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

Seventh Annual Report

***January 1994
to
June 2000***

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The Massachusetts
Department of Public Health

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HIGHLIGHTS: JANUARY 1994 - JUNE 2000

To reduce the public health costs of tobacco use, the Massachusetts Tobacco Control Program (MTCP) informs Massachusetts residents about tobacco risks, provides tobacco treatment services to smokers, and promotes public policies that reduce youth access to tobacco products and limit public exposure to environmental tobacco smoke. The Independent Evaluation annually reviews MTCP's activities and results, this year assessing progress from the program's inception in 1993 through fiscal year 2000. Some of the key findings follow.

Massachusetts' adult smoking rate fell from 22.6 percent to 17.9 percent from 1993 to 2000, an estimated reduction of 228,000 adult smokers.

Massachusetts outpaced states without tobacco control programs in the 1990-1999 decline in smoking rates, even after accounting for differing demographic composition of the populations.

Per-capita cigarette consumption dropped by 36 percent from 1992-2000 in Massachusetts, compared to 16 percent in other states (excluding California, which has a comparable tobacco control program).

Smoking by pregnant women plummeted from 1990 to 1999. The reduction from 25 percent to 11 percent was the greatest percentage decrease of any state over the period.

Youth smoking rates declined from 36 percent to 30 percent from 1995-1999 in Massachusetts, while remaining essentially unchanged in the country as a whole.

Smokeless tobacco use was halved among high school boys in Massachusetts, going from 17 percent to 8 percent between 1993 and 1999.

Exposure to environmental tobacco smoke (ETS) decreased among Massachusetts workers, from 44 percent reporting exposure in 1993 to 29 percent in 2000. The proportion of workers in worksites with smoking bans grew from 53 percent to 75 percent.

ETS exposure at home dropped from 28 percent to 18 percent of Massachusetts residents from 1993 to 2000, while the number of households with visitor smoking bans grew from 43 percent to 66 percent.

ETS exposure in restaurants fell, as the proportion of residents reporting exposure when they eat out went from 64 percent to 39 percent from 1995 to 2000.

Protection by local ordinances and regulations restricting smoking tripled, from 24 percent coverage of the Massachusetts population in 1993 to 78 percent in 2000. Population coverage of **youth access provisions quadrupled**, from 21 percent to 90 percent.

Retailer compliance with the prohibition on tobacco sales to youth increased sharply from 1994 to 2000. Compliance rates rose from 53 percent to 89 percent.

Public support for tobacco control keeps growing, with more than 50 percent of Massachusetts residents in 2000 favoring complete smoking bans in shopping malls, indoor sports events, public buildings, and restaurants.

State-level law and regulation stiffened, with new excise taxes, advertising restrictions, smoking restrictions, and consumer protection policies.

Part 1:

Summary of MTCP Activities and Effects

Chapter 1: The Massachusetts Tobacco Control Program, 1993-2000

Tobacco remains the leading cause of preventable death in Massachusetts as well as the nation, causing over 9,500 deaths each year in Massachusetts alone.¹ Smokers lose a combined 100,000 years of potential life annually.² In addition to lost productivity, the cost of caring for people with smoking-related illnesses surpasses \$2 billion a year.³

To combat this public health problem, the Massachusetts Tobacco Control Program (MTCP) addresses three main goals:

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

Program Structure, Organization and Services

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. The major programmatic initiatives are described below.

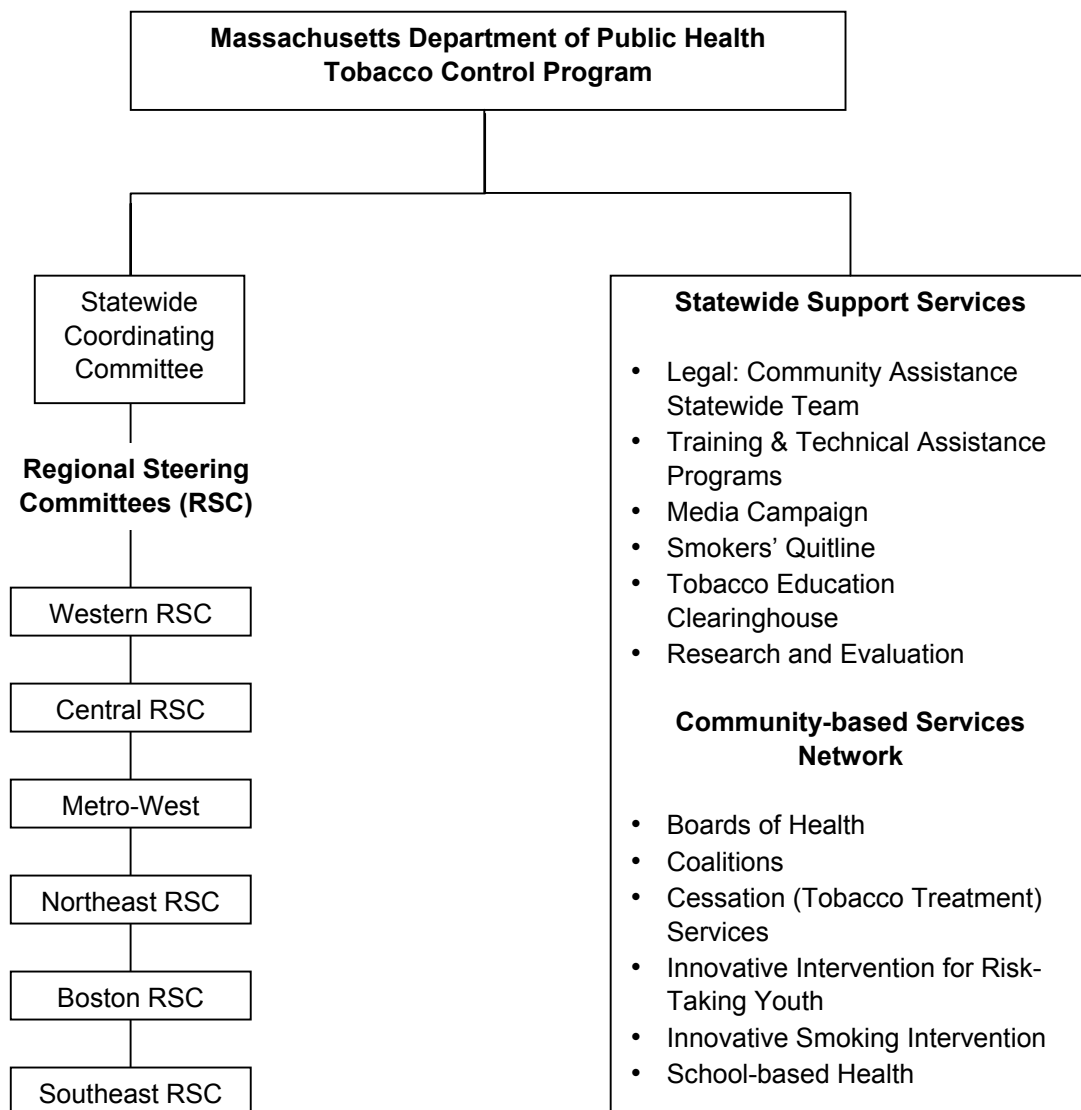
Media campaign

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. The media campaign educates 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.

Exhibit 1.1
Massachusetts Tobacco Control Program
Organizational Chart



The *Public Education Media Campaign* targets the general population and is aimed at raising awareness of an important public health issue, tobacco control. The general campaign explains tobacco control issues to the public and communicates a “call-to-action.” *Strategic and Targeted Marketing* targets select populations, such as populations with high smoking prevalence, with customized messages. Both components of the media campaign tailor public relations and advertising initiatives to community-based strategies.

MTCP community-based programs

In late 1993 and early 1994, MTCP began funding statewide, regional, and local tobacco control programs and services. MTCP now funds 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 below.

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. Boards and collaboratives (multiple Boards acting as a group) have been funded in 298 of the 351 cities and towns in Massachusetts.
- ***Tobacco Free Community Mobilization Networks⁴ (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. Eighteen Community Mobilization Networks, each covering geographic areas with populations of 125,000 or greater assist local tobacco control programs to plan and coordinate activities.
- ***Youth Action Alliances⁴*** are structured youth skill-building programs that foster youth leadership in tobacco control. Structured experiences within the 44 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.

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).***⁴ Tobacco Treatment Services are located in hospitals, health centers and other community-based agencies. The 52 funded programs offer assistance to smokers in the form of behavioral counseling, combined with pharmacological treatments.

(Beginning in July 2000, tobacco services are provided by Tobacco Treatment Specialists, who are required to participate in an intensive certification process provided by the University of Massachusetts Medical Center.)

- ***Outreach and Referral Programs (O&R)***⁴ 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. The programs 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.
- ***Innovative Smoking Intervention Programs (ISI)***⁴ 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. ISI programs 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.

MTCP statewide programs and services

The Massachusetts Tobacco Control Program funds 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), managed by the American Cancer Society, 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.

- ***The Tobacco Education Clearinghouse***, operated by the John Snow Institute, Inc., assesses and acquires new tobacco education materials from sources nationally; develops materials to meet MTCP needs; and fills orders for tobacco education materials and ships within the state and nationally. The Clearinghouse also offers training and technical assistance on educational materials development to community-based programs.

(Beginning in August 2001, the Tobacco Education Clearinghouse, Smokers Quitline, and the website, www.trytostop.org, are administered under one lead agency, the John Snow Institute, Inc., as the MTCP Resource Center.)

- ***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. Three Capacity Building projects jointly form the Community Assistance Statewide Team (CAST), which 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.

Funding and Budget

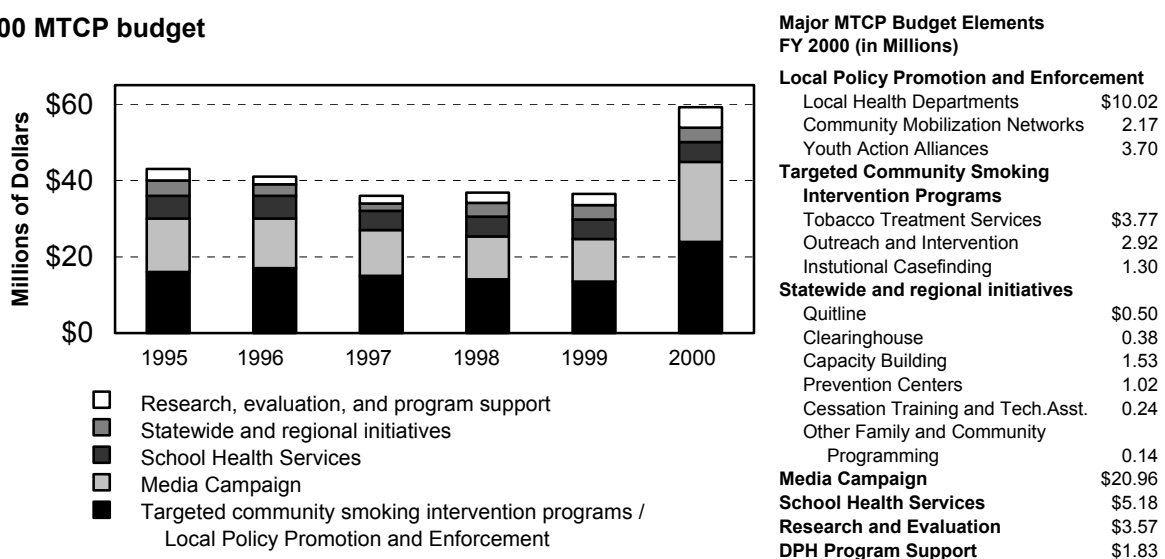
MTCP is funded mainly by appropriations from the Health Protection Fund, which receives revenue from a 25 cent excise tax on each pack of cigarettes and each unit of smokeless tobacco sold in the Commonwealth. The Massachusetts legislature appropriates funds from the Health Protection Fund each year. The 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 Beginning in fiscal year 1999, MTCP has also received funding from the U.S. Centers for Disease Control and Prevention (CDC).

Appropriations from the Health Protection Fund, which have ranged from \$113 million to \$130 million annually since 1994, target a range of health protection programs including tobacco education and surveillance. The MTCP budget, which accounts for only a portion of the Fund's appropriation, had fallen from \$43 million in fiscal year 1995 to \$37 million in fiscal year 1999, a decline of 15 percent. Funding from the Master Settlement Agreement between the attorneys general of 46 states, including Massachusetts, and the four largest tobacco companies in the nation provided for a one-time increase, bringing the budget to \$59 million for fiscal year 2000.

It is useful to put the MTCP budget in the perspective of the value of marketing expenditures by the tobacco industry. Industry advertising and promotional expenditures in 1999 totaled \$8.24 billion, or

Exhibit 1.2

2000 MTCP budget



Source: Massachusetts Department of Public Health

almost \$29 for every person in the United States.⁶ The MTCP budget for the same year represents less than \$6 per Massachusetts resident.

Research and Evaluation

The MTCP not only implements tobacco control programming based on existing knowledge, but also supports research to expand that knowledge. The research grant program funded 14 Massachusetts research teams in FY 2000. Several projects are investigating tobacco-related issues for special populations, including college students in general, college-age women, adolescents, cigar-using youth, youth with developmental disabilities, schizophrenics, and populations in locations with abnormal rates of tobacco-related death. The range of topics also includes tobacco industry strategies, town-level measures of tobacco control and tobacco-related health problems, levels of ETS exposure under alternative regulations, and biochemical processes in tobacco-related disease.

To assess the effectiveness of MTCP's programmatic efforts, the Department of Public Health funds an independent 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.

This seventh annual report describes MTCP activities and their results through June 2000. The report presents data demonstrating the pattern and pace of changes since the inception of MTCP. Descriptions of current MTCP programs and events refer to the status existing in fiscal year 2000 (July 1999 through June 2000).

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 for individuals: 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 contains analyses exploring the extent to which the observed progress can be attributed to Massachusetts' tobacco control efforts. Chapter 2 describes in broad terms the MTCP activities that have been undertaken since 1993. Chapters 3 and 4 examine adult and youth smoking prevalence, respectively, comparing trends in Massachusetts to those in the rest of the country. Chapter 5 assesses the case for attributing the growth of local tobacco control ordinances to MTCP funding of local Boards of Health. Finally, Chapter 6 addresses the question of whether and how Massachusetts' social norms regarding tobacco have changed since MTCP began in 1993.

Decline in Adult Smoking

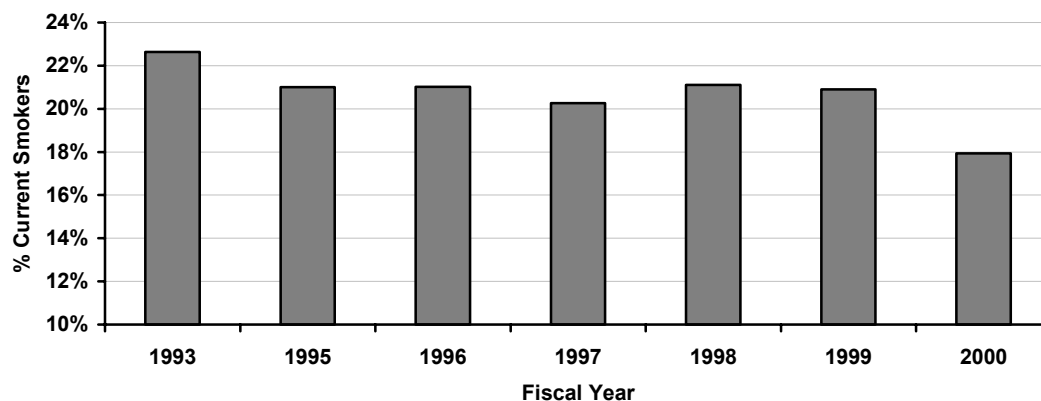
Adult smoking in Massachusetts has declined significantly since MTCP began in 1993.

In 2000, the Massachusetts Adult Tobacco (MATS) survey found that 17.9 percent of Massachusetts adults were current smokers. This compares very favorably to the 22.6 percent found in 1993 by the Massachusetts Tobacco Survey (MTS). This reduction of 4.7 percentage points amounts to about 228,000 adults, based on the 2000 population.

The surveys have shown a generally downward trend in Massachusetts since 1993, as indicated in Exhibit 1.3. The 1993-2000 difference is statistically significant.⁷

Exhibit 1.3

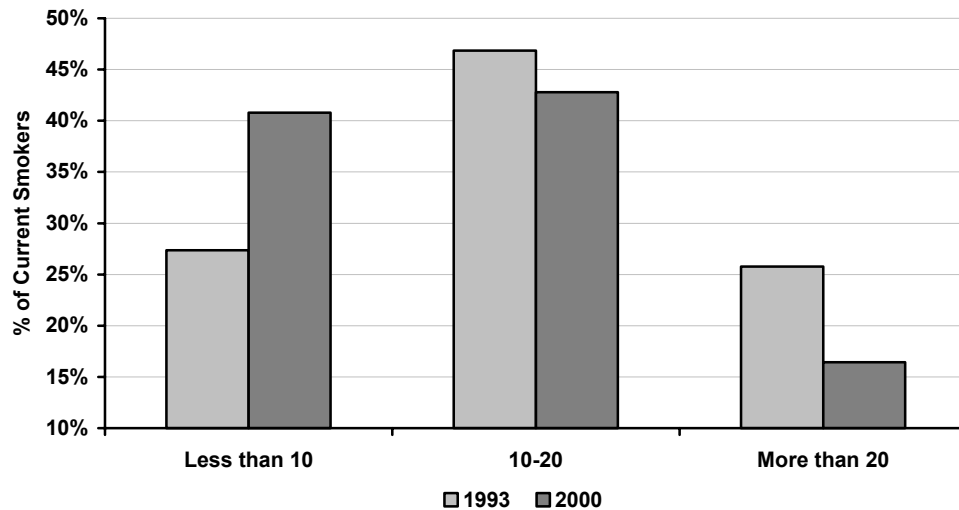
Adult Smoking Prevalence in Massachusetts



Source: Massachusetts Tobacco Survey (1993), Massachusetts Adult Tobacco Survey (1995-2000).

Massachusetts' adult smoking prevalence declined even though no such improvement was occurring for most of the United States, according to an analysis of data from the Behavioral Risk Factor Surveillance System (see Chapter 3). This 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.

Smokers are smoking fewer cigarettes per day. Among Massachusetts' adult smokers, 41 percent reported smoking less than half a pack of cigarettes per day in 2000, while only 16 percent smoked more than a pack a day (Exhibit 1.4). This is a significant improvement from 1993, when only 27 percent smoked less than half a pack daily and 26 percent smoked more than a pack. The average daily number of cigarettes fell from 19.5 in 1993 to 15.2 in 2000.

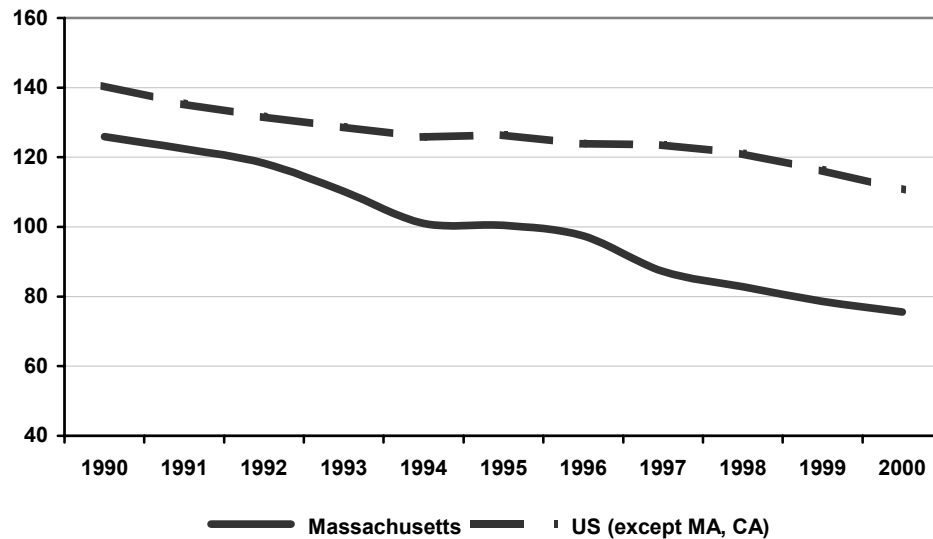
Exhibit 1.4**Cigarettes smoked per day by adult smokers**

Source: Massachusetts Tobacco Survey (1993), Massachusetts Adult Tobacco Survey (2000).

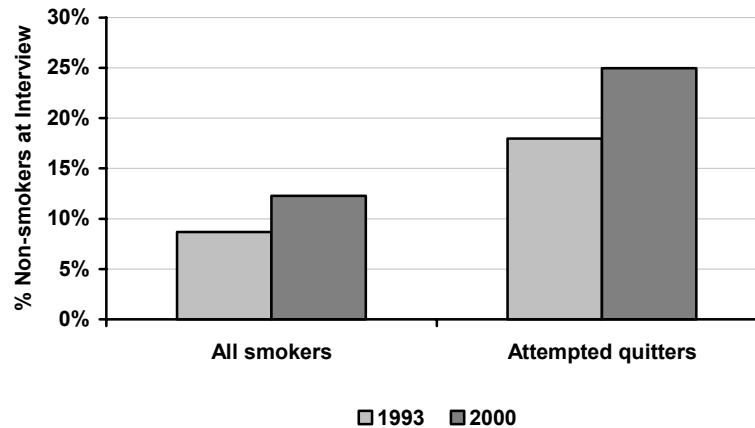
Per capita consumption of cigarettes in Massachusetts fell even more sharply. In 1990, cigarette sales in Massachusetts amounted to 126 packs for every resident over age 18. That number declined slightly to 118 packs in 1992. In the following years, when the tobacco control programming and tobacco excise tax mandated by Question 1 were implemented, consumption fell dramatically, reaching a level of 76 packs per adult in 2000.

Like the decline in prevalence, Massachusetts' drop in cigarette consumption was considerably greater than that seen in the rest of the country. Consumption fell by 36 percent from 1992-2000 in Massachusetts, but by only 16 percent in the other states, as shown in Exhibit 1.5 (California, which also had a comprehensive tobacco control program during this period, is excluded from the comparison).

Quitters are becoming more successful, which probably accounts for some of the reduction in smoking prevalence. Among smokers who attempted to quit in the year before the survey, 25 percent of those in the 2000 survey were still not smoking at the time of the interview (Exhibit 1.6). This is a significant improvement from the 18 percent success rate in 1993.

Exhibit 1.5**Packs of cigarettes purchased 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 1.6**Quit success among those smoking last year**

Source: Massachusetts Tobacco Survey (1993), Massachusetts Adult Tobacco Survey (2000).

About half of all smokers attempt to quit each year, a proportion that has remained fairly constant over the study period. Thus the increasing success rate translates into an increasing number of smokers quitting. Of those smoking in the year before the 2000 survey, 12 percent quit and were still not smoking at the time of the interview. The comparable figure in 1993 was 9 percent (Exhibit 1.6).

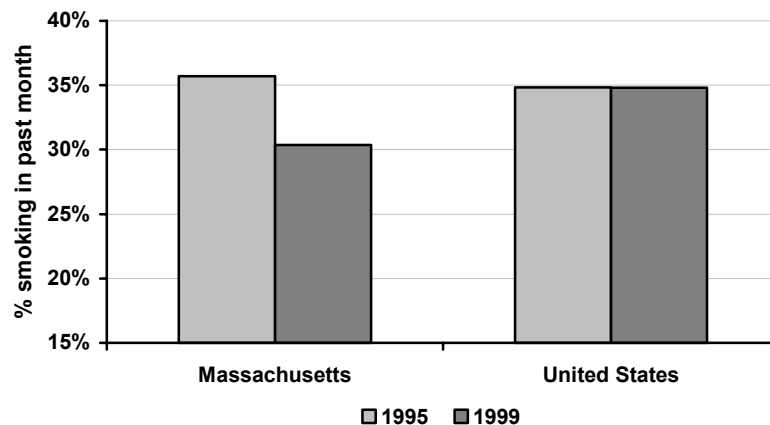
Fewer pregnant women are smoking. Vital statistics indicate that 11 percent of new Massachusetts mothers smoked during pregnancy in 1999, down from 25 percent in 1990.⁸ The national rate declined from 18 percent to 12 percent in the same period. Massachusetts had the steepest reduction of any state (only the District of Columbia had a greater percent decline).

Youth Smoking Reduction

Youth smoking prevalence declined from 1995-1999 in Massachusetts, contrary to the national trend. According to the Youth Risk Behavior Survey (YRBS), 30 percent of Massachusetts high school students smoked within the month prior to the survey (Exhibit 1.7). This represents a significant reduction from the 36 percent smoking rate reported in 1995.

Exhibit 1.7

Prevalence of current smoking among high school students



Source: 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 trend will continue downward in future years. For the United States as a whole, the YRBS shows essentially no change from 1995 to 1999 in prevalence of current smoking. The Massachusetts decline is significantly different from the US trend, even after controlling for differences in the demographic composition of the population (see Chapter 4). The reduced smoking prevalence in Massachusetts therefore can be attributed to Massachusetts' tobacco control efforts.

Smokeless tobacco use also fell in Massachusetts. Among high school boys, 8 percent reported using smokeless tobacco during the past month in the 1999 YRBS, compared to 17 percent in 1993.

The US as a whole experienced a smaller reduction, from 20 percent to 14 percent over the same period.

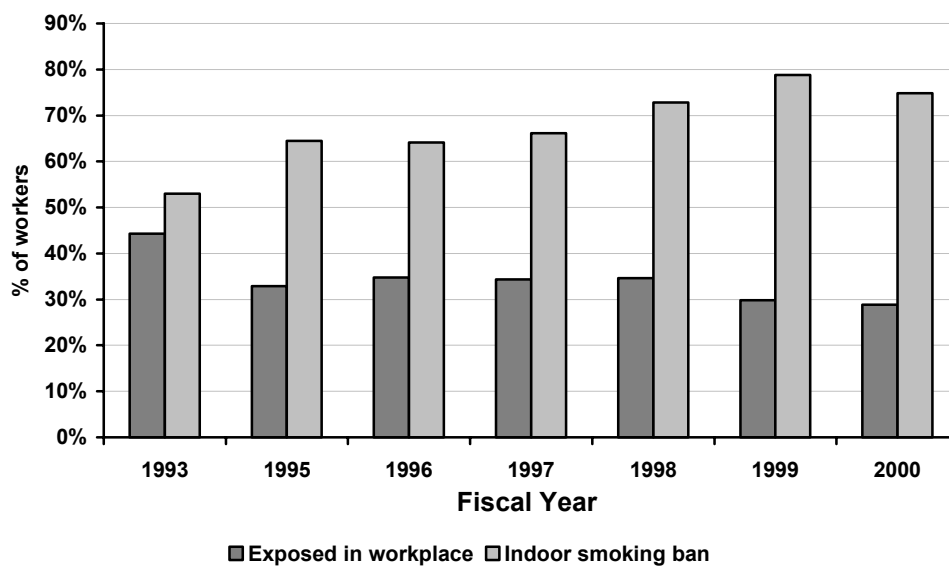
Decreased ETS Exposure

Workers are less exposed at work. In 2000, 29 percent of Massachusetts residents employed indoors, and outside their home, reported some exposure to other people's tobacco smoke in the week before the survey (Exhibit 1.8). This represents a reduction of more than one-third from the 44 percent who reported workplace ETS exposure in the 1993 survey, a statistically significant improvement. The average weekly hours of exposure in the workplace fell from 4.5 hours to 1.4 hours.

Workplace smoking bans have become much more common over the 1993-2000 period, almost certainly contributing to the reduction in ETS exposure. Just over half (53 percent) of the workers in the 1993 survey indicated that their workplace had an official policy prohibiting smoking throughout the building. That figure grew to 75 percent in 2000, a statistically significant increase.

