

COMPREHENSIVE TOBACCO CONTROL PROGRAMS:
A REVIEW AND SYNTHESIS OF EVALUATION STRATEGIES
IN THE UNITED STATES

Shawn C. O'Connor
Joanna E. Cohen
Katherine Osterlund

Ontario Tobacco Research Unit

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EXECUTIVE SUMMARY

This review examines what several U.S. jurisdictions are doing with respect to evaluating comprehensive tobacco control programs. We found that California and Massachusetts led the way both in tobacco control and in evaluating their efforts at tobacco control. The relatively stable and long-term funding that these two states have enjoyed has allowed them to implement truly comprehensive programs. Their programs, including their evaluation components, have been models for other jurisdictions to follow. Although the next generation of tobacco control programs are in their infancy (e.g., Florida), the evaluation of these programs appear to be just as promising. On the basis of our review of evaluation activity in these and other states, we begin to have a frame of reference for evaluating tobacco control in Ontario.

Infrastructure

Our review indicates that a well-developed infrastructure is essential to a meaningful evaluation. Evaluating a state or provincial tobacco control program is a complex activity that requires dedicated resources and political commitment.

Personnel are the frontline resource. For example, Massachusetts has six staff devoted exclusively to research and evaluation for a population of about 6 million people. Frequently, a Director of Evaluation is part of a comprehensive program's management structure. Moreover, several jurisdictions have contracted with universities to act as evaluation and research coordinating centres. To guide decisions related to evaluation, advisory boards have proven invaluable. Taken together, these resources provide a comprehensive program with vision, leadership, credibility, and expertise.

Comprehensive programs require well-developed lines of communication. Evaluation reports communicate progress toward goals to program staff, local partners, policy makers, and the public. Likewise, Internet web sites offer such groups readily accessible information (e.g., requests for proposals, evaluation resources, etc.). Together these resources not only aid overall communication, but also facilitate capacity building, advance program initiatives, and offer transparency.

Relatedly, a collaborative atmosphere is essential to the success of an evaluation. Feedback across government agencies, between evaluators and program staff, and between program staff and local organizations ensures a shared understanding of program goals, objectives, and impacts.

Comprehensive programs that do not have sufficient infrastructure in place for evaluation activities are in danger of not being able to adequately assess progress toward program goals. Worse, decisions about future program directions (e.g., funding) might be unsound because under-resourced evaluations might not provide a clear picture of what is actually going on. For evaluation, it is thus critical to have adequate resources such as data sources to measure program implementation and impact. Likewise, a realistic amount of time needs to be allotted for program components to have a measurable impact on program goals.

Evaluation Overview

We find an extensive array of evaluation activity taking place in select U.S. jurisdictions. Typically, programs are assessed at the level of infrastructure development, social and environmental change, behaviour change, and health status improvement. Two types of evaluations that we frequently cite are process and outcome evaluations (loosely defined).

Process evaluations focus on assessments of program development, implementation, and ongoing activities. Data sources that jurisdictions have used for process evaluations include agency progress reports; interviews with project directors and school administrators; policy tracking; coalition or capacity building measures; and information on funding, staffing, and leadership.

Outcome evaluations focus on assessing progress toward program goals as measured by short-term impact indicators (at both community and individual levels) and long-term outcomes. Data sources frequently include: a) regular national surveys, for comparison with other jurisdictions and over time, and b) state tobacco-specific surveys (e.g., youth, adults, enforcement agency staff, opinion leaders, and school principals). Ideally, these allow for local estimates. In the jurisdictions we reviewed, the comparison of national, regional, and local data is facilitated by a fair degree of coordination resulting in uniform measures (e.g., consistent survey items, definitions of constructs and terminology).

Comprehensive tobacco control programs at the state level provide local-level programs with an extensive pool of evaluation resources. Staff at the local level in turn are able to conduct their own evaluations, and state evaluators use results to assess overall impact of community-based interventions.

Whereas infrastructure and tobacco control programs and activities are instrumental in achieving progress toward program goals, pro-tobacco influences work against goals. Several jurisdictions rely on a variety of measures to monitor the tobacco industry including marketing and promotional activities, political and lobbying activities, news media, and the tobacco economy.

Assessing Progress toward Program Goals

Our review of evaluation materials used by comprehensive tobacco control programs in the U.S. illustrates numerous short-term impact indicators related to the goals of protection, prevention, and cessation. Within each goal, there are measures that can be grouped according to intervention (policy, media-based public education campaigns, and community-based interventions), setting (e.g., workplaces and homes), and priority group (e.g., youth).

These examples of implementation, process and impact measures related to goals, interventions, settings, and priority groups are a useful resource for jurisdictions developing an evaluation strategy for comprehensive tobacco control programs.

ACRONYMS & ABBREVIATIONS

ASSIST	American Stop Smoking Intervention Study for Cancer Prevention
CA:92	California: A report on the activities and evaluation of California's TCP
CA:94	California: Novotny (1994). Structural Evaluation
CA:98	California: Pierce et al. (1998). An evaluation of the TCP, 1989-1996
CA:IE	California: Independent Evaluation Consortium (1998)
CDC	Centers for Disease Control and Prevention
ETS	Environmental Tobacco Smoke
MA:4	Independent Evaluation of the Massachusetts Tobacco Control Program: 4 th Annual Report
MA:5	Independent Evaluation of the Massachusetts Tobacco Control Program: 5 th Annual Report
MA:DOE	Massachusetts Department of Education
MIS	Management Information System
OTRU	Ontario Tobacco Research Unit
TCP	Tobacco Control Program

INTRODUCTORY REMARKS

Since the late 1980s, several jurisdictions in North America have implemented comprehensive tobacco control programs. These control efforts comprise numerous components including policy interventions, media campaigns, and local programs. Among tobacco control experts, there has been recognition that an evaluation component is critical to a comprehensive program. Progress toward program goals, such as reducing smoking prevalence and exposure to environmental tobacco smoke (ETS), not only needs to be monitored on an ongoing basis, but the impacts of both the overall comprehensive program and component pieces also need to be evaluated.

The purpose of this report is to review and synthesize what leading U.S. jurisdictions are doing with respect to evaluating their comprehensive tobacco control programs. The primary focus of this review will be on evaluation methodologies—specifically, measures of short-term impact and long-term outcome, with respect to the goals of prevention, cessation, and protection.

In the recent past, OTRU has prepared a similar report: *A review of evaluations of anti-smoking interventions in countries other than Canada* (1995). This earlier work focused on a review of literature from primarily academic journals dealing with individual components of a tobacco control program. The present work, in contrast, focuses on evaluation reports and working papers released by state tobacco control programs that are comprehensive, particularly ones from California and Massachusetts. The present report does not attempt to prescribe what such a program should look like, except as it applies to evaluation.

This work is organized into four parts. PART I provides an overview of several U.S. jurisdictions that have instituted comprehensive tobacco control programs. PART II describes the evaluation infrastructure that established programs have in place and provides an overview of evaluation activities. Part III focuses on the evaluation of three frequently cited *goals* of comprehensive tobacco control programs: prevention, cessation, and protection and details evaluation activities centred on pro-tobacco influences, and collaborations resulting from the establishment of a comprehensive program. We conclude the review in PART IV with general recommendations for evaluating a comprehensive program.

PART I: BACKGROUND

SECTION 1: TOBACCO CONTROL IN THE UNITED STATES

Context

There are three main funding contexts in the United States from which comprehensive tobacco control programs have emerged: programs funded by national agencies (e.g., ASSIST by the National Cancer Institute); programs established as a result of citizen referenda to increase state excise taxes on tobacco products (e.g., Arizona, California, Massachusetts, and Oregon); and programs funded through state settlements with the tobacco industry (e.g., Florida).

In evidence throughout the various comprehensive programs in the U.S. is the influence of large multi-state initiatives. The primary mandate of ASSIST, for instance, is the reduction of smoking prevalence through policy-based interventions. Such interventions seek to redefine the social environment as one not supportive of tobacco use. ASSIST fosters grassroots initiatives that help to develop media advocacy skills, bring about protection from tobacco (in terms of youth uptake and ETS protection), and increase the demand for cessation services. Another example of an initiative of this type is the SmokeLess States program that began in 1994, funded by the Robert Wood Johnson Foundation. The primary goal of SmokeLess States is to reduce tobacco use, particularly among children. The approach taken by this initiative is to fund state coalitions that engage in community building, conduct public education regarding policy options, and provide local prevention and treatment programs. Another example of a multi-state program at the grassroots level is IMPACT, funded since 1993 by the Centers for Disease Control and Prevention.

California

In 1988, voters in the state of California approved Proposition 99, which increased the excise tax on cigarettes by 25 cents per package. Proposition 99 specified that the funds generated from this increase would flow into state social programs, with 20% going toward tobacco control programs (approximately US\$131 million annually). However, between 1989 and 1994, the comprehensive tobacco control program received only three-quarters of its funds because of redirection of monies to direct medical service programs. Funding currently rests at US\$3.93 per capita. Obtaining and preserving the mandated funding is a major feature of the California context, a feature it shares with several other jurisdictions. Table 1 shows tobacco control expenditures in California in addition to that of several other jurisdictions.

Massachusetts

In 1992, voters passed a similar referendum in Massachusetts, mandating a tax increase of 25 cents per package of cigarettes (Question 1). From this initiative the Massachusetts Health

Protection Fund was created. In the intervening years, the government has allocated approximately 40% of the revenue generated from the tax to the Massachusetts Tobacco Control Program. This level of funding reflects annual spending of US\$6.43 per capita from 1993 to 1995. With recent settlement funds becoming available, Massachusetts's expenditures are expected to rise to approximately US\$10 per person.

Table 1: Jurisdictional Spending on Tobacco Control

	Population (1,000s)	Per Capita Funding (US\$)	% of CDC's Low Recommendation	Primary Revenue Sources
Vermont	589	\$15.76	117	Settlement
Maine	1, 243	\$15.00	167	Settlement
Mississippi	2, 731	\$11.36	165	Settlement
Massachusetts	6, 118	\$8.67	151	Excise Tax & Settlement
Minnesota	4, 686	\$7.46	122	Settlement
Arizona	4, 555	\$6.44	106	Excise Tax
California	32, 269	\$3.93	77	Excise Tax
Florida	14, 654	\$3.00	56	Settlement
Oregon	3, 244	\$2.62	40	Excise Tax
Ontario	11, 500	\$1.11 ^a	20 ^b	General Revenues
British Columbia	4, 000	\$1.09 ^a	17 ^b	General Revenues

Note. FY 1999/2000. ^aIn Canadian funds, Ontario spends \$1.65 and British Columbia spends \$1.62. ^bWith respect to Canada, the CDC does not make spending recommendations, but a figure can be estimated by matching Ontario and British Columbia with states having similar numbers of residents (e.g., Illinois and Oregon, respectively). Primary source: Adapted from *Per-capita state spending for comprehensive tobacco prevention* (Campaign for Tobacco-Free Kids).

Arizona

Arizona began a comprehensive tobacco control program in 1994 through a referendum that approved the Tobacco Tax and Health Care Act (Proposition 200). This measure raised the sales tax on all tobacco products, and created a fund for health care and education in the state. In Arizona, as in other jurisdictions, the politics were complex. The Arizona legislature quickly capped tobacco control funding at US\$10 million annually, severely restricted program focus (i.e., to youth and pregnant women), and limited the number of organizations involved. Over time, agencies and institutions permitted to receive tobacco monies has expanded, as has program coverage. In 1997, the cap on annual funding was raised to 90% of the original Arizona Health Education Fund, resulting in US\$22 million for tobacco control in the 1997/98 fiscal year, or US\$4.83 per capita. As shown in Table 1, spending is currently at US\$6.44 per capita.

Oregon

Oregon also utilized a voter proposition to establish funding for its comprehensive tobacco control program (Measure 44). This program, reported to be in the early stages (in 1998), focuses equally on adults and children. The Oregon Legislature approved US\$17 million for the development and implementation of Oregon's Tobacco Prevention and Education Program for 1997-1999, representing annual per capita spending of about US\$2.62.

Florida

Florida finds itself in a somewhat different situation, as the funding for its tobacco control program is through a large out of court settlement with the tobacco industry negotiated in 1997. This settlement allocated an annual sum of US\$100 million to the program. Recently, the state legislature cut spending by approximately 45% despite encouraging results. The settlement contains negotiated conditions for the program. Most important of these in terms of program content is the limitation of the program aim "specifically at the reduction of the use of tobacco products by persons under the age of 18 years" (Florida Settlement Agreement, online). Further, none of the funds can be lawfully used to direct messages against the tobacco industry. Nevertheless, with the assistance of the CDC and advice from both California and Massachusetts, the Florida program has a strong foundation.

Other U.S. States

Among the other U.S. states, Maine and Maryland have increased their tobacco taxes to fund comprehensive programs. Alaska, Arkansas, Colorado, Indiana, Maryland, Montana, Nebraska, New Hampshire, New Mexico, North Carolina, Ohio, Oklahoma, Utah, Virginia, and Wyoming have committed funds for comprehensive programs using money from settlements with the tobacco industry.

Goals

In general, objectives for comprehensive tobacco control programs tend to be grouped into three to five intersecting categories or goals.

Prevention

The most frequently stated goal of comprehensive tobacco control programs is the prevention of smoking. As most smokers are already addicted before adulthood, the focus of this objective is typically on preventing children and teens from taking up tobacco. The Florida tobacco control program, for example, emphasizes youth prevention through programs and restrictive legislation.

Cessation

Another basic priority is to bring about a decline in smoking prevalence through smoking cessation. This is usually achieved through programs targeted to adults, often within specific social groups. Cessation by youth is typically grouped with discussions of prevention. Among

the jurisdictions that were reviewed, at least one subtle difference is apparent: some jurisdictions seek to provide services to those smokers who wish to quit (e.g., Florida and Arizona); other jurisdictions explicitly state that they seek to both convince adult smokers to quit, and provide services to help them do so (e.g., California and Massachusetts).

Reducing Exposure

A third common goal is the reduction of exposure to environment tobacco smoke (ETS). Particular emphasis is placed on preventing ETS exposure among children. Many jurisdictions focus on the implementation of policies that restrict smoking in public places and activities to facilitate this process. For example, in an effort to reduce ETS exposure, the Massachusetts tobacco control program has worked toward empowering communities and community leaders to bring about local smoking restrictions. In such efforts across the U.S., local jurisdictions face potential threats from pro-tobacco influences including pre-emptive legislation at the state level that prevents communities from implementing ETS restrictions stronger than that of the state.

Denormalization

A fourth priority that characterizes several U.S. programs centres on the ‘denormalization’ of tobacco use in society. This denormalization is both an objective, and in many ways a means by which to facilitate the other goals of prevention, cessation, and protection. As smoking becomes denormalized, it becomes socially unacceptable, and subject to both formal and informal social control. Such efforts are the “landmark” of the California program; these basic ideas, with varying degrees of emphasis, also characterize programs in Arizona, Florida, Massachusetts, and Oregon.

Capacity Building

Several comprehensive programs have as a priority the creation and support of community infrastructure to facilitate tobacco control at the local level; a goal also referred to as “community building” or “community capacity building.” For example, the Oregon program lists as one of its immediate goals the creation of “functioning coalitions.” The Massachusetts program is administered through the activities of six regional “boundary crossing networks” that bring local stakeholders together, provide research and planning assistance, and determine “best practices.”

In review, comprehensive tobacco control programs have three direct goals: prevention, cessation, and protection. Integrated into these, in some jurisdictions, are at least two additional goals: the denormalization of tobacco in society and the fostering of community development.

Program Components

Comprehensive programs approach the problem of tobacco use from multiple dimensions including individual, social, and cultural. Interventions are often structured to be sensitive, specific, and targeted enough to reach all populations across the social spectrum. The result is

that comprehensive programs are typically composed of state-level initiatives, local activities, and some form of intermediary activity that provides services and facilitates program operation.

The two most common approaches to prevention are youth educational programs and reducing youth access to tobacco. In addition to California's media campaign and other related efforts to denormalize tobacco to aid prevention, for instance, about 22% of tobacco control program funds are directed toward educational efforts for young people, mainly in schools. As mentioned, the Arizona program has a strong emphasis on youth prevention. Their methods are typical of other jurisdictions: restrict youth access to tobacco products at the retail level, ban or restrict cigarette vending machines, restrict tobacco advertising near schools, and provide school-based education programs. Florida utilizes such measures in addition to civil penalties for youths found in possession of tobacco. Although a legal approach that prohibits purchase or possession by youth is not uncommon, strict enforcement and financial penalties levied against youth are relatively less common.

Toward the goal of smoking cessation, comprehensive programs in the U.S. offer various "quit smoking" programs for individual smokers, ideally in the community where they live. California focuses on adult cessation to both reduce smoking prevalence and foster the creation of a social environment unsupportive of tobacco usage, thus integrating prevention with cessation through denormalization. The funding of local service providers through a competitive grants program accounts for about 15% of all tobacco control funds. California provides an intensive media campaign (12% of funds), which has cessation messages as one of its many focuses. As previously mentioned, there is some jurisdictional variation in terms of amount of effort placed on directly encouraging people to quit. For example, Massachusetts utilizes a modified "institutional case-finding" approach (based on the National Cancer Institute program) that educates doctors to always ask their patients about smoking, advise quitting, assist in cessation, and arrange follow-up. In contrast, the stated policy in Arizona is to provide affordable cessation services to all those *who wish to quit*. Oregon offers a mix of community based programming in addition to a statewide quit helpline.

