

Support for smoke free restaurants has been growing in Massachusetts and around the country over the past two decades. In a Massachusetts telephone survey of 4929 adults in 1995-1996, nearly half of all adults reported avoiding restaurants and bars because of the expectation of excessive ETS.¹¹ Analyses from the Massachusetts Behavioral Risk Factor Surveillance System showed that between 1992 and 1999 the rate of support for smoke free restaurant increased from 37.5 percent to 59.8 percent among smokers and non-smokers.¹² Results from the California Adult Tobacco Survey show that 87.7 percent of Californians prefer to eat in smoke free restaurants.¹³

This growing social preference for clean indoor air is demonstrated by the increasing number of state and local governments that have enacted legislation to restrict or completely ban smoking in restaurants. The Center for Disease Control's Office on Smoking and Health reports that as of the fourth quarter in calendar year 2001, 31 states had enacted smoke free indoor air restrictions in restaurants. Of these, two states had a complete ban and one had designated areas with separate ventilation.¹⁴

In Massachusetts the enactment of policies restricting exposure to ETS has occurred primarily at the town level. Over the period of the MTCP, the state has seen rapid growth in the number of towns that have adopted ordinances restricting indoor smoking in public places. Local boards of health funded by the MTCP are charged with assessing the need for tobacco control policies and supporting their enactment. Research has shown that receiving MTCP funding increases a town's probability of adopting tobacco control ordinances or regulations in general, and restrictions on restaurant smoking

in particular.^{15,16} Massachusetts town ordinance adoption trends are very closely aligned with funding patterns. Of the funded towns, 54.3 percent have a restaurant ordinance in effect, compared with 10.5 percent of non-funded towns. By June 2001, 182 towns representing 78 percent of the Massachusetts population had enacted restaurant ordinances.¹⁷ The majority of these were enacted after 1993 following the implementation of the MTCP.

Despite widespread adoption of restaurant smoking restrictions, little is known about the extent to which the restrictions actually reduce overall population exposure to ETS. A smoking restriction might not lead to reduced exposure for several reasons. Policies vary substantially in the severity of the restriction, from minimal requirements for non-smoking areas to complete smoking bans, and even stringent ordinances may not be enforced effectively. Restaurants, especially chain restaurants, may have voluntary smoking restrictions even without a local policy. Moreover, consumers might respond to changes in restaurants' practices by changing their pattern of patronage, which could either increase or reduce the impact of the restrictions. Nonetheless, the only research to date has focused on workers: a study of self-reported exposure to ETS among bartenders over a period of time in which the smoking policy changed from non-restrictive to restrictive found that self-reported ETS exposure declined after the implementation of a smoking ban from a median of 28 hours a week to two hours a week.¹⁸ No studies to date have examined the effects for patrons or the population at large.

The analysis reported here addresses the question of how the adoption of local ordinances restricting smoking in restaurants has affected self-reported ETS exposure by Massachusetts residents. We look at the effect of ordinances adopted in the individual's home town and the effect of ordinance adoption in other towns in the state.

We also consider the possibility that MTCP funding of local boards of health might have an effect on ETS exposure in restaurants, independent of the effect of increasing the likelihood of ordinance adoption. Such an effect might occur if, for example, the local board raises citizens' awareness of the dangers of environmental tobacco smoke, leading them to patronize smoke-free restaurants as well as to support passage of an ordinance.

Data Sources and Methods

Survey data from the Massachusetts Adult Tobacco Survey (MATS) were used in combination with data on ordinances for the 351 towns taken from the Massachusetts Tobacco Control Program Ordinance Tracking System (MTCP-OTS). The MATS is conducted by the Center for Survey

Research at the University of Massachusetts in Boston. The MATS survey was a random digit dial survey of stratified probability samples of the population in the state. A sample of Massachusetts residents were interviewed in each month. Data from fiscal years 1995-2000 are used in this analysis. The sample size numbers for each fiscal year are shown in Exhibit 3.1.

Exhibit 3.1	
MATS Annual Sample Size	
Year	Number in sample
1995	950
1996	2,792
1997	2,964
1998	2,705
1999	2,621
2000	2,939
TOTAL	14,971

The MTCP-OTS is a database maintained by the Massachusetts Department of Health (DPH) detailing information on tobacco-related ordinances, municipal by-laws, and regulations that have been proposed, enacted, effected and/or repealed in the state. The DPH collects the data through local boards of health and health departments that receive funding under the MTCP Board of Health program. These agencies are required to provide information on all local ordinances (a term used to include by-laws and regulations) designed to limit ETS or restrict the marketing or accessibility of tobacco products to youth. The DPH first requested these data in 1995, at which time it requested information on all provisions that had been in place at any time since 1990. Subsequent reports have been required as new locations are funded, new provisions are proposed or adopted, or existing provisions are modified or repealed. In addition, local health officials in towns not receiving MTCP funding were surveyed to obtain comparable information on those towns.

Ordinances are coded as being ‘in effect’ or not for each town in each time period. The ordinance data goes from July 1993-June 2000 and is aggregated into 14 six-month time periods. Any ordinance that was enacted before July 1993 is coded as being ‘in effect’ from the first time period. An ordinance is coded as being ‘in effect’ if it was in existence for at least three out of the six months of a given time period.

The dependent variable for the analysis comes from the following MATS question, which was asked only of respondents who had answered a previous question by saying that they sometimes eat in

restaurants: *“In the past three months, when you ate in restaurants, how often were you exposed to other people’s tobacco smoke? Would you say...*

1. *Always*
2. *Often*
3. *Sometimes*
4. *Rarely*
5. *Never”*

A variety of individual and household factors that were hypothesized to affect a person’s pattern of restaurant choices, and hence their likelihood of ETS exposure in restaurants, were included as covariates. These include demographic indicators for age, race, gender, and education level. Other factors are whether or not the respondent is a smoker, the frequency with which the respondent eats at restaurants, and whether there are children under the age of 12 in the household. In addition to the respondent-level covariates, a variable representing time (month and year) was included to account for any secular trend in ETS exposure related to general factors such as declining smoking prevalence.

The predictor variables of primary interest measure the current status of ordinances in the respondent’s **home town** and the **state as a whole**. The home town measure is dichotomous, and indicates whether the town in which the respondent resided had a restaurant ordinance in effect at the time of the interview (measured as the half-year period during which the interview was conducted). The statewide measure represents the weighted percent of towns in the state that had ordinances when the interview was conducted, where the weight is the number of restaurants in the town in 2001.

The rationale for including measures of both the home town and the statewide ordinance status was that people may eat at restaurants outside their home town. Whether a person chooses a restaurant inside or outside the town would presumably depend on the number of restaurants available in town and the distance to restaurants in other towns, among other factors. We tested proxies for this factor (e.g., interaction terms using the percent of the state’s restaurants in the respondent’s home town) but found that parameter estimates were highly sensitive to the specification, and did not include these terms in the final specification.

We also hypothesized that the effect of ordinances, whether in the home town or elsewhere, might depend on the length of time the ordinance had been in effect. One might expect that compliance with the restrictions would increase (or perhaps decrease) over time, leading to a lagged effect. To test this hypothesis, we estimated two versions of the model. The base model included only the two terms measuring current ordinance status. The full model added two terms measuring the length of time the ordinance had been effect. For the home town, this was the natural log of the number of six-month

periods the ordinance had been in effect up to the time of the interview. For the statewide measure, the main term (weighted percentage of towns with ordinance) was further weighted by natural log of the number of time periods that the ordinance had been in effect in each town. The logarithmic specification reflects a hypothesis that the lagged effect, if any, might not be linear.

In addition to these policy variables, we included four town-level variables that have been shown in other research to be associated with the likelihood of ordinance adoption: whether the town ever received MTCP funding for its board of health; population (less than 20,000, 20,000 to 50,000, and over 50,000); percent Non-Hispanic White; and percent “yes” vote on Question 1 (the 1992 referendum that raised the tobacco excise tax and provided funding for the MTCP).

The models were estimated using SUDAAN software to account for the complex sample design of the MATS. The Multilog Procedure was used to estimate ordered logit models. This procedure supports estimation with categorical dependent variables where there may be more than two categories and where the categories may or may not be ordered. With the ordered logit model specification, the responses are distributed among the five possible categories (“always” to “never” exposed). The model estimates four separate intercepts, which demarcate the dependent variable response categories. The explanatory variable parameter estimates are consistent across the five dependent variable response categories. (Graphically the result is depicted by four curves with identical slopes and different intercepts.)

The specification for the logistic model is as follows:

$$Z_{it} = a_i + \beta_{it} \text{ Ordinances} + \beta_{jt} \text{ Ordinance*Time Effects} + \beta_{kt} \text{ MTCP Funding} + d_i \text{ Demographics} + d_j \text{ Other Individual Effects} + d_k \text{ Other Town Effects} + d_l \text{ Time} + e_{it}$$

Where:

- Z_{it} = Reported exposure
- a_i = Ordered logit intercepts
- β_{it} = Parameters for hometown and state level ordinance status
- β_{jt} = Parameters for the length of time that hometown and state level ordinances were in effect when the interview occurred
- β_{kt} = Parameter for whether the town received MTCP funding for its board of health
- d_i = Parameters for demographic variables
- d_j = Parameters for other respondent-level variables, including respondent’s smoking status, presence of children and frequency of eating out
- d_k = Parameters town population, percent of population that is Non-Hispanic White, and percent of voters who voted “yes” on Question 1
- d_l = Parameters for calendar date (year and month) of the interview and number of restaurants in the respondents home town

e_{it} = Error term

The number of respondents who said they eat out in restaurants is 13,982, of whom 13,532 responded to the question about exposure. Of these, 6850 reported that they are always, sometimes or often exposed to ETS in restaurants and 6682 reported that they are rarely or never exposed. For the actual analysis 12,890 observations were used, omitting those with missing data in one or more variables.

Results

Exhibit 3.2 shows the parameter estimates and significance levels for the model. To summarize:

- **Home town ordinance status** – Respondents who lived in towns with a restaurant ordinance in effect at the time of the interview were less likely to report exposure to ETS in restaurants than respondents who lived in towns where no ordinance was in effect at the time of the interview, controlling for individual- and town-level characteristics. This effect is statistically significant in both the base model and the model including the time effects of the ordinances.

The odds ratios for home town ordinance status are 0.83 in the base model and 0.78 in the full model. This implies that a respondent who lives in a town with a restaurant ordinance will be 25 percent more likely to report a lower rather than a higher level of exposure (e.g., to report being “sometimes” rather than “often” exposed, or “often” rather than “always”).

- **Statewide ordinance status** – When ordinances cover a larger proportion of the restaurants outside the respondent’s home town, respondents report less exposure to ETS, independent of whether an ordinance exists in their home town. This relationship is marginally significant in the base model and significant in the full model. The odds ratio in the full model (0.05) implies that, if all towns in the state had restaurant ordinances, respondents would be 20 times more likely to report a one-step lower level of exposure than if no towns had ordinances.
- **MTCP funding for local board of health** – Respondents in towns with MTCP funding reported significantly less exposure in both models, indicating that the towns that sought and received funding tended to have lower exposure levels.

- **Time effects of home town and statewide ordinances** – Neither time effect is statistically significant.
- **Town population** – Differences in reported exposure by size of respondent’s town were not statistically significant.
- **Percent of residents who voted “yes” on Question 1** – Residents of the towns that were highly supportive of tobacco control in 1992 reported significantly lower levels of exposure.
- **Percent of town population that is Non-Hispanic White** – This variable was marginally significant in both models, implying some tendency for residents of towns with larger minority populations to report less exposure.
- **Age** – Older respondents were less likely to report ETS exposure in restaurants than younger people, with statistically significant differences between people under 25 and those aged 45 and over.
- **Race/ethnic group** – Respondents who were racial/ethnic minorities tended to report less exposure than Non-Hispanic Whites. The difference was statistically significant for Non-Hispanic Blacks, and marginally significant for Hispanics and Non-Hispanic Asians.
- **Education** – Differences in reported exposure by education level were not statistically significant.
- **Gender** – Differences in reported exposure by gender were not significant.
- **Frequency of Eating at Restaurants** – Respondents who eat at restaurants frequently were more likely to report exposure than those who eat out less often than once a month. The differences were statistically significant for those who eat out about once a week and those who eat out more frequently than once per week .
- **Children in household** – Differences in reported exposure were not significantly related to having children in the household.
- **Smoking status** – As might be expected, smokers were more likely to be exposed to ETS in restaurants than non-smokers.
- **Time** – Exposure to ETS in restaurants became less likely for Massachusetts residents over time, independent of the presence or duration of ordinances.

Exhibit 3.2
Results of the Logistic Regression Model

Independent variable	Base model		Full model	
	Beta coefficient	P value	Beta coefficient	P value
Hometown restaurant ordinance				
None in effect	Reference		Reference	
In effect	-0.183	0.015	-0.246	0.031
Statewide ordinance coverage	-1.302	0.056	-3.044	0.013
Time effect for hometown ordinance			0.423	0.118
Time effect for statewide coverage			0.038	0.553
MTCP funding	-0.409	0.034	-0.416	0.029
Population				
<20,000	Reference		Reference	
20,000-49,000	0.074	0.418	0.063	0.496
50,000+	0.181	0.143	0.179	0.152
Percent White Non-Hispanic	0.576	0.081	0.606	0.065
Percent Yes on Q1	-0.918	0.028	-0.934	0.026
Age				
18-24 years	Reference		Reference	
25-44 years	-0.297	0.011	-0.299	0.010
45-64 years	-0.506	0.000	-0.511	0.000
65+ years	-1.063	0.000	-1.066	0.000
Race				
Non-Hispanic White	Reference		Reference	
Non-Hispanic Black	-0.549	0.000	-0.544	0.001
Hispanic	-0.304	0.081	-0.310	0.075
Non-Hispanic Asian	-0.524	0.056	-0.524	0.056
Other	0.349	0.154	0.330	0.185
Education				
Less than high school degree	Reference		Reference	
High school	0.284	0.139	0.277	0.151
Some college	0.317	0.098	0.309	0.108
BA or higher	0.344	0.069	0.337	0.076
Gender				
Male	Reference		Reference	
Female	-0.001	0.988	0.001	0.989
Smoking status				
Non-smoker	Reference		Reference	
Smoker	0.514	0.000	0.508	0.000
Frequency of eating out				
More than once a week	0.459	0.001	0.464	0.000
Once a week	0.367	0.004	0.374	0.003
Once or twice a month	0.123	0.333	0.127	0.316
Less than once a month	Reference		Reference	
Children in Household				
None under age 12	Reference		Reference	
One or more	-0.117	0.139	-0.119	0.134
Calendar time	-0.011	0.000	-0.012	0.000
-2 * Normalized log-likelihood		36153		36139
Approximate chi-square		1114		1128

Discussion

The findings support the hypothesis that implementing local policies restricting smoking in restaurants leads to lower levels of perceived ETS exposure for restaurant patrons. Statistically significant effects are found for the presence of a restaurant ordinance in the respondent's hometown and for the proportion of restaurants statewide that are subject to ordinances. Because the analysis controlled for individual and household characteristics, secular trends, and town-level characteristics, there is strong reason to believe that the estimated effects result from the ordinances rather than reflecting the confounding effects of other factors.