Exhibit 1.8

ETS exposure in the workplace



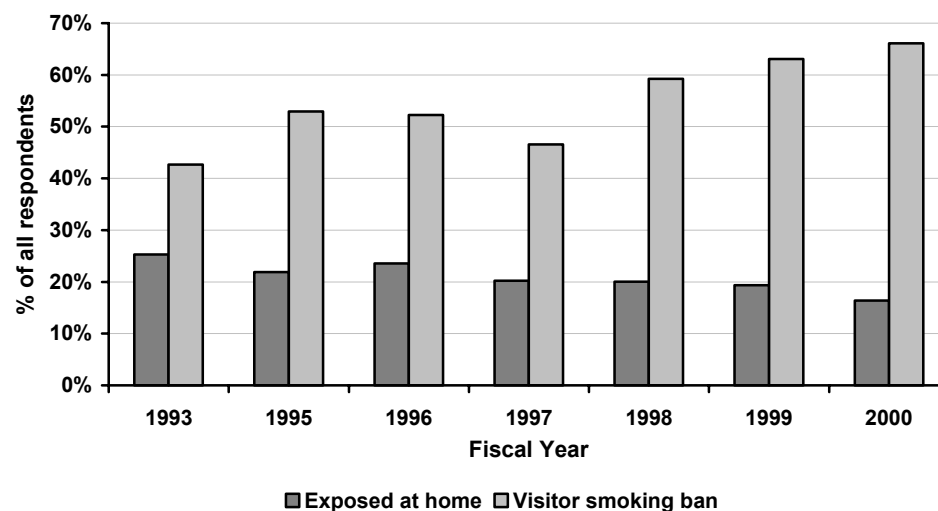
Source: Massachusetts Tobacco Survey (1993), Massachusetts Adult Tobacco Survey (1995-2000).

Fewer people are exposed at home. Just 18 percent of Massachusetts residents said they were exposed to other people's tobacco smoke in their home during the week before the 2000 survey (Exhibit 1.9). This is a reduction of more than a 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 3.3 over that period.

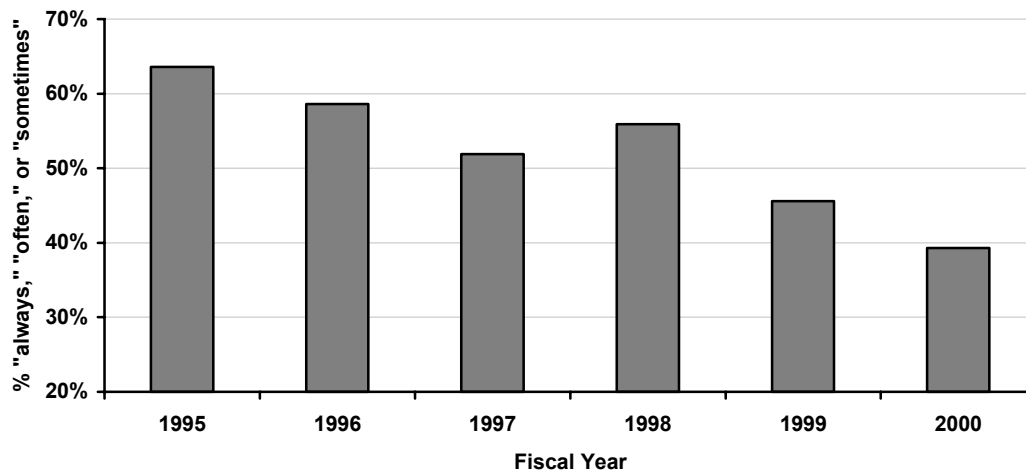
The declining ETS exposure in the home reflects an increase in household policies restricting smoking by visitors. Fewer than half of all Massachusetts residents (43 percent) said in the 1993 survey that they do not allow visitors to smoke in their home. The proportion with bans grew to 66 percent in 2000, a statistically significant improvement.

Exhibit 1.9

ETS exposure at home



Source: Massachusetts Tobacco Survey (1993), Massachusetts Adult Tobacco Survey (1995-2000).

Exhibit 1.10**ETS exposure in restaurants**

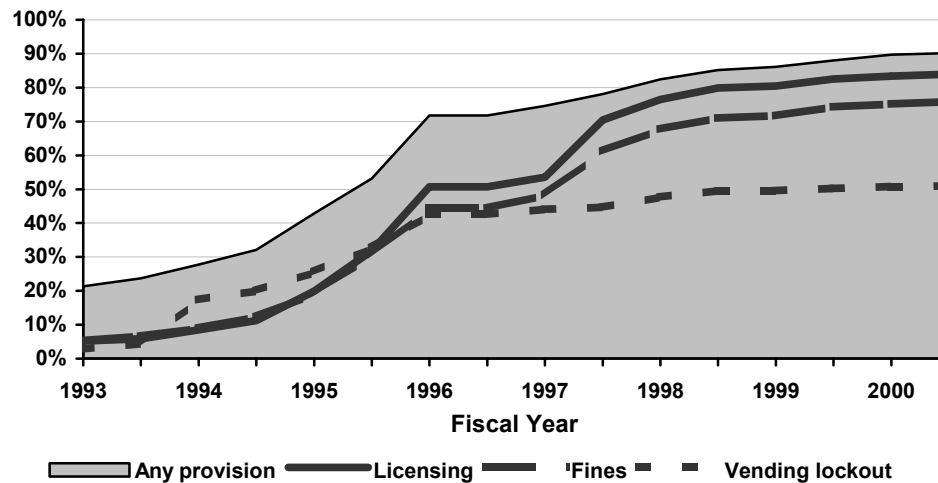
Source: Massachusetts Tobacco Survey (1993), Massachusetts Adult Tobacco Survey (1995-2000).

The reduced ETS exposure in restaurants reflects the proliferation of local ordinances and regulations restricting smoking in restaurants. As discussed below, the population covered by such restrictions increased from 26 to 69 percent of all Massachusetts residents between 1995 and 2000.

Restaurant exposure also declined by more than one-third. Among Massachusetts residents who report eating at restaurants, 39 percent said in the 2000 survey that they sometimes, often, or always are exposed to other people's tobacco smoke when they eat out (the other possible responses were "rarely" or "never") (Exhibit 1.10). This is significantly lower than the 64 percent exposure rate reported by respondents to the 1995 survey, when the question was first asked.

Increased Local Policy Adoption and Enforcement

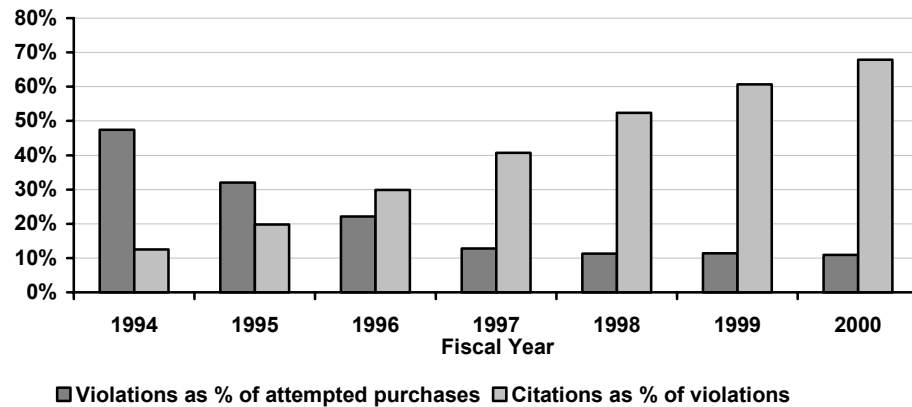
Youth access restrictions have increased dramatically. Towns across the Commonwealth have adopted local ordinances or regulations intended to reduce young people's ability to purchase tobacco products and their exposure to local tobacco marketing. In fiscal year 2000, 90 percent of Massachusetts residents lived in the 236 cities and towns that had one or more youth access provisions in place (Exhibit 1.11). This represents more than a four-fold increase since 1993 in the coverage of such provisions. Analysis reported in Chapter 5 shows that towns that received MTCP funding were significantly more likely than comparable non-funded towns to adopt such provisions.

Exhibit 1.11**Percent of population covered by youth access provisions**

Source: Massachusetts Department of Public Health.

The most common approach to restricting youth access is to establish licensing requirements for retailers selling tobacco products, often in conjunction with the specification of fines for selling 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, a ban on vending machine sales of tobacco except in adult-only establishments, or a complete ban on vending machines.

Retailers increasingly comply with the law prohibiting tobacco sales to youth. MTCP-funded boards of health have supervised attempts by youth to purchase tobacco since 1993. The violation rate—the percent of purchase attempts resulting in an illegal sale—has dropped sharply over time, reaching 11 percent in 2000 (Exhibit 1.12). The improved retailer performance reflects stronger enforcement, as the local boards of health have increased their monitoring intensity and their use of penalties (citations, fines, or license suspensions) when they find violations.

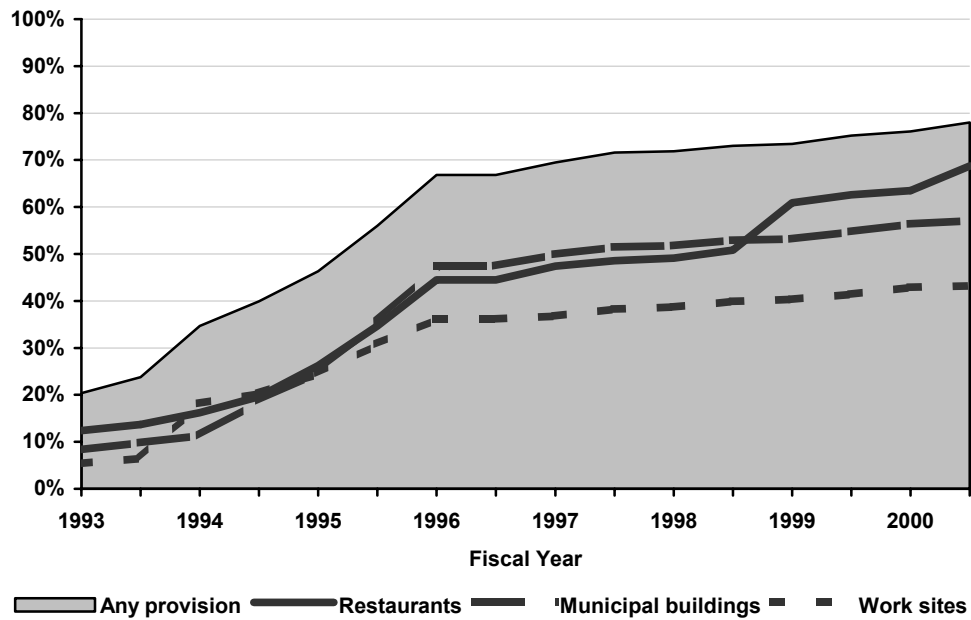
Exhibit 1.12**Results of underage purchase attempts**

Source: MTCP Management Information System.

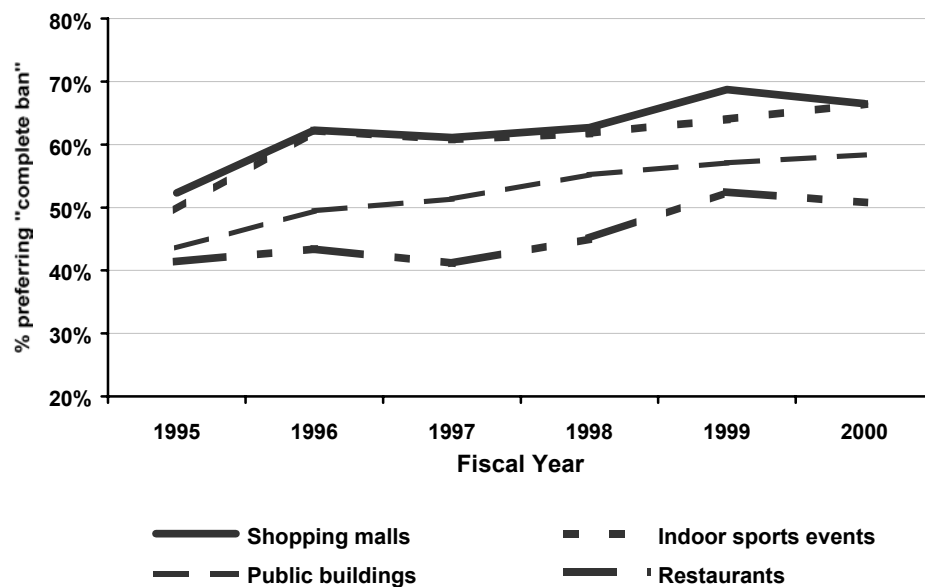
Local ETS restrictions have become widespread. At the end of 2000, 78 percent of Massachusetts residents lived in a town with some form of restriction on smoking in public places (Exhibit 1.13). That is more than triple the 24 percent who were protected in 1993, before MTCP began.

Restaurant smoking restrictions have become the most common type of ETS provision. In 2000, restaurant restrictions were in effect in 164 cities and towns representing 69 percent of the Massachusetts population. Complete restaurant smoking bans were in place in 102 of those towns, covering 45 percent of the population.

Public support for clean indoor air policies keeps growing. More than half of Massachusetts residents in the 2000 survey supported complete smoking bans in shopping malls, public buildings, indoor sporting events, and restaurants (Exhibit 1.14). The proportion supporting each of these policies has increased significantly since 1995.

Exhibit 1.13**Percent of population covered by ETS provisions**

Source: Massachusetts Department of Public Health.

Exhibit 1.14**Public support for clean air policies**

Source: Massachusetts Adult Tobacco Survey (1995-2000).

Stronger State-level Policies

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 in Massachusetts. New additions to the tobacco control landscape during the period of MTCP include:

Tax and economic policies

- Cigarette excise tax increases of \$0.25 per pack in 1992 and 1996;
- Smokeless tobacco excise tax increases of 25 percent of wholesale price in 1992 and 1996;
- New cigar excise tax of 15 percent in 1996;
- State pension fund prohibited from investing in tobacco companies in 1998; and
- Increase in cigarette prices resulting from Master Settlement Agreement in 1998.⁹

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).

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).

Endnotes

- ¹ *Smoking-Attributable Mortality, Morbidity, and Economic Costs. Massachusetts, 1998* and similar reports for 1996 and 1997. The Bureau of Health Statistics, Research and Evaluation, Massachusetts Department of Health. November 1999.
- ² *Smoking-Attributable Mortality, Morbidity, and Economic Costs. Massachusetts, 1998* and similar reports for 1996 and 1997. The Bureau of Health Statistics, Research and Evaluation, Massachusetts Department of Health. November 1999.
- ³ *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.
- ⁴ Prior to June, 2000, Community Mobilization Networks were called Coalitions; Youth Action Alliances were called Innovative Intervention for Risk-Taking Youth Programs; Outreach and Referral programs were combined with Innovative Smoking Intervention in one program type—Innovative Outreach and Intervention; and Tobacco Treatment Services were referred to as Cessation Programs or, in institutions that provide health-care, as Institutional Casefinding Programs. In fiscal year 2000, there were 35 funded Innovative Outreach and Intervention programs.
- ⁵ Massachusetts General Laws, Chapter 29, Section 2GG.
- ⁶ Federal Trade Commission Cigarette Report for 1999. Issued 2001. U.S. and Massachusetts population figures used in calculating per capita expenditures are from the 2000 Census.
- ⁷ Statements regarding statistical significance refer to probabilities of 0.05 or less unless otherwise noted.
- ⁸ Mathews, T. Smoking During Pregnancy in the 1990s. *National Vital Statistics Reports* 2001; 49-7,1-12.
- ⁹ 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.

Part 2

Selected Analyses of MTCP Activities and Effects

Chapter 2: MTCP Strategies and Activities

The Massachusetts Tobacco Control Program (MTCP) pursues three broad goals:

- preventing non-smokers, particularly youth, from beginning to use tobacco;
- getting current smokers to quit; and
- reducing people's exposure to environmental tobacco smoke (ETS).

In pursuing these goals, the statewide and local MTCP programs identified in Chapter 1 implement a great variety of interrelated interventions. Most programs pursue all three MTCP goals, although some clearly emphasize one of the goals. Youth action alliances, for example, devote most of their effort to preventing youth from starting to use tobacco, and tobacco treatment services programs focus most strongly on helping smokers quit successfully. Practically all of the programs use multiple kinds of interventions, ranging from education and awareness activities targeted to broad audiences to one-on-one interactions with members of the community.

This chapter presents an overview of the major strategies that guide the MTCP programs, brief descriptions of some of the interventions they have recently implemented, and data that show some of the MTCP's strategic evolution over time. Subsequent chapters examine the extent to which these strategies and interventions have resulted in movement toward the MTCP goals.

Data Sources and Methods

The primary source of quantitative data in this chapter is the MTCP Management Information System (MIS). All local programs and some statewide programs submit data on their activities in monthly reports that include summary statistics and detailed data on individual activities carried out during the month. Information about program activities in this chapter is based on the MIS unless otherwise noted.

Reporting rates for the MIS rarely reach 100 percent in a given month (Exhibit 2.1) and particular data elements may be omitted within a submitted report. The counts of services presented in this chapter have not been adjusted for underreporting, and therefore represent a lower-bound estimate of the actual level of activity and number of people served.

Exhibit 2.1**Average Reporting per Month**

		1995	1996	1997	1998 ^a	1999	2000	Program average
Boards of Health	% reporting	81%	86%	83%	85%	96%	92%	87%
	# funded programs	80	84	80	73	73	73	
Community Mobilization Networks	% reporting	97%	92%	93%	65%	86%	85%	86%
	# funded programs	16	18	19	18	18	18	
Outreach and Referral / Innovative Smoking Intervention	% reporting	91%	93%	93%	72%	94%	88%	88%
	# funded programs	29	32	32	35	35	35	
Youth Action Alliances	% reporting	89%	87%	85%	78%	91%	90%	87%
	# funded programs	39	43	45	44	44	44	
Tobacco Treatment Services	% reporting	94%	89%	87%	63%	90%	84%	84%
	# funded programs	62	64	64	50	48	50	
Overall		89%	88%	87%	74%	93%	88%	86%

Information about media activities comes from Arnold Worldwide, the advertising agency responsible for MTCP media and public relations activities. Arnold provided documentation including videotapes of televised advertisements and special events, images used in billboard and newspaper advertising, and dissemination reports.

Goal 1: Prevent Tobacco Use Among Youth

The MTCP employs two main strategies—education and policy—for preventing tobacco use initiation among youth. The education strategy seeks to have every Massachusetts youth receive a continuous stream of messages, from differing sources, about the negative health consequences and social undesirability of tobacco use. The policy strategy works to erect institutional barriers between youth and tobacco, to increase the difficulty of smoking and also to provide a further signal that youth smoking is contrary to social norms.

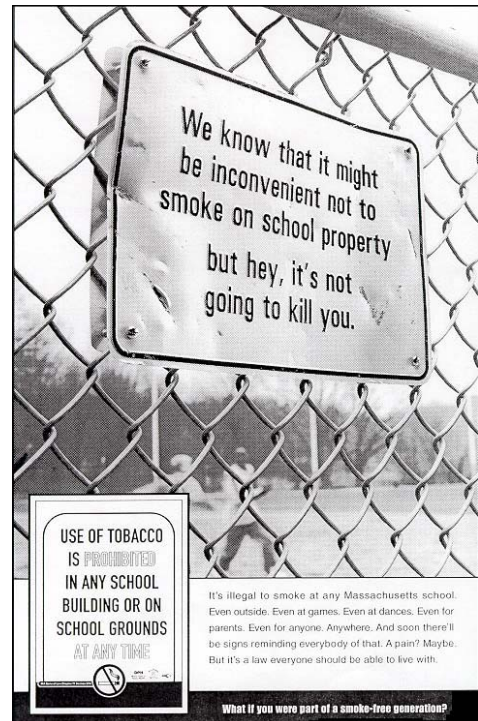
Educating Youth about Tobacco

The MTCP education strategy is implemented through three channels: schools, peer groups, and the media. Some of the principal activities using each channel are described below.

Reaching children in school

Many local MTCP programs work with schools in their area to deliver anti-tobacco messages to students. Since 1994, almost 9000 events—a quarter of all events reported by relevant programs each year—were held at schools. Among the events held in schools, 41 percent have been classroom or auditorium presentations by outside speakers. Many of the speakers have developed diseases or lost family due to tobacco, and they include several of the individuals who have appeared in statewide media campaigns. Recreational activities with a tobacco theme (16 percent) and health fairs (10 percent) are the other two common types of events in schools.

- A coalition of MTCP programs in the Metrowest and Central regions used public relations initiative funds to help local schools implement smoke-free policies. Innovative signs remind visitors that smoking is not allowed, even on athletic fields. The humorous messages, such as “We know that it might be inconvenient not to smoke on school property... but hey, it’s not going to kill you” were so well received that the program went statewide. About 3,000 metal signs were distributed to high schools and middle schools, along with 9,000 decals designed for windows and bathroom mirrors.



The special events conducted by local MTCP programs complement the schools' ongoing tobacco education curriculum. The Massachusetts Department of Education administers a Comprehensive School Health Education program, which has been funded out of the Health Protection Fund at an annual level of about \$23 million since 1993. Findings of the most recent evaluation of the program indicate substantial emphasis on tobacco education and control:

- All Massachusetts school districts have a tobacco free schools policy for students and staff, with 92 percent including a policy of expulsion or suspension of students for violations, and 91 percent including consequences for teachers who violate the policy;
- 98 percent of Massachusetts public middle and high schools teach tobacco use prevention with a curriculum that includes refusal skills;

- 63 percent of school districts offer tobacco treatment programs for students, averaging 10 hours in duration.¹

The MTCP statewide and local programs often work with schools to make sure that the messages that children receive in and out of school are complementary and reinforcing. One important dimension of this coordination has been teaching teens to understand and withstand the tobacco advertising and promotion to which they are incessantly exposed.

- Arnold Worldwide, the MTCP media vendor, assembled the *Smoke-Screeners* multi-media educational kit. Containing a video and posters, this kit has been distributed to middle schools throughout Massachusetts since 1998.
- The Tobacco Free Greater Franklin County tobacco control program created workshops on media literacy for youth in grades 7 through 12. The workshops have drawn 1,183 youth participants and 303 adults.
- *Squares Ain't Hip—See Through The Smoke Screen* produced 32-square-foot screens with anti-tobacco messages. A mosaic of the screens was displayed at various public places on the North Shore as one mural.

Using peers to educate

MTCP-funded youth action alliance participants are encouraged not to rely solely on their own impressions of their target population's knowledge and attitudes, but to collect and analyze data. The programs have conducted hundreds of focus groups and surveys since 1994 (Exhibit 2.2), using the information to plan their outreach and education programs.

Exhibit 2.2

Focus groups and surveys of youth

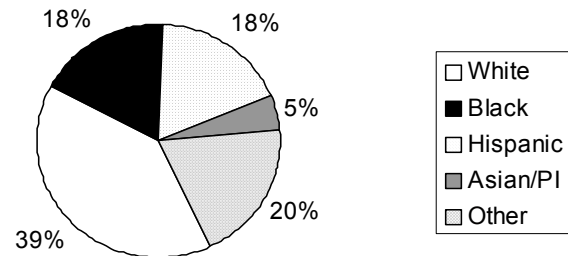
		1994	1995	1996	1997	1998	1999	2000
Focus groups	# groups	39	39	35	33	27	24	28
	# participants	1472	982	708	492	1084	520	610
Written surveys	# surveys	45	54	34	53	56	48	55
	# respondents	6961	7143	3454	8833	6180	4599	3006
Interviews	# surveys	38	45	34	43	26	25	26
	# respondents	2499	2848	1364	3079	1803	1164	744

- During 1999, three youth action alliances in the Northeast region surveyed 187 students about smoking policies in their schools and found widespread frustration with a lack of enforcement of restrictions, particularly in student bathrooms.
- Also in the last year, two youth action alliances—one in the Southeast region and the other in the Western region—surveyed 390 high school smokers and found that about a third were interested in quitting.
- In the spring of 2000, three agencies that specialize in media campaigns in communities of color conducted focus groups and surveys to get specific feedback from minority youth. These agencies are using that feedback to develop effective, targeted campaigns.

MTCP-funded youth action alliances enlist youth as peer leaders. These young people learn about tobacco issues and engage them in efforts both to educate and to bring about policy change in their community. The peer leaders then develop and implement programs to convince other teens that tobacco is harmful, addictive, and not worth using.

Over 1,700 teenagers have worked as MTCP peer leaders. Almost all (92 percent) are paid, allowing a broader spectrum of youth to participate than might otherwise be the case. Over 1998-2000, about two-thirds of the peer leaders were girls and one-third boys. Their racial and ethnic backgrounds are quite diverse, as shown in Exhibit 2.3.

Exhibit 2.3:
Peer Leaders by Racial/Ethnic Group



The youth action alliances carry out a great deal of one-on-one outreach and persuasion. In addition, they often use large events and initiatives draw many teens and help create a sense of urgency and energy (Exhibit 2.4).

- A Smoke-Free Walk & Jam in June drew more than 200 MTCP peer leaders from throughout the state. They joined the Boston Area Youth Tobacco Action Group in a two-mile walk through the city, chanting anti-tobacco messages and distributing information. Following the walk, entertainment included watching and rating anti-tobacco advertisements that aired and others that were banned after being challenged by the tobacco industry and hearing success stories and testimonials.

- Young people sent a petition with 1,021 signatures, as well as 759 individual letters, to Vogue Magazine protesting tobacco advertising in magazines. The 5 City Tobacco Control Collaborative reached these youth through schools and colleges, churches, libraries, health fairs, health centers, community-based organizations, clubs, businesses, and urban housing developments.

Peer leaders are also involved with promoting and enforcing tobacco control regulations, as discussed later in this chapter.

Exhibit 2.4

Number of youth involved in local MTCP activities^a

	1994	1995	1996	1997	1998	1999	2000
Community Mobilization Network meetings	318	665	431	439	348	492	473
Board of health activities	691	1362	920	1034	779	893	995
Advocacy activities	927	1322	1111	903	728	629	1183

^a Number of youth reported as participating in distinct activities; an individual participating in two activities is counted twice.

The media message for youth

Using television and radio to reach youth across the state has been a cornerstone of MTCP programming since its inception. MTCP youth-oriented advertising was most intense in 1994-1997 (Exhibit 2.5). As national advertising campaigns aimed at youth increased, MTCP advertising on this theme declined.

Exhibit 2.5

Advertising aimed at youth

		1994	1995	1996	1997	1998	1999 ^a	2000 ^a	Total
Television	# ads	9	15	13	8	10	4	0	38 ^b
	Total gross rating points ^c	4,125	3,401	4,823	3,150	1,701	600	0	17,800
Radio	# ads	4	11	10	6	3	2	0	22 ^b
	Total gross rating points ^c	2,548	2,700	5,100	1,952	1,050	600	0	13,950

^a There were no advertisements after March, 1999 because a national campaign aimed at youth was underway.

^b The total is less than the sum of individual years because some advertisements are shown in multiple years.

^c Gross Rating Points (GRP's) measure the percentage of households that is tuned in to the show, or advertisement, of interest. The total GRP's for a year reflect both the number of times an advertisement was aired and the number of households that saw it.

Note: These figures include only advertisements aimed at a general audience, not those targeted to specific linguistic or other groups.

Source: Arnold Worldwide.

In 1999, almost all teenagers (90 percent) were able to remember seeing an anti-tobacco ad on television and many (70 percent) remembered two. They gave the ads an average rating of 7.6 on a scale of 0 (“not good”) to 10 (“very good”). One third of teenagers remember seeing an anti-smoking billboard—which are even more likely to be MTCP ads than national ads—and rated them 6.7 on the same scale.²

MTCP research has shown that youth respond strongly to advertisements about real families who have suffered due to tobacco-related illness in people they love.³ Stories of people who had adverse health outcomes while still relatively young are also effective in convincing youth that tobacco products are dangerous.

- A series of seven advertisements aired on television and radio in 2000 featured a Massachusetts resident named Rick Stoddard, whose wife Marie had died of lung cancer at 46. Statements such as “I guess I never thought of 23 as middle aged” and “I watched her smoke right up to the end; she couldn’t even quit when it was killing her” were directed at young audiences who may not appreciate the seriousness or addictiveness of tobacco. The ads aired during shows popular among youth such as the MTV Awards, Dawson’s Creek, and Buffy the Vampire Slayer.