Policy development is a common intervention among comprehensive tobacco control programs. The ASSIST program is particularly exemplary in this regard. In general, progress toward the protection objective is achieved through concerted policy action. The mandate of the Massachusetts program, for instance, includes specific activities to support local jurisdictions in the incorporation of strict ETS regulation, including raising awareness, mobilizing local community leaders, and providing funds to local departments or boards of health for policy enforcement and development. Moreover, Massachusetts recently enacted legislation requiring the divestment of tobacco company stocks and bonds from state pension plans and has mandated that the tobacco industry must disclose cigarette nicotine levels and additives.

PART II: EVALUATIONS OF TOBACCO CONTROL PROGRAMS

SECTION 2: EVALUATION INFRASTRUCTURE

Evaluation is a critical component of comprehensive tobacco control programs. To adequately assess and understand progress toward goals, programs must invest significant resources in evaluation. Infrastructure includes not only funding and personnel, but also management structures (e.g., someone to direct the evaluation, coordinating centres, and advisory boards), communication channels (e.g., annual reports, Internet websites, etc.), and measurement tools (e.g., surveys and management information systems). We discuss measurement tools in Part III.

Funding

Budgetary resources are integral to the success of comprehensive programs. Recently, the CDC (1999) established guidelines for funding levels, recommending that 5% of program funds be allocated to administration and management and another 10% to surveillance and evaluation. In California, for instance, 1999/2000 funding was 2% for administration and 7% for evaluation.

Comprehensive programs that fund local community groups frequently mandate that a portion of the budget be spent on evaluation. California requires groups to spend 10%. To further assist local groups in evaluating their programs, California publishes a directory of evaluators; holds a conference that highlights evaluations of community programs; and manages a database that contains information about research design, possible measures, prototypical evaluations, guidelines for preparing evaluation reports, and tips for writing outcome objectives.

Funding levels have programmatic and evaluation implications. As one might expect, a strong relationship exists between funding and program outcomes. Higher levels of program funding lead to more desirable outcomes and progress toward the goals of prevention, cessation, and protection. For funding levels below that recommended by the CDC, one can expect smaller impacts that will likely be noticeable only over a longer period than would otherwise be the case. Moreover, funding levels impact the ability of staff to assess progress toward program goals. Without sustained funding at an adequate level, evaluation infrastructure cannot be developed. This makes it challenging both to develop long-term evaluation plans and to link program implementation to program impact with respect to tobacco control program goals. In evaluating any given program, outcomes need to be interpreted within the context of existing funding allocations.

Management and Staff

Established tobacco control programs have a comprehensive infrastructure of evaluation personnel including a Director of Evaluation responsible for the overall evaluation of the program and in-house staff responsible for evaluating specific programs (e.g., Arizona, California, Florida, Massachusetts, and Oregon). At the local level, public health units collect a

variety of data about local policy and tobacco control efforts and provide technical assistance to local tobacco control groups. For example, Massachusetts' overall program has approximately 32 direct staff and 3-400 secondary staff in the field (e.g., local board of health staff), serving a population of some 6 million people. About six of the direct staff work exclusively on research and evaluation. In Oregon (population = 3, 244, 000), program staff allotted to evaluation include one half-time Director, two full-time staff, with one full-time and one half-time contract staff. Additionally, auxiliary staff from various government departments is used on occasion for their particular expertise (e.g., epidemiologists).

Although a comprehensive program may have a Director of Evaluation, outside agencies are frequently charged with coordinating an evaluation. Early on, the CDC played an instrumental role in directing the build-up of Florida's program and evaluation infrastructure. Specifically, four employees of the CDC spent almost four months helping Florida set up systems for collecting baseline data on a wide variety of parameters prior to the start of the program, and setting the direction of the evaluation portion of the program in general. Because Florida was one of the first settlement states, the CDC wanted the Florida program (and its evaluation) to succeed so that it could be used as a model for other states.

Currently in Florida, the University of Miami School of Medicine is the coordinating centre for research and evaluation. They are responsible for managing subcontracts in relation to population surveys conducted by other research institutions (primarily universities) and providing technical assistance to program staff and local partnerships.

In California, a consortium of groups, including the Gallup Organization, Stanford University, and the University of Southern California, plan and conduct the evaluation of the state's program. A team of 17 evaluators has prepared an initial report, a document cited extensively throughout this review (Independent Evaluation Consortium, 1998). A second report, based on a second wave of data, has recently been published. Researchers at the University of California at San Diego have carried out a concurrent evaluation. They have examined California's tobacco control program from its inception in 1989 up until 1996. Their evaluation report too has been a useful resource to the present review. Arizona has taken a slightly different route. Although the relationship has since terminated, Arizona contracted the initial statewide evaluation to New Focus, Inc. and worked with this firm to implement a comprehensive evaluation of the Tobacco Education and Prevention Program.

In addition to in-house staff and outside agencies, established comprehensive programs have set up evaluation advisory boards (e.g., California, Florida, and Oregon). These boards advise program staff on issues such as evaluation design and methodology, technical merit of evaluation reports, and future directions. In regard to Florida's advisory committee, the University of Miami Research and Evaluation Coordinating Center chose panel members after consultations with state TCP leaders. The final panel consisted of one youth representative from Florida, and nine out-of-state experts including representatives from the California TCP, Centers for Disease Control and Prevention, Massachusetts TCP, and Robert Wood Johnson Foundation. Oregon's Evaluation and Technical Advisory Committee is in the formative stages and will be comprised of individuals with expertise in evaluation, public health, research methodology, and tobacco prevention and education. Expert advice is not limited to advisory panels. For instance,

representatives from the CDC, Massachusetts, and California attend joint meetings several times a year to discuss evaluation strategies.

Communication

Sharing evaluation results with others and keeping stakeholders abreast of evaluation activities is critical to the maintenance and growth of a comprehensive tobacco control program. Communication infrastructure facilitates this sharing process. Several channels are available to communicate evaluation activities including Internet web sites, regular bulletins (e.g., monthly or quarterly), and annual evaluation reports. This degree of infrastructure facilitates feedback to program staff and strengthens existing relationships between local tobacco control groups while a comprehensive program (capacity building) institutionalizes linkages between political actors and the program, and guides evaluation activities.

The Internet is being utilized in innovative ways by a number of jurisdictions. A web site frequently provides information detailing a program's historical development, program components, local tobacco control activities, requests for proposals with respect to community initiatives (i.e., invitations, forms, instructions, etc.), and resources that might be of interest to the general public (e.g., cessation services, information clearinghouse, etc.). In regard to evaluation infrastructure, sites contain a wealth of information including downloadable annual evaluation reports, assorted evaluation studies, descriptions of measurement instruments, minutes of evaluation team meetings, information for subcontractors, and local feedback to community groups (e.g., locally focused evaluation newsletters). In the writing of this report, we obtained useful information from several Internet web sites, as listed in the bibliography.

Evaluation reports are a critical component of communication infrastructure. As previously mentioned, they provide valuable feedback to program staff. For example, cessation services played a prominent role in the early years of California's program, but evaluators suggested that such initiatives had little impact on program goals. As a result, the Department of Health modified the whole program, shifting from individual cessation to a strategy focused on the denormalization of tobacco use.

The utility of evaluation reports has been recognized by a number of jurisdictions, several of which have legislatively mandated that reports be submitted to the government on a regular basis. In Oregon, for instance, regulations mandate that a report assessing the state's Tobacco Prevention and Education Program must be submitted to the legislature each biennium. Within this two-year window, evaluators monitor and evaluate the state's comprehensive program. Evaluators in California are working within a different timeframe. With one of the more advanced comprehensive programs in place, its evaluation has one of the more sophisticated designs. Three waves of data have been collected, each several years apart. An evaluation report of Wave 1 data was published in 1998 and a second (interim) report of Wave 2 data was published in early 2001. The final report is expected to be published sometime in 2002. Data collection timelines have allowed realistic periods for data analyses and report preparation.

In sum, the evaluation infrastructure needed to run and evaluate a comprehensive program is well established in California and Massachusetts. These states have led the way and other states have been able to draw on their experience and the experience of the CDC. With adequate

resources, in particular sustainable funding and reasonable timeframes, evaluators of comprehensive tobacco control programs are able to examine linkages between program implementation and program impact.

SECTION 3: OVERVIEW OF EVALUATIONS

Although jurisdictions differ with respect to the priority afforded the three common goals of prevention, cessation, and protection and the mechanisms employed to achieve these goals, they generally approach evaluation in a similar fashion, assessing progress with program implementation and development as well as changes in short-term impact indicators and long-term outcomes.

Evaluation activities are frequently classified as either *monitoring* or *evaluation*. Monitoring (sometimes called surveillance) is primarily descriptive and is characterized by the regular, ongoing collection of a limited set of measures, typically of long-term outcomes such as prevalence of smoking. Evaluation, in contrast, involves the collection of more detailed measures (e.g., inputs as well as short and medium-term indicators), typically collected over several occasions as part of an overall research design that aims to assess the causal relationship between program implementation and program impact.

Monitoring, although necessary, falls short of linking program implementation and exposure with program impact. A well-planned *comprehensive evaluation* addresses not only these linkages, but also the effectiveness of program components (e.g., legislation, media-based interventions, telephone helpline, etc.) and the effectiveness of the overall program.

Such a comprehensive evaluation characterizes the more successful tobacco control programs we reviewed (e.g., California, Massachusetts, and Florida). What makes these evaluations comprehensive is that a variety of evaluation activities, such as a *needs assessment*, an *implementation* (or *process*) *evaluation*, and an *impact evaluation*, are embedded within a larger evaluation design.

Needs Assessment

A needs assessment generally involves five steps: (1) determining the extent of the problem; (2) determining the status of any existing interventions (including school prevention programs, smoking restrictions, and tobacco taxes) to deal with the problem; (3) determining the need (gap between what is and what could be); (4) prioritizing needs; and (5) creating an action plan.

Implementation or Process Evaluation

Assessing program implementation and continued operation is an essential component of comprehensive program evaluation plans. An implementation evaluation is appropriate for a jurisdiction that has recently started a new tobacco control program. Its main features include an assessment of whether the program is operating as planned, reaching the intended target audience, and free of any barriers that prevent its full implementation. Frequently, these features are compared to criteria set prior to program implementation (e.g., expected number of people reached, an implementation timeline, etc.). A process evaluation is similar in nature, but the program to be evaluated is not new (i.e., it has been ongoing for some time). Our review primarily focuses on process evaluation because the evaluation reports readily available to us came from established comprehensive programs, namely, California and Massachusetts.

Relevant information on program activities has been obtained from a wide range of sources including regularly submitted health unit and community group progress reports, media dissemination schedules, content analysis of media campaigns, funding and budget information, as well as surveys of and interviews with project directors, teachers, school administrators, and lead contractors. Evaluations typically focus on the amount, type, reach, and availability of local and statewide tobacco control program activities

Several states use a management information system to organize information from local health units and community group progress reports. In regard to organizing information into their system for later analyses, Arizona has developed a model of “stages of program development” consisting of six tiers: a) motivation, b) skill development, c) capacity building, d) environmental shift, e) outcomes, and f) impact. All program activities are coded by level reached on this result hierarchy, according to program goal. Information is also obtained from program staff to provide context and a better understanding of program and community dynamics.

Impact Evaluation

Jurisdictions with comprehensive programs have also conducted impact (or outcome) evaluations. Impact evaluations have been designed to determine whether the program as implemented has any effect on program goals. This is accomplished in part by linking program exposure to outcome data. Broadly, four kinds of outcomes are evaluated:

- ❑ Infrastructure development (e.g., staff, capacity building).
- ❑ Social and environmental change (e.g., policy enactment, knowledge, attitudes).
- ❑ Behaviour change (e.g., cigarette consumption, smoking prevalence, and ETS exposure).
- ❑ Health status improvement (e.g., morbidity, mortality, economic costs).

Each successive level is progressively longer-term in scope. Thus, outcomes of infrastructure development and social and environmental change are typically apparent over a shorter period whereas behavioural change and health status improvement are not expected to be noticeable until a well funded comprehensive program has been established for some time (e.g., 3+ years).

Impact evaluations use predominantly population-based surveys to track short and long-term outcomes. In addition, special surveys are used to obtain data on particular target groups, such as pregnant women, or on people involved in tobacco control efforts such as local enforcement agency staff or community opinion leaders. Vital statistics and hospital separation data have provided information on smoking related mortality and morbidity, in addition to smoking status during pregnancy. Economic costs associated with tobacco use can be calculated with data available from a variety of sources including Statistics Canada, Health Canada and the Association of Fire Marshals and Fire Commissioners. Appendix A provides an overview of a number of surveys and other data sources used by jurisdictions with comprehensive programs.

The CDC *Best Practices* report recommends that jurisdictions participate in and make use of data from national surveillance systems, so that they are able to compare progress across time and with other jurisdictions. Indeed, California, Florida, Massachusetts, and Oregon all track adult smoking behaviours using the Behavioral Risk Factor Surveillance System (BRFSS), an annual

CDC-sponsored national telephone survey. A number of states also take advantage of the Youth Risk Behavior Survey, the Monitoring the Future Survey, and the Tobacco Use Supplement of the Current Population Survey. Moreover, several states conduct the Pregnancy Risk Assessment Monitoring Survey (PRAMS).

Various state-specific tobacco-related surveys are also administered to assess changes over the short and long term. For example, Arizona conducts a School Tobacco Policy Survey, a Workplace Smoking Policy Survey, and Youth and Adult Tobacco Surveys. The California Adult Tobacco Survey and the California Youth Tobacco Survey are carried out annually; although the California Tobacco Survey is only conducted every three years, its sampling design and larger sample size allow for county and regional estimates. Florida conducts a Youth Tobacco Survey, as well as surveys of teachers, school principals, and community leaders. Data collection for the Massachusetts Adult Tobacco Survey occurs monthly; Massachusetts also relies on a triennial school-based survey of junior high and high school youth.

The CDC *Best Practices* report recommends that in addition to state-level estimates, data on short-term impact indicators and long-term outcomes should be obtained for local regions. Because regions differ with respect to past program and policy efforts, politics, program implementation, and receptivity to tobacco control, sub-state estimates are useful for identifying needs of specific regions and for tailoring programs and policies appropriately.

Practically all of the state surveys are cross-sectional; however, Massachusetts does conduct two longitudinal surveys, one of adults and the other of youth. In California, the Independent Evaluation Consortium also has, as part of its larger evaluation design, a longitudinal component, although the unit of analysis is the state county rather than the individual. Data from various sources are collected from 18 “focal counties” (chosen to be generalizable to the entire state) at three points in time.

In addition to population surveys, several of the jurisdictions we reviewed collect other sorts of data to assess progress toward comprehensive program goals. For example, tobacco company marketing strategies at both point-of-purchase and community events are monitored in Florida. In several states including Oregon, use is made of birth certificates (to monitor smoking during pregnancy), death certificates (to monitor tobacco-related deaths), compliance checks (to monitor illegal sales to underage youth), and tobacco tax revenue (to monitor tobacco sales). The Tobacco-Free Coalition of Oregon monitors tobacco industry activities including campaign contributions, industry front groups, and advertising. A number of jurisdictions also measure changes in state and local tobacco control bylaws and monitor local media for tobacco-related stories.

Jurisdictions with comprehensive programs recognize that it is not realistic to expect significant declines in smoking prevalence in the first few years of a statewide program and therefore focus initially on short-term impacts. These impacts can be measured both at the level of the individual and at the level of the community. Examples of individual-level short-term impact indicators include: knowledge, attitudes and beliefs; level of exposure to tobacco control programs and policies; susceptibility to tobacco use; quit attempts; and amount smoked. Examples of community-level indicators include: proportion of retailers selling cigarettes to minors;

proportion of homes, schools, workplaces, and public places with smokefree policies; cigarette prices; and tobacco control media coverage.

Eventually, it is realistic to expect changes in long-term outcome measures. Jurisdictions, for instance, track level of exposure to ETS (both adults and youth), and smoking prevalence overall and within various segments of the population.

Local-level tobacco control programs do conduct their own evaluations, relating specific interventions to specific outcomes. However, at the state-level, evaluation of comprehensive programs consists primarily of monitoring and surveillance. Relating changes in outcomes to program activities is achieved by comparing outcomes in that state over time, with outcomes in states that do not have comprehensive programs, and with outcomes at the national level.

ASSIST has developed a framework for its evaluation. In this model, a measure of the “strength of tobacco control” (composed of financial resources, capacity, and anti-tobacco efforts) is calculated and is used to represent the extent of tobacco control initiatives within a jurisdiction. Evaluators use this measure along with a measure of pro-tobacco influences to determine the relationship between ASSIST activities and short and long-term outcomes. State conditions, such as demographic and economic characteristics, influence, and are influenced by, all constructs of the framework.

As evident in the preceding discussion (and as suggested by Appendix A), comprehensive programs use a variety of measures to evaluate progress toward stated goals. Taken together, community-level measures (e.g., local health unit progress reports, community grants monitoring, local policy tracking, and opinion leader and enforcement agency surveys), state-level surveys (e.g., adult and youth surveys), and national comparison data (e.g., Behavioral Risk Factor Surveillance System and Current Population Survey), enable evaluators to assess program implementation and impact at the community and state (or province) level and in relation to other states (or provinces).

SECTION 4: RECOMMENDATIONS OF EVALUATORS

Several comprehensive tobacco control programs in the U.S. have been in existence since the early 1990s, most notably California and Massachusetts. With respect to program planning and evaluation strategies, many jurisdictions collaborate. Given this maturity and degree of collaboration, comprehensive programs in the U.S. have a wealth of information to offer. We relate here some of the recommendations offered by evaluators of these programs.