The length of time an ordinance had been in effect was not significantly related to reported exposure. This was somewhat surprising, as we had hypothesized that, even if ordinances were fully implemented immediately upon enactment, consumer perceptions of the change might lag. It is possible that restaurants and their patrons react very quickly to new ordinances, so that exposure rapidly reaches a steady post-ordinance level. It is also possible that, because of the strong general downward trend in exposure, the model is unable to distinguish a time effect related specifically to ordinances.

MTCP funding for a town's board of health has previously been shown to predict adoption of ordinances. Our results show that MTCP funding is also associated with reported ETS exposure levels in restaurants, independent of whether the town passes a restaurant ordinance. This may simply indicate that the towns that sought and received MTCP funding had lower exposure even before they passed ordinances. It is also possible that, given funding, the local boards of health raise public understanding of environmental tobacco smoke, leading restaurants and/or patrons to behavior changes that reduce ETS exposure.

The results also provide information about what kinds of people are most likely to be exposed to ETS when they eat out. Some of the patterns are fairly obvious. Smokers are more likely to be exposed than non-smokers, presumably because they choose restaurants where they can smoke. People who eat out often are likely to report more exposure than those who seldom eat out.

The patterns for demographic variables are perhaps less predictable. Younger people were more likely to report exposure than older people, controlling for other factors, and Non-Hispanic Whites were more likely to report exposure than racial/ethnic minorities. Education was not significantly related to reported ETS exposure, although one might have expected more educated people to be more likely to avoid exposure. Gender, like education, was unrelated to reported exposure.

The results also indicate a strong general time trend, with reported exposure in restaurants declining over the 1993-2000 period. This effect is independent of the adoption of ordinances. It presumably stems in part from general reductions in smoking prevalence and intensity. It may also reflect a secondary effect of restaurant and other smoking restrictions, in which smokers' expectations and behaviors change in ways that reduce the likelihood that they expose other people to ETS.

Three limitations of the analysis should be noted. First, ETS exposure is self-reported and the ordinal nature of the measure makes it relatively imprecise. Although previous research does indicate that reported exposure is correlated with actual exposure, more objective measures of exposure would be useful in estimating the public health benefit of ordinance adoption. Secondly, although we used a simple dichotomous measure indicating the presence of any smoking restriction in restaurants, more stringent ordinances would be expected to have greater effects than less stringent ones. It would be useful for future research to employ more sensitive measures, both to increase the precision with which the effect is measured and to understand better the effects of different types of restrictions. Finally, the measure of ordinance coverage outside the hometown must be considered quite crude because it does not take distance into account. To a resident of Western Massachusetts, an ordinance in Springfield is more relevant than an ordinance in Boston, but Boston has more restaurants, and therefore a greater weight in the measure used. Incorporating distance into the measure would yield a more precise estimate of the ordinance effect.

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Chapter 4: Factors Associated with Cessation Strategies and Quit Success

This chapter examines the experiences of Massachusetts smokers who attempt to quit, with particular attention to whether they received tobacco treatment services or other assistance, and what factors are associated with their likelihood of success in quitting. Descriptive statistics and logistic regression analyses are based principally on the Massachusetts Adult Tobacco Survey. About half of attempting quitters reported receiving some form of assistance, with nicotine replacement therapy (NRT) being the most common. A small proportion (about 7 percent) reported receiving NRT in combination with counseling, the preferred approach among MTCP-funded programs. The group receiving NRT with counseling had a substantially greater short-term success rate than those reporting other approaches, although the success rate reflects self-selection as well as the efficacy of the quit approach.

Introduction

A central goal of the MTCP is to reduce smoking prevalence by encouraging and helping current smokers quit. To this end, MTCP funded community-based Tobacco Treatment Services (TTS) programs that offer individual or group counseling, often in combination with nicotine replacement therapy. This direct service was complemented by the Smoker's Quitline, which provided telephone counseling as well as referrals to TTS programs, and by referrals and guidance information available on-line through the website TryToStop.org. In addition, media campaigns and community-level public education initiatives worked to motivate smokers to quit, to guide them to in-person, telephone, or on-line services, and to provide self-help information on quitting.

A great deal of research, much of it summarized in the 2000 Surgeon General's Report,¹ has examined the efficacy of treatment in bringing about sustained smoking cessation. Strong evidence indicates that both counseling and nicotine replacement therapy are effective, and that combining them results in greater success than either approach alone.² Advice from health professionals, even brief advice, has some effect, and self-help materials are about equivalent to brief advice in their effectiveness.³

Much of the research on tobacco treatment has been done in controlled trials, with subjects randomly assigned to alternative treatments. This contrasts with a "real world" setting, in which smokers who are interested in quitting make choices and take actions that determine what, if any, assistance they

receive in quitting. For example, Zhu and colleagues found that more addicted smokers tend to be the ones seeking assistance, and that females, older persons, and Non-Hispanic Whites are more likely to use assistance.⁴

This research suggests that the patterns of assistance usage and quit success will depend on both the characteristics of the smoking population and the availability and efficacy of various forms of assistance. The question addressed here is how these factors have played out in Massachusetts. We first examine the extent to which demographic and social characteristics of individuals are predictive of their short-term success in quitting smoking when they attempt to do so. We review the types of assistance they use in their quit attempt, and the extent to which the choice of quit approach varies by demographic and social characteristics. Finally, we compare the short-term success rates associated with the various quitting approaches, adjusting for differences in (measured) demographic characteristics.

Data Sources

The analyses presented here are based upon data from the Massachusetts Tobacco Survey (MTS) and the Massachusetts Adult Tobacco Survey (MATS). These surveys are described in detail elsewhere.^{5,6} Briefly, the MTS is a 1993 telephone survey administered by the Center for Survey Research at the University of Massachusetts, Boston, to establish baseline levels of smoking behaviors and attitudes among Massachusetts residents. Beginning in 1995, the MATS is a monthly continuation of the adult portion of the MTS. In both the MTS and the MATS surveys, a household respondent answers a brief screening survey, and then an eligible member of the household is randomly selected to answer a more extensive questionnaire.

Our analysis focuses on persons who attempted to quit smoking within the year prior to the interview, where “attempt to quit” is defined as quitting for at least one day in the past year. “Quit success” is defined by a respondent reporting not smoking at the time of the interview (answering “not at all” to the question, “Do you smoke cigarettes every day, some days, or not at all?”).

This analysis seeks to describe quit success with respect to demographic characteristics, home and social environment, and methods of quitting. Demographic characteristics include gender, and categorical variables for age (18-24, 25-44, 45-64, and 65 or more), race (Non-Hispanic White, Non-Hispanic Black, Hispanic, and the balance of other races), and education (less than high school, high school graduate/some college, and college graduate). Home and social environment variables include

the presence of children under 12 years of age in the household, and categorical variables for the adult composition of the household (no other adults, other adult(s) but no smokers, or at least one other adult who smokes) and the number of friends who smoke (two or fewer vs. three or more).

In fiscal year 1999, MATS began to ask attempting quitters a series of questions about the types of information, assistance, or treatment they received during their most recent quit attempt. To examine the effect of these aids on quit success, we use a series of binary variables indicating whether the respondent received counseling only, nicotine replacement therapy only, a combination of counseling and nicotine replacement therapy, advice only, or no treatment at all.

Analytic Methodology

We use a logistic model to determine factors that influence quit success. Our basic model is:⁷

$$\Pr(Y_i = \text{Quit Success} \mid x_i) = \frac{1}{1 + e^{-(x_i \mathbf{b} + \mathbf{e}_i)}}, \text{ or}$$

$$\text{Logit}(Y_i) = x_i \mathbf{b} + \mathbf{e}_i$$

Where:

x_i = Vector of covariates

\mathbf{b}_i = Vector of coefficients that relate the influence of the x_i on quit success

\mathbf{e}_i = Independent, identically distributed error term.

Although this is the basic model, there are some nuances in the data that necessitate some modifications to this model.

As outlined in Beiner and Roman (1999), the MTS/MATS is a stratified random digit dial sample, where the strata represent five major cities in Massachusetts and the balance of the State. Prior to 1998, within each stratum the MTS/MATS is sampled by a modified Mitofsky-Waksberg method. Each area code and exchange has two random digits appended to create clusters. They select a random sample of these clusters, and append 2 more random digits for complete telephone numbers. Since nonresidential numbers are not replaced within the cluster but rather from some other random cluster, different telephone numbers within a stratum will have different probabilities of selection into the MTS/MATS sample. Conceptually, this amounts to decomposing the error \mathbf{e}_i above term into two parts:

$$\mathbf{e}_{ci} = \mathbf{d}_c + u_i$$

\mathbf{d}_c is a random error term, sometimes called a random effect. This is particular to each cluster c , or block of 100 telephone numbers. u_i is an iid error term for each person in the sample.

After 1998, MATS employed the GENESYS system for sample selection⁶. It is a list-based sampling methodology that identifies all blocks of 100 telephone numbers containing at least one residential number. Its advantage is since every block of 100 telephone numbers is part of the sample frame, there is no clustering effect (i.e. any \mathbf{d}_c). The individual error term in this case is $\mathbf{e}_{ci} = u_i$. The Logistic procedure in SUDAAN accounts for both types of sampling, and computes correct point estimates and standard errors when using population weights generated from the sampling methodology.⁸

Ideally, rather than the logistic model presented, one might prefer to estimate a survival model, where a vector of covariates describes the time until a smoker starts smoking after their last quit attempt. Indeed, we considered this approach, but the structure of the data make it infeasible. Most importantly, the exact date of quitting, and therefore the duration of the non-smoking spell, is unknown. For those smokers who attempted to quit within the past year but failed, one only knows about a quit attempt *sometime* within the past year, with a coarse measure of the duration of the abstinence spell (1, 2-6, 7-14, or 15-30 days, or 1-3 or 3+ months). For those smokers who had quit within the past year and were still not smoking at the time of the interview, the measure is even coarser (0-1, 1-3, 3-6, and 6-12 months).

This data structure limits the analysis to using a logistic model of quit success in the year prior to the interview. Fortunately, this is still a model that, on average, reflects reality. If quit attempts are distributed uniformly over the year prior to the interview, on average the person will have their last quit attempt 6 months prior to the interview. The data's gross measures of time since quitting for those who were not smoking at the time of the interview suggest that is the case. On average, then, the logistic regression should reflect quit success over a six-month time period.

In the model estimation process, the criterion for including a variable was the change in goodness of fit for the model. Although many of the parameter estimates in regressions estimated are not statistically significant at the 95 percent level, likelihood-ratio tests of groups of variables such as the age and race categories reveal that the model fit is better when including these variables. In addition, parameter estimates and p-values are robust to different specifications of the covariates.

A number of observations were excluded from our analysis due to missing one or more necessary covariates. Exhibit 4.1 shows the number of missing values for each fiscal year of data. To examine the effect of excluding these observations, we imputed values using a random draw from the distribution of non-missing cases. After imputing missing values, all analyses were re-estimated. Parameter estimates and p-values are robust to including observations with missing values, suggesting that they are missing at random. Therefore, we present analyses using only observation with no missing values of the analysis variable s.

Exhibit 4.1
Number and Percent of Sample with at least One Missing Analysis Variable, by Fiscal Year

Fiscal Year	Number in Sample	Number with Missing Values	Percent of Sample
Full Data			
1993	846	70	8.3
1995	111	15	13.5
1996	350	25	7.1
1997	356	17	4.8
1998	349	8	2.3
1999	332	20	6.0
2000	364	20	5.5
2001	180	14	7.8
Quit Treatment Analysis			
1999	332	20	6.0
2000	364	21	5.8
2001	180	14	7.8

Results

Demographic and Social+ Factors Related to Successful Quitting

On average, about 43 percent of all Massachusetts smokers tried to quit each year from 1993-2001. Over the period, roughly 20 percent of the smokers who attempted to quit in the 12 months prior to their interview were not smoking at the time of their interview. It should be noted that persons not smoking at the time of the interview could relapse later, so long-term or permanent success rates would be lower.