In addition to the television and radio campaigns, the MTCP media contractor produces videotapes and other materials that can be distributed in a targeted fashion to youths across the state.

- *The Dirt on Dip: Truth About Spit Tobacco* teaches young audiences about the addictiveness and health outcomes of spit tobacco. Rick Bender, a middle-aged man who lost much of his facial bone and muscle during surgery to remove tobacco-related cancer, speaks to classrooms and auditoriums of students about his experience. He describes how he cannot play baseball with his son because the surgery removed muscle in his shoulder. Students’ faces show their discomfort and concern. Young men then talk about physical effects of chewing that they personally have experienced, and about the difficulty of quitting. The story of Sean Marsee, a tobacco chewer who died of oral cancer at age 19, underscores the message. Over 400 sets of the videotapes and workbooks were distributed to schools and programs that work with youth in 2000.

Youth Access to Tobacco Products

In order to make it more difficult and less socially acceptable for young people to smoke, the sale of tobacco products to children under 18 is illegal in Massachusetts, as it is in every state. Many cities and towns in Massachusetts have gone beyond this general prohibition, adopting ordinances or regulations designed to further reduce young people's access to tobacco products. Some policies limit in-store marketing practices to which children might be especially vulnerable, such placing tobacco products in easily reached self-service displays. Others restrict tobacco sales in vending machines, often by requiring lockout devices so that tobacco products cannot be purchased without the approval of store personnel.

Recipients of funding through the MTCP boards of health program are expected to assist their towns in developing and adopting these supplemental youth access ordinances and regulations. The boards of health also monitor compliance and participate in the enforcement of these policies, particularly the prohibition on tobacco sales to minors. Local programs receive technical assistance on legal and regulatory issues from the Community Action Statewide Team (CAST), a statewide committee made up of representatives from the Massachusetts Municipal Association, Massachusetts Association of Health Boards, Tobacco Control Resource Center, and MTCP.

Advocacy for policies restricting youth access

Local MTCP-funded boards of health and health departments educate citizens and decision-makers about the benefits of enacting tobacco control ordinances and regulations. Since 1994, boards of health have held over 500 policy advocacy meetings and attended over 400 hearings on local ordinances or regulations. An annual average of over 3,500 people have been involved with these activities (Exhibit 2.6). The highest levels of activity occurred in 1996-1997, when many towns were adopting youth access restrictions for the first time. Subsequent activity has aimed at enacting

Exhibit 2.6

Advocacy Events with a Youth Theme Reported by Boards of Health

		1994	1995	1996	1997	1998	1999	2000
Policy advocacy	Meetings	2	97	119	148	60	59	51
	Attendees	45	1266	2795	7930	1166	584	1065
Hearings on ordinances	Meetings	2	76	97	92	63	51	45
	Attendees	40	2029	2780	2640	1321	738	792

ordinances in those towns that still have no restrictions and, in some towns, updating or strengthening ordinances.

Youth, particularly those involved as Peer Leaders, are closely involved in developing and advocating tobacco control policies. They participate in meetings with other MTCP programs, gather signatures and write letters about pending legislation.

Education and enforcement regarding youth access policies

Local MTCP programs work with tobacco retailers to make sure they know the laws regarding sales to minors and are aware of effective means of complying with the laws. Since 1994, program staff have trained almost 14,000 people, both retail management and staff, on how to ask for identification and turn underage purchasers away. The bulk of the training sessions were held in 1995 and 1996, when around 5,000 people a year were trained. Training continues in order to ensure that new management and retail staff have the information, with an average of approximately 900 people trained annually.

Local boards of health monitor and enforce compliance with youth access laws and regulations. Working with MTCP youth action alliances and community mobilization networks, boards of health organize youth under age 18 in supervised attempts to purchase tobacco products. To check compliance in over-the-counter sales, a teenager will ask a clerk for a pack of cigarettes, cigars, or smokeless tobacco. If the clerk does not ask the youth for identification and sells the product, the store has violated the regulation. For vending machine sales, a youth will approach the machine. If s/he is able to purchase cigarettes, the owner of the vending machine has violated the regulation. Some towns have lockout regulations requiring a staff person to unlock the vending machine, and others restrict vending machines to establishments where children are not allowed. Retailer compliance with signage requirements—such signs indicating that tobacco cannot be sold to persons under age 18—are checked as a part of the same visit or separately.

Boards of health have reported a statewide average of 10,000 underage purchase attempts and signage checks annually since 1995, plus an average of about 1,200 vending machine checks (Exhibit 2.7). Actual purchase attempts have been increasingly emphasized over time, with signage checks becoming somewhat less common in recent years. The recent decline in vending machine checks reflects a reduction in the use of vending machines to sell tobacco products.⁴

Reports from the MTCP-funded boards of health indicate that the 259 cities and towns they serve include a total of 8,895 establishments selling tobacco products. From January 1999 through June 2000, the programs reported 23,612 compliance checks, an average of 1.8 checks per establishment per year. (These data have been reported only since 1999.) The MTCP guideline suggests that some compliance checks be performed in each town quarterly. Most compliance checks focus on the sale of cigarettes, but 7 percent of checks investigate the sale of smokeless tobacco and 12 percent the sale of cigars.

Exhibit 2.7

Enforcement of Laws Relating to Sales to Minors

	1994	1995	1996	1997	1998	1999	2000
Attempted purchases by youth	1,352	5,235	8,712	6,977	9,096	12,138	16,524
Checks of point-of-purchase signage	2,793	9,971	12,590	9,938	11,880	10,012	8,318
Checks of vending machine regulations	741	3,607	1,222	897	1,094	436	395

Goal 2: Promote Smoking Cessation

The MTCP works to get current smokers to quit through a two-pronged strategy: (1) reaching current smokers with messages that will motivate them to quit and (2) providing varied, flexible, and effective services to smokers who try to quit.

The strategy recognizes that quitting smoking can be extremely hard, as indicated in an ever-increasing body of research. For example, almost half of smokers who have surgery for lung cancer resume smoking and more than a third of those who suffer a heart attack resume while still in the hospital.⁵ Many smokers would like to quit, and many do, but the majority of people who attempt to quit relapse within 6 months.⁶ Smokers need techniques as well as strong motivation, so tobacco treatment programs work to help smokers develop skills that will support long-term changes and guard against relapses.

Communicating the Quit-Smoking Message

MTCP seeks to convince smokers to quit before they experience adverse health effects, which can occur decades after they begin to smoke. Quitting will usually improve the smoker's health and will decrease environmental tobacco smoke (ETS), benefiting others.

Statewide media campaigns

Motivating smokers to quit is one of the major themes of the MTCP statewide media campaign. The television ads provide information about smoking's consequences to the smoker and the smoker's family, and about the benefits of quitting. A total of 35 different television advertisements and 27 different radio spots have been developed and aired since 1994 (Exhibit 2.8).

Exhibit 2.8

Advertising Aimed at Adult Smokers

		1994	1995	1996	1997	1998	1999	2000	Total
Television	# ads	10	10	4	6	7	3	8	40 ^a
	Total gross rating points ^b	2,799	3,610	1,200	2,550	600	2,412	1,730	14,901
Radio	# ads	7	9	5	3	4	1	4	28 ^a
	Total gross rating points ^b	3,481	3,825	1,350	1,200	1,500	450	1,838	13,644

^a The total is less than the sum of individual years because some advertisements are shown in multiple years.

^b Gross Rating Points (GRP's) measure the percentage of households that is tuned in to the show, or advertisement, of interest. The total GRP's for a year reflect both the number of times an advertisement was aired and the number of households that saw it.

Note: These figures include only advertisements aimed at a general audience, not those targeted to specific linguistic or other groups.

Source: Arnold Worldwide.

To add emotional weight to the information, the advertisements use dramatic human stories, humor, and intense imagery. Most spots in the 2000 MTCP media campaign addressed smokers in a personal context, emphasizing social and emotional motivations for quitting.

- Rick Stoddard of Massachusetts, whose wife Marie died of lung cancer at age 46, talked about their experience in a series of seven television spots. In the series, Stoddard's emotions progressed from anger to sadness. The ads showed that smoking consequences are not limited to the smoker who dies, but extend to the people left behind.



- The *Smoke-Free Generation* television and radio advertisements described what the world could be like “if you quit smoking today.” Billboards suggested that smokers can quit and live to do fun things such as play

with grandchildren. In the smoke-free world that they envisioned, “each year half a million more people will live to do all these things.”

To move audience members along the path from motivation to action, the television and radio ads generally end with the number for the toll-free MTCP telephone Quitline (1-800-trytostop) or the Internet address (www.trytostop.org) for personal or online cessation support.

Complementary local media initiatives

The statewide media efforts in recent years have included complementary regional or local components. These are designed to reinforce the messages in the statewide campaign through mechanisms that have a more local character.

- Advertisements in regional newspapers reinforced the *Smoke-Free Generation* theme, described activities that healthy people would do, and told the reader that “You can be one of them. If you quit today.” These ads included the name of a local organization smokers could contact.
- The 13 largest regional newspapers (excepting the Boston Globe and Boston Herald) ran large ads announcing *Quit Contests* with banners such as “Stop Smoking! Win fabulous prizes.” Local businesses, which contributed prizes, inserted reasons to quit smoking in their newspaper advertisements. To win, participants had to find and submit three of the reasons. The entry form included a space for smokers to pledge to quit smoking on a specified date (the contest ran from mid-December 1999 through mid-January 2000 to capitalize on Millennial New Year’s resolutions). A newspaper announcement for each of three rounds of prizes congratulated the 460 participants for trying to quit.⁷

Media advertisements have been produced in many different languages. Television advertisements have been translated into Spanish, Portuguese, Chinese, and Vietnamese. Other ads were developed for specific communities.

- Billboards in Greater New Bedford show a man, woman, and infant with the message “Sometimes the only thing separating your family from second-hand smoke... is you” in Portuguese and English.
- Soccer fans at a New England Revolution game against Miami Fusion were surrounded with messages about cessation from MTCP. Information was provided in banners, videos

on the instant replay screen, an insert in the program, and free posters in English, Spanish, and Portuguese.⁸

Recognizing special populations

Smoking rates and attitudes about smoking vary across population subgroups, for many reasons.⁹ For example, immigrant groups from countries in which tobacco production is a large portion of the economy, such as Cambodia and Portugal, are less likely to support tobacco control measures than other immigrants.¹⁰ Attitudes and behavior are also shaped by tobacco industry advertising. Media campaigns created in the mid-twentieth century to target women and in the early 1960's to target Blacks resulted in both increased smoking prevalence in the groups and increased market share for the brands advertised among the targeted groups.¹¹ The targeting continues.¹²

MTCP advertising since the beginning of the program has included campaigns addressing, for example, African-Americans, Hispanics, and Asian-Americans. In the spring of 2000, MTCP contracted with four agencies that specialize in advertising for minority populations to research attitudes about tobacco control. The project included African-Americans, Haitians, Continental Portuguese, Cape Verdeans, Brazilians, and Latinos, primarily Puerto Ricans and Dominicans. Focus groups, in-depth interviews and surveys gathered information from male and female smokers and non-smokers.¹³ The findings were used to refine both advertising and program service strategies for these groups.

Local tobacco treatment services programs' messages

MTCP tobacco treatment service providers, in addition to counseling individual smokers, spread the message more broadly in the community. Program staff speak or make presentations in numerous venues—workplaces, community health centers, recreational or cultural centers, and schools—to educate smokers and make them aware of the availability of tobacco treatment services. Since 1998, the tobacco treatment services programs have shifted away from outreach to emphasize more strongly the direct provision of tobacco treatment services, and the number of community education events has declined somewhat. Even in the last three years, however, MTCP tobacco treatment services program staff have addressed over 20,000 people a year at over 500 public speaking engagements (Exhibit 2.9).

Exhibit 2.9**Community Education Activities Held by Tobacco Treatment Services Programs**

		1994	1995	1996	1997	1998	1999	2000
Public speaking	number	24	439	552	519	500	538	590
	percent	21%	39%	38%	38%	48%	64%	67%
Health fairs	number	46	255	322	238	153	93	82
	percent	41%	23%	22%	18%	15%	11%	9%
Community meetings^a	number	14	110	179	205	99	56	114
	percent	13%	10%	12%	15%	10%	7%	13%
Training sessions	number	6	108	110	76	76	54	24
	percent	5%	10%	8%	6%	7%	6%	3%
Other	number	22	216	276	311	224	95	68
	percent	20%	19%	19%	23%	21%	11%	8%
All	number	112	1128	1439	1349	1052	836	878

^a Includes meetings with community-based organizations and with the public.

Providing Tobacco Treatment Services

The second element of the MTCP cessation strategy is to help smokers who want to quit. The objective is to get as many smokers as possible to use counseling and pharmaceutical therapies to help them succeed in their attempt to quit.

The MTCP strategy responds to a growing body of literature about the effectiveness of tobacco treatments. Smokers who try to quit without any counseling help or pharmaceutical treatments succeed only one time out of twenty. Using nicotine replacement therapy (NRT) increases the likelihood of being abstinent in 6-12 months to one in four or five. Combining NRT with bupropion, a non-nicotine antidepressant treatment, can increase success rates to one in three.¹⁴ The nicotine patch has been available for non-prescription sales since 1996.¹⁵ New forms of NRT include lozenges, which are particularly helpful for people who cannot tolerate gum,¹⁶ and inhalers.¹⁷ The research also shows that quitting is stimulated by a health care provider's advice to quit smoking,¹⁸ and by personal intervention by other medical or non-medical personnel.¹⁹

Referring smokers to treatment

MTCP local programs, particularly the tobacco treatment services programs, work to identify smokers and get them to appropriate treatment by providing information about quitting and treatment

service availability, with referrals to specific service providers. The programs particularly reach out for smokers in high-risk communities and health care settings. Since 1994, local programs have referred an average of 3,400 youth and over 21,000 adults to treatment each year (Exhibit 2.10).

Exhibit 2.10

Referrals to Tobacco Treatment Services

	1995	1996	1997	1998	1999	2000
Youth	2,408	6,711	3,268	3,376	2,797	4,306
Adults	14,068	19,897	19,420	30,355	33,832	25,491

In-person tobacco treatment services

Situated in hospitals, community health centers, and community based service agencies, MTCP tobacco treatment services programs provide counseling and support to almost 7,500 people a year (Exhibit 2.11). Since 1994, 35,385 people have received individual counseling. Another 16,498 smokers have attended the more than 300 tobacco treatment groups held each year. Nicotine replacement therapy is subsidized for many participants who would otherwise not be able to afford it, increasing their chances for success.

Exhibit 2.11

Smokers Receiving Specified Tobacco Treatment Services

	1994	1995	1996	1997	1998	1999	2000
Assessments	569	14,699	21,702	18,305	25,995	46,464	43,108
Cessation plans	374	7,357	8,040	7,765	10,879	16,554	14,762
Individual counseling	223	5,359	6,718	6,215	6,407	5,193	5,270
Group counseling	96	2,442	3,008	2,449	3,017	3,012	2,474
Subsidized NRT	113	1,929	2,644	2,626	2,806	3,884	7,554
Follow-up	391	6,728	9,235	9,094	6,078	6,203	5,750

Tobacco treatment services programs have varying schedules to meet the specific needs of smokers. While many programs involve at least five weekly meetings, others are more concentrated. “Weekend to Quit” programs provide intensive counseling over a short period. Some include an evening orientation beforehand and follow-up sessions. Some participants use nicotine replacement or pharmacological therapies; all benefit from the group sessions and skills-building.

Like the media campaign, direct tobacco treatment services are delivered in many languages, including Khmer, Portuguese, and Spanish during 2000. In 2000 alone, tobacco treatment services program events have been held in Chinese, Haitian Creole, Portuguese, Spanish, and Vietnamese.

The MTCP makes a concerted effort to reach people who are addicted to other drugs and mental health patients, groups that are known to have high smoking rates.²⁰ Group treatment has been provided in institutions including drug rehabilitation centers, half-way houses, homeless shelters, and jails. Two percent of smokers receiving MTCP tobacco treatment live in homes with 10 or more adults (Exhibit 2.12). Treatment has also been provided in “safe houses” for women, mental health day treatment facilities, group homes for pregnant and parenting teens, retirement communities, low income housing, and food pantries to reach people for whom a lack of transportation would be a barrier to getting help.

Exhibit 2.12

Treating Institutionalized Smokers

		1995	1996	1997	1998	1999	2000
Smokers in group homes	Number	104	163	142	228	224	169
	Percent of tobacco treatment participants	1.2	1.7	1.6	2.4	2.7	2.2

A restructuring in early fiscal year 1998 made the tobacco treatment services programs more “hands on” by shifting the focus from outreach and community education to direct counseling, assessment, and follow-up services. It also linked the programs’ payments to the units of service provided (e.g., a fixed reimbursement for a 15 minute session of tobacco treatment counseling).²¹ Although there were fewer programs from 1998 to 2000 than during the first years of MTCP, aggregate treatment services increased (Exhibit 2.13). The number of smokers counseled or referred to other counseling programs remained about the same, but the number of smokers assessed, provided with a personalized plan, or provided with subsidized nicotine replacement therapy (NRT) approximately doubled. (Given the lower reporting rates in the recent period, the reported figures almost certainly understate the actual level of treatment services.)

Telephone-based tobacco treatment services

The toll-free telephone Quitline complements the work of local tobacco treatment services, providing flexible tobacco treatment services to smokers throughout the Commonwealth. Since 1994, over 40,000 smokers have received counseling from the Quitline, as shown in Exhibit 2.14. These services were being reconfigured during 2000, leading to a temporary decline in the number of participants.

Exhibit 2.13**Tobacco Treatment Services Program Activity: Amount and Change**

	1995-1997	1998-2000	1998-2000 relative to 1995-1997
Number of programs	65	52	-20%
Referrals to counseling	62,129	58,724	-5%
Assessments	54,706	115,567	+111%
Cessation plans	23,162	42,195	+82%
Individual counseling	18,292	16,870	-8%
Group counseling	7,899	8,503	+8%
Subsidized NRT	7,199	14,244	+98%
Follow-up	25,057	18,031	-28%

Exhibit 2.14**Smokers Receiving Tobacco Treatment Services from the Quitline**

	1994	1995	1996	1997	1998	1999	2000
Cessation counseling	7,630	9,617	5,218	6,228	5,213	5,054	2,951

Web-based tobacco treatment services

A new website, www.trytostop.org, provides cessation information and support in 13 languages. The site provides information about services available on the Internet, by phone, or in-person, allowing smokers to select the method that seems most appropriate to their situation. An *Expert Advice* section features a different topic each month, while *Success Stories*, submitted by other quitters, provide inspiration. Free e-cards, electronic greeting cards, are designed to encourage people to quit, support them while quitting, or for quitters to ask for support.

A *Quit Wizard* provides personalized support for people at all stages of quitting: thinking about it, setting plans, actively quitting, and “graduating to a life of a non-smoker.” The wizard is written in a friendly, non-judgmental tone. It is designed to help the user identify personal benefits and drawbacks for smoking and for quitting. For people who have quit before, but relapsed, it helps them identify the circumstances of the relapse in order to avoid relapsing again.

Certification for tobacco treatment service providers

In order to provide consistently effective services, the MTCP funded the development of the first-in-the-nation training and certification process for tobacco treatment service providers. Researchers at

the University Massachusetts Medical School and the Donahue Institute reviewed the literature on addiction counseling methods and certification procedures and interviewed tobacco treatment providers and experts. The team developed a curriculum focused on the core knowledge and skills needed by tobacco treatment professionals.

Certification requires attending eight days of training and passing both a final exam and an orally defended case study that demonstrates the counselor's ability to integrate knowledge, skills and experience. The counselor must also have provided 2000 hours of tobacco treatment—about one year of full-time work. Biannual renewal requires the specialists to attend continuing education units.²²

MTCP is using the certification process to strengthen treatment services in Massachusetts. As of July 1, 2001, all

MTCP-funded tobacco treatment providers will be required to attend the certification training within one year and to complete all the requirements within three years of employment.²³

Core service requirements for tobacco treatment specialists

- ' Provision of information and education
- ' Intake and assessment
- ' Treatment planning and implementation
- ' Pharmacotherapy support and guidance
- ' Counseling: individual, in-person or by telephone, and group
- ' Monitoring and evaluation of individual progress
- ' Relapse prevention and service to relapsed clients
- ' Follow up and ongoing support
- ' Record-keeping and reporting
- ' Professional development: serve as a resource to other professionals; remain up-to-date on new methods of quitting and other cessation related skills²²

Goal 3: Limit Environmental Tobacco Smoke

In the decade since the Environmental Protection Agency determined that environmental tobacco smoke is a carcinogen, causing cancer in human beings, many studies have confirmed a wide range of ill health effects due to ETS. Exposed children are more susceptible to respiratory diseases and have decreased cognitive functioning; in adults, ETS causes heart disease and is associated with higher risk of stroke and periodontal disease.²⁴

To combat ETS in Massachusetts, the MTCP pursues both an education strategy and a policy strategy. The education effort informs non-smokers and smokers about the health consequences of ETS and the actions they can take to protect themselves and others. ETS policies prohibit smoking in selected locations in order to increase residents' opportunities to avoid exposure.

Educating the Public About ETS

The ETS education effort has three behavioral objectives. First, non-smokers will protect themselves by avoiding exposure and making their own homes as smoke-free as possible. Second, smokers will restrict their own smoking in their homes and automobiles. Third, smokers and non-smokers will support public policies prohibiting smoking in particular locations.

The statewide media campaign and local programs' public information efforts are the two central tools in the education effort, as described below.

ETS messages in the statewide media

The statewide media campaign has focused on environmental tobacco smoke as one of its major themes. Since 1994, the television campaign has included six different television and two radio advertisements related to ETS in its general public opinion advertising (Exhibit 2.15). Many of the other public opinion advertisements subtly address ETS. For example, one ad aired in 2000 describes lives that children could lead and ends by saying, "Each year half a million more people will live to do all these things. If we raise a smoke-free generation." The emphasis is on a smoke-free environment, a broader mission than keeping individual children from smoking.

Exhibit 2.15

Advertising Aimed at Public Opinion, Including ETS

		1994	1995	1996	1997	1998	1999	2000	Total
Television	# ads	9	8	11	8	8	3	13	52 ^a
	Total gross rating points ^b	4,099	1,800	3,448	1,400	2,000	1,401	3,579	17,727
Radio	# ads	1	3	1	0	1	1	8	15 ^a
	Total gross rating points ^b	400	450	300	0	300	500	4358	6,308

a The total is less than the sum of individual years because some advertisements are shown in multiple years.

b Gross Rating Points (GRP's) measure the percentage of households that is tuned in to the show, or advertisement, of interest. The total GRP's for a year reflect both the number of times an advertisement was aired and the number of households that saw it.

Note: These figures include only advertisements aimed at a general audience, not those targeted to specific linguistic or other groups. Gross rating points are not separately available for the subset of ETS ads.

Source: Arnold Worldwide.

The media campaign has had broad reach. Three-quarters of Massachusetts residents report having seen an anti-tobacco ad on television during the past 3 months. Half the respondents remember a specific MTCP slogan, confirming that they are not just recalling the national campaigns.²⁵

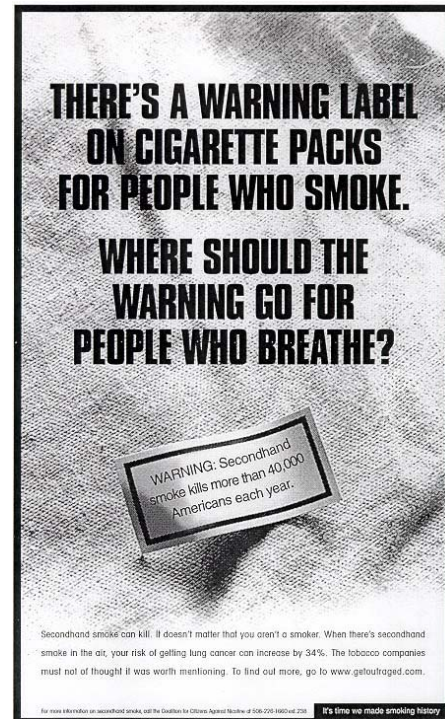
The ETS public information effort is shaped with a recognition that people with less education are more likely to be exposed to ETS than those with more education.²⁶ Television and radio ads are particularly helpful in reaching audiences with low literacy, who may not benefit from brochures and other written materials.

MTCP television and radio advertisements in 2000 emphasized the health effects of ETS on children. Directed largely at smokers, the ads were designed to persuade smokers to be careful where they smoke or, preferably, to quit smoking in order to avoid harm to people they love.

- One ad showed a baby monitor flashing while a baby cries and coughs incessantly. The narrator explains that cigarette smoke caused the baby's pain. The ad was translated into Spanish and Portuguese in response to research indicating that smokers in these groups considered potential harm to children as a particularly important motivation for quitting.

Other ads, aimed especially at non-smokers, focused attention on the tobacco industry rather than smokers as the source of ETS. The campaign sought to generate opposition to ETS without increasing friction within communities.

- A newspaper ad in the *Get Outraged* campaign says "There's a warning label on cigarette packs for people who smoke. Where should the warning go for people who breathe?" It goes on to explain that "secondhand smoke can kill... The tobacco companies must not [have] thought it was worth mentioning."



ETS messages delivered by local programs

Locally based MTCP programs directly educate people in their communities, operating at the level of the town, workplace, school, or local agency. Since 1994, almost 21,000 events have brought the message about the dangers of ETS to people at health fairs, workshops, and community meetings, among others (Exhibit 2.16).

Exhibit 2.16**Advocacy Events with a Youth Theme Reported by Boards of Health**

		1995	1996	1997	1998	1999	2000
Boards of Health	# events ^a	1,132	1,592	1,234	1,026	1,032	1,053
	# attendees	394,323	1,211,230	939,830	456,600	331,155	408,649
Community Mobilization Networks	# events ^a	389	527	450	183	237	172
	# attendees	73,163	223,582	251,028	38,434	30,090	77,145
Outreach and Referral / Innovative Smoking Intervention	# events ^a	348	546	572	538	656	696
	# attendees	90,155	80,839	157,961	77,406	134,378	75,171
Youth Action Alliances	# events ^a	297	368	352	301	309	399
	# attendees	118,344	174,908	72,358	79,202	38,818	98,202
Tobacco Treatment Services	# events ^a	290	639	690	462	412	503
	# attendees	49,189	172,702	108,018	103,046	44,984	28,781

a Events involving two or more local programs may be reported more than once.

In the earlier years of the MTCP, programs trying to generate initial public awareness of ETS as an issue tended to use events that would yield broad exposure to a message with relatively limited content. They put up signs, operated booths, and handed out literature at large public gatherings such as town meetings, festivals, and sports events. As public awareness grew and many towns had adopted ETS ordinances or regulations, local program efforts tended to become more targeted, presenting deeper information on more focused issues to smaller audiences. Local programs can apply for special funds to integrate the message of statewide campaigns into their community-based programming. In fiscal year 2000, 117 projects were funded, 42 percent of which concerned ETS as the primary theme.

- The Tobacco Awareness Program of Andover inserted messages about ETS in Val Pak Mailers, sets of advertisements and coupons mailed to all residences in selected areas. Over 500 residents of the Northeast region returned a postcard included in a mailer that said, “Yes! I want to enjoy smoke-free restaurants.”
- In Worcester, a combination of advertisements on buses and the radio and two methods of identifying smoke-free restaurants—a guide and decals—announced and promoted a new ordinance restricting smoking in eating establishments.

Limiting ETS Through Public Policy

The ETS policy strategy seeks to minimize Massachusetts residents' exposure to environmental tobacco smoke in public places by restricting smoking to locations in which little involuntary exposure will occur. This strategy also has two collateral objectives. One is to "denormalize" smoking, so that smoking will not be a common practice that is integrated into mainstream social behavior. The second collateral objective is to reduce smokers' tobacco consumption, which can occur as they spend more of their day in locations where they cannot smoke.

The strategy relies heavily on local MTCP programs, particularly those in the Boards of Health program, to promote the adoption of town-level ETS restrictions and to enforce the ETS ordinances and regulations that are in place.