Organization and Infrastructure

- ❑ The recommended level of funding for program evaluation is 10% of a program's budget [CDC].
- ❑ A single reporting system coming directly to a single authority to whom all program components are answerable is essential to provide clear messages to decision makers. Several components including surveillance systems, individual program evaluation, and process evaluation should be reported through this system, and the single authority should have the in-house capabilities to summarize all of these component data systems [CA:94, direct quote; also FL].
- ❑ The evaluation should be conducted by an independent evaluator, yet one that is able to truly understand the objectives and processes of the comprehensive program [CA, AZ].
- ❑ Evaluators should strive to be a resource or 'coach' to program operation [AZ].
- ❑ Departments of Health and Education should collaborate to ensure integration and accountability of program components. Higher level leadership should be involved in this process to ensure accountability [CA:94].
- ❑ Local agencies play an integral part in the collection of local data. Evaluation results should be shared with local agencies to foster local program improvement and capacity building [CA:94, FL, MA].

Methods

Planning and Design

- ❑ An evaluation and research component should be incorporated into the design of the comprehensive program, not applied after the fact [CA:IE, FL].
- ❑ The planning of program objectives should be in conjunction with input from stakeholders, policymakers, and evaluators.
- ❑ A long-term evaluation plan should be developed even if the longevity of the program is in question [FL].
- ❑ Don't necessarily base long-term plans on what has been done in the past [FL].
- ❑ The evaluation should occur on two broad dimensions [CDC]:
 - Process (i.e., input, implementation activities, reactions of stakeholders and policy makers, etc.)
 - Outcome (short-term, long-term, and ultimate outcomes)
- ❑ Process evaluation is a necessary prerequisite if jurisdiction wants to link program elements with outcomes [FL].

- ❑ Research design should enable evaluators to link the ‘dose’ of program exposure to impacts and outcomes [CA:IE].
- ❑ As much as possible, a pre-exposure/post-exposure design should be used in assessing impact; longitudinal study designs may be especially useful.
- ❑ Have a realistic expectation for change [CDC]:
 - Over the short-term, change will likely be limited to social and environmental outcomes (attitudes, knowledge, and policies).
 - Longer-term outcomes might include behavioural change (prevalence, consumption, and exposure) leading to improved health status (reduced morbidity, mortality, and economic costs).

Measures

- ❑ Evaluations should measure both the *individual* and *societal* impacts of interventions.
- ❑ Comparable substantive foci and uniform measures across jurisdictions, both local and state/provincial, should be developed [CDC]. In addition to developing appropriate local and cross-jurisdictional performance objectives, current practices in the U.S. [AZ, CA, MA, OR] suggest that jurisdictional monitoring should include:
 - Age specific smoking prevalence.
 - Smoking prevalence among targeted population groups (e.g., ethnic minorities, blue-collar workers, and women).
 - ETS exposure.
 - Content and number of ETS restrictions by jurisdiction.
 - Tobacco related attitudes in the population.
 - Compliance with legislation and regulations.
 - Implementation and impact of school-based programs.
 - Collaboration between agencies, organizations, and people (e.g., opinion leaders).
 - Tobacco industry activities and spending.
- ❑ To address the problem that the impact of a comprehensive program might occur over a longer period than that being evaluated, both short and long-term measures of program success should be used [FL]. Short-term indicators should have at least the following characteristics:
 - They potentially guide program decisions.
 - They potentially indicate movement toward long-term objectives.

Data Collection

- ❑ Baseline data should be collected *prior* to program implementation.
- ❑ Baseline data should be pertinent to each objective and performance indicator.
- ❑ Data collection should enable sub-state estimates [CA:94].
- ❑ An in-house information management system should be developed to keep track of progress reports of TCP-funded organizations, tobacco-related policies, disease and social impact of tobacco use, short-term impact indicators, and long-term outcome measures [CA:94, FL, CDC].
- ❑ Evaluations should make use of both quantitative data (for breadth) and qualitative data (for depth) as appropriate.

- ❑ The analysis of evaluation data must take into account the impact of efforts by the tobacco industry to undermine the effectiveness of a comprehensive program, as maintaining past achievements in the face of industry opposition may in fact be a positive outcome [ASSIST, CA:IE, CDC].

Reporting

- ❑ A single report should be produced rather than separate reports for the various components of the comprehensive program [CA:94].
- ❑ A jurisdiction should designate a single source to communicate prevalence numbers to avoid loss of credibility from the circulation of different prevalence estimates from different sources [CA].

PART III: EVALUATING COMPREHENSIVE TOBACCO CONTROL PROGRAM GOALS

Evaluations of comprehensive tobacco control programs are uncommon. Few jurisdictions have programs and for those jurisdictions with comprehensive programs, most have not been operating long enough to have produced outcomes that can be reliably evaluated. Two exceptions are California and Massachusetts. These two states have been leaders in implementing, operating, and evaluating comprehensive programs. In this Part, we examine specific evaluation activities from these two jurisdictions. The first three sections focus primarily on short-term evaluation measures in relation to the goals of *prevention* (Section 5), *cessation* (Section 6), and *protection* (Section 7). In the remaining three sections of this Part, we review what has been done to evaluate *capacity building* (Section 8), *pro-tobacco influences* (Section 9), and *synergy and interdependence* (Section 10). It is important to note that the information provided in this part is based on the actual reports of evaluations of comprehensive programs. Additional potential outcome measures, such as those from specific state surveys or those described in the peer-reviewed literature dealing with individual components of comprehensive programs, are not addressed here.

To the extent possible, our review focused on evaluation material related to prevention, cessation, and protection. For each of these goals, we focused on a) interventions, b) settings, and c) priority groups.

For *interventions*, our review provides a synthesis of measures used to evaluate the implementation and impact of policy, media-based public education campaigns, and community-based interventions (i.e., local and school programs). Although not intended to be all-inclusive, the three interventions listed account for the vast majority of program activity of many comprehensive programs. Our subsequent use of “policy” is quite broad in meaning. For instance, we use the term in reference to youth access laws, smoking restriction bylaws, and taxation. For our purposes, we lump all these initiatives and several others under the general rubric of policy. Media and community are likewise broadly defined.

Settings are particularly relevant to the protection section in that protection efforts frequently focus on reducing people’s exposure to ETS at work, home, and school.

Throughout this Part, we refer to several *priority groups*. The prevention section, for instance, devotes a substantial amount of space to one priority group in particular, youth.

For ease of presentation, we generally order the outcome measures listed in the subsequent three sections as follows: enactment, support for enactment, behaviour (past and future), and knowledge, attitudes, and beliefs. Our listing of outcome indicators is in no way meant to be exhaustive, but it does represent a great deal of what evaluators in other jurisdictions report.

The information presented in Sections 5, 6, and 7 is reproduced in Appendix B (Prevention), Appendix C (Cessation), and Appendix D (Protection), respectively. Supplemental material is included in these appendices such as the evaluation report from which the outcome measure is cited, response category examples, and data collection methods.

SECTION 5: PREVENTION

Preventing people's uptake of tobacco products is a major goal of comprehensive tobacco control programs. Because most individuals developed their addiction by late adolescence, efforts around prevention are frequently geared toward young people. Government policy, for instance, might dictate that the purchasing of tobacco products be limited to those who are at least 18 years of age, media spots on prevention frequently try to appeal to younger viewers, and smoking prevention material is increasingly becoming a compulsory component of school curricula. These examples illustrate the multi-pronged approach that comprehensive programs take to prevent the uptake of tobacco products, namely, policy action, media-based public education campaigns, and community-based interventions.

Policy Interventions

Tobacco control policies, as they relate to prevention, are primarily meant to reduce access to and demand for tobacco products. For instance, such policies might a) stipulate youth access restrictions including age of purchase and b) increase the price of tobacco products through taxation. Our review of evaluation material focuses on short-term impact indicators related to such policies. We provide additional details in Appendix B.

Youth Access

In assessing the effectiveness of youth access policies, evaluators have analyzed data from several sources. Survey instruments have enabled researchers to collect information about behaviours, attitudes, and beliefs related to prevention, from not only adults and youth, but from community opinion leaders and enforcement agency staff as well. Observational studies of retail space provide information about age of purchase signage, promotional displays, and prevalence of vending machines. Controlled buy attempts by underage youth provide data about retailer compliance. Archival records of enforcement agencies list the number of inspections, infractions, and extent of sanction. Progress reports from and interviews with local health agencies and community-funded grant holders provide information about policy enforcement, extent of coverage, and number of contacts with retailers and the public in regard to activities such as compliance checks and educational outreach.

Implementation of Policies Restricting Youth Access to Tobacco Products

- Type of policies implemented (e.g., age of purchase, retailer licensing, etc.).
- Extent of policy implementation with respect to number of municipalities having policies and percentage of the population covered by policies.
- Number of local policies that are more stringent than state level policies.

Support for Policies Restricting Youth Access to Tobacco Products

- Support for restrictions on tobacco marketing practices that affect youth.
- Support for various controls including licensure, fines, and enforcement.

Compliance with Youth Access Policies

- Number of retailers checked for age of purchase compliance.
- Number of retail premises checked for displaying appropriate age of purchase signage.
- Frequency with which enforcement agencies conduct age of purchase enforcement checks with respect to a) *retailers* selling to underage youth and b) *underage youth* attempting to purchase cigarettes.
- Percentage of enforcement agency staff that conduct underage buy operations.
- Barriers enforcement agencies face in enforcing youth access policies.

Violations of Youth Access Policies

- Number of retailers found violating age of purchase restrictions.
- Calls to an enforcement hotline.
- Extent of the penalty imposed on retailers violating age of purchase restrictions.

Youth Access to Tobacco Products

- Sources used by youth to obtain tobacco products.
- Percentage of adults asked by an adolescent to buy tobacco products on his or her behalf.
- Percentage of underage youth reporting not being asked for proof of age when attempting to purchase cigarettes in the last 30 days.

Beliefs about Youth Access to Tobacco Products

- Beliefs about whether youth access to tobacco products is a serious problem.
- Beliefs about whether the illegal sale of tobacco influences youth uptake of smoking.
- Beliefs about whether more needs to be done to prevent illegal sales to youth.
- Beliefs about how easy it is for underage youth to purchase tobacco products.
- Perceptions of the percentage of retailers willing to sell cigarettes to underage buyers.
- Belief about whether license revocation would deter retailers from selling tobacco products to underage youth.

Knowledge, Attitudes and Beliefs with respect to Age Restrictions on Sales

- Awareness of age of purchase signage.
- Awareness of the legal age to purchase tobacco products.
- Awareness of whether or not compliance checks are being conducted on local retail outlets that sell cigarettes.
- Beliefs about the ideal legal age for purchasing cigarettes.

Price and Taxation

Government taxes and tobacco industry price changes are two factors that determine the real price of cigarettes. Much of the evaluation research on taxation and price relates to overall consumption. We explore price and taxation further in the cessation section; most of this literature is couched in terms of demand for cigarettes, and thus the findings have implications for both prevention and cessation.

- ❑ Among teens, smoking participation elasticity over time (calculated as percentage change in teen smoking prevalence due to the percentage change in the price of cigarettes):
 - CA:98. Because consumption data are not available for teens, overall price elasticities of demand for youth are not available. Data source: CTS (1990, 1993 & 1996) & Tobacco Institute.
- ❑ Comparison of expected and actual percentage change in youth smoking prevalence:
 - CA:98. Expected values determined from smoking participation calculations. This measure can be used to assess progress toward both prevention and cessation goals. Data source: CTS (1990, 1993 & 1996) & Tobacco Institute.
- ❑ Support for an increased excise tax on cigarette packs that would be directed toward prevention and health care:
 - CA:98. Response categories ranged from no increase to \$3. Data source: CTS (1992, 1993 & 1996).

Media-Based Public Education Campaigns

Media campaigns focusing on prevention communicate a variety of messages including health risks associated with smoking, youth access issues, and the social unattractiveness of smoking (i.e., denormalization). Evaluators have evaluated program implementation and program impact using a variety of methods. For instance, content analyses of media campaigns provide evaluators with particular information about campaign focus such as youth access or prevention. The impact of a media campaign on progress toward the goal of prevention can be determined in part by comparing the behaviours, attitudes, and beliefs of campaign exposed to campaign unexposed individuals including people living outside the campaign's broadcast area (e.g., out-of-state residents). Exposure is gauged in several ways. Frequently, data are collected prior to the start of a campaign (baseline) and compared to data collected on one or more subsequent occasions (e.g., post campaign).

Campaign Implementation

- ❑ Media campaign funding directed toward prevention issues.
- ❑ Degree to which media campaign focused on youth access and prevention issues.
- ❑ Source by which media campaign messages reach audience members.

Campaign Exposure

- ❑ Recall of campaign messages and theme lines.
- ❑ Comparisons of people exposed and unexposed to media campaigns regarding:
 - Number of calls to a telephone hotline reporting illegal tobacco sales to youth.
 - Agreement with statements such as: "Smoking is a way to look and feel independent," "If your best friend offered you a cigarette, would you smoke it?" and "Do you think that you will smoke cigarettes when you are an adult?"
 - Support for policies mandating retailer licensing and fines for youth attempting to purchase tobacco products.

- Recall of the legal age to purchase tobacco products.
- Recall of signs requesting customers inform authorities of retailers selling cigarettes to underage youth.
- Beliefs about the prevalence of police “sting” operations in the community.
- Youth smokers’ beliefs about the ease with which cigarettes can be purchased.

Behavioural Intentions

- ❑ Change in nonsmokers’ intentions to start smoking over the duration of the campaign.

Other

- ❑ Agreement with advert message.

Community-Based Interventions

Local Programs and Activities

In regard to local initiatives, evaluators assess progress toward the prevention goal by examining the extent of program implementation (e.g., reach) and program impact. We detail several outcome measures related to these two constructs.

Program Implementation

- ❑ Number and type of events local groups sponsored or participated in which focused on tobacco education or prevention.
- ❑ Youth access restrictions for which local groups lobby.
- ❑ Community collaboration between enforcement agency staff and educational organizations, local government officials, voluntary health organizations, anti-smoking coalitions, and county health departments.

Program Impact

- ❑ Recall of community programs regarding youth access.
- ❑ Skill development of peer leaders.
- ❑ Comparison of people exposed and unexposed to educational programs across a variety of short-term impact indicators.
- ❑ Association between number of information requests to an enforcement telephone hotline and a) local program activity on youth access issues, and b) reported enforcement activity of retailers and youth.

School Programs and Activities

In assessing school programs and activities in relation to the goal of prevention, evaluators have used a number of methodological and analytic strategies. For instance, comparisons have been made between students in different grade levels and in tobacco control funded versus non-funded schools and districts. Moreover, in some jurisdictions, the school is the unit of analysis.

The evaluation of school programs in Massachusetts generally falls under the control of the Department of Education. One instrument they use is the Self Evaluation Tool for School-Based Tobacco Control Programs, a survey distributed to all school districts in the state. Responses enable evaluators to assess, in part, the degree of program implementation. In California, evaluators have used a host of special surveys (and interviews) including surveys of school-based youth, teachers, school administrators, and school district and county office of education coordinators. We include here a mix of reported outcome measures.

Policy Implementation

- Policies relevant to prevention goals typically fall under smoking restrictions on school grounds. These policies are referred to in the *protection* section.

Program Implementation

- Most common tobacco prevention curriculum materials used in schools.
- Tobacco prevention education activities and programs implemented in schools.
- Topics covered by teachers in tobacco education classes.
- Correspondence of school district tobacco prevention programs to CDC's "Guidelines for School Health Programs to Prevent Tobacco Use and Addiction".
- School administrators' awareness of implementation plans for school and district tobacco education programs.
- Barriers to implementing tobacco education.
- Priority of tobacco education relative to other health education topics.

Program Exposure

- Student exposure to tobacco education over the past year.
- Extent to which teachers involve parents in tobacco use prevention programs.

Program Impact

- Frequency with which a school district's prevention program has been evaluated by district.
- Association between program exposure and outcome measures (i.e., knowledge, attitudes, beliefs, and behaviours with respect to tobacco use).
- Beliefs about the helpfulness of tobacco-related course content.

Teacher Preparation

- Staff-development programs and activities offered by school districts over the past year.
- Extent of teacher training in tobacco education.

SECTION 6: CESSATION

Cessation is a stated goal of the comprehensive tobacco control programs that we reviewed. Several components commonly comprise a jurisdiction's cessation activities. With respect to policy, smoking restrictions and price increases have played a role in reducing consumption and prevalence levels. Likewise, media-based public education campaigns have been instrumental in educating the public about tobacco use and cessation services. Community-based interventions have also facilitated progress toward cessation goals. Evaluation measures related to these three components are subsequently described. First, we list several general outcome indicators.

Long-Term Outcomes

In assessing progress toward the goal of cessation, the measurement of particular constructs, such as prevalence, consumption, quitting history, and quitting intentions, provides useful information to evaluators. Taken together, these constructs give a general sense of where a program is at with respect to cessation. Evaluations in California and Massachusetts include such measures:

Smoking Prevalence

- ❑ Cigarette consumption trends as measured by number of cigarette packs taxed.
- ❑ Percentage of respondents who indicate that they smoke.
- ❑ Percentage of respondents who report being nondaily smokers.
- ❑ Percentage of respondents who have smoked in the past 30 days.
- ❑ Percentage of respondents who report smoking at least 100 cigarettes in their lifetime
- ❑ Number of cigarettes smoked per day.
- ❑ Percentage of smokers who report smoking less than 15 cigarettes per day.

Quitting History

- ❑ Percentage of respondents who gave up smoking during the past year for at least a) 1 day, b) 7 days, c) 14 days, or d) 90 days.
- ❑ "Quit success rate" over time as measured by the number of people who gave up smoking for at least one day during the past year and who were still not smoking at the time of the survey.
- ❑ Among smokers who had made a quit attempt, the percentage who relapse within a) the first week or b) the first month.
- ❑ Quitting success of youth in relation to parents' smoking status.
- ❑ Quitting success of youth in relation to self-reported symptoms of depression.