Results from the logistic regression for fiscal years 1993-2001 are presented in Exhibit 4.2. The univariate proportion is the simple weighted percentage from the survey. The adjusted proportion is the predicted percentage from the model, holding all other covariates constant at their weighted population averages. The parameter estimates and p-values are taken from the logistic model, as is the odds ratio, which is the likelihood of quitting for the specified group as compared to that group's reference.⁹

Exhibit 4.2
Factors Related to Quitting Success, Fiscal Years 1993 - 2001

		Percent Quitting Successfully		Parameter	p-value	Odds Ratio
		Univariate Proportion	Adjusted Proportion	Estimate		
Intercept		20.3%	19.0%	-1.35	0.02	0.26
Fiscal Year						
	1993	18.0%	16.6%	Reference		
	1995	16.1%	17.3%	0.05	0.94	1.05
	1996	17.3%	17.2%	0.04	0.91	1.04
	1997	24.8%	21.6%	0.32	0.34	1.38
	1998	26.6%	23.6%	0.44	0.21	1.55
	1999	24.1%	22.6%	0.38	0.28	1.46
	2000	25.0%	25.1%	0.52	0.09	1.69
	2001	12.5%	12.8%	-0.31	0.51	0.73
Gender						
	Male	18.3%	17.9%	-0.14	0.55	0.87
	Female	22.2%	20.2%	Reference		
Age						
	18-24	14.2%	15.8%	Reference		
	25-44	20.6%	19.8%	0.27	0.44	1.31
	45-64	21.5%	19.6%	0.26	0.51	1.30
	65+	26.3%	18.6%	0.19	0.73	1.21
Race						
	Non-Hispanic White	21.5%	19.4%	Reference		
	Non-Hispanic Black	20.8%	16.7%	-0.18	0.71	0.83
	Hispanic	12.8%	11.9%	-0.58	0.26	0.56
	Other	19.3%	24.6%	0.31	0.75	1.36
Education						
	Less than HS	15.1%	15.4%	Reference		
	HS Grad/Some post HS	20.2%	19.6%	0.29	0.50	1.34
	College Grad+	24.5%	19.7%	0.30	0.50	1.35
Friends who Smoke						
	2 or Fewer	30.1%	28.2%	Reference		
	3 or More	14.1%	14.5%	-0.84	<0.01	0.43
Other Adults in Household						
	None	26.3%	23.6%	0.13	0.65	1.13
	Adult(s) but no Smoker	23.4%	21.4%	Reference		
	At Least One Smoker	14.4%	15.2%	-0.42	0.11	0.66

The smoker's social and home environments are clearly related to the likelihood of successfully quitting. Attempting quitters with three or more friends who smoke are less than half as likely to succeed quitting than those with fewer smoking friends. Similarly, the point estimates indicate that an attempting quitter living with another smoking adult is roughly one-third less likely to quit

successfully than if he or she were living with a non-smoking adult, but this relationship is not statistically significant ($p = 0.11$).

Demographic groups show no significant differences in quitting success. Although females, Non-Hispanic Whites, high school and college graduates, and older persons are estimated to have higher likelihoods of quit success, none of these estimates approach statistical significant at even the 10 percent level.

Aids to Quitting

Smokers who tried to quit in fiscal years 1999-2001 reported a variety of approaches to their most recent quit attempt. As shown in Exhibit 4.3, 54 percent said that they did not use any of the five forms of assistance covered in the MATS interview. About 30 percent reported using some form of nicotine replacement therapy (NRT), usually a transdermal nicotine patch. Nearly as many (27 percent) received some cessation-related advice from a health professional. Less common were the use of informational materials (16 percent), enrollment in a quit-smoking program (9 percent), or calling the Smoker's Quitline (4 percent). Many smokers said they used multiple types of assistance, including a few people who reported all five types of assistance in their most recent quit attempt.

Exhibit 4.3

Percentages of Attempting Quitters Using Specified Types of Quit Assistance

	Unweighted Sample	Proportion in population (weighted)
No Assistance Reported	473	53.9%
Form of Assistance		
Used Nicotine Replacement Therapy: Total	219	30.3%
Gum	32	5.0%
Patch	149	21.0%
Spray	1	0.0%
Other	37	4.2%
Joined Quit Smoking Program	47	9.2%
Got Advice from Doctor, Counselor, or Other Professional	230	26.6%
Used Books, Pamphlets, or Video Tapes	118	15.6%
Called Smoker's Telephone Quit Line	32	4.3%
Combinations^a		
NRT and Program	29	6.6%
NRT but not Program	208	23.7%
Program but not NRT	26	2.6%
Not NRT or Program, but Some Assistance	140	13.3%
No Assistance Reported	473	53.9%

a Those that include NRT and/or Program may also report professional advice, informational materials, and/or Quitline.

To further examine the quit assistance strategies of particular interest to the MTCP, we grouped attempting quitters into the five categories shown in the bottom panel of Exhibit 4.3. Tobacco treatment that includes formal counseling as well as NRT or other pharmaceutical therapy is the most intensive treatment suggested by MTCP-funded programs, and we maintained it as a separate category despite the relatively small number of respondents (6.6 percent, or 29 responses). Use of the Smoker's Quitline was not analyzed separately because it was usually reported in conjunction with NRT, participation in a quit-smoking program, or both treatments, which are assumed to be more intensive interventions.

The proportions of selected demographic groups using each of the five quit approaches is shown in Exhibit 4.4. Within each demographic dimension, subgroup differences were tested for statistical significance in bivariate tests (results not shown on table because of the large number of tests). Significant and marginally significant relationships ($p < 0.10$) found in these tests were as follows:

- Men who attempt to quit are more likely than women to use quit-smoking program in conjunction with NRT ($p < 0.05$). Men are less likely to use assistance other than NRT and quit-smoking programs ($p < 0.01$).
- Persons aged 18-24 were more likely than older groups to say that they used no assistance ($p < 0.01$).
- Non-Hispanic Blacks were less likely than Non-Hispanic Whites to use any assistance ($p < 0.05$). Although the sample of Hispanics is small, the data suggest low utilization of NRT alone or with quit-smoking programs relative to Non-Hispanic Whites ($p < 0.01$).
- People with a high school diploma or more were more likely than those with less education to report the combination of a quit-smoking program and NRT ($p < 0.01$). People with less than a high school education were more likely to say they used assistance that did not include either NRT or quit-smoking programs ($p < 0.01$). People who graduated high school but not college were more likely to use any assistance than the other education groups, although this association is only marginally significant ($p = 0.06$).
- Attempting quitters who have 3 or more friends who smoke were more likely to use the NRT and quit-smoking program combination (marginally significant at $p = 0.09$).
- People who did not live with other adults were less likely to only use NRT ($p < 0.05$).

- The presence of children is not significantly associated with particular quitting approaches.

Exhibit 4.4

**Types of Assistance Used by Attempting Quitters, by Population Subgroups:
Percent Reporting Each Type of Assistance**

		NRT and Program	NRT but Not Program	Program but not NRT	Not NRT or Program, but Some Assistance	No Assistance Reported
Total		6.6%	23.7%	2.6%	13.3%	53.9%
Gender						
	Male	11.1%	24.2%	0.6%	5.6%	58.5%
	Female	4.4%	24.3%	4.0%	19.9%	47.4%
Age						
	18-24	0.3%	1.4%	0.9%	16.9%	80.4%*
	25-44	7.1%	30.7%	3.7%	9.2%	49.3%
	45-64	14.0%	28.0%	1.1%	12.0%	44.9%
	65+	0.6%	22.0%	4.0%	38.8%	34.6%
Race						
	Non-Hispanic White	5.4%	27.0%	2.7%	12.1%	52.9%
	Non-Hispanic Black	26.7%	9.5%	1.0%	31.6%	31.2% [†]
	Hispanic	0.8%	8.2%	2.9%	25.3%	62.9%
	Other	32.3%	6.4%	0.5%	2.8%	58.1%
Education						
	Less than HS	0.6%	6.8%	0.3%	26.6%	65.8%
	HS Grad/Some post HS	7.5%	29.0%	3.5%	12.6%	47.5%
	College Grad+	10.4%	17.3%	0.3%	10.4%	61.6%
Kids <12 in Household						
	Yes	10.5%	19.2%	6.1%	14.5%	49.7%
	No	6.3%	25.9%	1.3%	13.4%	53.1%
Friends who Smoke						
	2 or Fewer	2.7%	20.6%	1.0%	18.9%	56.8%
	3 or More	9.6%	26.0%	3.3%	11.1%	50.0%
Other Adults in Household						
	None	3.2%	14.4%	3.1%	19.4%	59.9%
	Adult(s) but no Smoker	4.7%	26.3%	2.0%	14.8%	52.3%
	At Least One Smoker	12.6%	25.0%	3.1%	9.9%	49.3%

Note: Significance tests only reported for no assistance vs. any, by each population subgroup. Other statistically significant associations are reported in the text.

Statistical Significance: † = < 0.10 * = < 0.05

Quit Approach and Success Rates

Ideally, we would like to know to what extent the various quit approaches contributed to people's success in quitting. Selection bias makes this impossible. The analysis above shows that a number of demographic and social factors are related to the choice of quit approaches, and it is quite likely that additional factors not measured in the data—such as the individual's addiction level or motivation to quit—are correlated with both the choice of quit approaches and the likelihood of success. Without controlling for these unmeasured factors, we cannot know whether an observed association between quit method and success rate reflects the effectiveness of the method or the effect of some omitted variable.

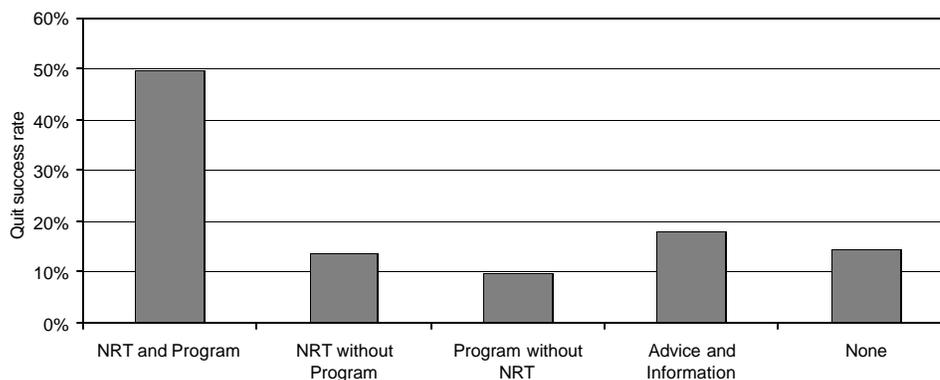
Examining the association between quit method and success rate may nonetheless be informative, particularly if the analysis controls for those demographic and social factors that seem related either to the choice of quit approaches or the likelihood of quit success. We therefore estimated a logistic regression model of quit success including the demographic, social, and quit success variables seen in previous analyses, and used this model to derive adjusted quit success rates for population subgroups. Exhibit 4.5 presents unadjusted and adjusted quit success rates by group.

Smokers who attempted to quit using a combination of NRT and a quit-smoking program had an adjusted success rate of 50 percent, far above the percentage for any other quit approach ($p = 0.02$). Success rates with other forms of quit assistance were not significantly different from the rate for quitters reporting that they received no assistance.

Other parameter estimates in the model were similar to those seen earlier for the full 1993-2001 period (Exhibit 4.2). Quit success was less likely for persons having three or more friends who smoke ($p < 0.01$) or living with another adult smoker ($p = 0.08$). Again, demographic characteristics were not closely associated with quit success (the exception is the small Other race category, which has a significantly higher success rate in this sample).

Exhibit 4.5
Quitting Aids and other Factors Related to Quitting Success, 1999 – 2001

Percent Quitting Successfully						
	Univariate Proportion	Adjusted Proportion	Parameter Estimate	p-value	Odds Ratio	
Intercept	19.8%	16.3%	-0.79	0.33	NA	
Fiscal year						
1999	24.1%	20.4%	Reference			
2000	25.0%	24.2%	0.22	0.61	1.24	
2001	12.5%	9.7%	-0.87	0.11	0.42	
Quit Assistance						
None	19.1%	14.6%	Reference			
NRT and Program	24.1%	49.6%	1.76	0.02	5.79	
NRT without Program	17.8%	13.6%	-0.08	0.86	0.93	
Program without NRT	9.9%	9.7%	-0.47	0.65	0.63	
Advice, Materials, Quitline	25.5%	18.1%	0.26	0.64	1.30	
Gender						
Male	17.0%	14.9%	-0.19	0.62	0.83	
Female	21.9%	17.5%	Reference			
Age						
18-24	13.2%	13.8%	Reference			
25-34	22.3%	21.5%	0.54	0.31	1.71	
35-64	14.2%	9.8%	-0.39	0.51	0.68	
65+	39.4%	23.2%	0.63	0.40	1.88	
Race						
Non-Hispanic White	19.1%	15.3%	Reference			
Non-Hispanic Black	29.1%	16.7%	0.11	0.87	1.11	
Hispanic	17.7%	17.2%	0.14	0.83	1.15	
Other	39.1%	55.5%	1.93	0.03	6.91	
Education						
Less than HS	15.2%	13.9%	Reference			
HS Grad/Some post HS	18.7%	16.6%	0.21	0.71	1.24	
College Grad+	27.7%	16.4%	0.19	0.78	1.21	
Kids <12 in Household						
Yes	16.3%	12.6%	-0.41	0.36	0.67	
No	21.0%	17.7%	Reference			
Friends who Smoke						
2 or Fewer	33.5%	29.5%	Reference			
3 or More	13.1%	11.8%	-1.13	<0.01	0.32	
Other Adults in Household						
None	33.5%	27.9%	0.47	0.36	1.61	
Adult(s) but no Smoker	21.7%	19.4%	Reference			
At Least One Smoker	11.8%	10.0%	-0.77	0.08	0.46	



Discussion

Patterns of smoking cessation in Massachusetts are roughly consistent with those for the United States as a whole. In the 1993-2001 surveys, about 9 percent of respondents who were smoking a year previously were not smoking at the time of the survey although 43 percent had quit for at least one day during the year. Nationwide, the 2000 National Health Interview Survey found that 5 percent of those who smoked a year previously had not smoked for at least 3 months at the time of the interview, out of 41 percent who had quit for at least a day.¹⁰

No demographic characteristics were significantly related to successful quitting among those who tried to quit in Massachusetts, corresponding to the pattern seen in California in 1999.¹¹ Social factors may be more important, however. Having three or more friends who smoke significantly reduced Massachusetts smokers' chances of quit success. Having a smoker as a member of the household may reduce the chances even more, although this variable was only marginally significant. Other research has also found the smoker's social environment to be important.¹² The smoker's level of addiction has also been found important in prior research,¹³ but was not considered here because of data limitations.

Among Massachusetts smokers attempting to quit, 46 percent reported using one or more kinds of quit aid, including nicotine replacement therapy (30 percent), counseling programs (9 percent), advice from a doctor or professional (27 percent), informational materials (16 percent), and the Smoker's Quitline (4 percent). The rate of use of assistance in general, and NRT and counseling programs in particular, appears to be greater in Massachusetts than in California, although differences between the Massachusetts and California survey questions make exact comparisons impossible.¹¹

The choice of quit approaches in Massachusetts varied across subgroups defined by demographic and social variables. Smokers under age 25 were most likely to report using no assistance, while Non-Hispanic Black smokers were the most likely to report some form of assistance and especially used NRT combined with counseling. More highly educated smokers tended to use NRT with counseling, while those with less than a high school diploma tended to use information and advice only. Most of these patterns are consistent with those reported for California,^{4,11} but there are also differences, notably the high rate of assistance reported by Non-Hispanic Blacks in Massachusetts. Such differences may arise from differences in the patterns of availability of various kinds of assistance (e.g., the location of counseling programs relative to the location of subgroup concentrations), differences in awareness of the resources, as well as from regional differences in preferences regarding quit approaches.