Establishing policies to limit ETS

The MTCP has promoted, and the legislature and responsible agencies have enacted, a variety of statewide regulations aimed at minimizing exposure to tobacco smoke. Smoking in state facilities, with the exception of mental health, substance abuse treatment, and veterans' housing facilities, is banned. Smoking in other public areas, such as airports, museums, waiting areas of health care facilities and child care facilities, or restaurants seating more than 75 people, is allowed only in specifically identified areas. The policy must be posted on each entrance. Sites with smoking areas must clearly post which areas are smoke-free and which are not.

Massachusetts cities and towns are permitted to go beyond these statewide regulations to enact local ordinances or regulations regarding ETS. Many towns have adopted restrictions on smoking in restaurants, municipal buildings, private work sites, and a variety of other settings, as discussed in Chapter 5.

Local boards of health and health departments funded under the MTCP Boards of Health program are charged with the mission of promoting the adoption of appropriate ETS restrictions in the towns they serve. Program staff inform local officials about regulatory options and work to build public support for policies that are under consideration.

Exhibit 2.17**Board of Health Activities Promoting the Enactment of Local ETS Policies**

	1994 ^a	1995	1996	1997	1998	1999	2000
Advocacy activities							
Contacting elected officials	138	323	271	216	195	192	140
Letter writing campaigns	82	199	140	86	64	65	60
Building turnout for town/council meetings	35	95	76	64	68	55	43
Signature gathering petitions	14	85	54	32	16	23	23
Other activities	141	285	247	231	207	229	214
Community education activities							
Hearings on ordinances or regulations	2	70	87	40	50	45	61
Policy advocacy activities	2	129	114	112	55	61	57

^a Programs were funded for only three to six months during fy1994.

Like the activities promoting youth access restrictions, ETS policy activity was most intense in 1995-1997, when a large number of towns were first considering enacting ETS restrictions (Exhibit 2.17). The programs continued to be quite active on this topic in 1998-2000, as additional towns enacted ETS restrictions and many towns with existing ETS policies added or strengthened particular provisions. Among the activities in 2000:

- A campaign in Lowell emphasized not smoking in certain areas. Calendars with original art in Cambodian style, take-out containers for food, hats, and bags all said “Thank you for not smoking” in Khmer (Cambodian) and English.
- *Smoke-Free Homes* kits, which describe the risks of smoking around children, were provided during home visits to first-time parents through the Department of Public Health’s Healthy Families program in Western Massachusetts. The message in the bilingual (English and Spanish) kits was supplemented by billboards, flyers distributed to elementary school students, and radio ads on all major stations about the connection between children’s exposure to ETS and asthma.

In addition to promoting public policies, boards of health work with private employers to help them develop or implement smoke-free policies for their own facilities. MTCP staff conducted extensive outreach in 1994-1996, contacting an average annual total of around of 900 work sites in that period. After the initial outreach efforts, the emphasis shifted to providing technical assistance on request for work sites developing and policies or implementation procedures.

Enforcing existing policies

MTCP-funded boards of health enforce existing policies by determining whether specific establishments are in compliance with the law or regulation and, if not, administering warnings or fines. Program staff statewide have averaged more than 5,000 annual checks of various kinds of public establishments and nearly 2,000 checks of private work sites since 1995 (Exhibit 2.18). The number of checks in work sites was greatest in 1995-1997, as initial regulations and policies were established, but checks of other establishments have been continued at a relatively steady level.

Exhibit 2.18

Enforcement of ETS Regulations

		1995	1996	1997	1998	1999	2000
Public establishments	Checks	2,975	4,384	5,462	4,050	9,566	5,032
	Violation rate	13%	9%	12%	11%	6%	10%
Workplaces	Checks	1,637	3,134	3,033	1,873	709	1,071
	Violation rate	15%	23%	14%	9%	7%	8%

The rate of violations peaked in 1996 and has consistently declined since then. In contrast, the violation rate at public establishments consistently hovered around the 10 percent mark. The percentage of checks reporting violations, though never very high, was highest in the early years of the program. Violation rates from 1998 onwards have consistently been around or below 10 percent.

Endnotes

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Chapter 3: Adult Smoking Prevalence

This chapter compares the 1990-1999 trends in smoking prevalence for Massachusetts and a group of 41 other states, controlling for four demographic characteristics associated with differential smoking prevalence. Massachusetts is found to have a significantly greater decline in prevalence. The differential decline was concentrated among males, while the decline for Massachusetts females was not significantly different from the trend elsewhere.

Background

Research has found that adult cigarette smoking prevalence declined more in Massachusetts than in states without tobacco control programs from 1993-1999,¹ and has shown improvement in Massachusetts in other measures of tobacco use.² Studies comparing trends in prevalence of current smoking in California to those in the rest of the US have also found differences in trends suggesting a positive impact of a comprehensive tobacco control program.^{3,4}

The previous research has not taken into account the possibility that shifts in demographic composition in the focal states or the comparison states could have contributed to the observed result. National smoking prevalences are lower than average for women, persons over age 65, college graduates, and Hispanics.⁵ The latter two groups have increased as a fraction of the US population over the past decade: college graduates from 21.3 percent to 25.6 percent,⁶ and Hispanics from 9.0 percent to 12.5 percent.⁷ Moreover, the demographic composition and the demographic shift over the decade vary by state. Massachusetts has a smaller than average Hispanic population, but it grew faster than the national growth rate over the decade. The situation for college graduates is reversed, with Massachusetts having a larger fraction of college graduates than the nation as a whole, but slower relative growth in this group.⁸ The extent to which these patterns may cause differential changes in state-level prevalence has not been examined.

This analysis therefore addresses two questions:

- To what extent do Massachusetts's trends in smoking prevalence differ from those in the rest of the United States after controlling for demographic characteristics?
- To what extent do prevalence trends for selected demographic subgroups differ for Massachusetts and the rest of the country?

Data Sources and Methods

The analysis presented below is based on data from the Behavioral Risk Factor Surveillance System (BRFSS). The BRFSS is an annual, state-based, standardized, random-digit-dialed telephone survey of noninstitutionalized adults aged 18 years or older.⁹ The Centers for Disease Control and Prevention (CDC) coordinates the BRFSS and individual states conduct the surveys. The comparisons between Massachusetts and other states are based on the core samples for 41 states that participated in the survey continuously from 1990-1999.¹⁰ Because California also had a comprehensive statewide tobacco control program in place during the study period, data from California are excluded. Although a few other states had some form of tobacco control program, particularly in the latter years of the period, it is generally reasonable to characterize the comparison group of 41 states as representing a population with no substantial presence of a tobacco control program. The annual BRFSS samples include 22,309 Massachusetts respondents and 946,241 respondents in the 41 comparison states who did not have missing values for smoking or for the demographic variables used in the analysis.

Current smokers are defined as those who answered “yes” to the questions “Have you smoked at least 100 cigarettes in your entire life?” and “Do you smoke cigarettes now?” In 1996, the latter question was changed to “Do you now smoke cigarettes everyday, some days, or not at all?” and current smokers after 1996 were those who answered “everyday” or “some days.” The change in the wording of this question may have increased the number of people counted as smokers starting in 1996, and indeed this is apparent in these analyses. This change in wording affects all states and therefore does not bias comparisons between Massachusetts and the rest of the US. However, to the extent that true prevalence declined between 1990-95 and 1996-99, the survey data will underestimate the decline in both Massachusetts and the rest of the US.¹¹

The analysis first tests the null hypothesis that the time trend of current smoking prevalence was the same for Massachusetts as for the rest of the US, controlling for demographic differences over time and between states. It then tests the sub-hypotheses that there was no difference between the Massachusetts and US trends for demographic subgroups defined in terms of sex, age, education, and race.

Logistic regression models and procedures for stratified sampling designs in SUDAAN were used to determine adjusted odds ratios, prevalences, standard errors and trends for dichotomous measures of current smoking. Models were estimated on a pooled data set including both Massachusetts and the rest of the US, using all 968,550 individual observations. The models included terms for year

(expressed alternatively as a continuous variable or a set of dichotomous indicators), location (Massachusetts or US), and the interaction of year and location. The interaction term measures the difference between the Massachusetts and US prevalence trends.

To account for demographic differences over time and between Massachusetts and the other states, the models included sex, age in three categories (18-34, 35-54, 55 and older), race/ethnicity in four categories (Non-Hispanic White, Non-Hispanic Black, Hispanic, and Other), and education level in three categories (under 12 years, 12-15 years, 16 or more years). Stratified analyses estimated separate models for each set of subgroups (e.g., separate models for males and females) controlling for the other covariates.

For ease of presenting the results, we generated adjusted prevalence estimates. The logit equations were solved for prevalence in each year using a constant set of values for the covariates (the weighted distribution of each covariate over the entire 10-year period). The year-to-year pattern was derived from the model specification in which each year is entered as a dummy variable. Each year's percent decline (or increase) as compared to 1990 was calculated as the adjusted prevalence in the year, minus the adjusted 1990 prevalence, divided by the adjusted 1990 prevalence.

As a measure of the trend over the decade, we similarly calculated the average year-to-year percent decline in prevalence. Each year's adjusted prevalence was calculated from the logit model in which time was specified as a continuous variable. The percent change was calculated for each contiguous pair of years, and the nine year-to-year percent changes were then averaged. The resulting measure is similar to a compound annual rate of change.

Difference in Massachusetts and Comparison States' Prevalence Trends

The adjusted adult smoking prevalence in Massachusetts declined during the 1990s, while the prevalence in the 41 comparison states did not. The adjusted prevalence in Massachusetts was 22.9 percent in 1990, not significantly different from the adjusted prevalence of 22.2 percent in the other 41 states ($p = 0.73$), as shown in Exhibit 3.1. By 1999, Massachusetts prevalence dropped to 19.7 percent, significantly below the prevalence of 22.3 percent in the comparison states ($p < 0.01$, not shown in table).

Massachusetts' 1999 adjusted prevalence of 19.7 percent represents a 14 percent reduction from 1990 in the number of current smokers, controlling for changes in population size and demographic composition ($p = 0.04$). The trend estimate for the full decade indicates an average decline of

1.0 percent per year ($p = 0.08$). In contrast, the 41 comparison states had a slightly increasing trend, with an average annual increase of 0.8 percent ($p < 0.01$). The Massachusetts trend is significantly different from that for the 41 states ($p = < 0.01$).

Exhibit 3.1

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

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Massachusetts										
Adjusted Prevalence	22.9%	21.6%	23.1%	20.4%	20.7%	22.0%	22.8%	20.4%	20.9%	19.7%
Relative to 1990		-6%	+1%	-11%	-9%	-4%	-0%	-11%	-9%	-14%*
US (41 states)										
Adjusted Prevalence	22.2%	22.0%	21.3%	21.1%	21.5%	21.7%	22.8%	22.6%	22.5%	22.3%
Relative to 1990		-1%	-4%**	-5%**	-3% [†]	-2%	+3%*	+2%	+2%	+1%
1990-1999 Trend		MA trend		US trend		Trend comparison^b				
Odds ratio		0.99 [†]		1.01**		0.98**				
Avg. annual change		-1.0%		+0.8%						

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

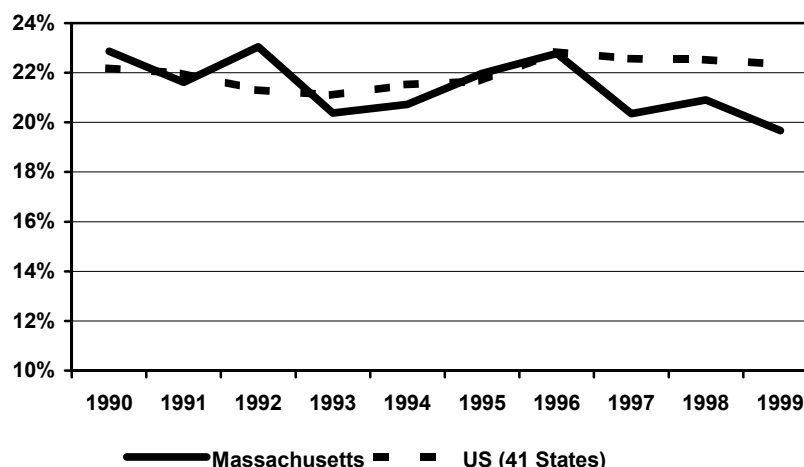
b Odds ratio of interaction term (MA*Year)

p-value of logit coefficient:

[†] = < 0.10

* = < 0.05

** = < 0.01



The change in the BRFSS questions in 1996 probably means that the estimated annual prevalence decline is understated for both Massachusetts and the 41 states. Had the question sequence been consistent throughout the period, it is likely that the Massachusetts decline would be greater than that shown here, and that the other states would show a decline rather than an increase.

The data suggest that the divergence between the Massachusetts and comparison states' prevalence grew most strongly in the last few years of the decade. This pattern can be seen visually in the chart and numerically in the difference between the Massachusetts and US adjusted prevalences in the individual years in Exhibit 3.1. From 1990-92, the Massachusetts adjusted prevalence averaged 0.7 percentage points higher than that in the 41 comparison states. In 1993-96, the first years of the MTCP, the Massachusetts prevalence averaged 0.3 percentage points lower than the other states, and this gap widened to an average of 2.2 percentage points in 1997-99. The difference between the Massachusetts and US point estimates is statistically significant only in 1999.

Massachusetts and Comparison States Prevalence Trends for Demographic Groups

Sex. The decline in prevalence of current smoking was greater for men than women in Massachusetts. The adjusted smoking prevalence for Massachusetts men declined from 25.1 percent in 1990 to 19.6 percent in 1999 ($p = 0.02$), as shown in Exhibit 3.2. Trend analysis shows an average year-to-year decline of 1.6 percent over the decade ($p = 0.09$). In contrast, the trend in the 41 comparison states over the period was nearly flat, with an average annual increase of 0.8 percent ($p = 0.01$). Comparing the trends in Massachusetts and the rest of the US shows that Massachusetts had a significantly more negative trend in smoking prevalence for men ($p = 0.02$).

The smoking prevalence for Massachusetts women was lower than that for men at the beginning of the decade, but it declined less than the men's prevalence. Among Massachusetts women, the adjusted prevalence dropped from 20.8 percent in 1990 to 19.8 percent in 1999 ($p = 0.67$). The average annual decline in prevalence was 0.8 percent ($p = 0.43$). The Massachusetts trend was slightly steeper than that in the comparison states, which had essentially no annual average change. The difference in Massachusetts and comparison trends among women is not statistically significant, however ($p = 0.17$).

Age. Relative to the 41 comparison states, Massachusetts made the greatest progress with younger adults (age 18-34). In the comparison states, smoking prevalence in the younger adult population increased by an average of 1.5 percent per year ($p < 0.01$), moving from 23.8 percent in 1990 to 26.8 percent in 1999, as shown in Exhibit 3.3. Among younger adults in Massachusetts, however, the smoking prevalence declined by 0.8 percent per year ($p = 0.33$). The difference between the trends in Massachusetts and the comparison states for this age group was statistically significant ($p < 0.05$).

Exhibit 3.2

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

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Males										
Massachusetts										
Adjusted Prevalence	25.1%	21.6%	25.0%	20.6%	22.7%	22.9%	23.3%	21.8%	22.3%	19.6%
Relative to 1990		-14%	-1%	-18% [†]	-10%	-9%	-7%	-13%	-11%	-22%*
US (41 states)										
Adjusted Prevalence	24.0%	24.0%	23.2%	23.0%	23.1%	24.0%	25.0%	24.9%	24.8%	24.4%
Relative to 1990		+0%	-3%	-4%*	-4% [†]	+0%	+4%*	+4% [†]	+3%	+2%
1990-1999 Trend	MA trend			US trend			Trend comparison ^b			
Odds ratio	0.98 [†]			1.01**			0.97*			
Avg. annual change	-1.6%			+0.8%						
Females										
Massachusetts										
Adjusted Prevalence	20.8%	21.4%	21.3%	20.3%	19.0%	21.1%	22.3%	19.2%	19.6%	19.8%
Relative to 1990		+3%	+2%	-3%	-9%	+2%	+7%	-8%	-6%	-5.%
US (41 states)										
Adjusted Prevalence	20.6%	20.2%	19.6%	19.5%	20.2%	19.6%	20.9%	20.5%	20.6%	20.4%
Relative to 1990		-2%	-5%*	-5%**	-2%	-5%*	+2%	-0%	-0%	-1%
1990-1999 Trend	MA trend			US trend			Trend comparison ^b			
Odds ratio	0.99			1.00			0.99			
Avg. annual change	-0.8%			0%						

a Adjusted for age, education, and race/ethnicity

b Odds ratio of interaction term (MA*Year)

p-value of beta in logit model:

† = < 0.10

* = < 0.05

** = < 0.01

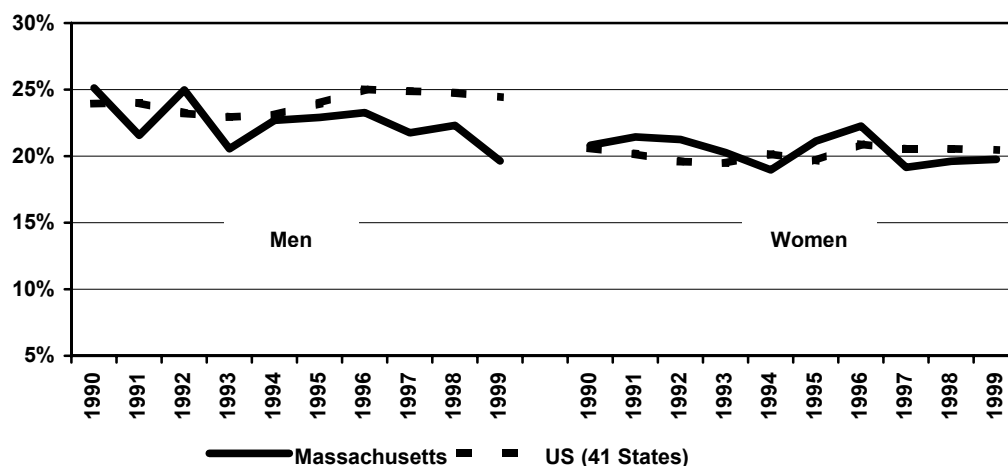


Exhibit 3.3

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

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	
Age 18-34											
Massachusetts											
Adjusted Prevalence Relative to 1990	25.1%	26.5% +6%	26.7% +6%	25.2% +0%	21.2% -15%	25.8% +3%	24.4% -3%	22.9% -9%	26.3% +5%	22.8% -9%	
US (41 states)											
Adjusted Prevalence Relative to 1990	23.8%	24.2% +2%	23.7% -0%	24.1% +1%	24.1% +1%	24.7% +4%	26.6% +12%**	26.8% +13%**	26.4% +11%**	26.8% +13%**	
1990-1999 Trend	MA trend		US trend			Trend comparison ^b					
Odds ratio	0.99		1.02**			0.97**					
Avg. annual change	-0.8%		+1.5%								
Age 35-54											
Massachusetts											
Adjusted Prevalence Relative to 1990	25.3%	23.3% -8%	24.6% -3%	23.0% -9%	25.7% +2%	26.5% +5%	25.1% -1%	25.2% -1%	24.1% -5%	21.5% -15%	
US (41 states)											
Adjusted Prevalence Relative to 1990	26.4%	25.7% -3%	25.3% -4%*	24.6% -7%**	25.3% -4%*	25.4% -4%†	26.6% +1%	26.2% -1%	25.9% -2%	25.5% -3%†	
1990-1999 Trend	MA trend		US trend			Trend comparison ^b					
Odds ratio	0.99		1.00			0.99					
Avg. annual change	-0.8%		<0.1%								
Age 55%											
Massachusetts											
Adjusted Prevalence Relative to 1990	18.2%	14.7% -19%	17.9% -2%	13.2% -28%†	15.7% -14%	13.6% -25%	19.6% +8%	12.6% -31%*	12.2% -33%*	14.9% -18%	
US (41 states)											
Adjusted Prevalence Relative to 1990	16.9%	16.3% -3%	15.1% -11%**	14.8% -12%**	15.2% -10%**	14.8% -13%**	15.2% -10%**	14.5% -14%**	15.0% -11%**	14.5% -14%**	
1990-1999 Trend	MA trend		US trend			Trend comparison ^b					
Odds ratio	0.98		0.98**			0.99					
Avg. annual change	-1.7%		-1.7%								

a Adjusted for sex, education, and race/ethnicity

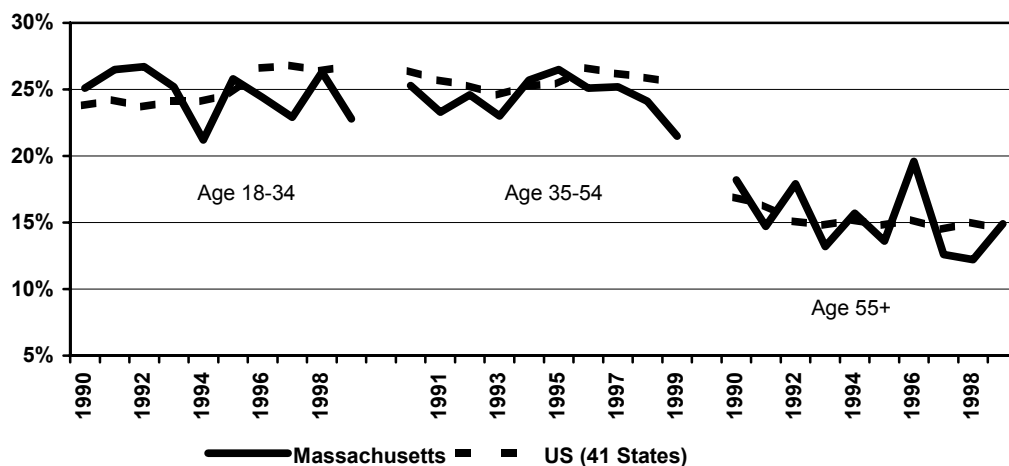
b Odds ratio of interaction term (MA*Year)

p-value of beta in logit model:

† = < 0.10

* = < 0.05

** = < 0.01



People age 55 and older had lower adjusted smoking prevalence than younger people, and they experienced a greater decline in prevalence throughout the 1990s. This pattern characterizes both Massachusetts and the 41 comparison states. In Massachusetts, the 1999 adjusted prevalence was 22.8 percent among persons aged 18-34 and 21.5 percent for those aged 35-54, but just 14.9 percent for those 55 and older. Moreover, the average annual percentage decline for Massachusetts' two younger groups was 0.8 percent, compared to an annual average decline for the older group of 1.7 percentage points. None of these Massachusetts time trends were statistically significant, however ($p = 0.33$ for age 18-34, $p = 0.58$ for age 35-54, $p = 0.12$ for age 55 and older). The Massachusetts and US trends differed significantly only for the younger age group.

Education. Progress in reducing smoking prevalence in Massachusetts was particularly evident for people in the middle of the education range—that is, people who completed high school but did not graduate from college. This group experienced an average annual decline of 1.3 percent in their adjusted smoking prevalence (Exhibit 3.4). This is significantly different from the pattern in the 41 comparison states, where the adjusted smoking prevalence increased at an annual average rate of 0.6 percent annually ($p < 0.01$).

The pattern for people with less than a high school education is quite similar, with a downward estimated prevalence trend in Massachusetts and an increase in the 41 comparison states, but the difference between the Massachusetts and US trends is not statistically significant ($p=0.43$). College graduates have much lower smoking prevalence than people with less education, and this prevalence declined at essentially the same pace in Massachusetts as in the comparison states.

Racial/ethnic groups. Because the minority group samples in Massachusetts are quite small, the analysis provides little information regarding the extent of smoking prevalence reduction for these groups. As indicated in Exhibit 3.5, prevalence estimates for Blacks and Hispanics in Massachusetts fluctuate substantially from year to year and show no clear trend. The patterns for Non-Hispanic Whites resemble the pattern for Massachusetts as a whole, as would be expected from the fact that this group makes up nearly 90 percent of the sample. The Massachusetts trend for Non-Hispanic Whites differs significantly from the trend in the 41 comparison sites.