Quitting Intentions

- ❑ Among people who had smoked in the past year, their stage along the quitting continuum (precontemplation, contemplation, early preparation, intermediate preparation, advanced preparation, action, early maintenance, or advanced maintenance).
- ❑ Percentage of respondents who express an intention to quit in next 6 months.

- ❑ Among respondents who indicate that they had smoked at least 100 cigarettes in their lifetime and had tried to quit in the past 6 months, the percentage that had smoking withdrawal symptoms.

Policy Interventions

In evaluating progress toward the goal of cessation, outcome measures related to several policy interventions have been examined. Two policy interventions present in California and Massachusetts that we examine below are a) smoking restriction policies, and b) price and taxation.

Smoking Restriction Policies

Policies aimed at restricting where people can smoke necessarily restrict the available space and frequently reduce the available time for smoking. Smoking prevalence and quitting rates have been two measures that evaluators have used to assess the effectiveness of smoking restriction policies. For instance:

- ❑ Rates of smoking cessation and progress toward quitting as a function of the comprehensiveness of worksite smoking bans.
- ❑ Percentage of quit attempts by level of workplace smoking restriction (complete or none) and level of home smoking restriction (complete, some, or none).
- ❑ Percentage of light or occasional smokers by level of workplace smoking restriction (complete or none) and level of home smoking restriction (complete, some, or none).
- ❑ Current smoker's position on the quitting continuum by level of workplace smoking restriction (smokefree vs. not smokefree) and level of home smoking restriction (smokefree vs. not smokefree).

Price

As mentioned previously in the prevention section, the cost of tobacco products can play a role in the nonsmoker's decision to start smoking. The influence of the price of cigarettes on cessation has also been established. We include here several measures that evaluators of comprehensive programs report, in regard to price and taxation.

General

- ❑ Amount respondents spent per month on cigarettes.
- ❑ Average price per pack of cigarettes examined over time.
- ❑ Youth smokeless tobacco use in relation to increased excise tax.
- ❑ Percentage of tobacco advertisements that promote savings or discounts.

Price Elasticity

- ❑ Price elasticity of demand over time (calculated as percentage change in demand due to the percentage change in the price of cigarettes).

- ❑ Comparison of expected and actual percentage change in cigarette consumption.
- ❑ Teen smoking participation elasticity over time (calculated as percentage change in teen smoking prevalence due to the percentage change in the price of cigarettes).
- ❑ Comparison of expected and actual percentage change in youth smoking prevalence.

Price Sensitivity

- ❑ Percentage of respondents who purchase cigarettes by a) the pack, and b) the carton.
- ❑ Percentage of smoking respondents who prefer premium (expensive) brand cigarettes relative to those who prefer generic (less expensive) brand cigarettes.
- ❑ Percentage of teens that use price-related versus non-price related sources to obtain tobacco (e.g., buy their own vs. steal).
- ❑ Percentage of respondents concerned about how much money they spend on cigarettes.

Media-Based Public Education Campaigns

As one might expect, cessation messages are an integral part of media campaigns. These messages frequently provide information on: the harmful effects of tobacco use, cessation services (e.g., telephone help-line), and general quitting advice. Our subsequent presentation includes several outcome measures that evaluators in California and Massachusetts have used to evaluate their respective campaigns.

Campaign Implementation

- ❑ Media campaign funding in regard to cessation.
- ❑ Degree to which media campaign focused on cessation issues.
- ❑ Percentage of advertisements that include a telephone number for a quitting helpline.

Campaign Exposure

- ❑ Recall of specific media spots (TV, radio, and outdoor).
- ❑ Reach of media campaign to targeted audience (smokers), as measured by a comparison of smoker and nonsmoker recall of media campaign theme line.
- ❑ Among respondents recalling specific media spots, identification of the correct meaning of the spot and self-reported accuracy.

Campaign Impact

- ❑ Relationship between reported media campaign exposure and smoking status (never smoker, former smoker, and current smoker).
- ❑ Association between intensity of media spots over time and number of monthly calls to a smokers' telephone helpline.
- ❑ Beliefs about the harmful effects of smoking.

Exposed Versus Unexposed Respondents

Comparisons of smokers exposed and unexposed to media campaigns regarding their knowledge, attitudes, and behavioural intentions:

- ❑ Number of quit attempts in past year.
- ❑ Among smokers who had a quit attempt in the last year, awareness of a smokers' telephone helpline.
- ❑ Agreement with tobacco company messages about a) advertising practises such as not encouraging young people to smoke, and b) health consequences of tobacco such as the assertion that tobacco is not addictive.
- ❑ Among teen smokers, the percentage who had thought about quitting.
- ❑ Beliefs about the harmful effects of smoking.

Community-Based Interventions

California and Massachusetts spend a sizeable portion of their respective tobacco control budgets on community-based interventions. With respect to local programs and activities, the focus frequently centres on promoting smoking cessation through various channels including program services, health professionals, and telephone quit lines. Similarly, school-based cessation activities focus on promoting smoking cessation, typically through the delivery of cessation programs.

Local Programs and Activities

Implementation

- ❑ Among tobacco control funded organizations, percentage of aggregated activities that focus on cessation as a function of total reported activities.
- ❑ Among tobacco control funded organizations, the number of events held, the number of people reached (further divided by population group and language of service), type of event (e.g., counselling session, health fair, or information campaigns), range of topics covered (health effects, quit advice, smoking while pregnant, etc.), and mode of delivery (public forum, telephone, mail, etc.).
- ❑ Type of cessation services offered by tobacco control funded programs.
- ❑ With respect to the past year, current and former smokers' source of information about quitting.

Promoting smoking cessation

Health Professional Advice

- ❑ Respondents' recall of whether a physician advised them to quit smoking.
- ❑ Percentage of respondents who indicated that they quit smoking as a result of physician advice to do so.
- ❑ Of respondents receiving physician advice to quit, the percentage who a) receive information on smoking cessation programs, or b) are encouraged to set a specific date.
- ❑ Percentage of respondents reporting a discussion with their physician about the hazards of ETS to the nonsmoker.

Methods of Quitting

- ❑ Among smokers responding that they had relied on some sort of assistance following their last quit attempt, the percentage of quitters as a function of type of assistance used and level of previous cigarette consumption.
- ❑ Percentage of respondents who reported using a) the nicotine patch or b) nicotine gum during a quit attempt in the last 12 months.
- ❑ Among smokers using some type of assistance, time to relapse following a quit attempt.
- ❑ Among smokers who had made a quit attempt in the last year, unaided recall of programs that assist people trying to quit smoking.

Smokers' Quitline

- ❑ Number of callers to the state's quitline requesting assistance in quitting.
- ❑ Type and quantity of information provided to callers by quitline staff including written cessation materials and individual counselling sessions.
- ❑ Number of cigarettes smoked per day.
- ❑ Percentage of callers who attempted to quit or who did not relapse after having been exposed to quitline services.
- ❑ Number of callers referred to the state quitline by their health-care provider.
- ❑ Of callers referred to the state's quitline by a health-care provider, the percentage who indicate that they have health problems.

Other Cessation Resources

- ❑ Type of information offered on a tobacco control funded website designed for smokers with an interest in quitting.
- ❑ Type and quantity of materials distributed by Tobacco Education Clearing House.

School Programs and Activities

In the jurisdictions that we reviewed, school-aged youth are not permitted to smoke. Nevertheless, a significant percentage of youth still use tobacco products. As previously suggested, policy interventions and media-based public education campaigns have worked to bring about progress toward the goal of youth cessation. Here we describe several measures that evaluators have used to assess school-based cessation programs and progress toward quitting.

Implementation of Cessation Program

- ❑ Percentage of schools that have implemented a cessation program.
- ❑ Number of students currently enrolled in cessation programs.
- ❑ Resources available to teachers who wish to stop using tobacco.
- ❑ Percentage of teachers who have received information regarding staff smoking cessation programs.
- ❑ Most common tobacco cessation program implemented in high schools.
- ❑ Percentage of teachers who have referred at least one student to the school cessation program over the past year.
- ❑ Student awareness of tobacco-use cessation programs.

Impact of Cessation Program

- ❑ Results of the school cessation program to date.
- ❑ Comparison of students with low exposure to school programs to students with high exposure to school programs in regard to 30-day prevalence of cigarette use.

Quitting History and Intentions

- ❑ Among students who have smoked at least 100 cigarettes in their lifetime, the percentage who have tried to quit at least once.
- ❑ Among students who have smoked at least 100 cigarettes in their lifetime, the percentage who have tried to quit in the past year.
- ❑ Among students who have smoked at least 100 cigarettes in their lifetime, the percentage who would like to quit.

SECTION 7: PROTECTION

One common goal of tobacco control strategies is to protect nonsmokers from second hand smoke. Frequently, this objective is further divided into attaining 100% smokefree public places and work sites and reducing exposure to ETS in the home.

Policy Interventions

The focus of the protection goal is to protect the health of nonsmokers and frequently involves a) the implementation of policies that restrict smoking in settings frequented by nonsmokers, and b) the enforcement of smokefree policies. An evaluation of short-term impact indicators, such as the extent of policy implementation within a given region, enforcement activity, the behaviour of smokers and nonsmokers, and public opinion toward smoking policies, enables evaluators to assess progress toward the goal of protection.

Smoking Restriction Policies

Policies on smoking restrictions are appealing, in part, because they reach a large segment of the population and are an inexpensive tobacco control strategy to implement. Such policies, moreover, not only impact on protection goals but on prevention and cessation goals as well. Smoking restrictions frequently come about in one of two ways: legislated restrictions or voluntary restrictions (e.g., families implementing household rules or private companies implementing their own workplace restrictions on smoking). In either instance, restrictions reduce people's exposure to the harmful effects of ETS and help establish non-smoking as the norm.

Although smoking policies are intended to protect *people*, evaluations have centred on *settings* in which people frequent including public places, work, home, and school. In jurisdictions that have successfully implemented policies related to restrictions on smoking or that have implemented public education campaigns in regard to voluntary restrictions, evaluations have focused on a variety of outcome measures, as suggested by the following items (and as described further in Appendix D):

Smoking Restrictions in General

Implementation of Smoking Restriction Policies

- ❑ Number of local bylaws restricting indoor smoking.

Support for Smoking Restriction Policies

- ❑ Percentage of people who support smokefree policies in various settings.

Exposure to ETS

- ❑ Percentage of people reporting no exposure to ETS in their everyday experience.

- Percentage of people who say they avoided places where they would be exposed to ETS.
- Exposure to ETS in places other than work or home.

Behaviour

- Percentage of people (smokers and nonsmokers) asking an acquaintance or a stranger not to smoke in their presence.

Knowledge, Attitudes, and Beliefs

- Percentage of people aware of smoking policies.
- Percentage of people who believe that ETS causes harm.
- Percentage of people indicating that they would increase their patronage of smokefree clubs or bars.

Economic Impact

- Economic impact on restaurants adopting smoking restrictions.

Workplace Smoking Restrictions

Implementation of Workplace Smoking Restrictions

- Number of workplaces having smokefree policies.
- Proportion of employees covered by workplace smoking policies.

Support for Workplace Smoking Restrictions

- Percentage of people agreeing that smoking should be banned in all worksites.

Exposure

- Proportion of non-smoking indoor employees exposed to ETS within their work area over the previous two weeks.
- Average hours per week that respondents are exposed to ETS at work.

Household Smoking Restrictions

Implementation of Household Smoking Restrictions

- Percentage of homes having a smokefree policy.
- Proportion of youth (less than 18 years) residing in smokefree homes.

School Smoking Restrictions

These are addressed subsequently in our review of Community-Based Interventions (School Programs and Activities).

Enforcement

In order to realize the goal of protecting nonsmokers from the harmful effects of ETS, smoking restriction policies need to be followed. To increase compliance, comprehensive programs have relied on enforcement and educational activities. We focus here on outcome measures related to enforcement and will return to education when we review community-based interventions.

- ❑ Reported number of enforcement staff who respond to inquiries and complaints.
- ❑ Number of warnings, citations, and fines issued for smoking policy infractions.
- ❑ Compliance with worksite smoking restrictions, as measured by the average hours per week that respondents are exposed to ETS at work.
- ❑ Barriers to enforcement of ETS policies.

Media-Based Public Education Campaigns

Messages about ETS play a central role in comprehensive tobacco control program media campaigns. The strategy behind ETS television spots and other ads (e.g., billboards, posters, etc.) is to inform smokers that their smoking is harmful to those around them, to denormalize smoking in public by portraying the harmful effects of smoke on nonsmokers, and to encourage smokers to stop smoking. Examples of short-term impact indicators used to evaluate these campaigns include:

General

- ❑ Media campaign funding in regard to ETS.
- ❑ Degree to which media campaign focused on ETS issues.

Behaviours, Support, Knowledge, Attitudes, and Beliefs

- ❑ Recall of media messages related to protection.
- ❑ Comparisons of respondents exposed and unexposed to media campaign with regard to:
 - Purposefully avoiding places that are smokey.
 - Asking an acquaintance or a stranger not to smoke.
 - Intentions to increase patronage of bars and clubs if these establishments implement smokefree policies.
 - Support for smoking bans in workplaces, restaurants, and drinking establishments.
 - Views on the importance of ETS as a health issue.

Community-Based Interventions

There are several types of programs and activities at the local level that aim to reduce nonsmokers' exposure to ETS. These initiatives frequently centre on public education (e.g., community presentations on the harmful effects of ETS), compliance checks of local establishments, organizing efforts to enact new smoking restrictions, and school programs and activities. Evaluators rely on several instruments to evaluate the effectiveness with which local

programs achieve progress toward the goal of protection including computerized management information systems and surveys.

Local Programs and Activities

In Massachusetts, community funded organizations file monthly reports with tobacco control evaluators, which are entered into an information database for later analysis. These reports detail an organization's past month's activities; for instance,

- ❑ In regard to promoting smoking restrictions at worksites, organizational reports detail information on several measures including:
 - Number of contacts local boards of health initiate.
 - Number of requests to which local boards respond.
 - Number of technical assistance/information referrals boards provide to worksites.
 - Number of worksites implementing tobacco control policies subsequent to board assistance.
 - Number of workers covered by these policies.
- ❑ Number of contacts an organization has had with community members.
- ❑ Number of community events sponsored or events in which an organization participated, including regulatory hearings, contests for children, school presentations, health exhibitions, and award ceremonies (e.g., for employers who have implemented smokefree policies).

Other Measures

- ❑ Comparison of communities with and without tobacco control program funding for local Boards of Health with respect to the existence of restaurant smoking restrictions.
- ❑ Percentage of tobacco control-funded organization programs and activities addressing ETS related issues as a function of total reported activities.

School Programs and Activities

The protection goal as it relates to schools focuses on the elimination of student (and staff) ETS exposure. This is primarily accomplished through smoking restriction policies. Evaluations of school programs and activities are generally conducted under the direction of either a Department of Education (e.g., Massachusetts) or a tobacco control program (e.g., California). Data collection methods can be diverse and have included school-based youth, parent, teacher, principal, and school district administrator surveys. We present here several short-term impact indicators used to assess progress toward the protection goal within schools.

Implementation of Tobacco-Free Policies

- ❑ Percentage of school districts adopting a tobacco-free policy.
- ❑ Percentage of school districts whose tobacco-free policies have provisions for violations.
- ❑ Student awareness of school tobacco-free policy.

Enforcement of Tobacco-Free Policies

- ❑ Means by which tobacco-free policy is publicized.

- ❑ Enforcement of tobacco-free policy during special school events such as athletic competitions.
- ❑ Means by which policy is enforced when community groups use the school during off-hours.

Violations of Tobacco-Free Policies

- ❑ Student consequences of violating school tobacco-free policy.
- ❑ Teacher consequences of violating school tobacco-free policy.
- ❑ Comprehensiveness of policy with respect to whether it explicitly lists consequences for 1st, 2nd, and 3rd offences.
- ❑ Percentage of students witnessing smoking on school property in the past two weeks.
- ❑ Perceptions of student compliance with school tobacco-free policy.

SECTION 8: CAPACITY BUILDING

Comprehensive tobacco control programs are multifaceted and thus require a large number of organizations and people to successfully develop, implement, and administer a variety of programs and activities. Examining the extent of collaboration between organizations (staff, boards, etc.) has been a part of several jurisdictions' evaluation frameworks including California and Massachusetts.

In regard to the California tobacco control program, the Independent Evaluation Consortium has examined collaboration between health, education, and community-based agencies funded by Proposition 99 and between these agencies and a) local organizations not funded by proposition 99, and b) public officials. To assess collaboration in regard to a) the sharing of information and materials, and b) implementing joint programs and events, evaluators in California have examined surveys from project directors of both local health units and community grantees, in addition to community leaders.

On the basis of their evaluation, tobacco control experts in California determined that: a) school and local programs needed to establish closer links with media outlets to promote their programs and activities; and b) health units and schools collaborated with some segments of the community, such as TCP funded organizations, but not with other segments such as law enforcement agencies, elected officials, and retailers.

Massachusetts' approach to evaluating collaboration among organizations and people is somewhat different. They have relied on qualitative reports that detail the activities of statewide staff including the provision of educational material and instruction to local program staff and health-care providers.

By evaluating collaboration among organizations and people, tobacco control experts in California and Massachusetts have been better able to assess barriers to program implementation, possible overlap in programs and services, whether or not certain populations are being underserved, and possible synergy between program components.