Perhaps the most striking result of the analysis is the high quit success rate in Massachusetts for people who report using both NRT and counseling, the preferred approach in MTCP treatment plans. This success rate (nearly 50 percent after adjusting for other factors in the model) was far higher than the rate for any other form of assistance including no assistance at all (adjusted success rates from about 10 to 18 percent). Two caveats apply to this finding: the success rates result from self-selection as well as the efficacy of alternative quit approaches, and the sample size of people using NRT with counseling is quite small. Nonetheless, the analysis points out the importance of learning more about quit approaches as they are actually selected and used in Massachusetts in order to determine how best to use scarce program resources.

This study has several important limitations, particularly with respect to the findings regarding quit assistance approaches. First, only short-term quit success was measured, and long-term abstinence patterns could be different. Second, the analysis did not include measures of the level of addiction, which have been found important in other research. Another limitation concerns the self-reported measure of assistance received, which is subject to measurement error; in particular, it seems likely that successful quitters may under-report the assistance they received, and reporting accuracy may vary by type of assistance. Finally, the numbers of respondents who reported they received specific kinds of assistance are small, and while significance tests take this into account, it would be reassuring to see the analysis replicated with larger samples.

Endnotes

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- ³ Lancaster T, Stead L, Silagy C, Sowden A. Effectiveness of interventions to help people stop smoking: findings from the Cochrane Library. *BMJ*. 2000;321(7257):355-8.
- ⁴ Zhu S-H, Melcer T, Sun J, Rosbrook B, Pierce JP. Smoking cessation with and without assistance: a population-based analysis. *American Journal of Preventive Medicine* 2000;18(4):305–11.
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- ⁷ Wooldridge, JM. *Econometric Analysis of Cross Section and Panel Data*. Cambridge: The MIT Press. 2002.
- ⁸ Research Triangle Institute. *SUDAAN User's Manual, Release 8.0*. Research Triangle Park, NC: Research Triangle Institute. 2001.
- ⁹ The estimated success rate for 2001 is considerably lower than that in prior years (although the difference is not statistically significant), raising the question of data reliability in that period. (Preliminary data from a related survey conducted in the second half of fiscal year 2001 indicate a success rate of about 29 percent, which would be consistent with the earlier trend.) Because of the seeming inconsistency, we checked all presented results by running the analyses with 2001 excluded. Parameter estimates and variances appear to be robust to the inclusion or exclusion of 2001 MATS data, so we include these data.
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- ¹² Rice VH, Templin T, Fox DH, Jarosz , Mullin M, Seiggreen M, Lepczyk M. Social context variables as predictors of smoking cessation. *Tobacco Control*. 1996; 5:280-285.
- ¹³ Farkas AJ, Pierce JP, Zhu SH, Rosbrook B, Gilpin EA, Berry C, Kaplan RM. Addiction versus stages of change models in predicting smoking cessation. *Addiction*. 1996;91:1271-76.

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**Services Provided by MTCP-funded Programs:
Environmental Tobacco Smoke**

	1994	1995	1996	1997	1998 ^a	1999	2000	2001 ^a	2002	Total
COMMUNITY EVENTS THAT ADDRESSED ENVIRONMENTAL TOBACCO SMOKE^b										
Boards of Health	365	1,264	1,592	1,334	1,133	1,084	1,067	1,181	989	10,009
Coalitions	115	1,149	527	450	183	237	175	173	127	3,136
Outreach and Intervention	158	1,200	546	572	538	656	711	486	343	5,210
Youth Action Alliances	208	1,214	368	352	301	309	399	283	308	3,742
Tobacco Treatment Programs	44	1,179	639	690	462	412	499	466	287	4,678
Total^c	936	7,136	3,713	3,445	2,617	2,698	2,851	2,589	2,054	28,039
ATTENDEES AT COMMUNITY EVENTS THAT ADDRESSED ENVIRONMENTAL TOBACCO SMOKE^b										
Boards of Health	96,932	541,244	1,211,240	939,830	456,600	331,181	409,823	304,419	327,321	4,618,590
Coalitions	58,319	439,625	223,582	251,028	38,434	30,090	77,448	50,122	30,555	1,199,203
Outreach and Intervention	30,971	423,031	80,839	157,961	77,406	134,378	77,343	273,415	244,779	1,500,123
Youth Action Alliances	96,925	476,194	174,908	72,358	79,202	38,818	98,202	46,028	51,303	1,130,938
Tobacco Treatment Programs	7,847	419,555	172,702	108,018	103,046	44,984	29,036	26,354	29,719	941,261
Total^c	302,317	2,689,937	1,880,547	1,543,894	754,688	579,451	691,852	697,338	683,677	9,823,701
PUBLIC ESTABLISHMENTS CHECKED FOR COMPLIANCE WITH SMOKE-FREE OR RESTRICTED SMOKING POLICIES										
Boards of Health	1300	2,975	4,373	5,462	4,050	4,954	5,074	12,752	14,913	55,853
WORKPLACES CHECKED FOR COMPLIANCE WITH SMOKE-FREE OR RESTRICTED SMOKING POLICIES										
Boards of Health	300	1,637	3,130	3,033	1,873	709	1,072	1,497	1,337	14,588

a Grant cycles began in fiscal years 1998 and 2001.

b Events prior to September, 1994 are attributed to a particular topic based on the distribution of events by topic from September, 1994 through June, 1996.

c Totals include data for Enhanced School Health programs, which reported through the MTCP MIS from 1995 through 1997.

Source: MTCP Management Information System

**Services Provided by MTCP-funded Programs:
Youth and Prevention**

	1994	1995	1996	1997	1998 ^a	1999	2000	2001 ^a	2002	Total
PREVENTION PROGRAMS										
Boards of Health	7	25	6	13	11	9	3	0	1	75
Outreach and Intervention	61	180	172	114	70	32	38	14	5	686
Youth Programs	52	182	125	86	83	60	69	19	10	686
Total	136	461	368	255	164	101	110	33	16	1,644
PEER LEADERS HIRED										
Youth Programs	649	219	214	118	222	126	178	85	67	1,878
ATTEMPTED TOBACCO PURCHASES BY UNDERAGE YOUTH										
Boards of Health	1,292	5,359	8,795	7,017	9,189	11,694	15,790	26,745	28,577	114,458
YOUTH REACHED THROUGH OUTREACH										
Youth Programs	67,751	100,614	100,129	88,151	65,220	54,500	62,364	34,041	42,682	615,452
COMMUNITY EVENTS THAT ADDRESSED YOUTH^b										
Boards of Health	546	1,736	2,535	2,168	1,696	1,655	1,566	1,515	1,293	14,710
Coalitions	157	1,560	668	619	255	354	281	201	153	4,248
Outreach and Intervention	216	1,629	520	586	453	651	585	415	301	5,356
Youth Action Alliances	283	1,648	827	909	730	800	777	450	500	6,924
Tobacco Treatment Programs	60	1,601	635	641	372	270	207	101	145	4,032
Total^c	1,323	8,174	5,325	5,024	3,506	3,730	3,416	2,682	2,392	35,572

continued

**Services Provided by MTCP-funded Programs:
Youth and Prevention, continued.**

	1994	1995	1996	1997	1998 ^a	1999	2000	2001 ^a	2002	Total
ATTENDEES AT COMMUNITY EVENTS THAT ADDRESSED YOUTH^b										
Boards of Health	126,671	769,498	1,634,013	1,197,518	567,389	415,897	407,459	268,267	334,264	5,700,976
Coalitions	83,067	622,538	408,902	440,921	43,035	40,912	98,428	54,693	25,884	1,818,380
Outreach and Intervention	44,113	598,902	104,628	160,494	87,702	141,610	92,954	270,640	302,556	1,803,599
Youth Action Alliances	138,056	674,626	187,040	127,445	129,350	69,617	129,411	47,383	65,720	1,568,648
Tobacco Treatment Programs	11,177	593,952	173,677	167,000	92,228	40,530	21,227	22,945	15,784	1,138,520
Total^c	419,212	3,791,781	2,610,650	2,119,257	919,704	708,566	749,479	663,928	744,208	12,726,785

a Grant cycles began in fiscal years 1998 and 2001.

b Events prior to September, 1994 are attributed to a particular topic based on the distribution of events by topic from September, 1994 through June, 1996.

c Totals include data for Enhanced School Health programs, which reported through the MTCP MIS from 1995 through 1997.

Source: MTCP Management Information System

**Services Provided by MTCP-funded Programs:
Tobacco Treatment Services**

	1994	1995	1996	1997	1998 ^a	1999	2000	2001 ^a	2002	Total
SMOKERS RECEIVING INDIVIDUAL TOBACCO TREATMENT (COUNSELING)										
Boards of Health	0	26	355	109	885	564	358	25	0	2,322
Outreach and Intervention	1	42	142	84	155	73	133	413	949	1,992
Tobacco Treatment Programs	217	5,039	6,324	6,281	5,956	5,086	5,208	6,004	7,559	47,674
Total^b	223	5,381	6,856	6,483	6,996	5,723	5,699	6,442	8,508	52,311
SMOKERS RECEIVING GROUP TOBACCO TREATMENT										
Boards of Health	0	130	955	440	887	1,107	526	39	0	4,084
Outreach and Intervention	21	70	191	124	534	493	234	154	29	1,850
Tobacco Treatment Programs	46	2,184	1,800	1,858	1,883	1,919	2,008	2,133	1,975	15,806
Total^b	96	2,472	3,161	2,534	3,305	3,519	2,797	2,326	2,004	22,214
GROUP TOBACCO TREATMENT SESSIONS HELD										
Boards of Health	26	69	76	38	78	108	95	8	0	498
Outreach and Intervention	8	29	26	17	37	42	32	11	19	221
Tobacco Treatment Programs	7	322	289	276	249	251	235	262	306	2,197
Total	41	420	391	331	364	401	362	281	325	2,916
PEOPLE REFERRED TO TOBACCO TREATMENT SERVICES										
Boards of Health	1,798	7,681	9,732	11,324	12,689	12,272	13,731	6,945	6,337	82,509
Coalitions	562	2,430	3,215	3,260	2,262	2,157	1,398	1,821	1,201	18,306
Outreach and Intervention	1,728	3,845	6,838	4,534	5,625	5,383	6,978	5,520	5,048	45,499
Youth Programs	917	2,217	6,434	2,871	3,376	1,993	2,767	3,493	2,976	27,044
Tobacco Treatment Programs	758	12,441	24,630	25,202	25,672	31,572	41,973	35,236	33,480	230,964
Total	5,763	28,614	50,849	47,191	49,624	53,377	66,847	53,015	49,042	404,322

continued

**Services Provided by MTCP-funded Programs:
Tobacco Treatment Services, continued**

	1994	1995	1996	1997	1998 ^a	1999	2000	2001 ^a	2002	Total
COMMUNITY EVENTS THAT ADDRESSED ADULT SMOKING^c										
Boards of Health	317	1,112	1,383	1,260	939	866	776	776	698	8,127
Coalitions	142	1,020	534	441	207	242	166	113	93	2,958
Outreach and Intervention	194	1,083	739	753	623	782	885	744	629	6,432
Youth Programs	255	1,100	158	191	193	191	239	185	197	2,709
Tobacco Treatment Programs	55	1,058	1,021	986	768	632	801	1,069	1,077	7,467
Total^b	1,018	6,370	3,879	3,678	2,730	2,713	2,867	2,887	2,694	29,029
ATTENDEES AT COMMUNITY EVENTS THAT ADDRESSED ADULT SMOKING^c										
Boards of Health	104,733	637,385	1,255,421	1,038,301	452,754	301,338	250,952	280,544	290,534	4,611,962
Coalitions	67,105	531,072	288,485	349,124	32,623	46,005	69,684	37,212	105,773	1,527,083
Outreach and Intervention	35,636	511,978	90,891	160,228	91,124	216,070	87,881	308,997	327,494	1,830,299
Youth Programs	111,527	573,150	159,270	65,378	55,125	38,206	93,411	31,974	38,725	1,166,766
Tobacco Treatment Programs	9,029	507,979	202,940	242,416	113,820	50,269	42,535	43,573	45,643	1,258,204
Total^b	341,058	3,235,867	2,005,941	1,869,027	745,446	651,888	544,463	702,300	808,169	10,798,290

a Grant cycles began in fiscal years 1998 and 2001, changing and limiting the activities programs would be funded to do, particularly in the third cycle.

b Totals include data for Enhanced School Health programs, which reported through the MTCP MIS from 1995 through 1997.

c Events prior to September, 1994 are attributed to a particular topic based on the distribution of events by topic from September, 1994 through June, 1996.