Exhibit 3.4

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

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Less than high school										
Massachusetts										
Adjusted Prevalence	29.1%	22.3%	26.3%	27.5%	29.9%	25.1%	29.4%	25.4%	28.7%	28.0%
Relative to 1990		-23%	-10%	-6%	+3%	-14%	+1%	-13%	-1%	-4%
US (41 states)										
Adjusted Prevalence	27.1%	27.1%	28.0%	28.1%	25.8%	26.5%	30.9%	29.6%	30.2%	29.2%
Relative to 1990		-0%	+3%	+4%	-5%	-2%	+14%**	+9%**	+11%**	+8%*
1990-1999 Trend		MA trend			US trend		Trend comparison ^b			
Odds ratio		1.01			1.02**		0.99			
Avg. annual change		-0.8%			+1.2%					
High school – some college										
Massachusetts										
Adjusted Prevalence	26.9%	27.0%	28.5%	24.4%	24.2%	27.6%	27.8%	23.7%	25.1%	22.5%
Relative to 1990		+0%	+6%	-9%	-10%	+3%	+4%	-12%	-7%	-16%†
US (41 states)										
Adjusted Prevalence	25.6%	25.5%	24.5%	24.5%	25.2%	25.4%	26.3%	26.2%	26.1%	26.1%
Relative to 1990		-1%	-5%**	-4%*	-2%	-1%	+3%	+2%	+2%	+2%
1990-1999 Trend		MA trend			US trend		Trend comparison ^b			
Odds ratio		0.98			1.01**		0.97**			
Avg. annual change		-1.3%			+0.6%					
College graduate										
Massachusetts										
Adjusted Prevalence	13.0%	11.9%	12.5%	11.1%	11.5%	10.9%	11.6%	12.2%	10.7%	11.6%
Relative to 1990		-9%	-4%	-15%	-12%	-16%	-11%	-7%	-18%	-11%
US (41 states)										
Adjusted Prevalence	14.5%	14.0%	13.1%	12.2%	13.3%	12.8%	13.2%	13.1%	12.7%	12.4%
Relative to 1990		-4%	-10%**	-16%**	-8%*	-12%**	-9%*	-10%**	-13%**	-14%**
1990-1999 Trend		MA trend			US trend		Trend comparison ^b			
Odds ratio		0.99			0.99**		1.00			
Avg. annual change		-1.0%			-1.1%					

a Adjusted for sex, age, and race/ethnicity

b Odds ratio of interaction term (MA*Year)

p-value of beta in logit model:

† = < 0.10

* = < 0.05

** = < 0.01

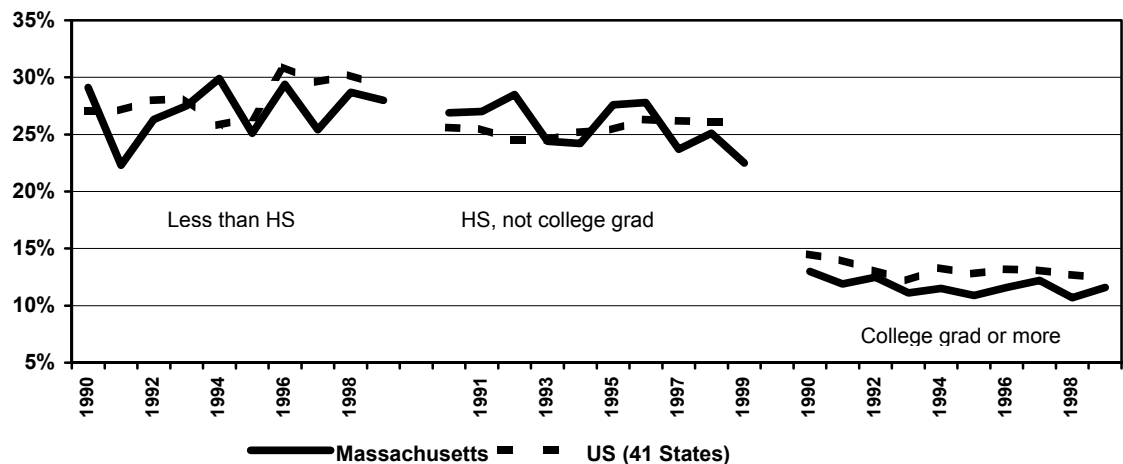


Exhibit 3.5

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

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
White, Non-Hispanic										
Massachusetts										
Adjusted Prevalence Relative to 1990	23.3%	22.0% -5%	23.1% -1%	20.3% -13%	20.9% -10%	22.7% -3%	22.8% -2%	21.0% -10%	21.0% -10%	19.7% -15%*
US (41 states) Adjusted Prevalence Relative to 1990	22.5%	22.1% -2%	21.3% -5%**	21.2% -6%**	21.7% -3%*	21.8% -3% [†]	23.0% +2%	22.9% +2%	22.8% +2%	22.7% +1%
1990-1999 Trend		MA trend			US trend		Trend comparison ^b			
Odds ratio		0.99 [†]			1.01**		0.98**			
Avg. annual change		-0.8%			+0.8%					
Black, Non-Hispanic										
Massachusetts										
Adjusted Prevalence Relative to 1990	21.4%	18.6% -13%	25.0% +17%	30.2% +41%	19.0% -11%	21.9% +2%	28.6% +34%	14.0% -35%	20.0% -6%	23.4% +9%
US (41 states) Adjusted Prevalence Relative to 1990	22.9%	21.6% -5%	22.6% -1%	21.7% -5%	21.4% -6%	21.2% -7%	22.9% +0%	21.5% -6%	20.8% -9%*	20.9% -9% [†]
1990-1999 Trend		MA trend			US trend		Trend comparison ^b			
Odds ratio		0.99			0.99*		1.00			
Avg. annual change		-0.8%			-0.8%					
Hispanic										
Massachusetts										
Adjusted Prevalence Relative to 1990	23.9%	13.4% -44%	22.5% -6%	19.9% -17%	14.4% -40%	14.1% -41%	18.4% -23%	11.0% -54% [†]	24.5% +2%	21.8% -9%
US (41 states) Adjusted Prevalence Relative to 1990	17.5%	20.3% +16% [†]	19.1% +9%	18.2% +4%	19.0% +8%	20.5% +17%*	20.6% +18%*	21.3% +22%**	21.1% +20%*	20.0% +14% [†]
1990-1999 Trend		MA trend			US trend		Trend comparison ^b			
Odds ratio		1.01			1.02*		0.99			
Avg. annual change		+0.8%			+1.6%					

a Adjusted for sex, age, and education

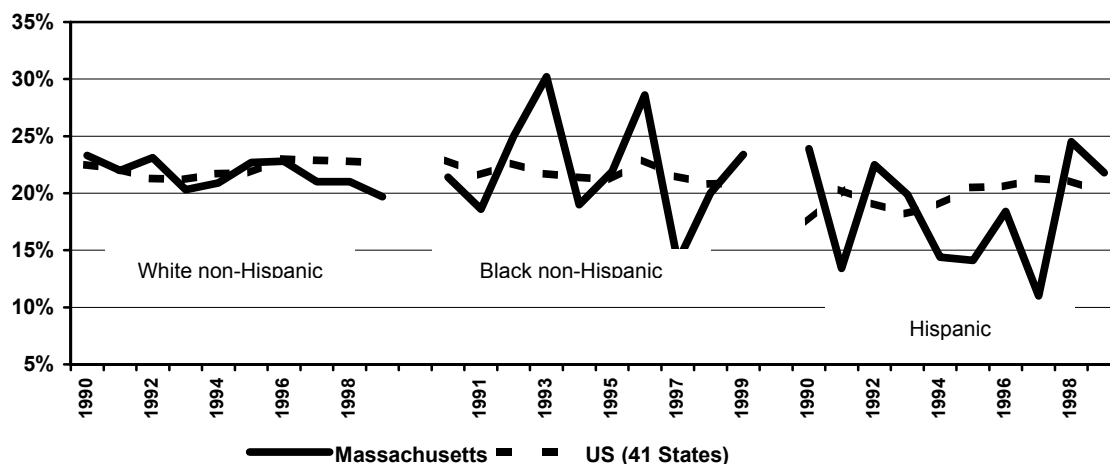
b Odds ratio of interaction term (MA*Year)

p-value of beta in logit model::

† = < 0.10

* = < 0.05

** = < 0.01



Discussion

Adjusted BRFSS smoking prevalence declined in Massachusetts from 1990-1999, but remained essentially constant for the comparison group of 41 states. This result is consistent with previously reported analysis,¹ but shows that the difference in the two trends is statistically significant after controlling for demographic characteristics of survey respondents. We can therefore conclude that the steeper prevalence decline in Massachusetts did not result from a difference in population demographics, nor from different patterns of demographic change over the decade. Absent any other clear smoking-related difference between Massachusetts and the other states, it is reasonable to conclude that Massachusetts' tobacco control efforts were the probable cause of the differential reduction in smoking prevalence.

The Massachusetts effect occurred principally among males. For females, the slight decline in Massachusetts was not significantly different from the US trend. Previous researchers have found differences between men and women in terms of the effect of tobacco control programs on current smoking and cessation success.^{12,13,14,15} Recent tobacco industry marketing strategies target women, which may be counteracting the effects of tobacco control strategies on this group.^{16,17,18} Some research indicates that females are less sensitive than males to cigarette price changes, which could mean that the excise tax hikes in Massachusetts would have less effect on females.^{19,20} Whatever the reason, the Massachusetts tobacco control effort has succeeded better with men than women.

The results for other demographic subgroups do not identify strongly differentiated patterns of success of the tobacco control effort. The Massachusetts trend was significantly better than the trend elsewhere for people in the younger age group (age 18-34) and the middle education group (high school but not college degree). In neither case, however, was the pattern as clear and consistent as for sex. Further research on demographic patterns of tobacco control effects would be useful, in Massachusetts or elsewhere.

The trend analysis indicates that the Massachusetts prevalence diverged gradually from the US trend. This suggests that the Massachusetts tobacco control effort was having a cumulative effect. The MTCP budget was roughly level from 1994-1999, and excise tax increases occurred only in 1993 and 1996, but the Massachusetts-US gap widened over the whole period.

The revision of the BRFSS smoking questions in 1996 almost certainly resulted in an increase in measured smoking prevalence, which means that the 1990-1999 trends as presented understate the actual rate of decline; this does not detract from the comparison of Massachusetts and the other states, because both groups are affected equally. It is likely that the analysis approach leads to some

understatement of the decline that has occurred during the period of the Massachusetts tobacco control effort, since we estimate the trend for the whole decade even though the effort began in 1993.

Controlling for demographic characteristics had potentially important effects on trend estimates. The estimates showed smaller prevalence declines after adjustment than before, for both Massachusetts and the comparison states (in the case of the comparison states, the unadjusted trend was a small decline and the adjusted trend a slight increase). The relative effect of the adjustment was somewhat greater for the comparison states than for Massachusetts. That is, differential demographic shifts were masking some of the difference in the underlying behavioral trends. These results indicate the importance of taking demographic shifts into account in evaluating the multi-year effect of tobacco control programs.

Endnotes

- ¹ Biener L, Harris JE, Hamilton W. Impact of the Massachusetts tobacco control programme: population based trend analysis. *BMJ* 2000;321:351-354.
- ² CDC. Cigarette smoking before and after an excise tax increase and an antismoking campaign—Massachusetts, 1990-1996. *MMWR* 1996;45:966-970.
- ³ Siegel MD, Mowery PD, Pechacek TP et al. Trends in adult cigarette smoking in California compared with the rest of the United States, 1978-1994. *Am J Pub Hlth* 2000;90:372-379.
- ⁴ Pierce JP, Gilpin EA, Emery SL, et al. Has the California tobacco control program reduced smoking? *JAMA* 1998;280:893-899.
- ⁵ US Centers for Disease Control and Prevention. Cigarette smoking among adults – United States, 1999. *MMWR* 2001; 50: 869-872.
- ⁶ U.S. Census Bureau, Population Division, Education and Social Stratification Branch.
- ⁷ U.S. Census Bureau, Census 2000 and U.S. Census Bureau, 1990 Census of Population.
- ⁸ U.S. Census Bureau, Census 2000 and U.S. Census Bureau, 1990 Census of Population.
- ⁹ 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;1:9–14.
- ¹⁰ The seven states that did not conduct the BRFSS in all years from 1990-1999 are Alaska, Arkansas, Kansas, Nevada, New Jersey, Rhode Island, and Wyoming.
- ¹¹ CDC. Cigarette smoking among adults—United States, 1992, and changes in the definition of current cigarette smoking. *MMWR* 43:342-346.
- ¹² Hann N, Asghar A. Smoking in Oklahoma: the seven-year trend. *Journal - Oklahoma State Medical Association* 1997;90:94-100.
- ¹³ Pierce JP, Macaskill P, Hill D. Long-term effectiveness of mass media led antismoking campaigns in Australia. *Am J Pub Hlth* 1990;80:565-569.
- ¹⁴ Pine D, Sullivan S, Sauser M, David C. Effects of a systematic approach to tobacco cessation in a community-based practice. *Arch Fam Med* 1997;6:363-367.
- ¹⁵ Monso E, Campbell J, Tonnesen P, et al. Sociodemographic predictors of success in smoking intervention. *Tobacco Control* 2001; 10:165-169.
- ¹⁶ Source: Amos A, Haglund M. From social taboo to “torch of freedom”: the marketing of cigarettes to women. *Tobacco Control* 2000;9:3-8.
- ¹⁷ Source: Houston T, Kaufman NJ. Tobacco Control in the 21st Century: Searching for Answers in a Sea of Change. *JAMA* 2000;284:752-753.
- ¹⁸ Source: Hastings G, MacFadyen L. A day in the life of an advertising man: review of internal documents from the UK tobacco industry's principal advertising agencies. *BMJ* 2000;321:366-371.
- ¹⁹ Source: Chaloupka FJ Pacula RL. Sex and race differences in young people's responsiveness to price and tobacco control policies. *Tobacco Control* 1999;8:373-377.
- ²⁰ Source: US Centers of Disease Control and Prevention. Response to increases in cigarette prices by race/ethnicity, income, and age groups, United States, 1976-1993. *MMWR* 1998;47:605-609.

Chapter 4: Youth Tobacco Use

This chapter examines 1995-1999 trends in the prevalence of current cigarette smoking, lifetime smoking, and current smokeless tobacco use by high school students in Massachusetts and in the United States as a whole. Massachusetts is found to have significant declines in prevalence for all three forms of tobacco use. The decline was greater in Massachusetts than in the nation for all three measures, and significantly greater for current smoking, indicating a positive effect of Massachusetts' tobacco control efforts.

Background

Preventing youth initiation of tobacco use is a major goal of the tobacco control efforts in Massachusetts, as it is in most other states with tobacco control programs. MTCP funds community based youth programs; some parts of the statewide media campaign are explicitly targeted to youth; the Department of Education carries out school-based tobacco education; and local communities enact ordinances restricting tobacco marketing to youth. Youth are also expected to be influenced by general tobacco control efforts such as the excise taxes on cigarettes and smokeless tobacco, media messages about health consequences, and policies restricting smoking in restaurants and other public places.

Research has demonstrated that tobacco control efforts including school-based, media, and community elements can be effective in reducing youth smoking.¹ The oldest and most comparable statewide program, California's, measured a 43 percent decline in teenage (ages 12-17) smoking from 1995 to 1999 using a telephone survey. Using in-school surveys, estimates of smoking by California 8th and 12th grade students declined by 45 percent and 13 percent, respectively.² The Florida Tobacco Pilot Program reports statistically significant declines among both public middle school and public high school students from 1998, the program's first year, to 1999 and again from 1999 to 2000. Over the three years, middle school smoking dropped by 54 percent and high school smoking by 24 percent.³ The Oregon Tobacco Prevention and Education Program reports declines in youth smoking since program implementation in 1997.⁴ More importantly, in 2000, 8th grade students who had been exposed to the program for two years were approximately 20 percent less likely to smoke than unexposed students, with the difference increasing with the level of program implementation.⁵ (Of the other two states with comprehensive tobacco control programming for at least three years, high school smoking rates remained stable from 1997 to 1999 in Mississippi⁶ and trend data are not available for Arizona.)

Consistent with these findings, prevalence measures of youth tobacco use in Massachusetts have been declining since the mid-1990s.^{7,8} However, nationwide data have also indicated a downturn in youth smoking in the last years of the decade.^{3,9,10} This raises the question of whether the decline in Massachusetts results from the Commonwealth's tobacco control efforts or simply reflects the nationwide trend.

Data Sources and Methods

The main data source used in the analyses below is the Youth Risk Behavior Survey (YRBS). Since 1990, the Centers for Disease Control and Prevention (CDC) has administered the national YRBS, which tracks behaviors, including tobacco use, that affect the health of 9th through 12th graders. Employing a three-stage cluster sample design, YRBS results are generalizable to high school students throughout the nation.¹¹ From 1991 onwards, the survey was administered in schools every other year, in the spring.

In addition to the national YRBS, the Massachusetts Department of Education administers the survey to a representative sample of high school students to provide Massachusetts-specific measures of key behaviors. Individual-level data from the Massachusetts YRBS surveys are available for 1995, 1997 and 1999.¹²

The Massachusetts and US samples are pooled for this analysis and treated as separate groups. The national YRBS sample includes some observations from Massachusetts, which cannot be removed because state of residence is not identified in the national data set. In principle, this could lead to an under-estimate of the difference between Massachusetts and the US. In practice, Massachusetts represents a small enough percentage of the national sample that any bias would be very small.

For analyses comparing current smoking in Massachusetts and the U.S. by grade, small cell sizes resulted in some strata having only one primary sampling unit represented and some primary sampling units having only one observation. Six observations were deleted from the national data set to enable within-grade analyses: three from the 9th grade, one from 10th grade, and two from the 12th grade. Resulting national sample sizes are: 9th grade, 10,124; 10th grade, 10,424; 11th grade, 10,732; and 12th grade, 11,105. The Massachusetts sample sizes are: 9th grade, 3,468; 10th grade, 3,166; 11th grade 3,206; and 12th grade, 2,607.

The analysis focuses on three measures of tobacco use prevalence. *Current smoking* is defined in the YRBS as having smoked a cigarette in the 30 days prior to the survey. *Lifetime smoking* is defined as

having ever smoked a cigarette. *Current use of smokeless tobacco* refers to having used any form of smokeless tobacco in the 30 days prior to the survey.

The analysis tests the null hypothesis that the 1995-1999 tobacco use trend in Massachusetts does not differ from that in the nation as a whole, controlling for gender, race/ethnicity, and grade level. It also tests this general hypothesis within each of the four grades, controlling for gender and race/ethnicity.

The analysis replicates the procedure described in Chapter 3. Logistic regression models were estimated that included variables for time (survey year, treated a continuous variable), an indicator of whether the respondent was in the Massachusetts or the national sample, and a term interacting year and sample. Covariates included gender, race/ethnicity in four categories (Non-Hispanic White, Non-Hispanic Black, Hispanic, and Other), and grade level (except in the analyses stratified by grade level). To calculate the adjusted prevalence for individual years, the model was specified with each year as a dummy variable (omitting the initial year) and evaluated at the mean of all covariates. The calculation of average annual change used the model in which time was specified as a continuous variable, solved for the adjusted prevalence in each year, calculated the percent change between 1995-1997 and 1997-1999, and averaged the percent changes. All analyses were performed using SUDAAN software to take account of the complex sample design of the YRBS.

Results

Current smoking prevalence for all grades combined. Youth cigarette smoking declined in Massachusetts from 1995 to 1999, even though the nationwide youth smoking prevalence did not. Massachusetts' adjusted prevalence in 1999 was 29.1 percent (Exhibit 4.1). This is a statistically significant reduction from the 1995 level ($p < 0.001$). In contrast, the US adjusted smoking prevalence climbed slightly, from 33.6 percent in 1995 to 34.7 percent in 1999, a difference that is not statistically significant ($p = 0.52$).

The trend estimate indicates that, controlling for the size and composition of the high school population, the number of high school smokers was declining by 3.3 percent per year over the 1995-1999 period ($p < 0.01$). This was significantly different from the US trend ($p = 0.01$).

Current smoking prevalence by grade. The overall pattern is visible in each of grades 9-12, with the prevalence in each grade trending downward more steeply in Massachusetts than in the nation as a whole (Exhibit 4.2).

Exhibit 4.1**Current smoking among high school students, all grades ^a**

	1995	1997	1999
Massachusetts			
Adjusted Prevalence	33.8%	32.7%	29.1%
Relative to 1990		-3%	-14%**
US (41 states)			
Adjusted Prevalence	33.6%	35.6%	34.7%
Relative to 1990		+6%	+3%
1990-1999 Trend	MA trend	US trend	Trend comparison^b
Odds ratio	0.95	1.01	0.94*
Avg. annual change	-3.3%**	+0.7%	

a Adjusted for sex and race/ethnicity

b Odds ratio of interaction term (MA*Year)

p-value of logit coefficient:

† = < 0.10

* = < 0.05

** = < 0.01

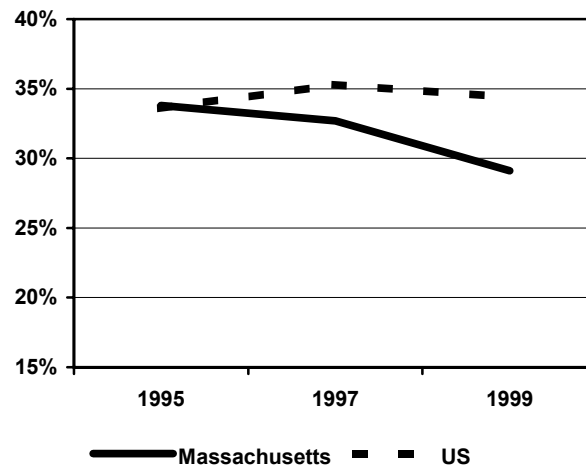


Exhibit 4.2

Current smoking among high school students, by grade ^a

	1995	1997	1999
9th Grade			
Massachusetts			
Adjusted Prevalence Relative to 1990	30.9%	26.2% -15%*	24.3% -21%**
United States			
Adjusted Prevalence Relative to 1990	30.9%	33.0% +7%	27.2% -12% [†]
1990-1999 Trend	MA trend	US trend	Trend comparison^b
Odds ratio	.92**	.95*	0.97
Avg. annual change	-5.5%	-3.3%	
10th Grade			
Massachusetts			
Adjusted Prevalence Relative to 1990	33.3%	33.7% +1%	28.0% -16%*
United States			
Adjusted Prevalence Relative to 1990	32.4%	34.8% +8%	34.6% +7%
1990-1999 Trend	MA trend	US trend	Trend comparison^b
Odds ratio	0.94*	1.02	0.92*
Avg. annual change	-3.9%	+1.3%	
11th Grade			
Massachusetts			
Adjusted Prevalence Relative to 1990	34.8%	32.8% -6%	29.8% -14%*
United States			
Adjusted Prevalence Relative to 1990	34.6%	36.2% +5%	35.5% +3%
1990-1999 Trend	MA trend	US trend	Trend comparison^b
Odds ratio	0.94*	1.00	0.94 [†]
Avg. annual change	-3.9%	+0.6%	
12th Grade			
Massachusetts			
Adjusted Prevalence Relative to 1990	35.2%	38.7% +10%	34.1% -3%
United States			
Adjusted Prevalence Relative to 1990	36.8%	38.7% +5%	42.1% +14 [†]
1990-1999 Trend	MA trend	US trend	Trend comparison^b
Odds ratio	.99	1.05 [†]	0.93 [†]
Avg. annual change	-0.6	+3.8	

a Adjusted for sex and race/ethnicity

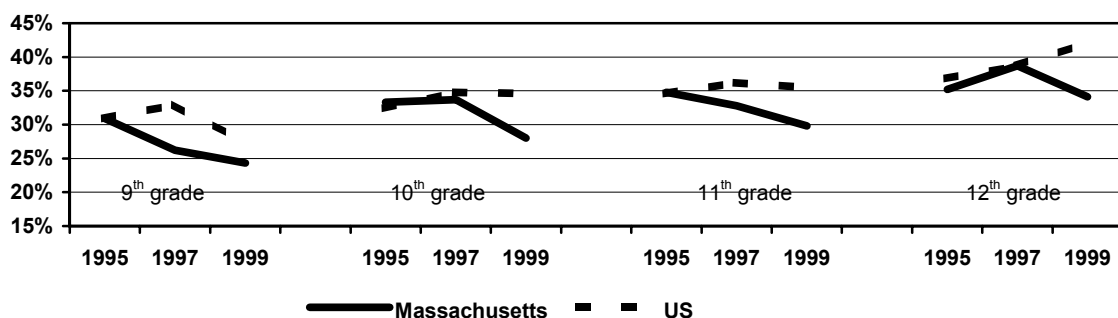
b Odds ratio of interaction term (MA*Year)

p-value of logit coefficient:

[†] = < 0.10

* = < 0.05

** = < 0.01



The Massachusetts decline was greater in the younger grades, with an average annual decline of 5.5 percent for the 9th grade ($p < 0.001$) and 3.9 percent for the 10th ($p = 0.01$). The decline was also statistically significant for grade 11 ($p = 0.02$), though not for grade 12 ($p = 0.64$). Nationwide, in contrast, the trend estimate indicated an increasing prevalence for grades 10, 11, and 12 ($p = 0.43$, 0.90, and 0.06, respectively). The nationwide prevalence declined only for grade 9 ($p = 0.03$).

The Massachusetts trend clearly differed from the US trend in each grade. The difference is pronounced for 10th graders ($p = 0.02$), 11th graders ($p = 0.05$), and 12th graders ($p = 0.06$).

Any cigarette use in lifetime. The lifetime smoking measure, which captures youth who have only experimented with cigarettes sometime in the past in addition to those who smoke currently, has prevalence levels about double those of current smoking. Like the current smoking measure, however, lifetime smoking shows a declining trend for Massachusetts high school students in 1995-1999 and little change in the US.

The adjusted prevalence in Massachusetts was 67.6 percent in 1999, down from 71.6 in 1995 (Exhibit 4.3). The downward trend is statistically significant ($p < 0.001$). In contrast, the adjusted prevalence for the US as a whole hardly changed over the period, moving from 70.8 percent in 1995 to 70.6 percent in 1999 ($p = 0.87$). The estimated trend for the US is downward, but not statistically significant ($p = 0.95$). The point estimate for the comparison between the Massachusetts and US trends shows a greater decline in Massachusetts, but the difference between the two trends is not statistically significant ($p = 0.12$).

Current use of smokeless tobacco. Smokeless tobacco use declined significantly from 1995-1999 in both Massachusetts and the nation as a whole (Exhibit 4.4). The adjusted prevalence for Massachusetts males was 7.2 percent in 1999, down from 13.0 percent in 1995 ($p < 0.001$). The change from 1995 to 1999 amounted to a 45-percent reduction in the number of males using smokeless tobacco, controlling for the size and composition of the Massachusetts high school population. The downward trend over the three time points is statistically significant ($p < 0.001$).

Although the nationwide data also show a decline in smokeless tobacco use ($p < 0.001$), the national adjusted prevalence was higher than that in Massachusetts in 1995 and the national trend estimate suggests a shallower decline through 1999. The change from 1995 to 1999 amounts to a 27 percent reduction in the nationwide number of smokeless tobacco users ($p < 0.001$). The difference in the Massachusetts and US trends is not statistically significant, however ($p = 0.18$).

Exhibit 4.3**Lifetime smoking among high school students, all grades^a**

	1995	1997	1999
Massachusetts			
Adjusted Prevalence	71.6%	69.1%	67.6%
Relative to 1990		-3%*	-6%**
US (41 states)			
Adjusted Prevalence	70.8%	70.2%	70.6%
Relative to 1990		-1%	-0%
1990-1999 Trend	MA trend	US trend	Trend comparison^b
Odds ratio	0.95**	1.00	.95
Avg. annual change	-1.5	-0%	

a Adjusted for grades, sex, and race/ethnicity

b Odds ratio of interaction term (MA*Year)

p-value of logit coefficient:

† = < 0.10

* = < 0.05

** = < 0.01

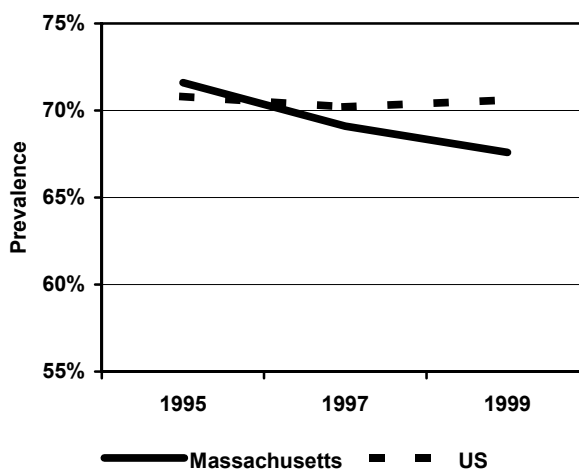


Exhibit 4.4**Current use of smokeless tobacco among males, all grades ^a**

	1995	1997	1999
Massachusetts			
Adjusted Prevalence	13.0%	8.8%	7.2%
Relative to 1990		-32**	-45%**
US (41 states)			
Adjusted Prevalence	18.2%	14.7%	13.2%
Relative to 1990		-20%**	-27**
1990-1999 Trend			
Odds ratio	0.84**	0.92**	0.93
Avg. annual change	-13.3%	-7.1%	
Trend comparison^b			
			0.93

a Adjusted for grade and race/ethnicity

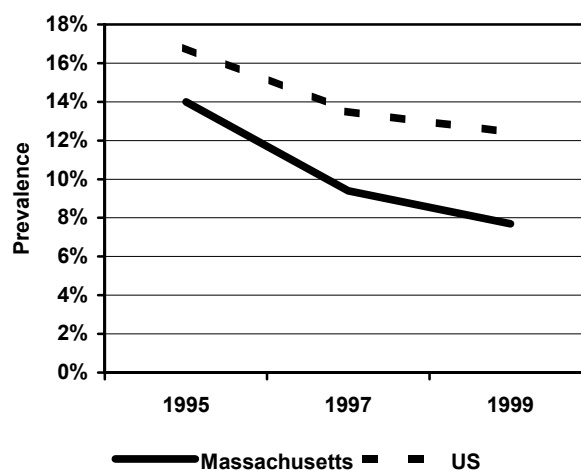
b Odds ratio of interaction term (MA*Year)

p-value of logit coefficient:

† = < 0.10

* = < 0.05

** = < 0.01



Discussion

The adjusted prevalence of current cigarette smoking declined significantly more in Massachusetts than in the nation as a whole during 1995-1999. This indicates that the reduction in Massachusetts was not simply a reflection of a national pattern. Moreover, because the analyses controlled for grade level, gender, and race/ethnicity, we can rule out the possibility that the greater Massachusetts decline stemmed from a different demographic composition or different shifts over time in the demographic makeup of the high school population. The most reasonable interpretation is that Massachusetts' tobacco control efforts influenced youth behavior, leading to a faster decrease in tobacco use.

In the earlier part of the decade, through 1995, Massachusetts participated in the national pattern of rising youth smoking prevalence. This period could not be included in the analysis (because disaggregated Massachusetts data were not available), but apparently would have shown no major divergence from the national trend during the first two years of the tobacco control efforts that began in 1993. This may reflect the fact that much of the youth-oriented programming was not fully implemented before 1995. In any event, the pattern is consistent with the findings for adult smoking prevalence, where an increasing divergence of the Massachusetts and US trends suggests a cumulative effect of continuing tobacco control activity.

Findings regarding lifetime cigarette use among all students and current use of smokeless tobacco among males are consistent with the current smoking findings, but less conclusive. For both measures, the decline in Massachusetts was statistically significant and the trend estimate showed a steeper decline for Massachusetts than the US, but the difference between the Massachusetts and US trends was not statistically significant.