SECTION 9: PRO TOBACCO INFLUENCES

There are four basic complementary strategies for monitoring the influence of the tobacco industry. One is the monitoring of *marketing and promotional activities* such as advertisements, event sponsorship, and direct marketing. A second strategy involves tracking the *political and lobbying activities* of the tobacco companies and their various representatives. Third, some jurisdictions monitor *news and editorial commentary* related to the tobacco industry and tobacco control. A fourth strategy centres on monitoring the *tobacco economy*.

Marketing and Promotional Activities

In California, the primary goal of the Tobacco Industry Monitoring Evaluation (TIME) is to assess the marketing influence of the tobacco industry across the state. This is achieved by examining past and current promotional activities by the industry. California's general approach is to:

- ❑ Describe promotional/marketing activities.
- ❑ Compare these activities with activities in other jurisdictions.
- ❑ Identify marketing trends that might be addressed by tobacco control experts.
- ❑ Assess the reach of tobacco marketing using data such as:
 - Proportion of teens and adults who can easily recall a cigarette brand name.
 - Proportion of teens and adults who own tobacco related merchandise.
 - Recall of tobacco ads.

With regard to the specifics of determining tobacco industry promotional activity, California and other jurisdictions make use of a range of methods that facilitate the collection and analysis of useful data. Advertising media is a key emphasis, including newspaper and magazine advertisements, catalogues and direct marketing literature, point-of-sale displays, posters and other ads within stores, billboard advertisements, and radio or television ads. Recommended techniques for analysis include:

- ❑ Tracking spending of the industry, in terms of types of promotions selected over time.
- ❑ Content analysis, for example tracking the underlying messages of advertisements (adventure, freedom, time to relax, etc.) for insight into ad effectiveness.
- ❑ Tracking differences among target audiences, such as differences in the type and number of ads present in ethnic newspapers versus more mainstream newspapers.
- ❑ Street surveys of billboards to determine location (e.g., by socio-economic status of neighbourhood or distance from schools), content, prevalence, etc.
- ❑ In-store inspections of point-of-sale advertisements.

Another common type of promotional activity is tobacco company sponsorship of sporting and cultural events. It has been suggested that tobacco industry tactics used in the selection of events to sponsor may include the identification of events with a large audience, particularly a large youth audience, events that are expected to increase rapidly in popularity, and events popular among ethnic minority males. Many of the analytical techniques mentioned above are relevant, as well as:

- ❑ The analysis of the placement of tobacco logos and names at venues (it has been noted that sponsorship of sports venues facilitates tobacco logos appearing on television, despite total bans on tobacco ads on television).
- ❑ Surveys of event organizers to determine the extent of funds, signage, duration, and audience.

Tracking Political and Lobbying Activities

The second category of activities, the monitoring of tobacco industry political and lobbying activities, seems especially challenging. In light of this, jurisdictions have a number of options. A key area of monitoring should be tobacco industry (or their representatives') donations to campaigns for political office, both to whom and the amount. Further, planners of comprehensive programs should incorporate into their programs support for activities that uncover so-called front organizations that lobby against tobacco control initiatives. Often these organizations appear to be citizen driven or non-tobacco business associations, but operate with tobacco funding. Lastly, advertisements by the tobacco industry intended to refute public health messages or anti-tobacco messages, such as the denial that tobacco advertisements are directed at youth, should be monitored for frequency, placement, spending, content, and recall of such ads by the target audience.

Monitoring News and Editorial Commentary

The third area of attention in monitoring tobacco industry influences also pertains to the news media. The CDC recommends that jurisdictions track news and editorial items appearing over time. It is suggested that a news-clipping service can be helpful. Content analysis and the tracking of target audiences can be undertaken in the analysis.

Monitoring the Tobacco Economy

The fourth type of pro-tobacco influence is the tobacco economy. Measures to monitor include: cigarette sales (e.g., number of packages sold and taxed per capita); tobacco agriculture (e.g., number of tobacco acres harvested, tobacco production in pounds, and tobacco as a percentage of cash receipts from crops and all farm commodities); tobacco processing and cigarette manufacturing (e.g., as a proportion of state GDP); and nicotine levels and additives in cigarettes.

SECTION 10: SYNERGY AND INTERDEPENDENCE

As the forces working toward restrictions on tobacco use multiply, a type of synergy—beneficial cooperation among various sectors of the system—develops. To the extent that relations among the sectors are harmonious and oriented toward a common goal, the synergy that develops produces a net effect of the combined forces that is greater than the sum of their separate effects. (Thompson et al., 1991, pp. 271-272)

Synergy

Comprehensive tobacco control programs are by their very nature multi-faceted. Progress toward program goals is achieved by implementing a number of interventions such as policy actions, media campaigns, and local and school programs. The reasons for such an approach are twofold. Firstly, tobacco control experts want to capitalize on the *additive* nature of interventions, and secondly, experts want to capitalize on potential positive *interactions* (or multiplicative effects) between interventions. Although not always clear in the literature, only the second (i.e., positive interactions between interventions) can accurately be called synergy.

The recent independent evaluation of the California tobacco control program provides evidence for these additive and synergistic aspects of interventions (CA:IE). In regard to the former, evaluators report that particular interventions, such as local programs, media campaigns, and school policies, each contribute uniquely to tobacco-related outcomes (i.e., after statistically controlling for the effects of other interventions). This makes it possible to examine the independent effect of any one intervention or add together the independent effects of several interventions. Multiple interventions that have independent effects support a comprehensive (multi-faceted) approach to tobacco control. A further example is illustrative. Adults exposed only to the media campaign or only to community programs showed less support for tobacco policies compared to adults exposed to both media and community campaigns. This result supports the notion that a tobacco control program with multiple interventions will have greater success in reaching its goals than one intervention on its own.

Just because two (or more) interventions are additive does not necessarily mean that there is synergy between interventions. For synergy to occur, the two interventions must positively interact. The California independent evaluation reports at least one example of synergy between program components. Using advocacy actions in which youth engage as a dependent variable (e.g., signing a petition, contacting a government official, or attending a youth conference), evaluators compared youth exposure to tobacco control program interventions (i.e., none, media, community, and school). For example, in regard to the media campaign, 5% of exposed youth indicated that they had signed a petition. Moreover, 2% of youth exposed to community programs had signed a petition. However, 14% of the youth exposed to both the media campaign and community programs indicated that they had signed a petition. Because this latter result (14%) is higher than the combined results of the media campaign (5%) and the community program (2%), an interaction is suggested between media and community exposure and thus supports the notion of a synergistic effect between the two interventions.

Interdependence

Whereas synergy refers to effects on tobacco-related outcome and goals, *interdependence* refers to the joint workings of two or more interventions. For instance, a media campaign might advertise a quitline telephone number. Because of these two interventions, calls to the quitline may increase. The quitline is dependent, in part, on the media campaign. The relationship between the interventions is thus one of interdependence, albeit in one direction (the media campaign is not dependent on the quitline). However, we do not have enough information to conclude that there is any sort of synergy between these two interventions (i.e., media campaign and quitline). To do so, we would need more data. Namely, we would need outcome measures related to peoples' quitting status, in addition to their exposure to the media campaign and their use of the quitline.

Main Effects

Any given intervention may contribute to each of prevention, cessation, and protection. This is not synergy, but rather an instance of an intervention having more than one effect. For instance, it is apparent that smoking restriction policies protect nonsmokers from ETS. Such policies, however, provide less opportunity for smokers to model their smoking habit and thus reduce the chance that someone close to the smoker (e.g., a co-worker or child) will begin smoking (prevention). Likewise, smoking restriction policies create a climate in which it is more difficult to find a place to smoke and thus can affect both consumption and potentially smoking prevalence (cessation). In this example, smoking restriction policies have multiple main effects, but synergy is not demonstrated.

In regard to whether or not synergy is occurring between program components, our reading of the literature suggests that caution should be taken when making such assertions. Determining whether synergy characterizes program components is not as straightforward as it may first appear. To adequately assess synergy, evaluators not only need to collect appropriate data, but also must interpret the relationship between program components with caution.

PART IV: DISCUSSION

It is apparent that systems of evaluation need to be in place in the early stages of a comprehensive tobacco control program to document changes in social, environmental, and behavioural outcomes. If initial high-quality measures are not available, change resulting from effective programs will not be readily noticeable. As indicated from our review, leading jurisdictions in tobacco control have invested in a variety of data collection tools, which play an integral role in their evaluation activities. For instance, regular, tobacco-specific population surveys are a staple of comprehensive tobacco control program evaluations, allowing the evaluation of short-term impacts and longer-term outcomes. Existing data collected primarily for other purposes (e.g., vital statistics, tobacco production and sales data, taxation data for restaurant and bar sales) are also important for evaluations of comprehensive tobacco control programs. In addition, jurisdictions have developed detailed progress reporting forms that facilitate data collection from local and community groups. Several jurisdictions rely on a computerized management information system (MIS) to organize data from health units and community grantees/organizations. We conclude our review by highlighting key evaluation resources that U.S. jurisdictions have used and follow-up with a series of recommendations for evaluating comprehensive tobacco control programs.

Evaluation Resources

Tobacco-specific Population Surveys

Regular, tobacco-specific population surveys are the most commonly used method to evaluate comprehensive tobacco control programs, in part because they allow evaluators to gather data on a wide spectrum of population characteristics including age, racial/ethnic background, socioeconomic status, and tobacco related knowledge, attitudes, and behaviours. Several common features characterized the surveys of the tobacco control programs we reviewed:

- ❑ Tobacco specific. Surveys focus on tobacco. General health or drug surveys that include a tobacco component do not provide sufficient detail for an evaluation of a comprehensive tobacco control program.
- ❑ Common format. Respondents are first asked questions about their tobacco use followed by a core set of tobacco-related questions (e.g., knowledge, attitudes, exposure, and behaviours). Frequently, surveys have an additional more flexible module in which questions can vary; this enables researchers to gather in-depth information about particular evaluation questions and to react to changes that possibly affect a tobacco control program (e.g., changes in cigarette prices).
- ❑ Population. For the jurisdictions that we reviewed, the most common surveys were of adults and youth. Additionally, several states surveyed community leaders, enforcement agency staff, schoolteachers and principals to gather program specific data.
- ❑ Frequency. Our review suggests that for any given state, several surveys (both state and national) are being conducted at any given time thus providing evaluators with relatively frequent tobacco-related measures. In general, most of these surveys are repeated annually,

however, data collection frequently occurs monthly. That is, monthly data are collected and pooled annually at which time the administration of the next year's survey begins.

Of the jurisdictions we reviewed, several had conducted longitudinal surveys of youth (e.g., California, Florida, and Massachusetts) and one jurisdiction surveyed the same adults several years apart (Massachusetts). Collecting data from the same individuals over several consecutive points enables evaluators to answer complex questions about the impact of tobacco control initiatives. A natural history of smokers and quitters can be obtained. For instance, evaluators might observe that a number of teenagers respond on a survey that they smoke only to find on a subsequent survey that these same individuals have indicated that they have quit. Because the same individuals were surveyed both times, evaluators are in a position to examine what might have contributed to an individual's quitting behaviour.

In addition to following people, evaluators have sometimes used longitudinal designs to examine changes within geographical areas. In California, the same geographical areas are followed over three points in time (although the actual people surveyed changes). This allows evaluators to examine program influences over time within defined areas (e.g., the county level), enabling firm conclusions to be drawn about whether or not the state's tobacco control program is working in these regions.

Progress Report Forms

Several jurisdictions use prescribed progress report forms for their different streams of funded projects (education-related, media interventions, community initiatives, research, etc.). Progress report forms streamlined in this manner can result in cleaner data and thus lead to more useful measures, for instance, of program implementation. Additionally, submission of program data via progress report forms acts as an accountability mechanism for grant-funded projects.

Progress report forms can be collected from a variety of sources including public health unit tobacco coordinators, grantees, and lead contractors. For instance, community groups might provide information to evaluators about the particular focus of their activities (e.g., youth access issues, cessation counseling, etc.) and the number of people reached by their projects; media outlets might provide evaluators with financial statements and audience share figures. Grants that explicitly stipulate that grantees and grantee sub-contractors must provide implementation data via progress report forms greatly facilitate the collection of evaluation data.

Management Information System

Leading tobacco control jurisdictions compile data collected from progress report forms into a management information system (MIS) for later analysis. A MIS allows evaluators to track, among other things, a) the success of grantees in reaching target populations such as pregnant women or ethnic minorities, b) the extent to which funded activities correspond with government priorities such as youth access and protection from environmental smoke, and c) the extent to which organizations collaborate and build capacity amongst themselves and with local governments. This type of information greatly facilitates implementation evaluations. Moreover, data from individual grantees can be aggregated to determine how well an overall grant program is

addressing a jurisdiction's priority areas. With respect to implementation measures, a MIS facilitates comparisons across key units of analysis such as school districts and public health units.

Evaluation Recommendations

Leadership & Co-ordination

- ❑ Assign primary responsibility for evaluation to ensure the evaluation program is systematic and rigorous.
- ❑ Provide sustained and predictable core funding for evaluation activities.
- ❑ Conduct the evaluation at arm's length from the government to lend credibility to the evaluation process and reported results.
- ❑ Establish an Evaluation Advisory Committee. Besides enhancing the scientific rigour of the evaluation, the profile of the comprehensive program will be raised nationally and internationally and will further enhance the credibility of the evaluation.
- ❑ Consult regularly with stakeholders, including government departments, regarding strategic directions for the long-term evaluation of the comprehensive program.

Implementation Evaluation

- ❑ Provide advice and consultation to TCP funded projects regarding their evaluation plans, designs, and forms of reporting.
- ❑ Develop a series of evaluation "best practices" fact sheets that a) describe different types of evaluations and highlight where each should be used, and b) provide key implementation and outcome measures. This initiative, in place in California, will enhance the validity and reliability of data reported by funded projects.
- ❑ Revise and standardize progress report forms and reporting requirements for TCP funded projects. This initiative can lead to more valid and reliable data and will complement other evaluation initiatives such as a computerized MIS.
- ❑ Develop a MIS to track tobacco control activities in the province. This will enhance the capacity of the TCP to evaluate progress toward its goals, particularly if the jurisdiction is committed to local-level initiatives and community capacity building. The MIS should be designed so that it will also be a useful resource for impact evaluations.

Impact Evaluation

- ❑ The overall evaluation design should consider impact both *provincially* and *locally*, as well as impact on specific *priority groups* (e.g., youth, pregnant women, and natives).
- ❑ Focus on an overall impact evaluation, in addition to separate impact evaluations of each program component. This will allow evaluators to examine impacts and synergistic effects in a cost-effective manner.
- ❑ Institute regular, ongoing tobacco-specific surveys of adults and youth. These surveys should consist of a common core set of questions, and a more flexible module that can react to new developments or address particular programming and evaluation questions. The surveys should be repeated annually, with monthly data collection. The flexibility and timeliness of

monthly data collections will aid program planners in their efforts to better understand the determinants of changing prevalence and the impact of policy changes.

- ❑ Design future surveys so that priority groups are readily identifiable from collected data; plan special surveys or data collection mechanisms where appropriate.
- ❑ Explore the possibility of coordinating with and utilizing data collected from other surveys (such as CCHS, CTUMS, and provincial surveys).
- ❑ Use a sub-provincial design (e.g., health regions, public health units) for the evaluation and for surveys so that staff will be able to assess program impact across specific geographical areas and populations. Sampling by public health unit, for example, will potentially enable evaluators to assess the impact of particular community-based programs and activities. Planners will thus be able to determine what is working or not working by region and will be able to make informed decisions about reallocating funds to more strategic areas.
- ❑ Include a longitudinal design in the evaluation plan so that the natural history of smokers and quitters can be determined and robust conclusions can be drawn about changes in knowledge, attitudes and behaviours among the population.
- ❑ Community-based (versus province-wide) projects should allocate at least 10% of their program funds to evaluation. The *overall* impact of community-based projects should be evaluated centrally.
- ❑ Provide grant-funded organizations with appropriate resources and training to facilitate the evaluation of their programs.
- ❑ Take advantage of existing data collected primarily for other purposes (e.g., vital statistics, hospital separation data, tobacco production and sales data, taxation data for restaurant and bar sales).
- ❑ Incorporate data on contextual factors (e.g., the health of the economy, political considerations, tobacco industry activities, etc.) into the evaluation of the overall tobacco control program.
- ❑ Disseminate findings fully to all stakeholders.

Funding

- ❑ Establish sustained, core funding. This will support the main components of the tobacco control program as well as overall evaluation infrastructure (e.g., personnel, data collection instruments, management information system, etc.).
- ❑ Invest in research, in addition to strict evaluation activities, to support the long-term success of the tobacco control program.

Concluding Remarks

Jurisdictions that commit to the implementation of a sustained comprehensive evaluation system can expect a number of positive benefits. On the basis of evaluation data, informed decisions can be made about which aspects of the program are working and which aspects are in need of rethinking or refinement. A rigorous and comprehensive evaluation is essential to ensure that program efforts are both focused and maximally effective and efficient, as jurisdictions strive onward toward program goals of prevention, cessation, and protection.

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Appendix A: Tables A-1 to A-6. Comprehensive Tobacco Control Program Data Sources

The following tables list U.S. national and state (Arizona, California, Florida, Massachusetts, and Oregon) data sources for evaluating comprehensive tobacco control programs. Note that national data sources are used to varying degrees by state evaluators.

For each data source listed, we provide a description of its content. These descriptions were either self-reported (by a jurisdiction) or derived from our reading of evaluation material (e.g., an examination of survey questions). The listing is not intended to be authoritative. Moreover, because of a concern over length, these descriptions are succinct. Although not mentioned under *Content*, it can be assumed that for the relevant data sources, respondents were queried about current smoking status and general attitudes toward smoking. Where we mention “ETS restrictions,” “school smoking policies” or other such concepts, attitudes, beliefs, and behaviours in relation to the particular concept are implied.