Source: MTCP Management Information System

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Abington					1996							
Acton											1999	
Acushnet	1996	1996	1996		1996	1996		1996	1996	1996	1996	1996
Adams												
Agawam	2000				2000	2000					2000	
Alford												
Amesbury		2000	2000		2000						2000	2000
Amherst	1999		1995		1995	1995		1995		1995	1995	1995
Andover		1995	1995	1995	1995	1995	1995				1995	1995
Aquinnah											2001	2001
Arlington		1995			1995	1995			1995	1995	1995	1995
Ashburnham												
Ashby												
Ashfield												
Ashland		2000							2000		2000	
Athol		1998			1998	1998					1998	1998
Attleboro	1995	1995	1995	1995	1995	1995		1995	1995	1996	1995	1995
Auburn	1987	1987				1987					1987	
Avon												
Ayer												
Barnstable		1996		1996	1996	1996		1996	1996	1996		1996
Barre	2001				1993						2001	
Becket												
Bedford			1995		1995	1995				1995	1995	1995
Belchertown	1998	1997	1997	1997	1997	1997	1997	1997	1997	1997	1998	1997
Bellingham		1997		1997	1997	1997		1997	1997	1997	1999	1997
Belmont		1995	1995	1995	2000	1995	1991		1995	1991	1995	
Berkley												
Berlin												
Bernardston												
Beverly		1994			1994	1994					1994	

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Billerica		1996	1996	1996	1996	1996					1996	
Blackstone			1998		1998	1998				1998	1998	
Blandford												
Bolton												
Boston										1994	1999	
Bourne		1996	1996	1996	1996	1996	1996	1996	1996	1996	1997	1996
Boxborough			1996		1996						1996	
Boxford												
Boylston	2000	2000	2000		2000						2000	2000
Braintree					1995						1982	
Brewster										1997	2000	
Bridgewater												
Brimfield	2002	2002		2001	2001					2002	2002	2001
Brockton					1995							
Brookfield												
Brookline	1995	1994	1995	1994	1995	1987		1987	1987	1995	1995	
Buckland	2001									2001	2001	
Burlington	1993	1993	1993	1993	1993	1993		1993	1993	1993	1993	1993
Cambridge	1987	1987	1987	1995	1994	1987		1987	1987	1995	1999	1995
Canton		1995	1995	1995	1995	1995				1995	1995	1995
Carlisle												
Carver												
Charlemont												
Charlton												
Chatham	1999	1996		1996	1996	1996		1996	1996	1996	1999	1996
Chelmsford		1992	1996	1992	1992	1992			1997	1992	1992	1992
Chelsea				1999	1999					1999	1999	
Cheshire												
Chester												
Chesterfield												
Chicopee					1994						1996	

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Chilmark	2001		2001	1997	1997	1997		1997	1997	1997	1998	1997
Clarksburg												
Clinton		1995		1995	1995	1995					1995	
Cohasset				1991	1995	1991				1991	1999	1991
Colrain												
Concord											1996	
Conway												
Cummington												
Dalton												
Danvers		1995	1995	1995	1995	1995					1995	1995
Dartmouth					1997						2000	
Dedham			1996	1995							1996	
Deerfield		1997	1997	1997	1997	1997				1997	1997	1997
Dennis			2000			2000				2000	2000	
Dighton												
Douglas												
Dover	2001	1994	1994	1994	1994	1994		1994	1994	1994	1994	1994
Dracut					1998					1998	1998	
Dudley			1994		1994	1994				1994	2000	1994
Dunstable					2002		2002					
Duxbury	1999	1999			1996				1999	1999	1999	
East Bridgewater												
East Brookfield												
East Longmeadow					1994						1995	
Eastham	2000									2000	2000	
Easthampton		1995	1995	1995	1995	1995				1995	1997	1995
Easton												
Edgartown	2001	1997		1997	1997	1997		1997	1997	2001	1999	1997
Egremont			1998								1998	
Erving												
Essex												

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Everett											1992	
Fairhaven					2000						2000	
Fall River					1995						2000	
Falmouth		1994	1994	1994	1994	1994				1994	1999	1994
Fitchburg		1997		1997	1997	1997					1997	1997
Florida												
Foxborough		1994			1994	1994			1994	1994	1994	1994
Framingham	2000	2000			2000					2000	2000	
Franklin											1989	
Freetown												
Gardner											1997	
Georgetown		1997	1997		1997	1997				1997	2000	1997
Gill												
Gloucester		1994	1994		1994	1994			1994	1995	1994	1994
Goshen												
Gosnold												
Grafton										1999	1999	
Granby		1996		1996	1996							1996
Granville												
Great Barrington		1993	1993	2000	1993					1993	2000	1993
Greenfield												
Groton	1998				1998					1998	1998	
Groveland		1997	1997	1997	1997	1997				1997	1997	1997
Hadley												
Halifax		2000	2000			2000				2000	2000	2000
Hamilton					1997					1997	1997	
Hampden												
Hancock												
Hanover					1995							
Hanson					1995							
Hardwick												

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Harvard												
Harwich									1998		1994	
Hatfield												
Haverhill		1996	1996	1996	1996	1996				1996	1996	1996
Hawley												
Heath												
Hingham	1999		1999		1995	1999				1994	1999	1993
Hinsdale												
Holbrook		2000			1995						2000	
Holden			1994		1994	1994			1994		1994	1994
Holland												
Holliston												
Holyoke		1995	1995	1995	1988	1995		1995	1995		1995	1995
Hopedale												
Hopkinton					1998					1998	1998	
Hubbardston	2002	2002			2002	2002				2002	2002	2002
Hudson					1985							
Hull					1995						1993	
Huntington												
Ipswich												
Kingston					1992							
Lakeville		1999	1999		1999	1999				1999	1999	1999
Lancaster		2000			2000					2000	2000	
Lanesborough	1994	1994	1994		1994	1994				1994	1994	1994
Lawrence		1995	1995		1995	1995				1995	1995	1995
Lee			1995		1993	1993				1993	1996	
Leicester												
Lenox			1995		1993	1993				1993	1996	
Leominster					1995					1995	1998	
Leverett												
Lexington	1995			1995	1995	1995				1995	1995	1995

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Leyden												
Lincoln												
Littleton											1997	
Longmeadow					2000	1992		1992	1992		1995	
Lowell					1996						2000	
Ludlow				2001	1999						2001	2001
Lunenburg												
Lynn												
Lynnfield		2000		2000	2000					2000	2000	2000
Malden								1994	1994		1996	
Manchester												
Mansfield					1995					1994	1993	
Marblehead	1995	1995			1995	1995			1995		1995	
Marion	1996	1996	1996	1996	1996	1996	1996	1995	1995	1996	1996	1996
Marlborough	1993				2000						2000	
Marshfield					1996							
Mashpee		1994			1994	1994				1995	1994	
Mattapoissett		1999			1999	1998				1999	2001	
Maynard					1997	2000					2000	2000
Medfield			1993		1993	1993		1993	1993	1994		1993
Medford	2000				1996						2000	
Medway												
Melrose	1999				1999						1999	
Mendon	2002		2002	2002	2002	2002	2002				2001	
Merrimac												
Methuen		1996	1996		1996	1996	1996			1996	1996	1996
Middleborough												
Middlefield												
Middleton		1996	1996		1996	1996	1996					1996
Milford					1998	1998					1998	1998
Millbury												

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Millis										1990	1997	
Millville	2001				2001							
Milton					1995						2000	
Monroe												
Monson		2001			1999						2001	2001
Montague		1995		1995	1995	1995				1995	1995	1995
Monterey	2000										2000	
Montgomery												
Mount Washington												
Nahant			1995		1995					1995	1995	1995
Nantucket										1997		
Natick	1988	1988	1988	1988	1988	1988			1988	1988	1988	1988
Needham		1992	1992	1992	1992	1992		1992	1992	1992	1996	1992
New Ashford												
New Bedford					1997						2000	
New Braintree	2001	2001	2001		2001						2001	
New Marlborough												
New Salem												
Newbury												
Newburyport		1997	1997	1997	1997	1997		1997	1997	1997	1997	1997
Newton		1994	1994	1994	1994	1994				1994	1995	1994
Norfolk	1996										1996	
North Adams												
North Andover		1996	1996		1996	1996	1996			1996	1998	1996
North Attleborough											1995	
North Brookfield												
North Reading												
Northampton		1995	1995	1995	1995	1995		1995	1995	1996	1996	1995
Northborough					2000					2000	2000	2000
Northbridge					2001					2001	2001	
Northfield												

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Norton					1995					1998	1998	
Norwell	1994				1993	1994				1994	1994	
Norwood												1993
Oak Bluffs	2001									2001	2001	
Oakham		2001	2001		2001	2001						
Orange		1996	1996	1996	1996	1996				1996		1996
Orleans	1999									1998	1999	
Otis												
Oxford												
Palmer		2001				2001					2001	
Paxton												
Peabody		1996	1996	1996	1996						1996	1996
Pelham												
Pembroke												
Pepperell					1995							
Peru												
Petersham	2001	2001			2001	2001					2001	
Phillipston												
Pittsfield		1996	1996	1996	1996	1996	1996	1996	1996		1996	1996
Plainfield												
Plainville	1995	1993			1993	1993				1993	1995	1993
Plymouth				1994	1994	1994		1994	1994	1994	1994	1994
Plympton												
Princeton		2000	2000		2000						2000	2000
Provincetown										1997	1998	
Quincy											2000	
Randolph											1999	
Raynham												
Reading			2000		1996	1995					1996	1996
Rehoboth												
Revere		1993	1993	1993	1993	1993				1993	1993	

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Richmond	2001			2001	2001							2001
Rochester	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996
Rockland												
Rockport												
Rowe												
Rowley												
Royalston												
Russell												
Rutland												
Salem											1988	
Salisbury												
Sandisfield					2001							
Sandwich	1994		1992		1992	1992				1992	1992	1992
Saugus		1995		1995	1995					1995	1995	1995
Savoy												
Scituate					1995							2000
Seekonk					1998							1998
Sharon	1995		1995		1995					1998	1998	
Sheffield											1996	
Shelburne		1998			1999							1999
Sherborn					1998	1998					1998	1998
Shirley												
Shrewsbury										2000	2000	
Shutesbury												
Somerset					1996							
Somerville		1993	1993	1993	1993	1993		1993	1993	1993	2000	1993
South Hadley		2000		2000	1995						1995	2000
Southampton	1995	1995	1995	1995	1995	1995				1995	1995	1995
Southborough	2001	2001			2001	2001				2001	2001	2001
Southbridge		2002			2002						2002	2002
Southwick											1993	

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Spencer												
Springfield											2001	
Sterling	1988	2000	2000		1988						1988	2000
Stockbridge			1995		1993	1993				1993	1996	
Stoneham			2000		1996	1996					1997	1996
Stoughton											1983	
Stow		2000			2000						2000	2000
Sturbridge			2000		2000						2000	
Sudbury	1988	1988			1988					1988	1988	
Sunderland	1996	1996	1996	1996	1996	1996				1996	1996	1996
Sutton												
Swampscott		1995			1995	1995				1995	1995	1995
Swansea					1995							
Taunton												
Templeton					1995					2000	2000	2000
Tewksbury		1995	1995	1995		1995					1995	1995
Tisbury	2001									2001	2001	
Tolland												
Topsfield												
Townsend		1999	1999	1999	1999						1999	1999
Truro	2000	1996		1996	1996	1996		1996	1996	1996	2000	1996
Tyngsborough	1999		1999	1999	1999	1999			1999	1999	1999	1999
Tyringham	2001				2001					2001	2001	
Upton												
Uxbridge												
Wakefield	1996	1998	1998	1998	1996	1996	1998		1996	1996	1996	
Wales												
Walpole		1996		1996				1996	1996	1996	1996	
Waltham												
Ware												
Wareham										1997	1999	

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Warren					1995							
Warwick												
Washington												
Watertown	2000				1996					1990	2000	
Wayland	1997	1997	1997	1997	1997	1997	1997		1997	1997	1997	1997
Webster	2001	2001									2001	2001
Wellesley					1994					1991		
Wellfleet	1998									1996	1998	
Wendell												
Wenham												
West Boylston	2000	2000	2000		2000						2000	2000
West Bridgewater												
West Brookfield		2000			2000						2000	2000
West Newbury												
West Springfield					1994						1996	1995
West Stockbridge												
West Tisbury										2001	2001	
Westborough		1985				1985				1999	1999	
Westfield		1996		1996	1995	1996					1996	1996
Westford		1993	1996	1996	1993	1996			1996	1996	1996	1993
Westhampton												
Westminster	2002				1999	1999					1999	1999
Weston												
Westport					1996							
Westwood	2000	1996	1996	1996	1996	1996			1996	1996	1997	1996
Weymouth		1995	1995	1995	1995	1995				1995	1992	1995
Whately		2001		2001	2001						2001	2001
Whitman												
Wilbraham	1995				1995						1995	1995
Williamsburg												
Williamstown	1996	1987	1994		1994	1994		1994	1994	1994	1996	1994

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Wilmington			2001		1994						2001	
Winchendon			2000		2000						2000	2000
Winchester											1996	
Windsor												
Winthrop												
Woburn												
Worcester		2000	2000	2000	2000	2000					2000	2000
Worthington												
Wrentham										1996	1996	
Yarmouth	1997	1997		1997	1997	1997	1997	1997		1997	2000	

a Due to decreases in funding for Boards of Health, some ordinances may not have been reported.

Source: Massachusetts Department of Public Health.