Two limitations of the analysis should be noted. First, it rests on YRBS surveys conducted in just three years, an uncomfortably small number for estimating time trends. The multivariate models, which control for differences in sample composition, give reasonable assurance that the trend is estimated as accurately as possible within the period, however. Second, because the national sample includes some Massachusetts observations (none that are in the separate Massachusetts sample), the analysis may underestimate the difference between Massachusetts and the rest of the United States. Any bias should be small, however, as Massachusetts represents less than 3 percent of the US population.

Endnotes

- ¹ U.S. Department of Health and Human Services. *Reducing Tobacco Use: A Report of the Surgeon General*. Atlanta GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. 2000.
- ² *California Tobacco Control Update*. Sacramento CA: California Department of Health Services / Tobacco Control Section. August 2000.
- ³ *2000 Florida Youth Tobacco Survey Results*. Tallahassee FL: Florida Department of Health. March 1, 2000.
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- ⁵ CDC. Effectiveness of School-Based Programs as a Component of a Statewide Tobacco Control Initiative—Oregon, 1999-2000. *MMWR* 2001;50:663-6.
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CDC. Youth Risk Behavior Surveillance—United States, 1997. *MMWR* 1998;47(SS-3);
CDC. Youth Tobacco Surveillance—United States, 2000. *MMWR* 2001;50(SS-4); and
Mississippi State Department of Health. *The 1998 Mississippi Youth Tobacco Survey*. Undated.
- ⁷ Abt Associates. *Independent Evaluation of the Massachusetts Tobacco Control Program, Sixth Annual Report*. Cambridge MA: Abt Associates Inc. 2000.
- ⁸ *Adolescent Tobacco Use in Massachusetts: Trends Among Public School Students 1996-1999*. Boston MA: Massachusetts Department of Public Health. 2000.
- ⁹ CDC. Trends in Cigarette Smoking Among High School Students – United States, 1991-1999. *MMWR* 2000;33,755-758.
- ¹⁰ Johnston LD, O'Malley PM, Bachman JG. The Monitoring the Future National survey results on adolescent drug use: Overview of key findings, 1999 (NIH Publication No. 00-4690). Washington DC. 2000.
- ¹¹ CDC. Youth Risk Behavior Surveillance—United States, 1999. *MMWR* 2000;49(SS05);1-96.
- ¹² Only data from 1995 onwards were available for the analyses presented here. Prior Massachusetts surveys were limited by not including schools for Boston (1990) or not being weighted (1992).

Chapter 5: Local Adoption of Tobacco Control Policies

This chapter describes the clean air and youth access policies enacted by Massachusetts cities and towns since 1993, and examines the effect of MTCP funding on the pattern of ordinance adoption. In fiscal year 2000, 78 percent of Massachusetts residents lived in towns with one or more clean air policies and 94 percent lived in towns with local provisions restricting youth access to tobacco. Smoking restrictions in restaurants, municipal buildings, and private work sites were the most common forms of clean indoor air provision. The most common youth access provisions were requirements for tobacco retailer licensing, fines for sales to underage youth, and restrictions on free-standing displays of tobacco products. For small towns, MTCP funding substantially increased the likelihood that a town would adopt clean air or youth access provisions; no test was possible for large towns because nearly all have MTCP funding.

Background

Public policy restrictions on tobacco marketing and use have become major elements of tobacco control strategies throughout the nation. One thrust has been to prohibit smoking in specified locations, such as public buildings, restaurants, and private workplaces. "Clean indoor air" policies are designed to reduce public exposure to environmental tobacco smoke (ETS), and research has documented such reductions, particularly in workplaces.^{1,2} The Surgeon General's report of 2000 presents considerable evidence that such restrictions also reduce smoking, at least among smokers who spend substantial time in restricted locations.³

A second policy thrust is to regulate tobacco marketing to reduce the accessibility and appeal of tobacco products to youths. All states have laws prohibiting tobacco sales to young persons, generally those under age 18, but states and localities vary widely in their specific restrictions and in their enforcement efforts. Research indicates that more stringent policies can reduce the likelihood of illegal sales to minors^{4,5} and contribute to reduced smoking.^{6,7}

MTCP pursues these two policy directions by encouraging cities and towns to adopt and enforce clean indoor air and youth access ordinances and regulations. MTCP-funded local boards of health are charged with assessing the need for such policies, supporting their enactment, and conducting monitoring and enforcement activities, as described in Chapter 2. (MTCP also promotes state-level policies to limit ETS and youth access, but the analysis here focuses on local policies.)

A great many Massachusetts cities and towns have adopted ETS and youth access policies since 1993, as described in Chapter 1. It is logical to hypothesize that the MTCP effort was a major cause of this pattern. Bartosch (2000) constructed an index of policy adoption (a weighted count of the number of policies adopted) and found that higher levels of adoption were associated with the presence of MTCP funding.⁸ The analysis below extends that research by comparing the prevalence of adoption of each type of policy separately in towns with and without MTCP funding. To eliminate bias associated with the fact that nearly all medium- and large-population towns receive MTCP funding, this analysis is limited to towns with populations under 10,000.

Data and Methods

Data on local ordinances and regulations come from a database maintained by the Massachusetts Department of Public Health. The DPH requires all local boards of health and health departments that receive funding under the MTCP Board of Health program to provide information on all local ordinances and regulations designed to limit environmental tobacco smoke or to restrict the marketing or accessibility of tobacco products to youth. Local programs fill out a questionnaire and provide copies of their provisions. 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.

Information received at DPH is coded by staff trained in the legal interpretation of the ordinances and regulations, consulting legal staff as necessary. Each ETS provision is coded as to whether it restricts smoking in each of twelve specified types of facilities or locations (restaurants, municipal buildings, etc.) as well as “other” types of places. The stringency of the restriction, such as whether smoking is banned entirely or limited to designated areas, is also coded for some provisions. (The analysis below uses only the coding on types of places covered.) Policies regarding youth access are coded in terms of twelve specific provisions and an “other” category. Provisions are also coded as to whether they are ordinances, regulations, or municipal by-laws; the analysis does not distinguish among these types of provisions.

The data base contains information on specific provisions in 241 of the 289 towns receiving Board of Health funding in fiscal year 2000 and 34 of the 62 towns not receiving such funding. One important limitation of the data base stems from the fact that the data collection procedure did not require towns

with no tobacco control provisions to file a report. Thus a town may have no recorded information either because it has no ordinances or regulations or because it has never provided information.

Counts of towns and estimates of population coverage treat towns with no recorded data as having no provisions. These counts and estimates are lower bounds, because some of the “missing” towns probably do have some local tobacco control regulations or ordinances. The extent of underestimation is probably not large, however. DPH staff believe that most towns for which no data are recorded do not actually have any tobacco control provisions.

The descriptive analyses below present unweighted distributions of towns and distributions weighted by the town population in 1990. The 1990 population figures are used for all time periods to avoid confounding changes in towns’ population with changes in the number of towns that have ordinances.

The analysis of the effect of MTCP funding uses logistic regression to examine the probability that a town has a particular provision in fiscal year 2000 as a function of whether it had MTCP Board of Health funding in fiscal year 2000, 1990 population, and whether the town had any tobacco control ordinances or regulations before January, 1994. Because nearly all towns with populations greater than 10,000 receive such funding, only towns with populations under 10,000 are included in this analysis. Towns with no recorded data are excluded to avoid bias from the fact that most of the towns without data are unfunded towns (note that this inflates the prevalence figures in Exhibit 5.2).

Results

Prevalence of local tobacco control ordinances and regulations

In fiscal year 2000, one or more clean air ordinances or regulations were in effect in 196 cities and towns in Massachusetts, representing 78 percent of the state population (Exhibit 5.1). Youth access provisions were implemented in 236 towns covering 90 percent of the population.

Restrictions on smoking in restaurants and in municipal buildings are the most common ETS provisions, affecting 69 percent and 57 percent of the statewide population, respectively. Ordinances covering smoking in private work sites are third most common, and have been adopted in towns that contain 43 percent of the population.

All of the remaining ETS provisions are less common, covering less than half of Massachusetts residents. One reason for the limited prevalence of these provisions is that many towns have no facilities of particular types, such as nursing homes or malls. Indeed, this limitation applies even in the case of restaurant restrictions, the most widespread of the provisions. Of the 136 MTCP-funded

towns that had no reported restaurant smoking restriction in fiscal year 2000, a quarter had no listings under “restaurants” in the ATT telephone business directory, and about the same number had 1-3 establishments listed. (Only 11 of these 136 towns have populations of 20,000 or more.) Ideally, coverage statistics would indicate the percent of the applicable population covered by ETS restrictions, but the currently available data do not permit such a distinction for all types of facilities.

Exhibit 5.1

Number of Towns and Percent of Population Covered by Specified Tobacco Control Provisions

	All Towns		Towns with 10,000+		Towns with <10,000	
	No. of towns	% of population	No. of towns	% of population	No. of towns	% of population
ETS Provisions						
Any ETS Provision	196	78.0%	126	81.6%	70	54.2%
Restaurants	164	68.7%	109	72.8%	55	40.9%
Municipal Buildings	155	57.1%	103	59.6%	52	39.8%
Work Sites	102	43.2%	63	45.2%	39	29.6%
Nursing Homes	92	33.5%	61	35.0%	31	22.8%
Hospitals	86	32.2%	58	34.1%	28	19.7%
Sports Arenas	87	30.3%	54	31.3%	33	23.9%
Hotels	73	26.4%	44	27.1%	29	21.8%
Malls	61	25.7%	45	27.9%	16	10.4%
Private Schools	42	17.0%	32	18.5%	10	6.6%
Bars	43	14.1%	25	14.2%	18	13.2%
Private Colleges	30	13.0%	21	14.1%	9	5.5%
Outdoor Stadiums	13	4.4%	10	4.8%	3	1.7%
Other ETS	87	23.2%	50	22.2%	37	30.0%
Youth Access Provisions						
Any Youth Provision	236	90.2%	143	93.6%	96	67.2%
License and fines	227	87.8%	139	91.3%	88	64.2%
Require retailer license	210	83.9%	130	87.5%	80	59.5%
Fines for sales to minors	194	75.8%	117	78.9%	77	55.5%
Vending machines	216	84.4%	131	87.9%	85	61.3%
Require lockout devices	79	51.0%	66	57.1%	13	9.7%
Limit to adult establishments	74	32.2%	46	34.2%	28	18.7%
Complete ban	94	22.9%	47	21.0%	47	35.1%
In-store marketing and promotion	220	82.4%	132	85.5%	88	62.1%
Limit free-standing displays	202	76.2%	120	78.8%	82	58.6%
Ban free samples	183	73.7%	113	77.1%	70	50.9%
Ban individual cigarette sales	162	58.4%	101	59.9%	61	47.7%
Ban tobacco coupon redemption	40	10.9%	28	11.1%	12	9.6%
Advertising	19	7.9%	15	8.7%	4	2.2%
Ban public transit advertising	18	7.2%	14	7.9%	4	2.2%
Ban taxi advertising	18	7.2%	14	7.9%	4	2.2%
Ban billboard advertising	4	1.7%	4	1.9%	0	0.0%
Other restrictions	47	16.2%	29	16.5%	18	14.8%
Total towns	351		161		190	
1990 population (millions)		6.02		5.24		0.78

The most common youth access provisions are those that establish a basis for regulation and enforcement: a requirement for retailers who sell tobacco products to be licensed by the town, and the establishment of fines for selling tobacco products to persons less than 18 years old. Nearly all Massachusetts towns that have adopted any youth-oriented ordinances or regulations have implemented one or both of these provisions. As a result, this regulatory infrastructure is in place in towns covering 88 percent of the population statewide.

Nearly as many towns have undertaken some form of regulation of vending machines, although the regulatory strategy differs strikingly from town to town. Through fiscal year 2000, 94 towns, representing 23 percent of the state population, had completely banned vending machines. Fewer towns required lockout devices, but these tended to be larger towns and represented 51 percent of the statewide population. Finally, a number of towns limited vending machine sales to adult-only establishments such as bars.

The third major youth access regulatory strategy is represented by a group of provisions prohibiting specific retail marketing and promotion practices that are believed particularly effective with young people. Nearly three quarters of Massachusetts residents live in towns limiting the use of free-standing tobacco displays in retail stores or towns banning the distribution of free samples of tobacco products, and over half of the population is covered by bans on the sale of individual cigarettes.

Nearly all types of ordinances were less prevalent in the small towns (those with fewer than 10,000 residents) than larger towns, but the relative prevalence within each size class of towns is quite consistent. The only notable exception concerns vending machine regulations: very few of the small towns required lockout devices, but a relatively large proportion completely banned cigarette sales in vending machines.

Effect of MTCP funding on adoption of policies

The analysis clearly indicates a positive effect of MTCP funding. For each type of provision considered, towns receiving MTCP funding had a substantially greater prevalence of the provision, as shown in bivariate comparisons in Exhibit 5.2. In multivariate analyses controlling for population and for the presence of any ordinances before 1994, the point estimate of the MTCP funding coefficient was consistently positive. It was significant ($p < 0.05$) for nearly all youth access provisions, for the overall measure of the presence of any ETS provision, and for provisions restricting smoking in restaurants and work sites. The odds ratio on the ETS funding term was 5.4 for the presence of any ETS provision, and 79.5 for the presence of any youth provision.

The other covariates—population, median income, and the presence of any ETS or youth access ordinances before 1994—were statistically significant in some but not all models. Larger towns were significantly more likely than smaller towns to have at least one ETS provision and also significantly more likely to have at least one youth provision ($p < 0.05$). Population was a significant predictor in 5 of the 16 models of individual provisions. Higher median income was a significant predictor for any youth provision and for 3 of the 8 individual youth access provisions, but not for any of the ETS provisions. Having a provision before 1994 was not a significant predictor for most models, but was positively associated with the presence of any ETS provision and with the presence of a restaurant smoking restriction.

Discussion

The analysis provides strong evidence that, among towns with populations less than 10,000, MTCP funding had a strong influence on whether or not the town adopted policies restricting smoking in public places and/or restricting youth access to tobacco. Towns with MTCP funding were three times more likely to have adopted one or more ETS policies than towns without funding, and six times more likely to have adopted any youth access policies. These differences were statistically significant. This general pattern applies to all of the individual policies examined, although the effect was not statistically significant in all cases.

These results are consistent with expectations. One mission of the MTCP-funded boards of health was to promote clean air and youth access policies. It is gratifying but not surprising to find that the funding had its intended effect. The results are also consistent with prior research in Massachusetts⁸ and with case studies elsewhere indicating that organized local efforts have led to the enactment of ordinances.^{9,10,11}

The key limitation of the analysis is its restriction to towns with populations no larger than 10,000, made necessary by the fact that 144 of the 161 towns with populations larger than 10,000 received MTCP funding. Nonetheless, it is reasonable to believe that MTCP funding had a similar effect in larger towns—that is, far fewer ordinances would probably have been enacted if the towns had not received from MTCP both the funding and the mandate to pursue clean air and youth access policies.

Exhibit 5.2

**Comparison of ETS and Youth Access Ordinance Adoption by Towns Receiving and Not Receiving MTCP Board of Health Funding
(Towns with Population <10,000 and Recorded Data on Provisions)**

Percent with Specified ETS Provisions in Fiscal Year 2000			
	Funded	Not Funded	P-value of Difference ^a
<i>Any ETS Provision</i>	64.8%	21.1%	0.01
Restaurants	54.3%	10.5%	0.01
Municipal Buildings	48.6%	21.1%	0.12
Work Sites	38.1%	5.3%	0.05
Nursing Homes	29.5%	5.3%	0.08
Hospitals	28.6%	15.8%	0.51
Sports Arenas	33.3%	15.8%	0.27
Hotels	29.5%	5.3%	0.10
Malls	14.3%	10.5%	0.66
Private Schools	9.5%	0.0%	b
Bars	18.1%	0.0%	b
Private Colleges	8.6%	0.0%	b
Outdoor Stadiums	2.9%	0.0%	b
Other ETS	40.0%	15.8%	0.10
<i>Any Youth Provision</i>	93.0%	13.7%	<0.01
Require retailer license	83.1%	6.6%	<0.01
Fines for sales to minors	77.4%	6.6%	<0.01
Require lockout devices	13.6%	0.0%	b
Limit to adult establishments	26.3%	0.0%	b
Complete ban	48.6%	6.6%	<0.01
Limit free-standing displays	81.9%	6.6%	<0.01
Ban free samples	71.0%	6.6%	<0.01
Ban individual cigarette sales	66.4%	6.6%	<0.01
Ban tobacco coupon redemption	13.5%	0.0%	b
Ban public transit advertising	3.1%	0.0%	b
Ban taxi advertising	3.1%	0.0%	b
Ban billboard advertising	0.0%	0.0%	b
Other restrictions	19.8%	7.1%	0.37
Number of towns	105	19	
^a Controlling for town population, median income, and presence of any ordinances in 1993. ^b Model not estimated because of zero cell.			

Endnotes

- ¹ Pierce JP, Shanks TG, Pertschuk M, et al. Do smoking ordinances protect non-smokers from environmental tobacco smoke at work? *Tobacco Control* 1994;3(1):15–20.
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Chapter 6: Changing Social Norms

This chapter addresses the question of whether tobacco-related social norms have changed in Massachusetts during the period of the MTCP. Using data from the 1993 Massachusetts Tobacco Survey and the 1995-2000 Massachusetts Adult Tobacco Survey, we examined 23 measures that pertain to two broad domains of social norms: whether tobacco use is normal and customary, and whether exposure to environmental tobacco smoke is normal and expected. The analysis shows a general pattern of gradual movement towards tobacco-free norms, with statistically significant positive trends for 13 of the 23 indicators. Improvement has occurred for both non-smokers and smokers, and is particularly striking in the support for public and household-level policies restricting smoking in areas where people might be exposed to environmental tobacco smoke.

Background

In recent years, tobacco researchers have increasingly understood the effect of environmental cues and social expectations on the smoking behavior of individuals, in particular among youth. Three social factors affect young people's predisposition to try cigarettes. First, seeing adults smoke in public places such as restaurants, sports arenas, and school, as well as in private homes, creates the impression that smoking is prevalent and acceptable. Second, knowing that tobacco control measures such as bans on students' smoking at school or bans on sales to minors are not enforced creates the impression that adults do not mind, and may expect or support, youth experimentation. Third, exposure to a heavy volume of advertising for tobacco products not only creates positive associations of smoking with relaxation and popularity but also, through repetition, may create a sense of familiarity that decreases youths' perception of risk.^{1,2}

The youth who are most predisposed to tobacco begin smoking, creating a cycle in which more youth have friends who smoke, their association of smoking with desirable social attributes increases, and they overestimate the number of other youth who smoke.^{1,2,3,4,5} Remaining smoke-free may require actively choosing that status, developing the skills to reject tobacco, and doing so successfully.⁶ In social environments that support tobacco use, youth fear potential negative social effects of a smoke-free status more strongly than they anticipate positive effects, inhibiting their success.⁷

Relatively few adults initiate tobacco use, but for those who already smoke, social norms may either reinforce their behavior or provide incentives to quit. Norms that allow smokers to smoke at most

times, including while at work or home, provide little incentive to quit, and visual or olfactory cues such as seeing an ashtray or smelling others' smoke in a restaurant may reinforce smoking behavior.²

Tobacco control advocates have increasingly focused on the influence of social norms on tobacco use,⁸ developing prevention frameworks that incorporate social norms at the peer group, organizational, community, and population levels.⁹ Tobacco control programs in Massachusetts, as well as many other states,¹⁰ include the alteration of social norms as one aspect of their strategy.

The theoretical and programmatic interest in social norms has led to some attempts to measure norms, but not yet to a standard measurement approach. Evaluators of statewide tobacco control programs have used a variety of measures within three broad domains: belief in negative health effects of tobacco use and environmental tobacco smoke; attitudes about tobacco industry statements or actions; and support for tobacco control policies such as local and statewide ordinances on smoking and youth access and taxation of cigarettes.^{11,12} The National Social Climate Survey, administered by Mississippi State University in 2000 and 2001, structures the measurement of social norms around seven social institutions that impact individuals' lives: 1) family and friendship groups, 2) education, 3) government and political order, 4) work, 5) health and medical care, 6) recreation, leisure and sports, and 7) mass communication and culture.¹³

Data Sources and Methods

This analysis addresses the question of whether Massachusetts' social norms regarding tobacco have changed over the period in which the MTCP has been operating. We measure social norms in two domains: whether tobacco use is normal and customary, and whether exposure to environmental tobacco smoke is normal and expected.

Data come from the Massachusetts Tobacco Survey (MTS) and the Massachusetts Adult Tobacco Survey (MATs). Both surveys were conducted by the Center for Survey Research of the University of Massachusetts at Boston. Both were random-digit-dial surveys of stratified probability samples of the Massachusetts population. The MTS was a one-time survey, conducted in late 1993 and early 1994 and including both a youth sample and an adult sample. The MATs was a continuing survey, interviewing a sample of Massachusetts residents each month from March, 1995 through June, 2000.¹⁴ Data collection methods have been described thoroughly elsewhere.¹⁵ All references to time periods for the MATs data concern Massachusetts fiscal years (July through June). Sample sizes for the main interview are 4,733 in 1993, 950 in 1995, 2,792 in 1996, 2,964 in 1997, 2,705 in 1998, 2,621 in 1999, and 2,939 in 2000. Some analyses are conducted for smokers only (n=4,975, 1993-

2000); some are for parents of children age 12 through 17 only (n=3,010, 1995 through 2000, not measured in 1993).

The variables used in the analysis are summarized in Exhibit 6.1. Data are generally included for all years in which the question was asked. Some measures are not reported for the 1993 MTS survey because the item itself or the context in which it was presented differed from the subsequent MATS instrument.

The analysis treats each social norm measure as a function of time and demographic characteristics, as specifically noted in each table. Demographic characteristics for the adult survey generally include sex, age in four categories (18-24, 25-44, 45-64, and 65+), race/ethnicity in four categories (Non-Hispanic White, Non-Hispanic Black, Hispanic, and Other), education level in four categories (less than high school, high school graduate, some college, college graduate), whether a child under age 12 lived in the respondent's household, and whether a teenager (aged 12-17) lived in the respondent's household. To control for the increased likelihood that a person working indoors would be protected by—and possibly influenced by—a ban on smoking, we also controlled for whether the respondent was employed indoors. Time is represented in two alternative specifications: (a) as a series of dummy variables for the fiscal year in which the survey was conducted, or (b) as a continuous variable with values reflecting the month of the interview.

In most instances, we perform stratified analyses of smokers and non-smokers, controlling for the other covariates, to see how norms in these two subcultures may be changing. In these cases, we present the results for the entire population and for both subgroups. We do not control for smoking status or other factors that might be hypothesized to affect norms but which are themselves potentially influenced, at the respondent level, by the tobacco control program.

To generate adjusted prevalence estimates, weighted distributions of covariates over the time period in the model were determined using SAS, and these distributions were entered into the logistic regression equations generated by SUDAAN to solve for the prevalence in a given year. The percent increase (or decrease) as compared to the baseline year was calculated as the difference between the adjusted prevalence in the year of interest and the adjusted baseline prevalence, divided by the adjusted baseline prevalence. Because time is coded in increments of one month, the odds ratio in the trend model reflects the level of month-to-month change. To calculate the average year-to-year percent decline, each year's adjusted prevalence was calculated as of the mid-point in the year, and the average decline over the entire period was determined.

Exhibit 6.1**Measurements of Social Norms**

Domain 1: Whether tobacco use is normal and customary.

Indicator of favorable change	Survey question	Coding
Fewer adults perceived to smoke	"About how many of your friends and relatives are smokers? Would you say..."	Less than half includes "None, "A few" and "Less than half."
It is less acceptable for adults to smoke	"Do you believe that people in your family are upset by your smoking/would be upset if you smoked?"	Yes/No
It is less acceptable for children to smoke	[If not the parent of a 12-19 year old:] "If you were the parent of a teenager..."	1="10, Strongly disapprove"
	"...How would you feel about your teenager smoking cigarettes? On a scale from 0 to 10 where 0 means "don't care" and 10 means "strongly disapprove," what number would you choose?"	0= responses 0 ("don't care") through 9
Support for restrictions on marketing to youth has increased.	"On the same 0 to 10 scale, how would you feel about your child becoming a pack-a-day smoker as an adult?"	1="10, Strongly disapprove" 0=responses 0 ("don't care") through 9
	"Do you think that tobacco companies deliberately use advertising and promotional campaigns to get young people to start smoking, or do you believe tobacco companies do not do this?"	Yes="Deliberately advertise to start youth smoking"
	"Cigarette companies currently use many different methods to advertise or promote their product. I will describe a number of these. For each one please tell me whether you think this method should be allowed or not allowed by law..	Ban="No"
	"...Should the distribution of free cigarettes on public streets be permitted?"	
	"...Should sponsorship of sporting or cultural events by tobacco companies be permitted?"	Ban="No"
	"...Should advertising of tobacco products through newspapers and magazines be permitted?"	Ban="No"
	"...Should coupons to obtain free samples of cigarettes by mail be permitted?"	Ban="No"
	"...Should advertising of tobacco products on outdoor billboards be permitted? [if yes:] Should billboards with tobacco advertising be permitted near schools?"	Ban="No" to either question
	"...Should tobacco companies be permitted to offer products such as clothing or camping equipment in exchange for coupons on cigarette packs?"	Ban="No"
	"...Should cigarette sales be allowed in vending machines? [if yes:] Do you think cigarette vending machines should be restricted to places where only adults can use them?"	Ban="No [not allowed at all]" or "Yes [restricted to adult-only establishments]"

Exhibit 6.1**Measurements of Social Norms**

Domain 2: Exposure to environmental tobacco smoke is “normal,” or expected.

Indicator of favorable change	Survey question	Coding
More people believe ETS is harmful to non-smokers.	“Do you believe that inhaling someone else’s cigarette smoke can cause lung cancer in nonsmokers?”	Yes/No
	“Do you believe that it harms the health of children to inhale someone else’s cigarette smoke?”	Yes/No
More adults support banning smoking in public places	“The next questions are about allowing or not allowing smoking in various places. “...In restaurants, do you think smoking should be allowed throughout the restaurant, only in special smoking areas, or not at all?”	Ban=“Not at all”
	“...How about public buildings? Do you think smoking should be allowed throughout the building, only in special smoking areas, or not at all?”	Ban=“Not at all”
	“...How about indoor sporting events or concerts? Do you think smoking should be allowed....”	Ban=“Not at all”
	“How about outdoor sporting events or concerts? Do you think smoking should be allowed....”	Ban=“Not at all”
	“How about indoor shopping malls? Do you think smoking should be allowed....”	Ban=“Not at all”
More adults are protected from ETS at work	For people who work indoors, “I’m going to read you a list of typical policies. Please tell me which one is the most like the indoor smoking policy at your workplace.”	Ban=“Smoking is not allowed anywhere in the building”
Take action: More people ban smoking at home	“Some households have rules about when and where people may smoke. When you have visitors who smoke, are they allowed to smoke inside your home?”	Ban=“No”
Take action: More kids are protected from ETS at home.	“...Do smokers in your household smoke inside your home?”	Ban=“No” Restriction=“No [smoking]” or “Only in certain rooms”
Take action: Ask acquaintance not to smoke	“In the past 12 months have you ever asked someone you know not to smoke around you, in order to avoid exposure to their tobacco smoke?”	Yes/No

Results

Domain 1: Tobacco use is “normal,” or customary.

Indicator of change: fewer adults smoke

Massachusetts smokers increasingly report that fewer than half of their friends and relatives smoke, a trend that is statistically significant over the 1993-2000 period ($p = 0.03$) (Exhibit 6.2). The vast majority (90 percent) of non-smokers even in 1993 said that fewer than half of their friends and relatives smoke, and this percentage remained essentially constant over the time period. The trend for the full population shows a small improvement that is not statistically significant ($p = 0.13$).