Table A-1. United States National Data Sources

	TARGET/ SAMPLE SIZE	CONTENT
Behavioral Risk Factor Surveillance System (1984, continuous)	18+ (civilian)/ 148, 000 (1998)	Quitting behaviour, ETS (restrictions), and brand
State Tobacco Activities Tracking and Evaluation System, STATE (CDC)	U.S. states/ Information not available	Database warehouse: Prevalence, local initiatives, ETS (restrictions), and prevention activities
Current Population Survey: Tobacco Use Supplement (9/1992, 1/93, 5/93, 9/95, 1/96, 5/96, 9/98, 1/99, 5/99, 1/00, 5/00)	15+/ ~240, 000 (1998-1999)	Quitting behaviour, health professional advice, ETS (restrictions), youth access, and advertising/marketing
Monitoring the Future ^a (1975, annually)	Grades ^b 8, 10, & 12/ ~50, 000 (1999)	Health risks, youth access, and brand
National Health Interview Survey (1957, annually)	Adults ^c & Youth by proxy ~106, 000 (1999)	Quit attempts
National Health and Nutrition Examination Survey (NHANES), annual	2 months and older/ 5000	Tobacco use and serum cotinine concentrations in children and adults, ETS exposure
National Household Survey on Drug Abuse (1971, annual since 1990)	12+ ^c / 25, 500 (1998)	Health risks, treatment & counselling, smokeless tobacco, desire to quit, and smoking and pregnancy
National Youth Tobacco Survey (new 1999)	Grades 9-12 ^b / Information not available	Use of other tobacco products and exposure to marketing & advertising
Per Capita Consumption/Revenue Data	Not applicable	Not applicable
Smoking-Attributable Morbidity, Mortality, and Economic Costs	U.S. states, adults 35+	No. of deaths & death rates, years of life lost, lost productivity due to illness and premature death, and deaths from fires (smoking)
Synar Compliance Check Data	U.S. states	Youth access: random unannounced inspections of tobacco vendors to assess compliance with age of purchase restrictions
Youth Risk Behavior Survey (biennially)	Grades ^b 9 to 12/16, 000+	Sources, other tobacco products, & smoking on school property

Note. ^aCoterminous 48 states. ^bPublic and private school students. ^cCivilian non-institutionalized population.

Table A-2. Arizona Tobacco Education and Prevention Program Data Sources

	TARGET/ SAMPLE SIZE	CONTENT
Adult Tobacco Survey (circa 1996)	18+/ 6000	Quitting behaviour, ETS (restrictions), health risks, health professional advice, media exposure, and opinions toward policies
School Tobacco Policy Survey (circa 1997)	Schools/ 1355	Implementation and enforcement of smokefree policies (student & staff), policy communication, barriers to enforcement, compliance, disciplinary action, prevention curriculum, and cessation services
Workplace Smoking Policy Survey (circa 1997)	Businesses (sized 5-30, 31-80, 81+)/ 1272	Implementation of smoking restriction policies, policy communication, compliance, disciplinary action, cessation programs, and attitudes & beliefs in regard to smokefree policies & cessation programs
Youth Tobacco Survey (circa 1997)	Youth (10-17)/ 6000	Youth access, smoking at school, knowledge and beliefs about smoking (e.g., health risks, social attractiveness, etc.), media exposure, and ETS (restrictions)

Table A-3. California Tobacco Control Program Data Sources

	TARGET/ SAMPLE SIZE	CONTENT
Adult Survey, IE ^a	Adults/ 8122	ETS (restrictions), media and community programs, youth access, and anti-smoking advocacy
California Adult Tobacco Survey, DHS (annual)	Adults (18+)/ ~4000	ETS (restrictions), quitting behaviour, brand, price, cessation, use of other tobacco products, pregnancy status, social influences, health professional advice, exposure to tobacco industry advertising & promotional items, media exposure, and health risks
California Tobacco Survey—Adult Attitudes and Practices, UCSD (1990, 1992, 1993, 1996, 1999)	Adult (18+)/ Information not available	Quitting behaviour, brand, ETS (restrictions), health risks, social influences, health professional advice, price, youth access, exposure to tobacco industry event sponsorship and promotional items, media exposure, and use of other tobacco products
California Tobacco Survey: Pregnancy Supplement, UCSD (1990)	Adult female (18+)/ Information not available	Supplement to California Tobacco Survey: Adult Attitudes and Practices Survey; content unknown
California Tobacco Survey-Youth Attitudes and Practices, UCSD (1990, 1992, 1993, 1996, 1999)	Youth (12-17)/ Information not available	Brand, youth access, health risks, social influences, media exposure (anti and pro tobacco), exposure to tobacco industry event sponsorship and promotional items, school smoking policies, and use of other tobacco products
California Youth Tobacco Survey, DHS (annual)	Youth (12-17)/ 2000	School smoking policies, ETS (restrictions), brand, (social) sources of cigarettes, youth access, other tobacco products, social influences, media exposure, exposure to tobacco company promotional items, health risks, and health status & exercise level
County Office of Education Interview, IE	Tobacco Use Education and Prevention Coordinators across 18 focal counties	Nature and extent of training and technical assistance to school districts, program implementation, and coordination between school districts & other community agencies
Funding and Budget Information, IE	Not applicable	Information from state funded community, media, and school programs
Helpline Call Data, IE	Callers	Weekly volume and caller characteristics
Local Policy Data, IE	Not applicable	Coded for amount and type of local policy enactment
Media Campaigns (content analysis), IE	19 statewide media spots	Media spots coded for delivery channel (television, radio, print, outdoor) and priority area (i.e., focus and objective)
Media and Public Relations Campaign Contractors Survey, IE	Contractors/ 8	Media advocacy activities, collaboration with community based media campaigns, and frequency of media coverage

	TARGET/ SAMPLE SIZE	CONTENT
Media Dissemination Schedules and Financial Statements, IE	Contractors/ 4	Schedules and priority area spending
Newspaper Coverage (content analysis), IE (over an eight month period)	56 general and ethnic newspapers	Randomly selected issues coded for amount of tobacco related coverage and advertisements
Operation Storefront Exterior and Interior Survey (1997)	Retail stores	Tracks tobacco ads and promotional items. Exterior tracking including ad placement, size, and language; brand; and anti-tobacco signage. Interior tracking including ad placement (below 3 feet, next to candy) & language, brand, and anti-tobacco signage
Opinion Leaders Survey, IE (1996)	Opinion leaders ^b / 712	Attitudes and involvement related to tobacco control issues including youth access, ETS, pro-tobacco advertisements, tobacco control programs, advocacy, and enforcement
Per Capita Sales of Tobacco (Bimonthly: February 1983 through May 1998)	Not applicable	Not applicable
Policy Enforcement Survey—Exposure to Environmental Tobacco Smoke, IE (1997)	State enforcement agencies ~394	Importance of the problem; perceived importance of agency enforcement, compliance, barriers to enforcement, effectiveness of enforcement policies/procedures; involvement in enforcement activities; and collaboration with other agencies
Policy Enforcement Survey—Youth Access, IE (1997)	State enforcement agencies ~409	Importance of the problem; perceived importance of agency enforcement, compliance, barriers to enforcement, effectiveness of enforcement policies/procedures; involvement in enforcement activities; and collaboration with other agencies
Progress Reports (content analysis), IE	TCP-funded grantees and Local Lead Agencies	Implementation of local programs and media activities
Project Director Interview, IE	TCP-funded grantees and local lead agencies/68	In regard to community and media programs, directors queried about what activities should be included in adult and youth surveys
Project Director Survey, IE	TCP-funded grantees and local lead agencies/112	Collaboration with schools, resource allocation among priority areas, utilization of technical assistance, and coalition activities
School Administrator Survey, IE	School administrators/ ~167	Program implementation, enforcement, and attitudes toward the tobacco education program
School-Based Youth Survey, IE (1996)	Grades 5, 8 & 10/ 15, 938: 196 schools	Exposure to tobacco control programs and activities (via school, community, and media), social sources, ETS, health risks, pro-tobacco advertisements, refusal skills, and tobacco advocacy

	TARGET/ SAMPLE SIZE	CONTENT
School District Tobacco Use Prevention Education Coordinator Interview & Survey, IE	Coordinators/ ~110	Interview: perceived effectiveness of programs & activities, barriers & aids to program implementation, and program administration issues. Survey: type of prevention & cessation activities implemented, manner by which program decisions were made & communicated, type & amount of staff development activities, and coordination of community programs.
Smoking Policy and Smoke Free Bar Survey (annual)	Adults (21+)/ 1023	ETS (restrictions) and behavioural intentions in regard to future visits
STAKE Act Call Data, IE	Public	County-specific call records (re: youth access)
STAKE Act Materials Distribution, IE	Public	Requests for materials (re: youth access)
Teacher Survey, IE	5 th , 8 th & 10-grade teachers 526	Tobacco program implementation, student responses to prevention programs, enforcement of school tobacco-free policies, parental involvement in prevention, and barriers to program implementation
Teenage Longitudinal Survey, Robert Wood Johnson Foundation (1993, 1996, 1999)	Youth (12-17)/ Information not available	Teens were initially surveyed as part of the 1993 California Tobacco Survey (Youth Attitudes and Practices Instrument), as described previously
Tobacco Industry Monitoring Data, IE	Newspapers, billboards, events, magazines & brand merchandise catalogs	Amount and content of pro-tobacco industry activities in California and in other states
Youth Tobacco Purchase Survey, DHS (annual)	Retail stores	Details of purchase attempt, tobacco product placement, and age of purchase signage (federal, state, local, and tobacco industry)

Note. IE = Independent Evaluation Consortium (The Gallup Organization, Stanford University, and University of Southern California). UCSD = University of California, San Diego. DHS = Department of Health Services. ^aThe Independent Evaluation Consortium planned three waves of data collection. At the time of writing, only results from the first wave were available (1996-1997). ^bFrom government, law enforcement, education, health, media, business, youth, and ethnic organizations.

Table A-4. Florida Tobacco Pilot Program Data Sources

	TARGET/ SAMPLE SIZE	CONTENT
Adult Tracking Survey	Information not available	Attitudes toward youth tobacco use, the industry, and the anti-tobacco media campaign
Birth Certificate Information	New mothers & infants	Information not available
Community Leader Survey (1998)	Information not available	Information not available
Consumer Tracking Survey	Information not available	Information not available
Five-year follow-up study	Grades 4 to 7/not available	Links program exposure to subsequent behavioural change
Florida Anti-Tobacco Media Evaluation, FAME (1998 and 1999)	Youth aged 12-17/ ~1810	Awareness, receptivity, anti-tobacco attitudes, and tobacco-related behaviours
Florida Youth Tobacco Survey (1998 & 1999)	Grades 6 to 12/ 23, 000	Youth access & enforcement issues; exposure to: ETS, prevention curricula, community programs, and media campaign
Key Opinion Leader Survey (1998)	Information not available	Information not available
Law Enforcement Survey (1998)	Enforcement officers/ 600	Attitudes toward youth access, enforcement (activities & agency culture), supervisor encouragement, community and system support (schools, judges, etc.), obstacles to enforcement, employee policies in relation to tobacco use, and media campaign exposure
Point of Purchase study	Information not available	Information not available
Pregnancy Risk Assessment Monitoring System	Women and newborns/ 4237	Smoking history, changes in smoking behaviour, health professional advice, and infant exposure to ETS
Principals Survey, public middle and high school (1999)	Principals/ 207	Tobacco use policies, policy enforcement, prevention education, sanctions for tobacco use, and cessation services
Sponsorship of Community Events Study	Information not available	Information not available
Teachers Survey	Information not available	Information not available
Teacher Training Workshop Survey	Information not available	Information not available
Teen Summit Survey	Information not available	Information not available
Tobacco Environmental Assessment	Information not available	Information not available
Youth and Parent Survey	Information not available	Information not available

Table A-5. Massachusetts Tobacco Control Program Data Sources

	TARGET/ SAMPLE SIZE	CONTENT
Adolescent Youth Tobacco Survey (1984, every three years)	Grades ^a 6 to 12/ 6844	Information not available
Cigarette Nicotine Disclosure Report	Tobacco Industry	Tests of cigarette nicotine yield and filter ventilation by brand
Massachusetts Adult Tobacco Survey (March 1995, monthly; aggregated annually)	Adult (18+)/ 6, 497 (Y99)	Progress toward tobacco control & cessation, exposure to ETS, attitudes about tobacco control, exposure to MTCP interventions (cessation services or messages and teen prevention efforts), and impact of media messages & policy initiatives
Massachusetts Management Information System	Houses reports from 250+ organizations	Tracking of local bylaws & policies regulating smoking and locally funded program activities (e.g., focus/content of programs & activities, reach, and community participation, etc.)
Massachusetts Tobacco Survey (MTS), baseline (1993/1994)	Adult & Youth (12-17)/ 21, 909	Exposure to ETS, attitudes about tobacco control, exposure to cessation services (or messages), and youth access
MTS Adult baseline follow-up survey (longitudinal)	Information not available	Quitting behaviour and exposure to anti-tobacco television campaign (no other information available)
MTS Youth baseline follow-up survey (longitudinal)	Information not available	Follow-up, no other information available
Operation Storefront (1998)	3000+ vendors located over 125 municipalities	Store-front tobacco advertising. Location of displays, quantity, type (e.g., cigar, smokeless, etc.), brand, and focus (e.g., youth); language, ID signage, geographic & demographic characteristics of neighbourhood, and location of store in relation to schools
School-based survey (self-administered), DataStar ^b (1998)	Grades 5 to 8/ ~1201 (pre/post)	Media campaign. Awareness of ads, social influences, ownership of promotional items, and participation in tobacco education classes
Self Evaluation Tool for School-Based Tobacco Control Programs, Department of Education (1997)	School districts/ 216	Policy development and implementation, violations of tobacco-free policy, enforcement during off-hours and at special events, tobacco prevention education, tobacco cessation activities, and evidence of tobacco use and tobacco-free signage on school grounds

Note. ^aPublic school students. ^bA market research firm retained to evaluate the 1998 media campaign.

Table A-6. Oregon Tobacco Prevention and Education Program Data Sources

	TARGET/ SAMPLE SIZE	CONTENT
Birth Certificates (since 1989)	New mothers & infants	Smoking status of mother; medical factors of pregnancy, labour, and delivery; and health status of newborn
Death Certificates (since 1989)	Oregon residents	Cause of death and whether death was related to tobacco use
Cigarette Tax Receipts	Not applicable	Monthly tobacco tax revenue. Data permits estimates of # of packs sold and packs per capita sold
Oregon Public Opinion Survey on Tobacco Policy (1994, 1996 & 1998)	Adults (18+)/ ~650	Opinions toward tobacco tax increases, secondhand smoke, tobacco industry practices, youth access, and tobacco advertising
Oregon Youth Survey (annually) Evolved from Oregon Public School Drug Use Survey (1986, biannually) and Youth Risk Behavior Survey	6 th , 8 th & 11 th grade/ 12, 263 (128 schools)	Social influences, refusal skills, community characteristics, views toward school and family
Restaurant Survey (1998)	Establishments/ 700	Smokefree policy implementation, principal advocate of smokefree policy, receipts (pre-post policy), complaints about smokefree policy, size and waiting time for smoking and nonsmoking seating areas, management concerns for employee safety (re: ETS), and support for smokefree policies
Statewide Central Cancer Registry (since 1996)	Information not available	Information not available
Worksite Survey (1998)	Businesses ^a (2-49 staff)/ 700	Smokefree policy implementation including unofficial policy, principal advocate of smokefree policy, violations, and availability of cessation programs

Note. ^aExcluding restaurants, bars, taverns, public schools, government offices, and courts

APPENDIX B: PREVENTION MEASURES

Policy Interventions

Youth Access

Implementation of Policies Restricting Youth Access to Tobacco Products

- ❑ Type of policies implemented (e.g., age of purchase, retailer licensing, etc.).
- ❑ Extent of policy implementation with respect to number of municipalities having policies and percentage of the population covered by policies”:
 - MA:5. Content analysis of locally reported data indicates the following policy restrictions: retailer licensing, vending machine, and freestanding display. The number of people residing in jurisdictions that have implemented the aforementioned restrictions is reported for each restriction. Data source: MTCP Management Information System.
- ❑ Number of local policies that are more stringent than state level policies [CA-IE].

Support for Policies Restricting Youth Access to Tobacco Products

- ❑ Support for restrictions on tobacco marketing practices that affect youth:
 - MA:5. Marketing practices reported include event sponsorship and billboards located near schools. Data source: Massachusetts Adult Tobacco Survey.
- ❑ Support for various controls including licensure, fines, and enforcement:
 - CA-IE. Data sources: School-Based Youth, Adult and Opinion Leader Surveys.

Compliance with Youth Access Policies

- ❑ Number of retailers checked for age of purchase compliance:
 - MA:5. Data source: MTCP Management Information System.
- ❑ Number of retail premises checked for displaying appropriate age of purchase signage:
 - MA:5. Data source: MTCP Management Information System.
- ❑ Frequency with which enforcement agencies conduct age of purchase enforcement checks with respect to a) *retailers* selling to underage youth and b) *underage youth* attempting to purchase cigarettes:
 - CA-IE. Respondents answered on a 7-point scale anchored from “never” to “very often.” Data source: Enforcement Agency Staff Surveys.
- ❑ Percentage of enforcement agency staff that conduct underage buy operations:
 - CA-IE. Data source: Enforcement Agency Staff Survey.
- ❑ Barriers enforcement agency staff face in enforcing youth access policies:

- CA-IE. Responses included limited staff, inadequate budget, and low community priority. Data source: Enforcement Agency Staff Surveys.