**Youth Access Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Ban distribution of samples of tobacco products	Ban public transit advertising of tobacco	Ban sale of individual cigarettes	Ban taxi advertising of tobacco	Ban tobacco coupon redemption	Complete ban on vending machines	Establish fines for selling to minors	Limit free-standing displays	Limit vending machines to adult-only establishments	Require licensing of tobacco retailers	Require vending machine lockout devices
Abington	1996		1996					1996		1996	1996
Acton	1994						1999	2000	1994	1994	1994
Acushnet							1996	1996	1996		
Adams	1999		1999				1994	1999	1999	1999	
Agawam											
Alford											
Amesbury			2000				2000	2000			2000
Amherst	2001		1995			1995	1995			1995	
Andover			1995			2001	1995	1995	1995		
Aquinnah							1999	1999	1995	1995	
Arlington			1995			1995	1995	1995		1995	
Ashburnham	2000		2000					2000	2000		
Ashby	1998		1998				1998	1998	1998	1998	
Ashfield											
Ashland	1994		1994				1994	1998		1994	1994
Athol	1996		1996				2000	1996	1996	1996	1996
Attleboro	1995	1995	1995	1995			1995	1995	1995	1995	1995
Auburn											
Avon	1998		1998				1998	1998	1998	1998	
Ayer	1995		1995				1995	1995		1995	1995
Barnstable	1996					1994		1996		1996	
Barre	1992		1992				1992	1992		1992	1992
Becket											
Bedford	1995		1995		1995	1995	1996	1995		1995	
Belchertown	1997		1997		1997	1997	1997	1997		1997	
Bellingham	1995	1995	1995	1995		1995	1995	1995		1995	
Belmont	1991					2000	2000	2000		1991	
Berkley											
Berlin											
Bernardston											
Beverly	1996		1996				1996	1996	1997	1997	1997
Billerica	1996	1996	1996	1996			1996	1996		1996	1996

**Youth Access Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Ban distribution of samples of tobacco products	Ban public transit advertising of tobacco	Ban sale of individual cigarettes	Ban taxi advertising of tobacco	Ban tobacco coupon redemption	Complete ban on vending machines	Establish fines for selling to minors	Limit free-standing displays	Limit vending machines to adult-only establishments	Require licensing of tobacco retailers	Require vending machine lockout devices
Blackstone			1998				1998	1998	1998	1998	1998
Blandford											
Bolton	1995		1995		1995		1995			1995	1995
Boston	1985						1997	1997	1997	1997	1994
Bourne	1996					1996		1996		1996	
Boxborough	1996		1996		1996		1996	1996		1996	1996
Boxford											
Boylston	1996		1996			1996	1996	1996		1996	
Braintree	1998		1998				1998	1998	1996	1998	1996
Brewster	1996		1997			1996		1996		1996	
Bridgewater											
Brimfield						2001	2001	2001		2001	
Brockton	1995	1995	1995	1995			1995	1995		1995	1995
Brookfield											
Brookline	1990					1994	1990	1995		1990	
Buckland	2000		2000			2000	2000	2000		2000	
Burlington	1993				1993		1993	1993			1993
Cambridge	1982		1995				1995	1995		1995	1994
Canton	1995		1995				1995	1995	1995	1996	
Carlisle											
Carver	1999		1999			1999	1999	1999		1999	
Charlemont											
Charlton	2002		2002				2002	2002	2002	2002	
Chatham	1996					1996		1996		1996	
Chelmsford	1992		1998		1992		1997	1997	1998	1992	
Chelsea	1997		1997				1997	1997	1997	1997	1997
Cheshire											
Chester											
Chesterfield											
Chicopee											
Chilmark							1999	1999	1995	1995	
Clarksburg											

**Youth Access Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Ban distribution of samples of tobacco products	Ban public transit advertising of tobacco	Ban sale of individual cigarettes	Ban taxi advertising of tobacco	Ban tobacco coupon redemption	Complete ban on vending machines	Establish fines for selling to minors	Limit free-standing displays	Limit vending machines to adult-only establishments	Require licensing of tobacco retailers	Require vending machine lockout devices
Clinton			1995				1995	1995		1995	1995
Cohasset	1996		1996			1996				1996	
Colrain											
Concord	1995						1995			1995	
Conway											
Cummington											
Dalton											
Danvers							1995			1995	1995
Dartmouth	1997		1998				1998	1998	1998	1998	
Dedham			1996			1997	1996	1996		1996	
Deerfield	1997		1997			1997	1997	1997		1997	
Dennis	1996					1996		1996			
Dighton											
Douglas											
Dover	1994	1994		1994	1994	1994	1994	1998		1994	
Dracut			1998				1998	1998	1998	1998	1998
Dudley	1995		1995				1995	1995	2001	1995	
Dunstable											
Duxbury	1997		1997				1997	1997	1997	1997	
East Bridgewater											
East Brookfield											
East	1997		1997			1997	1997	1997		1997	
Eastham	1996		1996			1997		1996		1996	
Easthampton			1995			1995	1997	1995		1995	
Easton	1995		1995				1995	1995		1995	1996
Edgartown							1999	1999	1995	1995	
Egremont							1998	1998		1998	
Erving											
Essex	1999		1999				1999	1999	1999	1999	1999
Everett										1997	1996
Fairhaven	1997		1997				1997	1997	1997	1997	
Fall River	1998		1998				1998			1998	1998

**Youth Access Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Ban distribution of samples of tobacco products	Ban public transit advertising of tobacco	Ban sale of individual cigarettes	Ban taxi advertising of tobacco	Ban tobacco coupon redemption	Complete ban on vending machines	Establish fines for selling to minors	Limit free-standing displays	Limit vending machines to adult-only establishments	Require licensing of tobacco retailers	Require vending machine lockout devices
Falmouth	1994						1997	1994		1997	
Fitchburg	1997		1997				1997	1997		1997	1997
Florida											
Foxborough	1994						1994				1994
Framingham	1995		1998				1995	1995	1998	1995	1995
Franklin			1996			1997	1996				
Freetown											
Gardner	1996		1996		1996		1996	1996	1996	1996	1996
Georgetown	1997		1997		1997	1997		1997		1997	
Gill											
Gloucester	1994		1994				1994	1994	1994	1995	1994
Goshen											
Gosnold											
Grafton	1999		1999				1999	1999	1999	1999	
Granby											
Granville											
Great Barrington	2000		2000				1998	1998	2000	1998	
Greenfield							1999	1996			
Groton	1995		1998		1998	1998	1995	1995		1995	
Groveland	1997		1997		1997	1997		1997		1997	
Hadley											
Halifax	1997		1997			1997	1997	1997		1997	
Hamilton	1997		1997		1997	1997	1997	1997		1997	
Hampden											
Hancock											
Hanover	1998		1998				1998	1998		1998	
Hanson	1998		1998			1998	1998	1998		1998	
Hardwick											
Harvard											
Harwich	1998					1998		1998		1998	
Hatfield											
Haverhill	1996		1996		1996		1996	1996	1996	1996	

**Youth Access Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Ban distribution of samples of tobacco products	Ban public transit advertising of tobacco	Ban sale of individual cigarettes	Ban taxi advertising of tobacco	Ban tobacco coupon redemption	Complete ban on vending machines	Establish fines for selling to minors	Limit free-standing displays	Limit vending machines to adult-only establishments	Require licensing of tobacco retailers	Require vending machine lockout devices
Hawley											
Heath											
Hingham	1993	1993	1993	1993		1996	1993			1996	
Hinsdale	2001		2001			2001	2001	2001		2001	
Holbrook	2000		2000				2000	2000	2000	2000	2000
Holden	1994	1994		1994			1994	1994		1994	
Holland											
Holliston			1995				1995	1995	1995	1995	1995
Holyoke	1996		1996				1996	1996	1996	1996	1996
Hopedale											
Hopkinton	1997		1997			1997	1997	1997		1997	
Hubbardston	1996		1996				1996	1996	1996	1996	
Hudson	1997		1997		1997		1997	1997	1997		1997
Hull	1996		1996			1996	1995	1996		1996	
Huntington											
Ipswich	2000		2000					2000	2000	2000	2000
Kingston	1996		1996			1996		1996		1996	
Lakeville						1999	1999	1999		1999	
Lancaster	1993		1993		1993		1993	2000	2000	1993	
Lanesborough	1994										1994
Lawrence	1995		1995				1995	1995		1996	1995
Lee	1993		2001			1995	1993	1995		1993	
Leicester											
Lenox	1993		2001			1995	1993	1995		1993	
Leominster	1995		1999		1995		1999	1999		1995	1995
Leverett											
Lexington	1995		1995			1995	1995	1995		1995	
Leyden											
Lincoln											
Littleton	1997		1997		1997	1997	1997	1997		1997	
Longmeadow	1992		1998			1993	1994	1998		1994	
Lowell	1996		1996					1996		1996	1996

**Youth Access Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Ban distribution of samples of tobacco products	Ban public transit advertising of tobacco	Ban sale of individual cigarettes	Ban taxi advertising of tobacco	Ban tobacco coupon redemption	Complete ban on vending machines	Establish fines for selling to minors	Limit free-standing displays	Limit vending machines to adult-only establishments	Require licensing of tobacco retailers	Require vending machine lockout devices
Ludlow	1999		1999				1999	1999	1999	1999	
Lunenburg											
Lynn										1995	1995
Lynnfield	1996				1996		1996	1996		1996	1996
Malden	1994		1994			1995		1994			
Manchester							1997	1997		1997	1997
Mansfield	1993						1997	1997	1997	1997	1993
Marblehead											
Marion						1995	1996	1996		1996	
Marlborough	1993	1996	1993	1996	1993		1996	1996	1993	1993	1993
Marshfield			1996					1996		1996	
Mashpee						1995	1998			1998	
Mattapoissett	1999					1999	1999	1999		1999	
Maynard			1996		1996		1996	1996	1996	1996	
Medfield			1993				1993	1993	1998	1996	
Medford							1996	1996		1996	
Medway			1996			1996	1996	1996		1996	
Melrose							1996		1996	1996	
Mendon	1995	1995	1995	1995		1995	1995	1995	2001	1995	
Merrimac	2000		2000			2000	2000	2000		2000	
Methuen	1996		1996		1996	1996	1996	1996		1996	
Middleborough											
Middlefield											
Middleton	1996		1996			2001	2001	1996	1996	1996	1996
Milford		1994	1994	1994			1999	1994		1997	1996
Millbury											
Millis			1995			1994	1995	1995		1993	
Millville	2001		2001				2001	2001	2001	2001	
Milton	1995		1995		1995		1995	1995	1995	1998	
Monroe											
Monson	1999		1999				1999	1999	1999	1999	
Montague			1995			1995	1999	1995		1995	

**Youth Access Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Ban distribution of samples of tobacco products	Ban public transit advertising of tobacco	Ban sale of individual cigarettes	Ban taxi advertising of tobacco	Ban tobacco coupon redemption	Complete ban on vending machines	Establish fines for selling to minors	Limit free-standing displays	Limit vending machines to adult-only establishments	Require licensing of tobacco retailers	Require vending machine lockout devices
Monterey											
Montgomery											
Mount											
Nahant	1995	1995	1995	1995			1995	1995	1995	1995	
Nantucket	1997					1995		1997		1997	
Natick	1994	1994	1994	1994			1994	1995		1994	1995
Needham						1995	1992	1998		1995	
New Ashford											
New Bedford	1990		1998				1998	1998	1998	1998	
New Braintree	2001		2001				2001	2001	2001	2001	
New Marlborough	2001		2001			2001	2001	2001			
New Salem											
Newbury	2000		2000				2000	2000	2000	2000	
Newburyport	1997		1997		1997			1997	1997	1997	1997
Newton	1982						1994	1994		1994	1994
Norfolk							2000			1995	1995
North Adams			1995			1994	1995	1995		1995	
North Andover	1996		1996		1996		1996	1996	1996	1996	1996
North	1995				1995					1995	1995
North Brookfield											
North Reading	2001		2001			2001	2001			2001	
Northampton	1995	1995	1995	1995	1995	1995	1995	1995		1995	
Northborough	2000		2000			2000	2000	2000		2000	
Northbridge	1997		1997				1997	1997		1997	
Northfield											
Norton	1996		1996		1996		1996	1998	1998	1996	1998
Norwell	1997		1997			1997	1997	1997		1997	
Norwood	1996		1996				1996	1996	1997	1996	1993
Oak Bluffs							1999	1999	1995	1995	
Oakham	2001		2001				2001	2001	2001	2001	
Orange	1996		1996			1996	1998	1996		1996	
Orleans	1998					1995		1998		1998	

**Youth Access Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Ban distribution of samples of tobacco products	Ban public transit advertising of tobacco	Ban sale of individual cigarettes	Ban taxi advertising of tobacco	Ban tobacco coupon redemption	Complete ban on vending machines	Establish fines for selling to minors	Limit free-standing displays	Limit vending machines to adult-only establishments	Require licensing of tobacco retailers	Require vending machine lockout devices
Otis											
Oxford											
Palmer	2000		2000				2000	2000	2000	2000	
Paxton	1999						1999	1999	1999	1999	
Peabody	1996		1996					1996	1996	1996	1996
Pelham											
Pembroke	2002		1999			1999	2002	1999		1999	
Pepperell	1995				1995	1995	1995				
Peru											
Petersham	2001		2001				2001	2001	2001	2001	
Phillipston											
Pittsfield	1995		1995				1995	1995	1995	1995	
Plainfield											
Plainville	1993		1993				1993	1993		1993	
Plymouth	1994		1994			1997		1994		1997	
Plympton											
Princeton	1997		1997			1997	1997	1997		1997	
Provincetown	1997					1992		1997		1997	
Quincy							1994			1994	1994
Randolph	1999		1999				1999	1999		1999	1999
Raynham	1998		1998			1996	1998	1998		1998	
Reading	1996		1996			1996	1996	1996		1997	
Rehoboth											
Revere	1998		1998				1995		1995	1995	1995
Richmond	2001						2001			2001	
Rochester						1996	1996	1996		1996	
Rockland											
Rockport	1999		1999				1999	1999	1999	1999	
Rowe											
Rowley											
Royalston											
Russell											

**Youth Access Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Ban distribution of samples of tobacco products	Ban public transit advertising of tobacco	Ban sale of individual cigarettes	Ban taxi advertising of tobacco	Ban tobacco coupon redemption	Complete ban on vending machines	Establish fines for selling to minors	Limit free-standing displays	Limit vending machines to adult-only establishments	Require licensing of tobacco retailers	Require vending machine lockout devices
Rutland	1997		1997			1997	1997	1997		1997	
Salem						1995				1996	1996
Salisbury											
Sandisfield	2001		2001				2001	2001			2001
Sandwich	1992		1996				1992	1992			
Saugus	1995	1995	1995	1995			1995	1995		1995	1995
Savoy											
Scituate	1997		1997			1997	1997	1997		1997	
Seekonk	1995		1995		1995			1995	1995	1995	1995
Sharon	1995					1995	1995	1995		1995	
Sheffield							1996	1996			
Shelburne	1999		1999			1999	1999	1999		1999	
Sherborn	1998		1998				1998	1998	1998	1998	
Shirley	1996		1996		1996		1996	1996		1996	
Shrewsbury	1998		1998				1998	1998	1998	1998	
Shutesbury											
Somerset	1996				1996		1996			1996	1996
Somerville	1993		1997				1993	1993		1993	1993
South Hadley	1995		1995			1995	1995	1995		1995	
Southampton	1995	1995	1995	1995			1995	1995		1995	
Southborough	1997		1997				1997	1997		1997	1997
Southbridge	2001		2001				2001	2001	2001	2001	
Southwick	1993		1993				1993	1993		1999	1993
Spencer	1998		1998				1998	1998	1998	1998	
Springfield	1998		1998				1998	1998		1998	1998
Sterling											
Stockbridge	1993		2001			1993	1993	1995		1993	
Stoneham	1996		1996			1996	1996	1997		1998	
Stoughton	2000		2000				2000	2000		2000	2000
Stow	1997		1997				1997	2002	1997	1997	
Sturbridge	2000		2000				2000	2000	2000	2000	
Sudbury											