Exhibit 6.2

Adult perceptions of adult smoking

	1993	1995 ^a	1996	1997	1998	1999	2000
Fewer than half of friends smoke:							
All adults^b	81.4%	83.9%	81.0%	83.9%	81.6%	84.5%	84.0%
Relative to 1993		+3%	-1%	+3%	+0%	+4% [†]	+3%
1993-2000 Trend: Odds ratio	1.00						
Average annual change	+0.4%						
Smokers^b	40.8%	53.7%	40.3%	61.0%	49.9%	53.7%	46.9%
Relative to 1993		+32%	-1	+50%**	+22% [†]	+32%*	+15%
1993-2000 Trend: Odds ratio	1.01*						
Average annual change	+3.0%						
Non-smokers^b	90.1%	88.5%	88.4%	87.8%	87.6%	89.3%	89.9%
Relative to 1993		-2%	-2%	-3% [†]	-3% [†]	-1%	-0%
1993-2000 Trend: Odds ratio	1.00						
Average annual change	-0.2%						
Family is upset about smoking^{b,c}	66.0%	62.0%	58.2%	73.5%	63.2%	67.0%	69.6%
Relative to 1993		-9%	-13%	+11%	-5%	+2%	+5%
1995-2000 Trend: Odds ratio	1.00						
Average annual change	+0.3%						

^a There was no survey in 1994.

^b Adjusted for age, education, sex, race/ethnicity, having child under 12 in household, having teenager (12-17) in household, and being employed indoors.

^c Non-smokers were asked this question in 1993 only. Only smokers are included in this analysis.

p-value of comparison:

† = < 0.1

* = < 0.05

** = < 0.01

Indicator of change: it is less acceptable for adults to smoke

About 70 percent of smokers in 2000 said that their families are upset about their smoking, a level that has not changed significantly since 1995 ($p = 0.76$).

Indicator of change: it is less acceptable for children to smoke

Adults disapprove of their children, whether real or hypothetical, smoking as a teenager or smoking a pack a day as an adult. Although the disapproval was very strong in 1995—averaging 9.2 out of 10 for both measures—adults felt even more strongly about their children becoming regular smokers as time went on (Exhibit 6.3). For the trend estimate, the scale was dichotomized, examining the percent who responded “10” (greatest disapproval). The trend estimate was positive, although not statistically significant, for this measure ($p = 0.11$). Adults who currently had teenagers felt even more strongly than adults without teenage children, averaging a score of 9.9 on both measures in the most recent year (data not shown).

Exhibit 6.3

Adult perceptions of youth smoking^a

	1995	1996	1997	1998	1999	2000
How adult would feel if child smokes as a teen^b	9.2	9.5	9.5	9.5	9.5	9.5
Relative to 1995		+3%*	+4%*	+4%*	+4%*	+4%*
1995-2000 Trend: Odds ratio^c	1.00					
Average annual change	+0.4%					
How adult would feel if child smokes as an adult^{b,d}	9.2	9.7	9.5	9.6	9.7	
Relative to 1995		+5%**	+3%	+4%*	+5%*	
1995-2000 Trend: Odds ratio^c	1.01					
Average annual change	+1.2%					

a Adults without children were asked to respond hypothetically. Responses are scaled from 0 (“don’t care”) through 10 (“strongly disapprove”).

b Adjusted for age, education, sex, race/ethnicity, having child under 12 in household, having teenager (12-17) in household, and being employed indoors.

c Odds ratio of the likelihood of the respondent saying “10, strongly disapprove” compared with all other responses.

d Question was not asked in 2000.

p-value of comparison:

* = < 0.05

** = < 0.01

Indicator of change: support for restrictions on marketing to youth has increased

Increasing numbers of adults believe the tobacco industry intentionally markets to youth, with 82 percent expressing that view in 2000 (Exhibit 6.4).

Exhibit 6.4

Adults' attitudes about tobacco industry marketing tobacco to youth

	1995	1996	1997	1998	1999	2000
Believe tobacco industry markets to youth^a	75.7%	79.9%	77.5%	78.9%	80.8%	82.2%
Relative to 1995		+4%	+2%	+4%	+7%	+9% [†]
1995-2000 Trend: Odds ratio	1.00*					
Average annual change	+1.2%					
Support bans on:						
Distribution of free cigarettes on public streets^a	84.6%	87.2%	85.7%	88.8%	89.5%	84.2%
Relative to 1995		+3%	+1%	+5%	+6% [†]	-0%
1995-2000 Trend: Odds ratio	1.00					
Average annual change	+0.4%					
Sponsorship of sporting or cultural events^a	54.6%	50.6%	56.1%	57.5%	54.1%	52.8%
Relative to 1995		-7%	+3%	+5%	-1%	-3%
1995-2000 Trend: Odds ratio	1.00					
Average annual change	+0.6%					
Advertisements in newspapers and magazines^a	35.3%	40.2%	41.2%	45.4%	44.9%	46.4%
Relative to 1995		+14%	+17%	+29%*	+27%*	+31%*
1995-2000 Trend: Odds ratio	1.01**					
Average annual change	+4.2%					
Distribution of free cigarettes by mail^a	67.5%	74.1%	76.0%	78.8%	82.1%	79.8%
Relative to 1995		+10% [†]	+13%*	+17%**	+22%**	+18%**
1995-2000 Trend: Odds ratio	1.01**					
Average annual change	+2.7%					
billboards near schools^a	88.4%	90.5%	91.9%	94.4%	92.8%	91.2%
Relative to 1995		+2%	+4%	+7%**	+5% [†]	+3%
1995-2000 Trend: Odds ratio	1.01*					
Average annual change	+8.2%					
Free products for proof of purchase^a	56.6%	63.1%	64.4%	66.0%	67.1%	59.5%
Relative to 1995		+11%	+14% [†]	+17%*	+19%*	+5%
1995-2000 Trend: Odds ratio	1.00					
Average annual change	+0.3%					
Vending machines where children are allowed^a	69.2%	71.5%	75.4%	72.7%	73.1%	71.7%
Relative to 1995		+3%	+9%	+5%	+6%	+4%
1995-2000 Trend: Odds ratio	1.00					
Average annual change	+0.1%					

a Adjusted for age, education, sex, race/ethnicity, having child under 12 in household, having teenager (12-17) in household, and being employed indoors.

p-value of comparison:

† = < 0.1
 * = < 0.05
 ** = < 0.01

Support has generally increased for public policies that would restrict forms of tobacco marketing to which young people are believed to be particularly vulnerable. Support for three of the seven policies—banning the distribution of free cigarettes through the mail, banning tobacco advertising in newspapers and magazines, and banning tobacco advertising on billboards—has followed a statistically significant upward trend from 1995-2000 (Exhibit 6.4). Support for the remaining four policies, all of which are endorsed by a majority of Massachusetts residents, increased slightly over the period.

It is worth noting that this picture of strengthening support for controls on marketing to youth occurs despite an increasing perception that youth access to tobacco is being effectively reduced. As discussed in Chapter 1, such controls have increasingly been embodied in local ordinances and regulations, and survey respondents have expressed growing satisfaction with the situation (data not shown).

Domain 2: Exposure to environmental tobacco smoke (ETS) is “normal,” or expected.

Indicator of change: more people believe ETS is harmful to non-smokers

In 1995, Massachusetts residents were already quite aware that ETS causes lung cancer in adults (83 percent) and harms children (92 percent) (Exhibit 6.5). Trend estimates suggest that understanding of these effects became more widespread over the 1995-2000 period. Comparisons to the base year show statistically significant increases in several years. Gains in understanding are particularly visible for smokers. Smokers had much lower percentages admitting the negative effects of ETS in 1995, but the gap closed considerably by 2000.

Indicator of change: More people support banning smoking in public places

The MATS tracks attitudes on smoking bans and more limited smoking restrictions in five venues: restaurants, public buildings, indoor and outdoor sporting events, and shopping malls. The data reveal strong upward trends in public support for smoking restrictions in Massachusetts. Trend estimates are positive and statistically significant for the population as a whole for four of the five policies. (For outdoor sporting events, the trend is statistically significant when considering all forms of restriction ($p < 0.01$, data not shown), but not for complete bans on smoking.) Solid majorities supported banning on smoking in shopping malls, public buildings, restaurants, and indoor sporting events.

Exhibit 6.5

Belief in Health Effects of Environmental Tobacco Smoke (ETS)

	1995	1996	1997	1998	1999	2000
ETS causes lung cancer:						
All adults^a	83.4%	87.7%	87.2%	88.2%	88.5%	88.3%
Relative to 1995		+5%	+4%	+6% [†]	+6%*	+6% [†]
1995-2000 Trend: Odds ratio	1.00					
Average annual change	+0.5%					
Smokers^a	58.7%	73.7%	76.7%	72.7%	72.9%	73.7%
Relative to 1995		+26%	+31%*	+24%	+24%	+26%
1995-2000 Trend: Odds ratio	1.00					
Average annual change	+0.5%					
Non-smokers^a	88.3%	91.0%	90.1%	92.7%	92.0%	91.5%
Relative to 1995		+3%	+2%	+5% [†]	+4%	+4%
1995-2000 Trend: Odds ratio	1.00					
Average annual change	+0.4%					
ETS harms children's health:						
All adults^a	92.4%	95.6%	94.8%	95.7%	95.9%	95.7%
Relative to 1995		+3% [†]	+3%	+3% [†]	+4%*	+4% [†]
1995-2000 Trend: Odds ratio	1.01					
Average annual change	+0.3%					
Smokers^a	77.7%	91.9%	91.3%	94.0%	92.9%	93.1%
Relative to 1995		+18%*	+18%*	+21%**	+20%**	+20%*
1995-2000 Trend: Odds ratio	1.01					
Average annual change	+1.3%					
Non-smokers^a	96.5%	96.8%	96.1%	96.7%	96.8%	96.7%
Relative to 1995		+0%	-0%	+0%	+0%	+0%
1995-2000 Trend: Odds ratio	1.00					
Average annual change	+0.1%					
^a Adjusted for age, education, sex, race/ethnicity, having child under 12 in household, having teenager (12-17) in household, and being employed indoors. p-value of comparison: [†] = < 0.1 * = < 0.05 ** = < 0.01						

Exhibit 6.6
Support for Complete Bans on Smoking in Public Places Among Massachusetts Adults

		1995	1996	1997	1998	1999	2000
Support smoking ban:							
In restaurants:	All adults^a	41.6%	43.3%	40.7%	44.6%	53.0%	50.8%
	Relative to 1995		+4%	-2%	+7%	+27%**	+22%*
	1995-2000 Trend: Odds ratio	1.01**					
	Average annual change	+5.7%					
	Smokers^a	13.1%	13.0	17.2%	14.3%	27.5%	18.0%
	Relative to 1995		-1%	+31%	+9%	+109%*	+37%
	1995-2000 Trend: Odds ratio	1.01					
	Average annual change	+8.8%					
	Non-smokers^a	47.1	50.1%	45.9%	52.1%	58.3%	57.6%
	Relative to 1995		+6%	-3%	+11%	+24%*	+22%*
	1995-2000 Trend: Odds ratio	1.01**					
	Average annual change	+5.2%					
In public buildings	All adults^a	45.6%	49.3%	51.1%	55.3%	56.8%	58.3%
	Relative to 1995		+8%	+12%	+21%*	+25%**	+28%**
	1995-2000 Trend: Odds ratio	1.01**					
	Average annual change	+4.6%					
	Smokers^a	17.6%	14.7%	25.1%	23.9%	19.7%	27.6%
	Relative to 1995		-16%	+43%	+36%	+12%	+57%
	1995-2000 Trend: Odds ratio	1.01 [†]					
	Average annual change	+6.3%					
	Non-smokers^a	49.0%	54.5%	53.2%	59.1%	61.5%	61.3%
	Relative to 1995		+11%	+9%	+21%*	+26%**	+25%**
	1995-2000 Trend: Odds ratio	1.01**					
	Average annual change	+4.2%					
At indoor sporting events	All adults^a	51.4%	62.7%	60.8%	61.9%	63.8%	67.0%
	Relative to 1995		+22%**	+18%*	+20%*	+24%**	+30%**
	1995-2000 Trend: Odds ratio	1.01**					
	Average annual change	+2.6%					
	Smokers^a	35.3%	40.5%	42.9%	36.0%	49.6%	48.6%
	Relative to 1995		+15%	+22%	+2%	+40%	+38%
	1995-2000 Trend: Odds ratio	1.01					
	Average annual change	+4.8%					
	Non-smokers^a	54.9%	67.9%	65.2%	68.7%	67.2%	71.1%
	Relative to 1995		+24%**	+19%*	+25%**	+22%**	+29%**
	1995-2000 Trend: Odds ratio	1.01*					
	Average annual change	+2.1%					
At outdoor sporting events	All adults^a	14.7%	19.3%	15.6%	18.8%	21.2%	19.2%
	Relative to 1995		+32%	+6%	+28%	+45%*	+30%
	1995-2000 Trend: Odds ratio	1.00					
	Average annual change	+3.1%					
	Smokers^a	1.0%	4.6%	2.1%	4.0%	2.6%	2.7%
	Relative to 1995		+341%**	+101%	+289%**	+149%	+157%*
	1995-2000 Trend: Odds ratio	1.00					
	Average annual change	-3.5%					

continued.

Exhibit 6.6, continued

Support for Complete Bans on Smoking in Public Places Among Massachusetts Adults

	1995	1996	1997	1998	1999	2000
At outdoor sporting events, continued.						
Non-smokers^a	17.6%	21.9%	18.3%	21.5%	24.9%	22.4%
Relative to 1995		+24%	+4%	+22%	+42% [†]	+27%
1995-2000 Trend: Odds ratio	1.00					
Average annual change	+3.3%					
In shopping malls						
all adults^a	52.7%	62.2%	61.7%	62.9%	69.0%	67.0%
Relative to 1995		+18%*	+17%*	+19%*	+31%**	+27%**
1995-2000 Trend: Odds ratio	1.01**					
Average annual change	+3.2%					
Smokers^a	40.1%	46.5%	54.0%	52.2%	49.0%	54.5%
Relative to 1995		+16%	+35%	+30%	+22%	+36%
1995-2000 Trend: Odds ratio	1.00					
Average annual change	+2.8%					
Non-smokers^a	55.7%	65.7%	63.2%	65.7%	73.1%	69.6%
Relative to 1995		+18%*	+13%	+18%*	+31%**	+25%**
1995-2000 Trend: Odds ratio	1.01**					
Average annual change	+3.1%					

^a Adjusted for age, education, sex, race/ethnicity, having child under 12 in household, having teenager (12-17) in household, and being employed indoors.

p-value of comparison:

† = < 0.1

* = < 0.05

** = < 0.01

Smaller proportions of smokers than non-smokers support the smoking bans, which would be expected. Nonetheless, the results suggest that smokers' support for bans may have grown at a faster pace than non-smokers' support. The estimated annual change rate is greater for smokers than non-smokers for three of the five measures and equal in a fourth, although only one of the smokers' trends approaches statistical significance due to their smaller sample size. A majority of smokers (55 percent) now support smoke-free malls and nearly half (49 percent) support smoke-free indoor sporting events. While only a very small minority of smokers support complete bans on smoking at outdoor events, they increasingly support restricting smoking ($p < 0.05$). By 2000, 62 percent of smokers thought there should be designated smoking areas at outdoor events (data not shown).

Indicator of change: more adults are protected from ETS at work.

Workers became significantly more likely to be protected from ETS over the 1995-2000 period ($p < 0.01$). Overall, 75 percent of indoor workers reported that their workplace had a complete ban on smoking in 2000. Non-smokers were more likely to work in places with a smoking ban, perhaps reflecting an effect of workplace bans in reducing smoking. While smoking and non-smoking workers reported a similar pattern of increase in workplace smoking bans over the six years (+3.4 percent and +3.8 percent, respectively) only the rate among non-smokers was significant ($p < 0.01$).

Exhibit 6.7**Level of protection from ETS at work**

	1995	1996	1997	1998	1999	2000
Ban on smoking in one's workplace:						
All adults employed indoors^a	69.4%	66.2%	67.5%	73.3%	79.8%	74.9%
Relative to 1995		-5%	-3%	+6%	+15%*	+8%
1995-2000 Trend: Odds ratio	1.01**					
Average annual change	+4.6%					
Smokers employed indoors^a	76.4%	54.3%	62.8%	66.0%	67.1%	68.4%
Relative to 1995		-29%	-18%	-14%	-12%	-10%
1995-2000 Trend: Odds ratio	1.01					
Average annual change	+6.9%					
Non-smokers employed indoors^a	68.4%	68.8%	68.6%	75.4%	82.4%	76.2%
Relative to 1995		+1%	+0%	+10%	+20%**	+11%
1995-2000 Trend: Odds ratio	1.01**					
Average annual change	+3.9%					

^a Adjusted for age, education, sex, race/ethnicity.

p-value of comparison:

* = < 0.05

** = < 0.01

Indicator of change: more people take action against ETS

The prevalence of actions taken to control other people's smoking has increased significantly over the past few years, with protection of children increasing the most. Two-thirds of MATS respondents reported banning visitors from smoking in their homes in 2000, up from 56 percent in 1995 ($p < 0.01$) (Exhibit 6.8). The increase was particularly strong for smokers, whose prevalence of bans in 2000 was nearly double that in 1995 ($p < 0.01$).

Households with children age 17 or younger were particularly likely to ban visitors from smoking, reaching three-quarters in 2000, up from 68 percent in 1995 ($p < 0.01$) (Exhibit 6.8). The data for smokers are less stable, due to the small sample size of this sub-set, but trend upwards ($p < 0.05$).

Many adults also require that any smokers who live in the household refrain from smoking indoors, and that proportion increased from 35 percent in 1995 to 41 percent in 2000 ($p < 0.05$). Non-smoking respondents were more likely than smokers to report that the smokers in their household were not allowed to smoke indoors. Nonetheless, it was the smoking respondents who reported an increase in bans ($p < 0.01$).

Exhibit 6.8
Actions to Reduce Exposure to Environmental Tobacco Smoke (ETS)

	1995	1996	1997	1998	1999	2000
Ban on visitor smoking in one's home:						
All adults^a	56.1%	51.8%	55.8%	59.0%	64.2%	66.7%
Relative to 1995		-8%	-0%	+5%	+15%*	+19%**
1995-2000 Trend: Odds ratio	1.01**					
Average annual change	+5.8%					
Smokers^a	17.1%	17.3%	23.1%	24.5%	28.4%	33.1%
Relative to 1995		+1%	+34%	+43%	+66%	+93%*
1995-2000 Trend: Odds ratio	1.02**					
Average annual change	+17.7%					
Non-smokers^a	63.8%	60.3%	63.4%	68.1%	71.7%	73.7%
Relative to 1995		-6%	-1%	+7%	+13% [†]	+15%*
1995-2000 Trend: Odds ratio	1.01**					
Average annual change	+4.5%					
Ban on visitor smoking in one's home, households with children:						
All adults^a	68.4%	59.1%	61.2%	65.4%	68.7%	74.5%
Relative to 1995		-14%	-11%	-5%	+0%	+9%
1995-2000 Trend: Odds ratio	1.01**					
Average annual change	+4.9%					
Smokers^a	3.8%	7.4%	11.2%	10.1%	8.3%	18.8%
Relative to 1995		+96%	+197% [†]	+170% [†]	+121%	+400%**
1995-2000 Trend: Odds ratio	1.02*					
Average annual change	+15.4%					
Non-smokers^a	77.9%	66.1%	72.9%	72.9%	77.3%	79.4%
Relative to 1995		-15% [†]	-6%	-6%	-1%	+2%
1995-2000 Trend: Odds ratio	1.01**					
Average annual change	+3.6%					
Ban on household member smoking at home:						
all adults^a	35.0%	28.3%	41.1%	39.6%	41.3%	40.6%
Relative to 1995		-19%	+17%	+13%	+18%	+16%
1995-2000 Trend: Odds ratio	1.01*					
Average annual change	+6.2%					
smokers^a	21.8%	15.4%	26.4%	23.4%	27.5%	36.0%
Relative to 1995		-30%	+21%	+7%	+26%	+65%
1995-2000 Trend: Odds ratio	1.02**					
Average annual change	+18.0%					
non-smokers^a	45.2%	41.3%	55.4%	50.7%	50.7%	43.2%
Relative to 1995		-9%	+23%	+12%	+12%	-4%
1995-2000 Trend: Odds ratio	1.00					
Average annual change	-0.3%					
Asked acquaintance not to smoke: all adults^{a,b}						
Relative to 1995	29.4%	29.6%	30.0%	32.8%	36.4%	
		+1%	+2%	+12%	+24% [†]	
1995-2000 Trend: Odds ratio	1.01*					
Average annual change	+5.6%					
smokers^{a,b}	13.3%	7.7%	13.0%	12.7%	16.8%	
Relative to 1995		-42%	-2%	-4%	+27%	
1995-2000 Trend: Odds ratio	1.02 [†]					
Average annual change	+17.6%					
non-smokers^{a,b}	31.9%	34.5%	33.6%	37.5%	40.4%	
Relative to 1995		+8%	+6%	+18%	+27% [†]	
1995-2000 Trend: Odds ratio	1.01 [†]					
Average annual change	+4.8%					

a Adjusted for age, education, sex, race/ethnicity, having child under 12 in household, having teenager (12-17) in household, and being employed indoors.

b Question was not asked in 2000.

p-value of comparison:

† = < 0.1
 * = < 0.05
 ** = < 0.01

Survey respondents increasingly report that they have asked an acquaintance not to smoke in the year preceding the survey ($p < 0.05$). Although the prevalence of such actions was higher among non-smokers, as would be expected, both smokers and non-smokers show a growing propensity to make the request ($p < 0.10$).

Discussion

The analyses indicate a gradual but pervasive change in Massachusetts' tobacco-related social norms during the period of MTCP operations. We found statistically significant positive trends for 13 of the 23 measures examined among the general population of adults, controlling for demographic characteristics of the respondents. Among the trends that did not reach statistical significance (at the level of $p < 0.05$), none of the point estimates were negative; none of the social norm indicators showed an unfavorable trend. In short, there is strong evidence that social norms in Massachusetts have become less favorable to tobacco use during the years of MTCP operations.

For those measures that were examined separately for smokers and non-smokers, the two groups showed quite similar patterns of change over time. Smokers' responses consistently indicated social norms that were more pro-tobacco than those indicated by non-smokers, as would be expected. But the trends for smokers and non-smokers were moving in the same favorable direction, and in some instances the gains were more pronounced among smokers.

It is difficult to compare the relative strength of trends across the various facets of tobacco-related norms, but the strong increase in support for public policies that restrict indoor smoking is particularly striking. All four of the measures asking about indoor smoking (in shopping malls, public buildings, restaurants, and indoor sporting events) showed statistically significant upward trends for the overall population and for non-smokers. The point estimates of gains for smokers were similar to or greater than those for non-smokers, although smaller samples of smokers meant that equivalent point estimates were less likely to be statistically significant.

The Massachusetts patterns appear roughly similar to results found in California and in the National Social Climate Survey. In California, with a comprehensive tobacco program similar to that in Massachusetts, evaluators examined change from 1996 to 1998 on a number of measures similar to those considered here, including attitudes about tobacco advertising and the tobacco industry, support for restrictions on advertising, bans on smoking in the home, and asking others not to smoke.¹² Most measures showed small favorable changes, some of which were statistically significant, over the two-year period. The National Social Climate Survey includes a much broader array of measures than

either Massachusetts or California, but only for the years 2000 and 2001. Comparisons of those two years show general movement toward tobacco-free social norms, characterized by many small positive changes with a substantial number being statistically significant.¹³ Several of the statistically significant improvements concern support for public policies restricting smoking and the use of household-level smoking restrictions, both of which are areas in which the Massachusetts data show particularly strong positive trends.

The consistency of the Massachusetts patterns with those in other locations using other measures increases credibility of the Massachusetts results as reflecting a general pattern of social change. Because the Massachusetts survey was not designed with the specific intention of measuring social norms, it is useful to have this confirmation that the indicators examined are unlikely to be misleading as to the broader picture.

Still open is the question of how the Commonwealth's tobacco control efforts contributed to the change. We would like to know, for example, whether the observed changes in social norms would have occurred from 1995-2000 if there had been no tobacco control. Neither the California nor the National Climate Survey results can be regarded as measuring change that would occur in the absence of tobacco control. California had a tobacco control program similar to that in Massachusetts, and the timing of the National Climate Survey corresponds to a period of national advertising campaigns and the establishment of tobacco control programs in many states. Further research will be needed to distinguish the influence of tobacco control on these social trends.

It is also important to note the trends measured here include only the period after Massachusetts tobacco control initiatives had gotten underway; indeed, the time period for many of the measures (1995-2000) begins more than two years after the passage of Question 1. It is quite possible that early tobacco control actions in the campaign to pass Question 1—implementation of the excise tax and the first mass media campaigns—generated an important change in norms before the survey began. If this is true, the favorable trends seen in this analysis could substantially understate the actual effect of tobacco control efforts in Massachusetts.

Endnotes

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- ⁵ Mosbach P and Leventhal H. Peer Group Identification and Smoking: Implications for Intervention. *Journal of Abnormal Psychology* 1998;97(2):238-245.
- ⁶ Dunn DA and Johnson JL. Choosing to remain smoke-free: The experiences of adolescent girls. *J Adolesc Health* 2001;29(4):289-97.
- ⁷ Langlois MA, Petosa R, Hallam JS. Why Do Effective Smoking Prevention Programs Work? Student Changes in Social Cognitive Theory Constructs. *Journal of School Health* 1999;69(8):326-31.
- ⁸ See for example: Lantz PM et al. Investing in youth tobacco control: a review of smoking prevention and control strategies. *Tobacco Control* 2000;9:47-63; and
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- ⁹ Corbett KK. Susceptibility of youth to tobacco: a social ecological framework for prevention. *Respir Physiol* 2001;128(1):13-18.
- ¹⁰ See for example: *A Model for Change: the California experience in Tobacco Control*. California Department of Health Services. 1998;
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- ¹¹ See for example: *Evaluation of the New Jersey Department of Health and Senior Services Comprehensive Tobacco Control Program: Baseline Measures*. New Jersey Department of Health and Senior Services. 2001; and
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- ¹² Independent Evaluation Consortium. Interim Report. Independent Evaluation of the California Tobacco Control Prevention and Education Program: Wave 2 Data, 1998; Wave 1 and Wave 2 Data Comparisons, 1996-1998. Rockville: MD: The Gallup Organization, 1998.
- ¹³ McMillen RC, Frese W, Cosby AG. *The National Social Climate of Tobacco Control, 2000-201*. Social Science Research Center, Mississippi State University. 2001.
- ¹⁴ The MATS continued through December, 2000, but the data available at the time of this analysis extended only through June, 2000.
- ¹⁵ Biener L, Nyman AL, Roman AM, et al.. *2000 Massachusetts Adult Tobacco Survey: Technical Report & Tables*. Boston MA: Center for Survey Research. University of Massachusetts, 2002.

Appendices

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**Local MTCP Programs by Town
Fiscal Year 2000**

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

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

**Local MTCP Programs by Town
Fiscal Year 2000**

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

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

**Local MTCP Programs by Town
Fiscal Year 2000**

Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services
Hanover	X				
Hanson	X	X			
Hardwick	X				
Harvard	X				
Harwich	X	X			
Hatfield		X			
Haverhill	X	X			
Hawley	X	X			
Heath	X	X			
Hingham	X				
Hinsdale	X	X			
Holbrook	X			X	X
Holden	X			X	
Holland		X			
Holliston	X				
Holyoke	X	X	X		X
Hopedale					
Hopkinton	X				
Hubbardston	X	X			
Hudson	X				
Hull	X				
Huntington		X			
Ipswich	X	X	X	X	
Kingston	X				
Lakeville	X	X			
Lancaster	X		X	X	X
Lanesborough	X	X			
Lawrence	X	X			
Lee	X	X			
Leicester	X				
Lenox	X	X			
Leominster	X	X			
Leverett	X	X	X		
Lexington	X				

Town	Boards of Health	Community Mobilization Network	Youth Action Alliance	Innovative Smoking Intervention	Tobacco Treatment Services
Leyden	X	X			
Lincoln					
Littleton	X				
Longmeadow	X	X			
Lowell	X	X			
Ludlow	X	X			
Lunenburg	X				X
Lynn	X	X			
Lynnfield	X	X			
Malden	X	X			
Manchester	X	X			
Mansfield	X	X			
Marblehead	X	X			
Marion	X	X			
Marlborough	X				
Marshfield	X				
Mashpee	X	X			
Mattapoisett	X	X			
Maynard	X	X			
Medfield	X				
Medford	X				
Medway	X				
Melrose		X			
Mendon	X				
Merrimac	X	X			
Methuen	X	X			
Middleborough	X	X			
Middlefield					
Middleton	X	X			
Milford	X		X		X
Millbury					
Millis	X				
Millville					
Milton	X				

**Local MTCP Programs by Town
Fiscal Year 2000**

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

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

**Local MTCP Programs by Town
Fiscal Year 2000**

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

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

**Local MTCP Programs by Town
Fiscal Year 2000**

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

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

Source: Massachusetts Department of Public Health.