Violations of Youth Access Policies

- Number of retailers found violating age of purchase restrictions:
 - MA:5. Data on successful buy attempts tracked annually (1994-1998). Data source: MTCP Management Information System.
 - MA:5. Parallel outcome measure pertains to citations that resulted in fines or license suspensions. Data on the number of citations as a percentage of violations tracked annually (1994-1998). Data source: MTCP Management Information System.
- Calls to an enforcement hotline:
 - CA-IE. Evaluators reported yearly calls, monthly averages, and the county average. Data source: call records obtained from the Department of Health Services (1-800-5-ASK-4-ID); call data includes requests for information.
 - CA-IE. Population surveys asked whether respondents called hotline within the past year. Data sources: Adult and Opinion Leader Surveys.
- Extent of the penalty imposed on retailers violating age of purchase restrictions:
 - MA:5. Evaluators report the dollar amount of fines levied. Data source: MTCP Management Information System.

Youth Access to Tobacco Products

- Sources used by youth to obtain tobacco products:
 - CA-IE. Sources include retail, social, took without permission, and other. Retail sources are further divided into convenience stores, gas station/mini marts, large supermarkets, liquor stores, small markets, and vending machines. Evaluators report the sources of cigarettes among: youth in 8th and 10th grade, youth who have ever smoked, youth who reported attempting to buy cigarettes, and most recently acquired cigarettes. Data source: school-based youth survey (8th and 10th grades).
 - MA:5. Data source: Massachusetts Youth Risk Behavior Survey.
- Percentage of adults asked by an adolescent to buy tobacco products on his or her behalf:
 - CA-IE. Data source: Adult Survey.
- Percentage of underage youth reporting not being asked for proof of age when attempting to purchase cigarettes in the last 30 days:
 - CA-IE. Data source: School-Based Youth Survey.
 - MA:5. Question wording not exactly as shown. Data source: Massachusetts Youth Risk Behavior Survey.

Beliefs about Youth Access to Tobacco Products

- Beliefs about whether youth access to tobacco products is a serious problem:
 - CA-IE. Data sources: 10th grade School-Based Youth and Opinion Leader Surveys.

- ❑ Beliefs about whether the illegal sale of tobacco influences youth uptake of smoking:
 - CA-IE. Response category examples: “some” or “a lot.” Data sources: Adult and Opinion Leader Surveys.
- ❑ Beliefs about whether more needs to be done to prevent illegal sales to youth:
 - CA-IE. Data source: Enforcement Agency Staff Surveys.
 - MA:5. Response category example: “more should be done.” Data source: Massachusetts Adult Tobacco Survey.
- ❑ Beliefs about how easy it is for underage youth to purchase tobacco products:
 - CA-IE. Evaluators compared the responses of students, adults, and opinion leaders. Data source: 10th grade School-Based Youth, Adult, and Opinion Leader Surveys.
 - MA:5. Response category examples: “very easy” or “somewhat easy.” Data source: Massachusetts Adult Tobacco Survey.
- ❑ Perceptions of the percentage of retailers willing to sell cigarettes to underage buyers:
 - CA-IE. Respondents’ perceptions of non-compliance compared to a) actual non-compliance rates ascertained from statewide youth purchase surveys, and b) perceptions of enforcement. Data sources: School-Based Youth, Adult, Opinion Leader, Enforcement Agency Staff, and Statewide Youth Purchase Surveys.
 - MA:5. Respondents asked their views on how many retailers are careful about selling cigarettes to underage buyers. Response category examples: “all” or “most.” Data source: Massachusetts Adult Tobacco Survey.
- ❑ Belief about whether licensure removal would deter retailers from selling tobacco products to underage youth:
 - CA-IE. Data source: Enforcement Agency Staff Surveys.

Knowledge, Attitudes and Beliefs with respect to Age Restrictions on Sales

- ❑ Awareness of age of purchase signage:
 - CA-IE. Data source: 10th grade School-Based Youth, Adult, and Opinion Leader Surveys.
- ❑ Awareness of the legal age to purchase tobacco products:
 - CA-IE. Data source: 10th grade School-Based Youth, Adult, and Opinion Leader Surveys.
- ❑ Awareness of whether or not compliance checks are being conducted on local retail outlets that sell cigarettes:
 - CA-IE. Data sources: 10th grade School-Based Youth, Adult, and Opinion Leader Surveys.
- ❑ Beliefs about the ideal legal age for purchasing cigarettes:
 - CA-IE. Response category examples: 18 years or older, at least 21 years of age. Data source: 10th grade School-Based-Youth, Adult, and Opinion Leader Surveys.

Price and Taxation

- Among teens, smoking participation elasticity over time (calculated as percentage change in teen smoking prevalence due to the percentage change in the price of cigarettes):
 - CA:98. Because consumption data are not available for teens, overall price elasticities of demand for youth are not available. Data source: CTS (1990, 1993 & 1996) & Tobacco Institute.
- Comparison of expected and actual percentage change in youth smoking prevalence:
 - CA:98. Expected values determined from smoking participation calculations. This measure can be used to assess progress toward both prevention and cessation goals. Data source: CTS (1990, 1993 & 1996) & Tobacco Institute.
- Support for an increased excise tax on cigarette packs that would be directed toward prevention and health care:
 - CA:98. Response categories ranged from no increase to \$3. Comparisons made between population subgroups. Data source: CTS (1992, 1993 & 1996).
 - MA:3 & 4. Data source: Massachusetts Adult Tobacco Survey (1996 & 1997).

Media-Based Public Education Campaigns

Campaign Implementation

- Media campaign funding directed toward prevention issues:
 - CA-IE. Data sources: Media funding and financial statements; budget information from Department of Health Services and California Department of Education.
- Degree to which media campaign focused on youth access and prevention issues:
 - CA-IE. Data source: Content Analysis of Statewide Media Campaign.
- Source by which media campaign messages reach audience members:
 - MA:4. Evaluators report the following sources: television, movies, billboard, radio, pamphlet, and school. Data source: telephone survey of 600 Massachusetts students in grades 5 to 7 and another 300 out-of-state students (administered by independent contractor).

Campaign Exposure

- Recall of campaign messages and theme lines:
 - CA-IE. Self-reported accuracy also queried. Data sources: Adult and 10th grade School-Based Youth Surveys.
 - MA:4. Data source: telephone survey of 600 Massachusetts students in grades 5 to 7 and another 300 out-of-state students.
- Comparisons of people exposed and unexposed to media campaigns regarding their knowledge, attitudes, and behavioural intentions:
 - Number of calls to a telephone hotline reporting illegal tobacco sales to youth

- CA-IE. Media message: youth access focused. Data source: Adult Survey.
- ❑ Agreement with statements such as: “Smoking is a way to look and feel independent,” “If your best friend offered you a cigarette, would you smoke it,” and “Do you think that you will smoke cigarettes when you are an adult?”:
 - MA:4. Data source: telephone survey of 600 Massachusetts students and another 300 out-of-state students.
- ❑ Support for policies mandating retailer licensing and fines for youth attempting to purchase tobacco products:
 - CA-IE. Media message: youth access focused. Data sources: School-Based Youth, Adult, and Opinion Leader Surveys.
- ❑ Recall of the legal age to purchase tobacco products:
 - CA-IE. Media message: youth access focused. Data sources: School-Based Youth, Adult, and Opinion Leader Surveys.
- ❑ Recall of signs requesting customers inform authorities of retailers selling cigarettes to underage youth:
 - CA-IE. Media message: youth access focused. Data sources: School-Based Youth, Adult, and Opinion Leader Surveys.
- ❑ Beliefs about the prevalence of police “sting” operations in the community:
 - CA-IE. Media message: youth access focused. Data sources: School-Based Youth, Adult, and Opinion Leader Surveys.
- ❑ Youth smokers’ beliefs about the ease with which cigarettes can be purchased:
 - CA-IE. Media message: youth access focused. Data source: School-Based Youth Survey.

Behavioural Intentions

- ❑ Change in nonsmokers’ intentions to start smoking over the duration of the campaign:
 - CA:92. Acquisition continuum used to classify nonsmokers. Changes in acquisition continuum examined over four waves of data collection. Data sources: Baseline (4145 students), Wave Two (6562), Wave Three (7846), and Wave Four (10,711) cross-sectional surveys.

Other

A series of Massachusetts media spots show a girl smoking in various settings. Background narration is provided by a boy who is heard talking about unappealing aspects of tobacco smoke (e.g., it leads to bad breath). The adverts conclude with the message, “Most guys don’t want to be with girls who smoke.” The evaluation of this series of media spots relied on a number of short-term impact indicators, including:

- ❑ Agreement with advert message “Most *boys* don’t want to be with girls who smoke.”

- MA:5. Information collected includes general behavioural intentions and attitudes about smokers and dating (e.g., likelihood that boys would want to be with a girl who smokes). Possible smoking related influences also recorded (e.g., smoking status of siblings, ownership of promotional items, and exposure to tobacco education in or out of school). Data sources: self-administered student survey of a sample of public and private school students in grades 5, 6, 7, and 8 prior to the campaign (n=1201) and again in another sample following the campaign (n=1200). A market research firm administered the survey.
- With respect to agreement with the advert message, several comparisons were made between students able to recall adverts and students surveyed prior to the start of the media campaign. Although the advert message focused on the unpleasantness of being with girls who smoked, evaluators assessed the messages generalizability by asking respondents about their agreement with the following statements, “Most *girls* don’t want to be with boys who smoke” and “Non-smokers don’t like to date someone who smokes.” Data source: self-administered student survey (as described in the previous paragraph).

Community-Based Interventions

Local Programs and Activities

Program Implementation

- ❑ Number and type of events local groups sponsored or participated in which focused on tobacco education or prevention:
 - CA-IE. Data sources: Content analysis of Progress Reports from Local Lead Agencies.
 - MA:5. Data source: MTCP Management Information System.
- ❑ Youth access restrictions for which local groups lobby:
 - MA:5. Evaluators report the following restrictions being pursued at the local level: sales and marketing (e.g., coupons and promotional displays), advertising, vending machines, and licensing requirements (including fines and suspensions). Data source: MTCP Management Information System.
- ❑ Community collaboration between enforcement agency staff and educational organizations, local government officials, voluntary health organizations, anti-smoking coalitions, and county health departments:
 - CA-IE. Evaluators examined the association between enforcement agency collaboration and enforcement activities related to retailers and minors. Data sources: Project Director Surveys and Interviews; Enforcement Agency Staff Surveys.

Program Impact

- ❑ Recall of community programs regarding youth access:

- ❑ Skill development of peer leaders:
 - MA:5. Descriptions of activities in which peer leaders were involved such as advocacy, educational outreach, networking, and public speaking. Data source: qualitative reports submitted to the MTCP Management Information System.
- ❑ Comparison of people exposed and unexposed to educational programs across a variety of short-term impact indicators:
 - CA-IE. Outcome measures: beliefs about how old a person should be before they are permitted to purchase cigarettes, agreement about whether or not police conduct “sting” operations with respect to underage buy attempts, and recall of signs that request customers to inform authorities of retailers selling cigarettes to underage youth. Data source: School-Based Youth, Adult, and Opinion Leader Surveys.
- ❑ Association between number of information requests to an enforcement telephone hotline and a) local program activity on youth access issues and b) reported enforcement activity of retailers and youth:
 - CA-IE. In regard to local program activity, data sources: program activity Progress Reports, and county level call records to the Stop Tobacco Access to Kids Enforcement Act Hotline, Department of Health Services (1-800-5-ASK-4-ID). In regard to enforcement activity, data sources: Enforcement Agency Staff Survey and county level call records to the Stop Tobacco Access to Kids Enforcement Act Hotline, Department of Health Services (1-800-5-ASK-4-ID).

School Programs and Activities

Program Implementation

- ❑ Most common tobacco prevention curriculum materials used in schools:
 - CA-IE. Data source: School District Tobacco Use Prevention Education (TUPE) Coordinator Interviews.
 - CA-IE. Implementation of tobacco prevention curriculum compared across 5th, 8th, and 10th grade classes. Data source: School Administrator Survey.
 - MA:DOE. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.
- ❑ Tobacco prevention education activities and programs implemented in schools:
 - CA-IE. Response categories include: tobacco lessons, Great American Smoke Out, cessation program, assembly/other event, tobacco contest, peer tobacco education, anti-tobacco club, and other (e.g., health fairs, red ribbon week, animation workshops, and dances). Data reported as the % of schools implementing any given program or activity. Data sources: elementary, middle/junior high, and high school Teacher and School Administrator Surveys.
 - CA-IE. TCP funded schools compared to non-funded schools in regard to implementation of programs and activities. Data sources: high-school Teacher and School Administrator Surveys.
 - MA:DOE. Survey asks specifically about peer leadership program. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.

- ❑ Topics covered by teachers in tobacco education classes:
 - CA-IE. Response categories include physiologic consequences, reasons kids smoke, social influences, refusal skills, social consequences, personal/social skills, peer norms. Data reported as the % of teachers providing instruction on any given category. Data sources: 5th, 8th, and 10th grade Teacher Surveys.
 - MA:DOE. Survey asks specifically about whether curriculum includes refusal skills and smokeless tobacco. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.

- ❑ Correspondence of school district tobacco prevention programs to CDC’s “Guidelines for School Health Programs to Prevent Tobacco Use and Addiction”:
 - CA-IE. Data sources: School-Based Youth, Teacher, School Administrator, and School District Tobacco Use Prevention Education (TUPE) Coordinator Surveys.

- ❑ School administrators’ awareness of implementation plans for school and district tobacco education programs:
 - CA-IE. Data source: School Administrator Surveys.

- ❑ Barriers to implementing tobacco education:
 - CA-IE. In regard to teacher self-reports, responses include lack of time, lack of adequate instructional material, inadequate training, not a high priority in district, not a high priority in school, not appropriate for subject area, not my responsibility, and other. In regard to school district coordinator interviews, responses include lack of time/commitment to tobacco education, lack of resources, lack of teacher and/or administrative support, remoteness of tobacco content from other curriculum content areas, and lack of program standards. Data source: Teacher Surveys and School District Tobacco Use Prevention Education (TUPE) Coordinator Interviews.

- ❑ Priority of tobacco education relative to other health education topics:
 - CA-IE. Response categories include low, medium, high, and highest. Comparisons made across grade level. Data source: Teacher and School Administrator Surveys.

Program Exposure

- ❑ Student exposure to tobacco education over the past year:
 - CA-IE. Recall of programs and activities including lessons about tobacco use, attended an assembly or event about tobacco use, heard in-class tobacco presentation by a peer leader, celebrated Great American Smokeout, practised refusal skills during class. Comparisons made between grade levels and between TCP funded and non-funded schools. Data source: School-Based Youth Survey.
 - MA:DOE. Number of hours of tobacco education students receive each year. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.

- ❑ Extent to which teachers involve parents in tobacco use prevention programs:
 - CA-IE. Response category examples: not too much or not at all. Data source: Teacher and School Administrator Surveys.

- CA-IE. The percentage of parents aware of school assignments sent home regarding parent-child discussions about tobacco. Data source: Adult Survey.
- MA:DOE. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.

Program Impact

- Frequency with which a school district's prevention program has been evaluated by district:
 - CA-IE. Refers to whether program was evaluated in past five years. Data source: School District Tobacco Use Prevention Education (TUPE) Coordinator Surveys.
- Association between program exposure and outcome measures (i.e., knowledge, attitudes, beliefs, and behaviours with respect to tobacco use):
 - CA-IE. An index of program exposure was created by summing students' self-reported recall of the following program components: at least one tobacco lesson, a Great American Smokeout event, other school wide tobacco-related assembly or event, a tobacco-related peer education program, and a school-based cessation program. An index of program outcomes was created by standardizing and averaging student responses within a school so that analyses could be conducted at the school level. The relationship between the index variables (i.e., exposure and outcomes) was analyzed. Data source: School-Based Youth Surveys.
- Beliefs about the helpfulness of tobacco-related course content:
 - CA-IE. Data source: School-Based Youth Surveys.

Teacher Preparation

- Staff-development programs and activities offered by school districts over the past year:
 - CA-IE. Response category examples: in-service training, newsletters, and distribution of tobacco prevention resources (e.g., fact sheets, pamphlets, teaching tips, and videos). Data source: School District Tobacco Use Prevention Education (TUPE) Coordinator Surveys.
- Extent of teacher training in tobacco education:
 - CA-IE. Refers to training over the past five years. Response category examples: general training or training regarding implementing a specific program. Data source: Teacher Survey.
 - MA:DOE. The number of hours of teacher training. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.

APPENDIX C: CESSATION MEASURES

Long-Term Outcomes

Smoking Prevalence

- ❑ Cigarette consumption trends as measured by number of cigarette packs taxed:
 - MA:5. Comparisons included pre- versus post-tobacco control efforts and Massachusetts versus U.S. national data. Data source: Tobacco Institute.

- ❑ Percentage of respondents who indicate that they smoke:
 - CA:98. Respondents asked if they a) smoke now, and b) whether they smoke every day, some days, or not at all. Comparisons made between demographic subgroups and over time. Data Source: California Tobacco Survey (1996).
 - MA:5. Adults. Annual comparisons made. Data sources: Massachusetts Tobacco Survey (1993/94), Massachusetts Adult Tobacco Surveys (1995-1998) and Behavioral Risk Factors Surveillance System (1989-1997).
 - MA:5. Pregnant Women. Smoking rates among pregnant teenagers also reported. Annual comparisons made as well as comparisons between Massachusetts and U.S. national data. Data source: cited from Mathew, T.J. (1998, November). "Smoking during pregnancy, 1990-96." *National Vital Statistics Reports*, CDC, 47 (10).
 - MA:5. Youth. Evaluators compared smoking rates over time and between a) Massachusetts and U.S. national data sources and b) racial/ethnic groups. Data about smokeless tobacco also provided. Data sources: Adolescent Youth Tobacco Survey (1993 & 1996) and Youth Risk Behavioral surveillance System (1995-1997).