**Youth Access Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Ban distribution of samples of tobacco products	Ban public transit advertising of tobacco	Ban sale of individual cigarettes	Ban taxi advertising of tobacco	Ban tobacco coupon redemption	Complete ban on vending machines	Establish fines for selling to minors	Limit free-standing displays	Limit vending machines to adult-only establishments	Require licensing of tobacco retailers	Require vending machine lockout devices
Sunderland	1996		1996			1996	1999	1996		1996	
Sutton											
Swampscott	1995	1995	1995	1995			1995	1995		1995	1995
Swansea	1995				1995		1995	1995		1995	1995
Taunton			2001		2001	2001		2001		2001	
Templeton	1996		1996				1996		1996	1996	2002
Tewksbury	1995	1995	1995	1995		1995	1995	1995		1995	
Tisbury							1999	1999	1995	1995	
Tolland											
Topsfield											
Townsend	1997		1997		1997	1997	1997	1997		1997	
Truro	1996					1996					
Tyngsborough	1999		1999				1999	1999	1999	1999	
Tyringham	2001		2001			2001	2001	2001		2001	
Upton	2001		2001						2001	2001	
Uxbridge			1995					1995		1995	1995
Wakefield	1996		1996				1996	1996		1996	1996
Wales											
Walpole	1996		1996		1996		1991	1996	1996	1996	1996
Waltham			2000				1998	2000		2000	2000
Ware											
Wareham	1997					1997		1997		1997	
Warren											
Warwick											
Washington											
Watertown	1997		1997			1997	1997	1997		1997	
Wayland	1997	1997	1997	1997	1997		1997			1997	1997
Webster	2001		2001				2001	2001	2001	2001	
Wellesley	1994						1994	1993		1994	1994
Wellfleet	1996					1996	1996	1996			
Wendell											
Wenham											

**Youth Access Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2002^a**

Town	Ban distribution of samples of tobacco products	Ban public transit advertising of tobacco	Ban sale of individual cigarettes	Ban taxi advertising of tobacco	Ban tobacco coupon redemption	Complete ban on vending machines	Establish fines for selling to minors	Limit free-standing displays	Limit vending machines to adult-only establishments	Require licensing of tobacco retailers	Require vending machine lockout devices
West Boylston	1997		1997			1997	1997	1997		1997	
West Bridgewater	2002		1999			1999	1999	1999		1999	
West Brookfield											
West Newbury											
West Springfield	1993		1993			1993	1993	1993		1993	
West Stockbridge											
West Tisbury							1999	1999	1995	1995	
Westborough	1997		1997			1997	1997	1997		1997	
Westfield	1996					1995				1997	
Westford	1993				1993		1996	1996	1997	1993	1993
Westhampton											
Westminster	1997		1997				1997	1997	1997	1997	
Weston											
Westport							1995			1995	1995
Westwood	1996		1996		1996	1996	2000	1996		1996	
Weymouth	1994						1995	1999	1995	1995	1995
Whately	1997		1997			1997	1997	1997		1997	
Whitman	1999		1999			1999	1999	1999		1999	
Wilbraham	1995		1995		1995	1995	1995	1995		1995	
Williamsburg	1998		1998			1998	1999	1998		1999	
Williamstown	1994		1994		1994	1995	1994	1994			
Wilmington	1994		2001				1993	1994		1997	1993
Winchendon	1995		1995				1995	1995	1995	1995	
Winchester	1995		1995		1995	1995	1995	1995		1995	
Windsor											
Winthrop											
Woburn	1996		1996			1996	1996	1996		1996	
Worcester	1996		1996				1996	1996		1996	1996
Worthington											
Wrentham							1995			1995	1995
Yarmouth						1997	2000	1997		1997	

a Due to decreases in funding for Boards of Health, some ordinances may not have been reported.

Source: Massachusetts Department of Public Health

**Enforcement of Sales to Minors, by Town
January 1999 through June 2002**

Town Name	Number of Vendors ^a	Number of Checks	Average annual checks per establishment	Town Name	Number of Vendors ^a	Number of Checks	Average annual checks per establishment
Abington	34	388	3.2	Brewster	11	111	2.9
Acton ^b	25	175	3.5	Bridgewater ^d			
Acushnet	16	154	2.7	Brimfield	4	24	3.1
Adams	12	109	2.5	Brockton	175	1443	2.3
Agawam ^b	45	192	2.1	Brookfield ^d			
Alford ^c				Brookline	50	670	3.8
Amesbury	15	108	2.1	Buckland	1	14	3.4
Amherst	25	429	4.9	Burlington	34	165	1.4
Andover	16	181	3.2	Cambridge	184	1321	2.1
Aquinnah	1	3	0.9	Canton	32	193	1.7
Arlington	29	412	4.0	Carlisle ^d			
Ashburnham	5	54	2.9	Carver	17	186	3.1
Ashby	3	33	2.9	Charlemont	6	52	2.6
Ashfield	1	11	2.4	Charlton	12	68	1.6
Ashland	27	250	2.6	Chatham	16	177	3.1
Athol	18	201	3.3	Chelmsford	41	454	3.2
Attleborough	80	1172	4.2	Chelsea	67	646	2.7
Auburn ^b	28	146	2.6	Cheshire	3	10	1.0
Avon	12	79	1.8	Chester ^d			
Ayer	12	114	2.8	Chesterfield ^d			
Barnstable	87	542	1.8	Chicopee ^d			
Barre	9	107	3.2	Chilmark	3	32	3.0
Becket	4	28	2.3	Clarksburg ^d			
Bedford	16	165	2.9	Clinton	23	283	3.6
Belchertown	12	0	0.0	Cohasset	14	150	3.1
Bellingham	29	96	0.9	Colrain	2	22	3.0
Belmont	25	262	3.0	Concord ^b	23	183	4.0
Berkley	5	14	0.9	Conway	3	27	2.9
Berlin	6	39	1.7	Cummington ^d			
Bernardston	5	51	2.7	Dalton	10	84	2.3
Beverly	46	553	3.4	Danvers	39	432	3.2
Billerica	49	728	4.2	Dartmouth	40	375	2.7
Blackstone	12	45	1.0	Dedham ^d			
Blandford ^d				Deerfield	9	19	0.6
Bolton	4	39	2.8	Dennis	33	245	2.1
Boston	1215	9422	2.2	Dighton	8	18	0.7
Bourne	37	245	1.9	Douglas ^d			
Boxborough	4	43	3.1	Dover	5	65	3.7
Boxford ^d				Dracut	28	290	2.9
Boylston	5	23	1.3	Dudley	15	176	3.3
Braintree	50	488	2.8	Dunstable	2	22	3.1

**Enforcement of Sales to Minors, by Town
January 1999 through June 2002**

Town Name	Number of Vendors ^a	Number of Checks	Average annual checks per establishment	Town Name	Number of Vendors ^a	Number of Checks	Average annual checks per establishment
Duxbury	12	155	3.7	Harvard ^c			
East Bridgewater	17	69	1.1	Harwich	20	176	2.5
East Brookfield	3	3	0.3	Hatfield ^e	2	2	0.3
East Longmeadow	20	119	1.7	Haverhill	66	579	2.5
Eastham	7	95	3.7	Hawley ^c			
Easthampton	18	227	3.5	Heath	1	8	2.3
Easton	25	344	4.0	Hingham	23	256	3.1
Edgartown	18	180	2.9	Hinsdale	4	37	2.9
Egremont	4	34	2.4	Holbrook	22	188	2.4
Erving	2	14	1.9	Holden	14	41	0.9
Essex	6	83	4.0	Holland ^c			
Everett	60	513	2.4	Holliston	14	170	3.4
Fairhaven	32	233	2.0	Holyoke	101	1325	3.8
Fall River	217	2235	2.9	Hopedale ^d			
Falmouth	45	439	2.8	Hopkinton	11	117	3.1
Fitchburg	55	470	2.5	Hubbardston ^c			
Florida ^d				Hudson	25	144	1.7
Foxborough	21	213	2.9	Hull	17	151	2.6
Framingham	102	848	2.4	Huntington ^d			
Franklin	23	245	3.0	Ipswich	14	174	3.6
Freetown	12	38	0.9	Kingston	20	235	3.3
Gardner	29	377	3.8	Lakeville	10	121	3.5
Georgetown	10	75	2.1	Lancaster	2	21	3.0
Gill	4	49	3.2	Lanesborough	8	83	3.1
Gloucester	49	703	4.1	Lawrence	159	395	0.7
Goshen	1	12	3.4	Lee	16	107	2.0
Gosnold ^d				Leicester	12	48	1.1
Grafton	17	146	2.4	Lenox	11	90	2.3
Granby ^b	8	70	4.4	Leominster	52	709	3.9
Granville ^d				Leverett	1	13	3.7
Great Barrington	20	145	2.1	Lexington	22	264	3.4
Greenfield	32	323	2.9	Leyden ^c			
Groton	10	98	2.9	Lincoln ^b	1	6	3.0
Groveland	7	62	2.6	Littleton	10	83	2.4
Hadley ^e	10	10	0.3	Longmeadow	14	155	3.2
Halifax	10	125	3.4	Lowell	204	1408	2.0
Hamilton	7	102	4.0	Ludlow	34	303	2.6
Hampden ^d				Lunenburg	21	0	0.0
Hancock	1	5	1.0	Lynn	218	1358	1.8
Hanover	25	285	3.3	Lynnfield	9	86	2.8
Hanson	11	124	3.3	Malden	82	828	2.9
Hardwick ^c				Manchester	6	72	3.6

**Enforcement of Sales to Minors, by Town
January 1999 through June 2002**

Town Name	Number of Vendors ^a	Number of Checks	Average annual checks per establishment	Town Name	Number of Vendors ^a	Number of Checks	Average annual checks per establishment
Mansfield	25	250	2.8	North Adams	36	243	1.9
Marblehead	17	170	2.9	North Andover	26	263	2.9
Marion	8	57	2.2	North Attleborough	41	394	2.8
Marlborough	63	336	1.5	North Brookfield ^b	4	8	1.0
Marshfield	29	291	2.9	North Reading	19	157	2.4
Mashpee	14	99	2.0	Northampton	43	983	6.6
Mattapoisett	8	95	3.4	Northborough	22	115	1.5
Maynard	15	155	3.0	Northbridge	19	73	1.1
Medfield	12	146	3.5	Northfield	4	42	3.2
Medford	75	634	2.4	Norton	19	158	2.4
Medway	12	138	3.4	Norwell	10	108	3.0
Melrose	20	221	3.2	Norwood	41	374	2.6
Mendon	8	21	0.7	Oak Bluffs	16	143	2.6
Merrimac	3	20	1.7	Oakham	2	11	1.6
Methuen	43	463	3.1	Orange	18	142	2.2
Middleborough	36	192	1.5	Orleans	18	214	3.4
Middlefield ^d				Otis	5	32	2.0
Middleton	17	140	2.3	Oxford ^d			
Milford	65	740	3.3	Palmer	33	364	3.1
Millbury ^b	14	43	1.5	Paxton	2	18	2.6
Millis	13	109	2.5	Peabody	66	571	2.5
Millville ^d				Pelham ^c			
Milton	12	156	3.7	Pembroke	25	232	2.7
Monroe ^c				Pepperell ^d			
Monson	11	109	2.8	Peru ^d			
Montague	12	158	3.6	Petersham	2	24	3.2
Monterey	2	10	1.7	Phillipston	3	31	3.4
Montgomery ^d				Pittsfield	70	711	2.9
Mount Washington ^c				Plainfield ^d			
Nahant	6	71	3.2	Plainville	15	143	2.7
Nantucket	34	303	2.6	Plymouth	49	480	2.8
Natick	40	435	3.1	Plympton	1	8	2.0
Needham	17	197	3.2	Princeton	2	8	1.1
New Ashford ^d				Provincetown	19	190	2.8
New Bedford	211	890	1.2	Quincy	197	1511	2.2
New Braintree ^b	1	6	3.0	Randolph ^d			
New Marlborough	3	15	1.6	Raynham	25	316	3.6
New Salem	1	7	2.0	Reading	22	208	2.7
Newbury	9	61	2.0	Rehoboth	9	16	0.5
Newburyport	25	223	2.5	Revere	96	836	2.5
Newton	79	930	3.3	Richmond ^c			
Norfolk	6	62	3.2	Rochester	3	32	2.9

**Enforcement of Sales to Minors, by Town
January 1999 through June 2002**

Town Name	Number of Vendors^a	Number of Checks	Average annual checks per establishment	Town Name	Number of Vendors^a	Number of Checks	Average annual checks per establishment
Rockland	26	268	3.0	Taunton ^b	93	579	3.1
Rockport	5	45	2.4	Templeton	10	110	3.1
Rowe ^c				Tewksbury	44	582	3.8
Rowley	8	64	2.4	Tisbury	9	104	3.4
Royalston	1	9	2.6	Tolland ^d			
Russell ^d				Topsfield	3	24	2.7
Rutland	6	18	0.9	Townsend	11	86	2.3
Salem	67	549	2.3	Truro	9	88	2.8
Salisbury	16	126	2.2	Tyngsborough	12	100	2.3
Sandisfield	2	8	1.5	Tyringham ^c			
Sandwich	20	156	2.2	Upton ^d			
Saugus	37	306	2.3	Uxbridge	23	72	0.9
Savoy ^c				Wakefield	29	284	2.8
Scituate	16	164	3.0	Wales ^c			
Seekonk	29	252	2.4	Walpole	34	241	2.0
Sharon	6	70	3.3	Waltham	88	903	2.9
Sheffield	7	49	2.0	Ware	18	18	0.3
Shelburne	7	76	3.2	Wareham	40	339	2.4
Sherborn	3	27	2.6	Warren ^d			
Shirley	7	57	2.4	Warwick ^c			
Shrewsbury	25	257	2.9	Washington ^c			
Shutesbury	1	1	0.3	Watertown	48	716	4.2
Somerset	29	313	3.0	Wayland	14	190	4.0
Somerville	135	1154	2.4	Webster	31	315	2.9
South Hadley	14	153	3.2	Wellesley	23	242	3.1
Southampton	8	24	0.9	Wellfleet	10	99	2.9
Southborough	12	108	2.6	Wendell	1	10	2.9
Southbridge	26	283	3.1	Wenham	1	29	8.3
Southwick	17	134	2.3	West Boylston	15	40	0.8
Spencer	17	17	0.3	West Bridgewater	16	172	3.1
Springfield	288	3098	3.1	West Brookfield ^b	4	8	1.0
Sterling	6	23	1.1	West Newbury	1	9	2.6
Stockbridge	3	26	2.3	West Springfield	56	566	2.9
Stoneham	25	286	3.3	West Stockbridge	3	29	2.8
Stoughton	46	460	2.8	West Tisbury	4	46	3.3
Stow	7	74	3.1	Westborough	19	196	2.9
Sturbridge	21	201	2.8	Westfield	63	811	3.7
Sudbury	13	123	2.7	Westford	27	255	2.7
Sunderland	6	55	2.9	Westhampton ^d			
Sutton ^d				Westminster	7	73	2.9
Swampscott	16	179	3.3	Weston ^d			
Swansea	29	306	3.1	Westport	20	20	0.3