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

	1994	1995	1996	1997	1998	1999	2000	Total
<i>SMOKERS RECEIVING INDIVIDUAL CESSATION COUNSELING</i>								
Boards of Health	0	21	268	90	632	312	358	1,681
Outreach and Intervention	1	42	142	84	98	42	130	539
Cessation Programs ^a	217	5,022	6,276	6,038	5,677	4,839	4,782	32,851
Total	218	5,085	6,686	6,212	6,407	5,193	5,270	35,071
<i>SMOKERS RECEIVING GROUP CESSATION COUNSELING</i>								
Boards of Health	0	102	802	362	752	771	526	3,315
Outreach and Intervention	21	70	191	124	469	404	234	1,513
Cessation Programs ^a	46	2,183	1,800	1,851	1,796	1,837	1,714	11,227
Total	67	2,355	2,793	2,337	3,017	3,012	2,474	16,055
<i>GROUP CESSATION COUNSELING SERIES HELD</i>								
Boards of Health	26	69	76	38	78	108	95	490
Outreach and Intervention	8	29	26	17	37	42	32	191
Cessation Programs ^a	7	322	289	264	230	235	200	1,547
Total	41	420	391	319	345	385	327	2,228
<i>PEOPLE REFERRED TO CESSATION SERVICES</i>								
Boards of Health	1,795	7,681	9,732	11,404	12,692	12,272	6,622	62,198
Coalitions	562	2,430	3,215	3,260	2,262	2,162	1,383	15,274
Outreach and Intervention	1,728	3,845	6,838	4,534	5,625	5,383	6,903	34,856
Youth Programs	917	2,217	6,434	2,871	3,376	1,993	2,730	20,538
Cessation Programs ^a	178	12,241	24,619	25,058	25,222	31,543	38,713	157,574
Total	5,180	28,414	50,838	47,127	49,177	53,353	56,351	290,440
<i>COMMUNITY EVENTS THAT DISCUSSED ADULT SMOKING^b</i>								
Boards of Health	1428	994	1381	1260	939	864	758	7,624
Coalitions	556	389	534	441	207	242	164	2,533
Outreach and Intervention	794	507	739	753	623	782	855	5,053
Youth	486	121	158	191	193	191	239	1,579
Cessation Programs ^a	637	522	1021	983	759	624	716	5,262
Total^c	4,020	2,585	3,877	3,675	2,721	2,703	2,732	22,051
<i>ATTENDEES AT COMMUNITY EVENTS THAT DISCUSSED ADULT SMOKING^b</i>								
Boards of Health	742,149	478,264	1,255,411	1,039,301	452,754	301,362	249,677	4,518,918
Coalitions	216,672	94,777	288,485	349,124	32,623	46,005	69,406	1,097,092
Outreach and Intervention	173,175	99,517	90,891	160,228	91,124	216,070	85,235	916,240
Youth	322,194	111,473	159,270	65,378	55,125	38,206	93,411	845,057
Cessation Programs ^a	105,377	63,979	202,940	242,340	113,596	50,150	38,264	816,646
Total^c	1,598,048	873,124	2,005,931	1,859,951	745,222	651,793	535,993	8,183,953

a Cessation Programs include Institutional Casefinding programs.

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: Massachusetts Department of Public Health.

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

	1994	1995	1996	1997	1998	1999	2000	Total
PREVENTION PROGRAMS								
Boards of Health	7	25	6	13	11	9	3	74
Outreach and Intervention	61	180	172	114	69	32	37	665
Youth Programs	52	182	125	85	82	60	60	646
Total[□]	120	387	303	212	162	101	100	1,385
PEER LEADERS HIRED								
Youth Programs	649	219	214	118	222	120	168	1,710
ATTEMPTED PURCHASES BY UNDERAGE YOUTH								
Boards of Health	1,370	5,359	8,795	7,017	9,189	11,828	15,411	58,969
YOUTH REACHED THROUGH OUTREACH								
Youth Programs	67,751	100,614	100,129	88,251	65,220	54,50	62,282	484,351
COMMUNITY EVENTS THAT DISCUSSED YOUTH^a								
Boards of Health	2,282	1,538	2,533	2,168	1,696	1,652	1,556	11,899
Coalitions	670	481	668	619	255	354	279	2,847
Outreach and Intervention	558	240	520	586	453	651	572	3,580
Youth	1,044	644	827	909	730	800	776	5,730
Cessation Programs ^b	408	281	635	624	372	270	199	2,510
Total^c	5,201	3,354	5,323	5,007	3,506	3,727	3,382	26,566
ATTENDEES AT COMMUNITY EVENTS THAT DISCUSSED YOUTH^a								
Boards of Health	876,292	556,634	1,634,003	1,197,518	567,389	415,652	406,312	5,653,800
Coalitions	258,000	105,734	408,902	440,921	43,035	40,912	98,150	1,395,654
Outreach and Intervention	176,835	85,656	104,628	160,494	87,702	141,610	82,964	839,889
Youth	409,009	238,328	187,040	127,445	129,350	69,617	129,400	1,290,189
Cessation Programs ^b	97,481	45,012	173,677	165,758	92,228	40,530	20,948	635,634
Total^c	1,873,040	1,070,231	2,610,640	2,118,015	919,704	708,321	737,774	9,815,166

a 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.

b Cessation Programs include Institutional Casefinding programs.

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

Source: Massachusetts Department of Public Health.

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

	1994	1995	1996	1997	1998	1999	2000	Total
<i>COMMUNITY EVENTS THAT DISCUSSED ENVIRONMENTAL TOBACCO SMOKE^a</i>								
Boards of Health	1629	1132	1590	1334	1133	1081	1054	8,953
Coalitions	525	389	527	450	183	237	172	2,483
Outreach and Intervention	582	348	546	572	538	656	696	3,983
Youth	595	297	368	352	301	309	399	2,621
Cessation Programs ^b	385	290	639	690	462	412	503	3,381
Total^c	3,793	2,483	3,711	3,445	2,617	2,695	2,824	21,421
<i>ATTENDEES AT COMMUNITY EVENTS THAT DISCUSSED ENVIRONMENTAL TOBACCO SMOKE^a</i>								
Boards of Health	638,205	394,323	1,211,230	939,830	456,600	331,155	408,649	4,379,992
Coalitions	179,594	73,163	223,582	251,028	38,434	30,090	77,145	873,036
Outreach and Intervention	154,169	90,155	80,839	157,961	77,406	134,378	75,171	770,079
Youth	301,477	118,344	174,908	72,358	79,202	38,818	98,202	883,309
Cessation Programs ^b	86,045	49,189	172,702	108,018	103,046	44,984	27,781	591,765
Total^c	1,377,413	734,918	1,880,537	1,543,894	754,688	579,425	686,948	7,498,181
<i>PUBLIC ESTABLISHMENTS CHECKED FOR COMPLIANCE WITH SMOKE-FREE OR RESTRICTED SMOKING POLICIES</i>								
Boards of Health	1,341	2,975	4,384	5,462	4,050	9,566	5,032	32,810
<i>WORKPLACES CHECKED FOR COMPLIANCE WITH SMOKE-FREE OR RESTRICTED SMOKING POLICIES</i>								
Boards of Health	300	1,637	3,134	3,033	1,873	709	1,071	11,757

a 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.

b Cessation Programs include Institutional Casefinding programs.

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

Source: Massachusetts Department of Public Health.

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2000**

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	
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												
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					1993							
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	
Billerica		1996	1996	1996	1996	1996					1996	

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Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
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												
Brockton					1995							
Brookfield												
Brookline	1995	1994	1995	1994	1995	1987		1987	1987	1995	1995	
Buckland												
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	
Chilmark				1997	1997	1997		1997	1997	1997	1998	1997
Clarksburg												

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2000**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
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		1994	1994	1994	1994	1994		1994	1994	1994	1994	1994
Dracut					1998					1998	1998	
Dudley			1994		1994	1994				1994		1994
Dunstable												
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		1997		1997	1997	1997		1997	1997		1999	1997
Egremont			1998								1998	
Erving												
Essex												
Everett											1992	
Fairhaven					2000						2000	
Fall River					1995							

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2000**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
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		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												
Harvard												
Harwich										1998	1994	
Hatfield												
Haverhill		1996	1996	1996	1996	1996				1996	1996	1996

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
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Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor statiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
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												
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
Leyden												
Lincoln												
Littleton											1997	
Longmeadow					2000	1992		1992	1992		1995	
Lowell					1996						2000	

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
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Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Ludlow					1999							
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	
Mattapoisett		1999			1999	1998				1999		
Maynard					1997							
Medfield			1993		1993	1993		1993	1993	1994		1993
Medford	2000				1996						2000	
Medway												
Melrose	1999				1999						1999	
Mendon	2002		2002	2002	2002	2002	2002					
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												
Millis										1990	1997	
Millville												
Milton					1995						2000	
Monroe												
Monson					1999							
Montague		1995		1995	1995	1995				1995	1995	1995

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
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Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
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												
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												
Northbridge												
Northfield												
Norton					1995					1998	1998	
Norwell	1994				1993	1994				1994	1994	
Norwood											1993	
Oak Bluffs												
Oakham												
Orange		1996	1996	1996	1996	1996				1996		1996
Orleans	1999									1998	1999	

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2000**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Otis												
Oxford												
Palmer												
Paxton												
Peabody		1996	1996	1996	1996						1996	1996
Pelham												
Pembroke												
Pepperell					1995							
Peru												
Petersham												
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												
Provincetown										1997	1998	
Quincy											2000	
Randolph											1999	
Raynham												
Reading			2000		1996	1995					1996	1996
Rehoboth												
Revere		1993	1993	1993	1993	1993				1993	1993	
Richmond												
Rochester	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996	1996
Rockland												
Rockport												
Rowe												
Rowley												
Royalston												
Russell												

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2000**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
Rutland												
Salem											1988	
Salisbury												
Sandisfield												
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												
Shutesbury												
Somerset					1996							
Somerville		1993	1993	1993	1993	1993		1993	1993	1993	2000	1993
South Hadley					1995						1995	
Southampton	1995	1995	1995	1995	1995	1995				1995	1995	1995
Southborough												
Southbridge												
Southwick											1993	
Spencer												
Springfield												
Sterling	1988				1988						1988	
Stockbridge			1995		1993	1993				1993	1996	
Stoneham					1996	1996					1997	1996
Stoughton											1983	
Stow		2000			2000						2000	2000
Sturbridge			2000		2000						2000	
Sudbury	1988	1988			1988					1988	1988	

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2000**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor stadiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
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												
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												
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	
Warren					1995							
Warwick												
Washington												
Watertown					1996					1990	2000	
Wayland	1997	1997	1997	1997	1997	1997	1997		1997	1997	1997	1997
Webster												
Wellesley					1994					1991		
Wellfleet	1998									1996	1998	
Wendell												
Wenham												

**Environmental Tobacco Smoke Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2000**

Town	Bars	Hospitals	Hotels/ motels	Malls	Municipal buildings	Nursing homes	Outdoor statiums	Private colleges/ universities	Private secondary schools	Private worksites	Restaurants	Sports arenas
West Boylston												
West Bridgewater												
West Brookfield		2000			2000						2000	2000
West Newbury												
West Springfield					1994						1996	1995
West Stockbridge												
West Tisbury												
Westborough		1985				1985				1999	1999	
Westfield		1996		1996	1995	1996					1996	1996
Westford		1993	1996	1996	1993	1996			1996	1996	1996	1993
Westhampton												
Westminster					1999	1999					1999	1999
Weston												
Westport					1996							
Westwood		1996	1996	1996	1996	1996			1996	1996	1997	1996
Weymouth		1995	1995	1995	1995	1995				1995	1992	1995
Whately												
Whitman												
Wilbraham	1995				1995						1995	1995
Williamsburg												
Williamstown	1996	1987	1994		1994	1994		1994	1994	1994	1996	1994
Wilmington					1994							
Winchendon			2000		2000						2000	2000
Winchester											1996	
Windsor												
Winthrop												
Woburn												
Worcester												
Worthington												
Wrentham										1996	1996	
Yarmouth	1997	1997		1997	1997	1997	1997	1997		1997	2000	

Source: Massachusetts Department of Public Health.

**Youth Access Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2000**

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			1995			1995	1995			1995	
Andover			1995				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 2000**

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											
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											
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 2000**

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		1995	
Dunstable											
Duxbury	1997		1997				1997	1997	1997	1997	
East Bridgewater											
East Brookfield											
East Longmeadow	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 2000**

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							1998	1998		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 2000**

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											
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					1995	1993	1995		1993	
Leicester											
Lenox	1993					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 2000**

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	
Mattapoisett	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		1995	
Merrimac	2000		2000			2000	2000	2000		2000	
Methuen	1996		1996		1996	1996	1996	1996		1996	
Middleborough											
Middlefield											
Middleton	1996		1996					1996	1996	1996	1996
Milford		1994	1994	1994			1999	1994		1997	1996
Millbury											
Millis			1995			1994	1995	1995		1993	
Millville											
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 2000**

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 Washington											
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											
New Marlborough											
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											
Northampton	1995	1995	1995	1995	1995	1995	1995	1995		1995	
Northborough											
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											
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 2000**

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			1999			1999		1999		1999	
Pepperell	1995				1995	1995	1995				
Peru											
Petersham											
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											
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 2000**

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											
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											
Southwick	1993		1993				1993	1993		1999	1993
Spencer	1998		1998				1998	1998	1998	1998	
Springfield	1998		1998				1998	1998		1998	1998
Sterling											
Stockbridge	1993					1993	1993	1995		1993	
Stoneham	1996		1996			1996	1996	1997		1998	
Stoughton	2000		2000				2000	2000		2000	2000
Stow	1997		1997				1997		1997	1997	
Sturbridge	2000		2000				2000	2000	2000	2000	
Sudbury											

**Youth Access Provisions and
Fiscal Year Enacted by Local Massachusetts Communities
Through June 2000**

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											
Templeton	1996		1996				1996		1996	1996	
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											
Upton											
Uxbridge			1995					1995		1995	1995
Wakefield	1996		1996				1996	1996		1996	1996
Wales											
Walpole	1996		1996		1996		1991	1996	1996	1996	1996
Waltham							1998				
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											
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 2000**

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			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						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	

Source: Massachusetts Department of Public Health

**Enforcement of Sales to Minors, by Town
January 1999 through June 2000**

Town	Number of Vendors	Number of Checks	Average annual checks per establishment	Town	Number of Vendors	Number of Checks	Average annual checks per establishment
Abington	24	132	3.6	Cambridge	196	299	1.0
Acushnet	16	72	3.1	Canton	31	50	1.1
Adams	14	38	1.8	Carver	17	86	3.3
Amesbury	14	28	1.3	Charlemont	4	4	0.7
Amherst	25	123	3.3	Charlton	12	8	0.4
Andover	16	54	2.3	Chatham	17	49	1.9
Arlington	30	180	4.0	Chelmsford	41	132	2.1
Ashburnham	6	15	1.7	Chelsea	67	109	1.1
Ashby	4	9	1.4	Chilmark	3	13	2.9
Ashfield	2	2	0.9	Clinton	18	95	3.5
Ashland	24	71	2.0	Cohasset	14	39	1.9
Athol	19	49	1.7	Colrain	2	2	0.7
Attleborough	90	594	4.4	Conway	2	4	1.3
Avon	13	6	0.3	Dalton	11	12	0.7
Ayer	12	35	1.9	Danvers	40	150	2.5
Barnstable	86	162	1.3	Dartmouth	43	130	2.0
Barre	10	30	2.0	Dennis	31	20	0.4
Becket	3	4	0.8	Dover	5	28	3.7
Bedford	16	37	1.5	Dracut	32	77	1.6
Belchertown	12	0	0.0	Dudley	14	35	1.7
Bellingham	29	70	1.6	Dunstable	2	6	2.0
Belmont	26	68	1.8	Duxbury	12	48	2.6
Berlin	8	0	0.0	East Bridgewater	17	33	1.3
Bernardston	4	9	1.5	Eastham	7	28	2.6
Beverly	48	208	2.9	Easthampton	18	84	3.1
Billerica	51	195	2.6	Easton	24	145	4.1
Blackstone	11	28	1.6	Edgartown	18	75	2.8
Bolton	4	10	1.7	Egremont	4	2	0.3
Boston	1,200	2,841	1.6	Erving	2	3	1.0
Bourne	41	54	0.9	Essex	6	38	4.2
Boxborough	4	11	1.8	Everett	64	132	1.4
Braintree	45	125	1.9	Fairhaven	33	65	1.3
Brewster	10	21	1.4	Fall River	218	539	1.7
Brockton	179	326	1.2	Falmouth	44	88	1.3
Brookline	51	299	3.9	Fitchburg	53	159	2.0
Buckland	2	4	1.3	Foxborough	23	41	1.2
Burlington	35	28	0.5	Framingham	109	286	1.7

**Enforcement of Sales to Minors,
January 1999 through June 2000**

Town Name	Number of Vendors	Number of Checks	Average annual checks per establishment	Town Name	Number of Vendors	Number of Checks	Average annual checks per establishment
Franklin	21	78	2.4	Lexington	23	88	2.6
Gardner	29	115	2.7	Littleton	9	9	0.7
Georgetown	10	21	1.4	Longmeadow	14	40	1.9
Gill	4	15	2.5	Ludlow	31	85	1.8
Gloucester	52	319	4.1	Lunenburg	21	0	0.0
Goshen	1	3	2.0	Lynn	161	162	0.7
Grafton	17	33	1.3	Lynnfield	9	37	2.7
Great Barrington	24	28	0.8	Malden	98	180	1.2
Greenfield	31	93	2.0	Manchester	6	21	2.5
Groton	9	22	1.6	Mansfield	26	135	3.5
Groveland	7	14	1.3	Marblehead	18	49	1.8
Halifax	10	61	4.0	Marion	8	20	1.7
Hamilton	7	42	4.0	Marlborough	64	159	1.7
Hanover	24	96	2.7	Marshfield	29	79	1.8
Hanson	11	64	3.7	Mashpee	13	0	0.0
Harwich	18	16	0.6	Mattapoissett	9	27	1.9
Haverhill	67	143	1.4	Maynard	16	62	2.7
Heath	1	1	0.7	Medfield	12	68	3.8
Hingham	24	74	2.0	Medford	76	200	1.8
Hinsdale	4	14	2.1	Medway	10	41	2.7
Holbrook	24	42	1.2	Melrose	19	85	3.0
Holliston	13	55	2.8	Mendon	8	12	1.0
Holyoke	103	716	4.6	Merrimac	4	7	1.3
Hopkinton	11	42	2.6	Methuen	39	84	1.4
Hudson	23	47	1.3	Middleborough	39	0	0.0
Hull	17	29	1.1	Middleton	19	43	1.5
Ipswich	14	62	2.9	Milford	70	289	2.7
Kingston	21	76	2.4	Millis	12	23	1.3
Lakeville	10	48	3.2	Milton	13	70	3.7
Lancaster	2	5	1.7	Monson	10	35	2.3
Lanesborough	8	29	2.6	Montague	11	56	3.4
Lawrence	177	64	0.2	Monterey	2	2	0.7
Lee	17	16	0.6	Nahant	7	14	1.3
Leicester	12	22	1.2	Nantucket	28	28	0.7
Lenox	13	13	0.7	Natick	39	140	2.4
Leominster	53	211	2.7	Needham	18	81	3.0
Leverett	1	1	0.7	New Bedford	216	0	0.0

**Enforcement of Sales to Minors,
January 1999 through June 2000**

Town Name	Number of Vendors	Number of Checks	Average annual checks per establishment	Town Name	Number of Vendors	Number of Checks	Average annual checks per establishment
New Marlborough	3	2	0.4	Rowley	8	17	1.4
New Salem	1	1	0.7	Royalston	1	2	1.3
Newburyport	26	57	1.5	Salem	71	46	0.4
Newton	83	384	3.1	Salisbury	18	37	1.4
Norfolk	5	15	2.0	Sandisfield	4	2	0.3
North Adams	40	60	1.0	Sandwich	20	40	1.3
North Andover	23	44	1.3	Saugus	41	69	1.1
North Attleborough	45	123	1.8	Scituate	17	44	1.7
North Reading	18	18	0.7	Seekonk	34	47	0.9
Northampton	44	315	4.8	Sharon	6	27	3.1
Northbridge	19	50	1.8	Sheffield	12	14	0.8
Northfield	4	12	2.0	Shelburne	6	11	1.3
Norton	18	71	2.6	Sherborn	3	6	1.3
Norwell	10	27	1.8	Shirley	8	16	1.3
Norwood	41	57	0.9	Shrewsbury	28	55	1.3
Oak Bluffs	16	69	2.9	Somerset	30	127	2.8
Oakham	17	36	1.4	Somerville	147	289	1.3
Orleans	17	67	2.6	South Hadley	15	47	2.1
Otis	5	2	0.3	Southborough	11	11	0.6
Palmer	30	103	2.3	Southbridge	25	74	2.0
Paxton	2	6	2.0	Southwick	17	77	3.0
Peabody	82	129	1.0	Springfield	275	1,168	2.8
Pembroke	25	109	2.9	Stockbridge	4	2	0.3
Petersham	3	8	2.0	Stoneham	26	107	2.7
Phillipston	3	12	2.7	Stoughton	45	92	1.4
Pittsfield	75	112	1.0	Stow	7	28	2.7
Plainville	15	54	2.4	Sturbridge	18	54	2.0
Plymouth	51	110	1.4	Sudbury	13	81	4.2
Plympton	2	2	0.7	Sunderland	5	11	1.5
Provincetown	18	36	1.3	Swampscott	15	43	1.9
Quincy	198	479	1.6	Swansea	31	98	2.1
Raynham	24	113	3.1	Templeton	11	42	2.7
Reading	23	83	2.4	Tewksbury	43	120	1.9
Revere	99	85	0.6	Tisbury	9	44	3.3
Rochester	3	8	1.8	Topsfield	2	5	1.7
Rockland	25	100	2.7	Townsend	12	19	1.1
Rockport	5	10	1.3	Truro	9	9	0.7

**Enforcement of Sales to Minors,
January 1999 through June 2000**

Town Name	Number of Vendors	Number of Checks	Average annual checks per establishment	Town Name	Number of Vendors	Number of Checks	Average annual checks per establishment
Tyngsborough	11	32	1.9	West Tisbury	4	18	3.0
Uxbridge	23	48	1.4	Westborough	20	53	1.7
Wakefield	29	113	2.6	Westfield	64	372	3.9
Walpole	32	75	1.6	Westford	27	107	2.7
Waltham	85	156	1.2	Westminster	7	29	2.6
Ware	18	18	0.7	Westwood	14	66	3.1
Wareham	46	83	1.2	Weymouth	96	208	1.5
Watertown	49	275	3.7	Whately	4	12	2.0
Wayland	14	130	6.3	Whitman	17	49	1.9
Webster	25	93	2.5	Wilbraham	12	36	2.0
Wellesley	23	91	2.7	Williamsburg	6	18	2.0
Wellfleet	10	20	1.4	Williamstown	11	35	2.2
Wendell	1	2	1.3	Wilmington	21	112	3.6
Wenham	1	3	2.0	Winchendon	11	33	2.0
West Bridgewater	16	77	3.2	Winchester	10	38	2.6
West Newbury	1	3	2.0	Worcester	364	552	1.0
West Springfield	56	227	2.7	Wrentham	18	50	1.9
West Stockbridge	3	5	1.1	Yarmouth	47	192	2.7
Total				8,895	23,612	1.8	

Source: MTCP Management Information System, Enforcement Forms.

**Massachusetts Tobacco Control Field-Initiated Research Program (FIRP):
Grants Funded in Fiscal Year 2000**

<i>Title:</i>	An Evidence-Based Critique of the Master Settlement Agreement's Restrictions on Advertising and Promotion
<i>Principal Investigator:</i>	Elizabeth Barbeau, ScD, MPH
<i>Organization:</i>	Dana Farber Cancer Institute
<i>Title:</i>	A Web-Based Expert System to Decrease Smoking Among College-Aged Women
<i>Principal Investigator:</i>	Nananda Col, MD, MPP, MPH
<i>Organization:</i>	New England Medical Center
<i>Title:</i>	Understanding and Countering the Tobacco Industry's Plans for Massachusetts: An Analysis of Internal Documents and Legal Strategies
<i>Principal Investigator:</i>	Richard Daynard, JD, MA, PhD
<i>Organization:</i>	Northeastern University
<i>Title:</i>	Sustained Release Bupropion versus Placebo Added to Cognitive Behavioral Therapy for Smoking Cessation in Schizophrenia
<i>Principal Investigator:</i>	Anne Eden Evins, MD
<i>Organization:</i>	Massachusetts General Hospital
<i>Title:</i>	Tobacco Research in Two Boston Neighborhoods with Excess Tobacco-Related Deaths
<i>Principal Investigator:</i>	Alan Geller, MPH, RN
<i>Organization:</i>	Boston University
<i>Title:</i>	Tobacco Promotional Items and Uptake of Adolescent Tobacco Use
<i>Principal Investigator:</i>	Lindsay Frazier, MD, MSc
<i>Organization:</i>	Brigham and Women's Hospital
<i>Title:</i>	Patterns and Effects of Town-Level Tobacco Control Strategies in Massachusetts
<i>Principal Investigator:</i>	William Hamilton, PhD
<i>Organization:</i>	Abt Associates Inc.
<i>Title:</i>	ETS and Restaurant Workers: Do Different Levels of Regulatory Control Result in Different Levels of Exposure?
<i>Principal Investigator:</i>	James Hyde, MA, SM
<i>Organization:</i>	Tufts University School of Medicine
<i>Title:</i>	Training the Next Generation of Tobacco Control Researchers
<i>Principal Investigator:</i>	Ichiro Kawachi, MD, PhD
<i>Organization:</i>	Harvard School of Public Health
<i>Title:</i>	The Role of Xanthine Oxidase and Nitric Oxide Synthase in Tobacco-Related Disease
<i>Principal Investigator:</i>	Usamah Kayyali, PhD, MPH
<i>Organization:</i>	New England Medical Center
<i>Title:</i>	Social Indicator-Based Measures of Tobacco Use-Related Health Problems, Risk, and Protection at the Town Level
<i>Principal Investigator:</i>	Peter Kreiner, PhD

**Massachusetts Tobacco Control Field-Initiated Research Program (FIRP):
Grants Funded in Fiscal Year 2000**

<i>Organization:</i>	Health and Addictions Research
<i>Title:</i>	Youth with Developmental Disabilities: Do Current Tobacco Initiatives Fail to Recognize this Group?
<i>Principal Investigator:</i>	Paula Minihan, MSW, MPH
<i>Organization:</i>	New England Medical Center
<i>Title:</i>	Understanding Youth Cigar Use
<i>Principal Investigator:</i>	Stephen Soldz, PhD
<i>Organization:</i>	Social Science Research and Evaluation
<i>Title:</i>	Tobacco Use by Massachusetts Public College Students
<i>Principal Investigator:</i>	Nancy Rigotti, MD
<i>Organization:</i>	Massachusetts General Hospital

Source: Massachusetts Department of Public Health

**Publications Concerning or Commissioned by the Tobacco Control Program
of the Massachusetts Department of Public Health**

THE QUESTION 1 BALLOT INITIATIVE

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- Harris J.E., Connolly G.N., Brooks D., Davis B. Cigarette Smoking Before and After an Excise Tax Increase in an Antismoking Campaign—Massachusetts, 1990-1996. *MMWR* 1996;45:966-970.

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Source: Massachusetts Department of Public Health.