**Enforcement of Sales to Minors, by Town
January 1999 through June 2002**

Town Name	Number of Vendors ^a	Number of Checks	Average annual checks per establishment	Town Name	Number of Vendors ^a	Number of Checks	Average annual checks per establishment
Westwood	15	132	2.5	Winchester	10	145	4.3
Weymouth	91	620	1.9	Windsor ^d			
Whately	4	35	2.9	Winthrop ^d			
Whitman	17	152	2.5	Woburn ^d			
Wilbraham	12	107	2.5	Worcester	374	2062	1.6
Williamsburg	6	72	3.4	Worthington ^d			
Williamstown	13	124	2.7	Wrentham	18	145	2.4
Wilmington	21	258	3.6	Yarmouth	48	606	3.6
Winchendon	12	109	2.7				

- a Boards of Health report the number of vendors in each town monthly. This can change, so the number of vendors indicated here is the average number reported.
- b The town or city was newly funded in the grant cycle beginning July, 2000, so all stings were performed over 1 ½ years, not 3 ½ years as for the towns and cities funded continuously since January, 1999.
- c It is not known whether there were any tobacco vendors in this town to perform compliance checks on.
- d The town or city was not served by an MTCP-funded Board of Health at any time since January, 1999, so had no MTCP compliance checks performed.
- e The town was not served by an MTCP-funded Board of Health, but compliance checks were done by another Board in December, 2001.

Source: MTCP Management Information System.

**Local MTCP Programs by Town
Fiscal Year 2001**

Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services	Outreach and Referral
Abington	X				X	
Acton	X				X*	
Acushnet	X	X			X	
Adams	X			X	X	
Agawam	X	X				
Alford	X				X	
Amesbury	X	X			X	
Amherst	X*	X	X	X	X	
Andover	X				X	
Aquinnah	X	X				
Arlington	X*				X	
Ashburnham	X					
Ashby	X					
Ashfield	X	X		X	X	
Ashland	X				X	
Athol	X	X		X	X*	X*
Attleborough	X*	X*	X*		X*	X
Auburn	X*					
Avon	X*	X	X			
Ayer	X*					
Barnstable	X*	X*	X*		X*	
Barre	X	X			X	
Becket	X				X	
Bedford	X*				X	
Belchertown		X	X	X		
Bellingham	X*					
Belmont	X*				X*	
Berkley	X	X			X	
Berlin	X					
Bernardston	X	X		X	X	
Beverly	X	X*	X	X	X	X
Billerica	X	X			X	
Blackstone	X				X	
Blandford		X		X		
Bolton	X					

Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services	Outreach and Referral
Boston: Total	X*	X*	X*	X*	X*	X*
Allston/Brighton	X	X	X	X	X*	
Back Bay/Fenway	X	X	X	X	X	X
Central/West End	X	X	X		X	X
Charlestown	X	X	X			X
East Boston	X	X	X*		X*	X*
Hyde Park	X	X	X	X	X*	
Jamaica Plain	X	X	X	X	X*	X
Mattapan	X	X	X	X*	X	X
North Dorchester	X		X*	X*	X*	X*
North End	X	X	X	X	X	X
Roslindale	X	X			X*	
Roxbury	X	X	X*	X*	X*	X*
South Boston	X	X	X*	X*	X*	X
South Dorchester	X	X	X*	X*	X*	X*
South End	X	X	X	X	X	X
West Roxbury	X	X	X			
Bourne	X	X			X	
Boxborough	X					
Boxford					X	
Boylston	X					
Braintree	X	X				
Brewster	X	X				
Bridgewater					X	
Brimfield	X	X	X		X	
Brockton	X*	X*	X*	X*	X*	X*
Brookfield					X	
Brookline	X					X
Buckland	X	X		X	X	
Burlington	X*		X		X	
Cambridge	X		X	X	X	X
Canton	X					
Carlisle						
Carver	X	X			X	
Charlemont	X	X		X	X	X

**Local MTCP Programs by Town
Fiscal Year 2001**

Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services	Outreach and Referral
Charlton	X					X
Chatham	X	X				
Chelmsford	X*	X				
Chelsea	X	X	X*			X
Cheshire	X			X	X	
Chester				X		
Chesterfield				X		
Chicopee				X	X*	
Chilmark	X	X				
Clarksburg				X	X	
Clinton	X	X				
Cohasset	X	X				
Colrain	X	X		X	X	
Concord	X					
Conway	X	X		X	X	
Cummington		X		X		
Dalton	X	X	X*	X	X	
Danvers	X	X		X	X	
Dartmouth	X	X	X		X	
Dedham						
Deerfield	X	X		X	X	
Dennis	X	X	X			
Dighton	X	X	X		X	
Douglas					X	
Dover	X					
Dracut	X					
Dudley	X*				X	
Dunstable	X					
Duxbury	X					
East Bridgewater	X					
East Brookfield	X				X	
East Longmeadow	X*					
Eastham	X	X				
Easthampton	X*	X	X	X		

Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services	Outreach and Referral
Easton	X*			X		
Edgartown	X*	X				
Egremont	X				X	
Erving	X	X		X	X	
Essex	X*	X			X	
Everett	X			X	X	X
Fairhaven	X	X	X		X	
Fall River	X*	X*	X*		X*	
Falmouth	X	X				
Fitchburg	X	X		X*	X*	
Florida				X	X	
Foxborough	X					
Framingham	X*				X*	X*
Franklin	X					
Freetown	X	X			X	
Gardner	X	X	X*		X*	
Georgetown	X	X			X	
Gill	X	X		X	X	
Gloucester	X	X*	X*	X*	X*	
Goshen	X	X	X	X		
Gosnold					X*	
Grafton	X					
Granby	X*			X		
Granville		X				
Great Barrington	X			X	X	
Greenfield	X*	X*	X*	X*	X*	X*
Groton	X					
Groveland	X	X			X	
Hadley		X	X	X	X	
Halifax	X	X			X	
Hamilton	X	X			X	
Hampden		X			X	
Hancock	X				X	
Hanover	X*					

**Local MTCP Programs by Town
Fiscal Year 2001**

Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services	Outreach and Referral	Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services	Outreach and Referral
Hanson	X	X			X		Lincoln	X					
Hardwick	X	X					Littleton	X					
Harvard	X						Longmeadow	X*	X				
Harwich	X	X	X				Lowell	X*	X*	X*	X*	X*	
Hatfield		X		X			Ludlow	X	X				
Haverhill	X*	X*			X		Lunenburg	X					
Hawley	X	X		X	X		Lynn	X	X	X*		X*	X*
Heath	X	X		X	X		Lynnfield	X	X			X	
Hingham	X	X					Malden	X*	X*	X*	X*	X*	X*
Hinsdale	X				X		Manchester	X	X		X	X	
Holbrook	X			X			Mansfield	X*	X				
Holden	X*			X			Marblehead	X	X				
Holland	X	X			X		Marion	X*	X	X		X	
Holliston	X				X		Marlborough	X*		X*		X	
Holyoke	X*	X	X*	X*	X*		Marshfield	X				X	
Hopedale							Mashpee	X	X				
Hopkinton	X						Mattapoisett	X	X	X		X	
Hubbardston	X	X					Maynard	X	X				
Hudson	X				X		Medfield	X				X	
Hull	X	X			X		Medford	X*					X
Huntington		X		X			Medway	X					
Ipswich	X	X		X	X		Melrose	X*	X			X	X
Kingston					X		Mendon	X					
Lakeville	X	X			X		Merrimac	X	X			X	
Lancaster	X						Methuen	X				X	
Lanesborough	X			X	X		Middleborough	X	X			X	X
Lawrence	X*	X*	X*	X*	X*	X	Middlefield				X		
Lee	X*			X	X		Middleton	X			X	X	
Leicester	X*						Milford	X*	X*			X*	
Lenox	X			X	X		Millbury	X					
Leominster	X*	X*	X*	X*			Millis	X*					
Leverett	X	X	X		X		Millville						
Lexington	X				X		Milton	X	X				
Leyden	X	X		X	X		Monroe	X	X		X	X	

**Local MTCP Programs by Town
Fiscal Year 2001**

Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services	Outreach and Referral
Monson	X	X				
Montague	X	X		X	X*	
Monterey	X				X	
Montgomery		X		X		
Mount Washington	X				X	
Nahant	X	X				
Nantucket	X	X			X	
Natick	X*				X	
Needham	X*				X	
New Ashford					X	
New Bedford	X*	X*	X*	X*	X*	
New Braintree	X	X				
New Marlborough	X				X	
New Salem	X	X		X	X	
Newbury	X	X			X	
Newburyport	X	X			X	
Newton	X				X	X
Norfolk	X					
North Adams	X*			X	X*	
North Andover	X				X	
North Attleborough	X*	X				
North Brookfield	X				X	
North Reading	X				X	
Northampton	X*	X*	X*	X	X*	
Northborough	X					
Northbridge	X					
Northfield	X	X		X	X	
Norton	X	X				
Norwell	X	X				
Norwood	X					
Oak Bluffs	X	X				
Oakham	X	X				
Orange	X	X		X	X	X
Orleans	X	X				

Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services	Outreach and Referral
Otis	X				X	
Oxford	X				X	X
Palmer	X	X				
Paxton	X					
Peabody	X	X	X	X	X	
Pelham				X		
Pembroke	X*	X			X	
Pepperell						
Peru					X	
Petersham	X	X		X	X	
Phillipston	X	X		X	X	
Pittsfield	X*	X*		X*	X*	
Plainfield				X	X	
Plainville	X	X				
Plymouth	X	X			X*	
Plympton	X	X			X	
Princeton	X					
Provincetown	X	X				
Quincy	X*	X*	X*	X*	X*	X
Randolph		X				
Raynham	X	X			X	
Reading	X*				X	
Rehoboth	X	X	x		X	
Revere	X	X	X		X*	X*
Richmond	X				X	
Rochester	X	X			X	
Rockland	X				X	
Rockport	X	X		X	X	
Rowe	X	X		X	X	
Rowley	X	X			X	
Royalston	X	X		X	X	
Russell		X		X		
Rutland	X					
Salem	X*	X	X*		X*	X

**Local MTCP Programs by Town
Fiscal Year 2001**

Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services	Outreach and Referral
Salisbury	X	X	X*		X	
Sandisfield	X				X	
Sandwich	X	X			X	
Saugus	X	X	X		X	
Savoy	X	X		X	X	
Scituate	X	X				
Seekonk	X	X	X		X	
Sharon	X					
Sheffield	X				X	
Shelburne	X	X		X	X	
Sherborn	X					
Shirley	X					
Shrewsbury	X					
Shutesbury	X	X		X	X	
Somerset	X	X	X		X	
Somerville	X*		X*	X	X*	
South Hadley	X	X		X	X	
Southampton	X		X	X		
Southborough	X					
Southbridge	X		X*		X*	
Southwick	X	X				
Spencer	X*				X	
Springfield	X*	X*	X*	X	X*	X
Sterling	X					
Stockbridge	X			X	X	
Stoneham	X				X	
Stoughton	X	X		X		
Stow	X	X				
Sturbridge	X				X	
Sudbury	X				X	
Sunderland	X	X		X	X	
Sutton						
Swampscott	X	X				
Swansea	X*	X	X		X	

Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services	Outreach and Referral
Taunton	X	X	X*		X*	X*
Templeton	X	X				
Tewksbury	X*	X			X	
Tisbury	X	X		X*	X*	
Tolland		X				
Topsfield	X	X			X	
Townsend	X					
Truro	X	X				
Tyngsborough	X	X				
Tyringham	X				X	
Upton						
Uxbridge	X					
Wakefield	X*				X	
Wales	X	X			X	
Walpole	X*					
Waltham	X*				X	
Ware	X	X	X*	X	X*	X
Wareham	X	X			X	
Warren					X	
Warwick	X	X		X	X	
Washington	X				X	
Watertown	X*				X	
Wayland	X				X	
Webster	X		X		X*	
Wellesley	X					
Wellfleet	X	X				
Wendell	X	X		X	X	
Wenham	X					
West Boylston	X				X	
West Bridgewater	X	X				
West Brookfield	X				X	
West Newbury	X	X			X	
West Springfield	X*	X			X	
West Stockbridge	X				X	

**Local MTCP Programs by Town
Fiscal Year 2001**

Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services	Outreach and Referral
West Tisbury	X	X				
Westborough	X*				X	
Westfield	X*	X		X		
Westford	X*	X				
Westhampton		X	X	X		
Westminster	X	X				
Weston						
Westport	X	X	X		X	
Westwood	X					
Weymouth	X*	X				
Whately	X	X		X	X	
Whitman	X	X				
Wilbraham	X*	X				

Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services	Outreach and Referral
Williamsburg	X	X	X	X		
Williamstown	X			X	X	
Wilmington	X*				X	
Winchendon	X	X				
Winchester	X*				X	
Windsor					X	
Winthrop					X	
Woburn			X		X*	
Worcester	X*	X*	X*		X*	X*
Worthington				X*		
Wrentham	X					
Yarmouth	X	X	X			

* Indicates there is a program headquartered in that town.

Source: Massachusetts Department of Public Health.

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