- ❑ Percentage of respondents who report being nondaily smokers:
 - CA:98. Evaluators report age comparisons. Data source: California Tobacco Survey (1990 & 1996).

- ❑ Percentage of respondents who have smoked in the past 30 days:
 - CA:98. Comparisons made between a) demographic subgroups, and b) over time. Data source: California Tobacco Survey (1990, 1993 & 1996).

- ❑ Percentage of respondents who report smoking at least 100 cigarettes in their lifetime:
 - CA:98. Comparisons made between demographic subgroups. Data source: California Tobacco Survey (1990 & 1996).

- ❑ Number of cigarettes smoked per day:
 - CA:98. Data source: California Tobacco Survey (1996).
 - MA:5. Annual comparisons made. Data sources: Massachusetts Tobacco Survey (1993/94) and Massachusetts Adult Tobacco Surveys (1995-1998).

- ❑ Percentage of smokers who report smoking less than 15 cigarettes per day:

- CA:98. Comparisons made between a) demographic subgroups, and b) over time. Data source: California Tobacco Survey (1990 & 1996).

Quitting History

- ❑ Percentage of respondents who gave up smoking during the past year for at least a) 1 day, b) 7 days, c) 14 days, or d) 90 days:
 - CA:98. Comparisons made between a) demographic subgroups, and b) over time. Data source: California Tobacco Survey (1990 & 1996).
 - MA:5. Evaluators report only one-day minimum quit attempts. Data source: Massachusetts Adult Tobacco Survey (1998).
- ❑ “Quit success rate” over time as measured by the number of people who gave up smoking for at least one day during the past year and who were still not smoking at the time of the survey:
 - MA:5. Data sources: Massachusetts Tobacco Survey (1993/94) and Massachusetts Adult Tobacco Survey (1998).
- ❑ Among smokers who had made a quit attempt, the percentage who relapse within a) the first week or b) the first month:
 - CA:98. Comparisons made between a) demographic subgroups, and b) over time. Data source: California Tobacco Survey (1996).
- ❑ Quitting success of youth in relation to parents’ smoking status:
 - CA:98. Data source: California Tobacco Survey (1996).
- ❑ Quitting success of youth in relation to self-reported symptoms of depression:
 - CA:98. Data source: California Tobacco Survey (1996).

Quitting Intentions

- ❑ Among people who had smoked in the past year, their stage along the quitting continuum (precontemplation, contemplation, early preparation, intermediate preparation, advanced preparation, action, early maintenance, or advanced maintenance):
 - CA:98. Comparisons made between demographic subgroups. Respondents who explicitly indicated that they would never attempt to quit were given a separate code (as opposed to being placed in the precontemplator category). Data source: California Tobacco Survey (1996).
- ❑ Percentage of respondents who express an intention to quit in next 6 months:
 - CA:98. Data source: California Tobacco Survey (date not clear).
- ❑ Among respondents who indicate that they had smoked at least 100 cigarettes in their lifetime and had tried to quit in the past 6 months, the percentage who had smoking withdrawal symptoms:
 - CA:98. Comparisons made between demographic subgroups. Data source: California Tobacco Survey (1990 & 1996).

Policy Interventions

In evaluating progress toward the goal of cessation, outcome measures related to several policy interventions have been examined. Two policy interventions present in California and Massachusetts that we examine below are a) smoking restriction policies, and b) price and taxation.

Smoking Restriction Policies

- ❑ Rates of smoking cessation and progress toward quitting as a function of the comprehensiveness of worksite smoking bans:
 - MA:5. Data sources: Massachusetts Tobacco Survey and adult baseline follow-up survey.
- ❑ Percentage of quit attempts by level of workplace smoking restriction (complete or none) and level of home smoking restriction (complete, some, or none):
 - CA:98. Quit attempts recorded as none or 7 or more days. Data source: California Tobacco Survey (1996).
- ❑ Percentage of light or occasional smokers by level of workplace smoking restriction (complete or none) and level of home smoking restriction (complete, some, or none):
 - CA:98. Light smokers defined as having smoked <15 cigarettes per day. Data source: California Tobacco Survey (1996).
- ❑ Current smoker's position on the quitting continuum by level of workplace smoking restriction (smokefree vs. not smokefree) and level of home smoking restriction (smokefree vs. not smokefree):
 - CA:98. Data from indoor workers cited in report. Quitting continuum categories included: precontemplation, contemplation, early preparation, intermediate preparation, and advanced preparation. Data source: California Tobacco Survey (1996).

Price

General

- ❑ Amount respondents spent per month on cigarettes:
 - CA:98. Data source: CTS (1996).
- ❑ Average price per pack of cigarettes examined over time:
 - CA:98. Data source: Tobacco Institute (1988-1996).
- ❑ Youth smokeless tobacco use in relation to increased excise tax:
 - MA:5. Comparisons made a) over time and b) between Massachusetts and U.S. national data. Data source: Youth Risk Behavioral Surveillance System (1993-1997).
- ❑ Percentage of tobacco advertisements that promote savings or discounts:
 - CA:IE. Data source: content analysis of newspapers.

Price Elasticity

- ❑ Price elasticity of demand over time (calculated as percentage change in demand due to the percentage change in the price of cigarettes):
 - CA:98. Data source: Hu, T. W., Hai-yen, S., & Keeler, T. (1996). Reducing cigarette consumption in California: Tobacco taxes vs. an anti-smoking media campaign. *American Journal of Public Health*, 85, 1218-1222.
- ❑ Comparison of expected and actual percentage change in cigarette consumption:
 - CA:98. Expected values determined from price elasticity calculations. Differences between expected and actual changes in consumption examined in relation to tobacco control funding (e.g., cut in media campaign budget). Data source: Tobacco Institute (1988-1996).
- ❑ Teen smoking participation elasticity over time (calculated as percentage change in teen smoking prevalence due to the percentage change in the price of cigarettes):
 - CA:98. Because consumption data are not available for teens, overall price elasticity of demand is not available. Data sources: CTS (1990, 1993 & 1996) & Tobacco Institute.
- ❑ Comparison of expected and actual percentage change in youth smoking prevalence:
 - CA:98. Expected values determined from smoking participation calculations. This measure can be used to assess progress toward both prevention and cessation goals. Data source: CTS (1990, 1993 & 1996) & Tobacco Institute.

Price Sensitivity

- ❑ Percentage of respondents who purchase cigarettes by a) the pack, and b) the carton:
 - CA:98. Comparisons made between demographic subgroups including low-income earners. Data source: CTS (1996).
- ❑ Percentage of smoking respondents who prefer premium (expensive) brand cigarettes relative to those who prefer generic (less expensive) brand cigarettes:
 - CA:98. Comparisons made between brand, self-reported consumption (translated into amount spent on cigarettes per month), and demographic subgroups including groups likely to be more price sensitive such as teens and heavy smokers. Data source: CTS (1996).
- ❑ Percentage of teens that use price-related versus non-price related sources to obtain tobacco (e.g., buy their own vs. steal):
 - CA:98. Data source: CTS (1996).
- ❑ Percentage of respondents concerned about how much money they spend on cigarettes:
 - CA:98. Comparisons made between demographic subgroups including low and high-income earners. Data source: CTS (1992 & 1996).

Media-Based Public Education Campaigns

Campaign Implementation

- ❑ Media campaign funding in regard to cessation:
 - CA-IE. Data sources: a) Media Financial Statements and b) Funding and Budget Information from Department of Health Services and California Department of Education.
- ❑ Degree to which media campaign focused on cessation issues:
 - CA-IE. Data source: Content analysis of statewide media campaign.
 - MA:5. Data source: not clear from report
- ❑ Percentage of advertisements that include a telephone number for a quitting helpline:
 - CA-IE. Language of helpline message compared across general audience media spots (English) and ethnic media spots (multi-language). Data source: Content analysis of statewide media campaign.

Campaign Exposure

- ❑ Recall of specific media spots (TV, radio, and outdoor):
 - CA-IE. Data sources: School-based youth (10th grade) and Adult Surveys.
- ❑ Reach of media campaign to targeted audience (smokers), as measured by a comparison of smoker and nonsmoker recall of media campaign theme line:
 - MA:5. Data source: Massachusetts Adult Tobacco Survey (1995-1998).
- ❑ Among respondents recalling specific media spots, identification of the correct meaning of the spot and self-reported accuracy:
 - CA-IE. Data sources: School-based youth (10th grade) and Adult Surveys.

Campaign Impact

- ❑ Relationship between reported media campaign exposure and smoking status (never smoker, former smoker, and current smoker):
 - CA:98. Data source: California Tobacco Survey (1996).
- ❑ Association between intensity of media spots over time and number of monthly calls to a smokers' telephone helpline:
 - CA:98. Data source: California Tobacco Survey (1996).
- ❑ Beliefs about the harmful effects of smoking:
 - MA:5. Comparison of campaign exposed residents and campaign unexposed a) residents, and b) out-of-state residents. With respect to media messages, health effects included risk of lung cancer, heart disease, and blocked arteries. Exposure determined by recall of specific media spots. Data source: Massachusetts Adult Tobacco Survey (1995-1998).

Exposed Versus Unexposed Respondents

Comparisons of smokers exposed and unexposed to media campaigns regarding their knowledge, attitudes, and behavioural intentions:

- ❑ Number of quit attempts in past year
 - CA:98. Data source: California Tobacco Survey (1996).
- ❑ Among smokers who had a quit attempt in the last year, awareness of a smokers' telephone helpline:
 - CA:98. Data source: California Tobacco Survey (1996).
- ❑ Agreement with tobacco company messages about a) advertising practises such as not encouraging young people to smoke, and b) health consequences of tobacco such as the assertion that tobacco is not addictive:
 - CA:98. Data source: California Tobacco Survey (1996).
- ❑ Among teen smokers, the percentage who had thought about quitting:
 - CA:98. Data source: California Tobacco Survey (1996).
- ❑ Beliefs about the harmful effects of smoking:
 - MA:5. With respect to media messages, health effects included risk of lung cancer and heart disease and whether or not respondents were addicted to nicotine. Exposure determined by self-reported recognition of campaign theme line. Data source: Massachusetts Adult Tobacco Survey (1995-1998).

Community-Based Interventions

Local Programs and Activities

Implementation

- ❑ Among tobacco control funded organizations, percentage of aggregated activities that focus on cessation as a function of total reported activities:
 - CA-IE. Data source: Content analysis of Progress Reports from local community agencies.
- ❑ Among tobacco control funded organizations, the number of events held, the number of people reached (further divided by population group and language of service), type of event (e.g., counselling session, health fair, or information campaigns), range of topics covered (health effects, quit advice, smoking while pregnant, etc.), and mode of delivery (public forum, telephone, mail, etc.):
 - MA:5. Data source: MTCP Management Information System.
- ❑ Type of cessation services offered by tobacco control funded programs:

- MA:5. Response categories included one-time individual counselling, ongoing individual counselling, group counselling, referrals to quitline, and pharmacological therapy.
- With respect to the past year, current and former smokers' source of information about quitting:
 - MA:5. Data source: Massachusetts Adult Tobacco Survey (1998).

Promoting Smoking Cessation

Health Professional Advice

- Respondents' recall of whether a physician advised them to quit smoking:
 - CA:98. Evaluators compared physician advice across self-reported health status (i.e., fair or poor vs. good or excellent) and respondent age. Data source: California Tobacco Survey (1992 and 1996).
 - MA:5. National comparisons made. Data sources: Massachusetts Tobacco Survey (1993) and Massachusetts Adult Tobacco Survey (1995-1998).
- Percentage of respondents who indicated that they quit smoking as a result of physician advice to do so:
 - CA:98. Data source: California Tobacco Survey (1996).
- Of respondents receiving physician advice to quit, the percentage who a) receive information on smoking cessation programs, or b) are encouraged to set a specific date:
 - CA:98. Data source: California Tobacco Survey (1996).
- Percentage of respondents reporting a discussion with their physician about the hazards of ETS to the nonsmoker
 - CA:98. Data source: California Tobacco Survey (1996).

Methods of Quitting

- Among smokers responding that they had relied on some sort of assistance following their last quit attempt, the percentage of quitters as a function of type of assistance used and level of previous cigarette consumption:
 - CA:98. Assistance categorized as none, self-help, counselling, nicotine replacement (alone or with self-help combined), and nicotine replacement with counselling. Level of previous cigarette consumption broken into three categories: <15 per day, 15-24 per day, or >25 per day. Data source: California Tobacco Survey (1996).
- Percentage of respondents who reported using a) the nicotine patch or b) nicotine gum during a quit attempt in the last 12 months:
 - CA:98. Comparisons made between light and heavy smokers in addition to several other demographic variables including age, and racial/ethnic background. Data source: California Tobacco Survey (1996).

- ❑ Among smokers using some type of assistance, time to relapse following a quit attempt:
 - CA:98. Comparisons made between type of assistance (none, nicotine replacement, or counselling or self-help only). Data source: California Tobacco Survey (1996).
- ❑ Among smokers who had made a quit attempt in the last year, unaided recall of programs that assist people trying to quit smoking:
 - CA:98. Data source: California Tobacco Survey (1996).

Smokers' Quitline

- ❑ Number of callers to the state's quitline requesting assistance in quitting:
 - CA:98. Report classifies callers by sex, age, and racial/ethnic background. Data source: Call records, 1992 to 1996.
 - MA:5. Report examines age differences of callers. Data source: not clear, presumably call records.
- ❑ Type and quantity of information provided to callers by quitline staff including written cessation materials and individual counselling sessions:
 - MA:5. Data source: not clear, presumably call records.
- ❑ Number of cigarettes smoked per day:
 - CA:98. Comparisons made between callers and a) all smokers in the population and b) all daily smokers in the population. Data source: not clear, presumably call records and California Tobacco Survey.
- ❑ Percentage of callers who attempted to quit or who did not relapse after having been exposed to quitline services:
 - CA:98. Abstinence examined across several quitline services including self-help quit kit, single-session telephone counselling, and multi-session telephone counselling. Data source: Zhu, S. H. et al. (1996). Telephone counseling for smoking cessation: effects of single-session and multiple-session interventions, *Journal of Consulting Clinical Psychology*, 64, 202-211.
 - MA:5. Data source: Massachusetts Adult Tobacco Survey (1995-98).
- ❑ Number of callers referred to the state quitline by their health-care provider
 - CA:98. Data source: not clear, presumably call records:
 - MA:5. Referrals of smoker by tobacco control funded programs documented. Data source: MTCP Management Information System.
- ❑ Of callers referred to the state's quitline by a health-care provider, the percentage who indicate that they have health problems:
 - CA:98. Comparison made with respect to callers who heard about the quitline through the media. Data source: not clear, presumably call records.

Other Cessation Resources

- ❑ Type of information offered on a tobacco control funded website designed for smokers with an interest in quitting:
 - MA:5. Data source: not clear, presumably content analysis of Internet web site.
- ❑ Type and quantity of materials distributed by Tobacco Education Clearing House:
 - MA:5. Data source: not clear.

School Programs and Activities

Implementation of Cessation Program

- ❑ Percentage of schools that have implemented a cessation program:
 - CA-IE. Comparisons made between elementary, middle/junior high, and high schools in addition to TCP funded versus non-funded schools. Data sources: Teacher and School Administrator Surveys.
 - MA:DOE. Parallel questions are asked about the implementation of cessation programs for teachers, parents, and the community. Additional questions are asked about who facilitates the actual program, its frequency, and over what part of the day it is scheduled. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.
- ❑ Number of students currently enrolled in cessation programs:
 - MA:DOE. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.
- ❑ Resources available to teachers who wish to stop using tobacco:
 - MA:DOE. Response categories include cessation program/referrals and written materials. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.
- ❑ Percentage of teachers who have received information regarding staff smoking cessation programs:
 - CA-IE. Data source: Teacher Survey.
- ❑ Most common tobacco cessation program implemented in high schools:
 - CA-IE. Responses included “I Quit Using It!” program (American Cancer Society), counselling and support groups, tobacco instruction, and school wide events. Data source: School District Tobacco Use Prevention Education (TUPE) Coordinator Interviews.
- ❑ Percentage of teachers who have referred at least one student to the school cessation program over the past year:
 - CA-IE. Data source: Teacher Survey.
- ❑ Student awareness of tobacco-use cessation programs:

- CA-IE. Data source: School-Based Youth Survey (10th grade).

Impact of Cessation Program

- ❑ Results of the school cessation program to date:
 - MA:DOE. Response categories included quit rate and change in attendance. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.
- ❑ Comparison of students with low exposure to school programs to students with high exposure to school programs in regard to 30-day prevalence of cigarette use:
 - CA-IE. School was the unit of analysis. A program exposure index was created by summing students' self-reported recall of the following activities: at least one tobacco lesson, a Great American Smokeout event, other school wide tobacco-related assembly or event, a tobacco-related peer education program, and a school-based cessation program. Data source: School-Based Youth Survey (8th grade).

Quitting History and Intentions

- ❑ Among students who have smoked at least 100 cigarettes in their lifetime, the percentage who have tried to quit at least once:
 - CA-IE. Data source: School-Based Youth Survey.
- ❑ Among students who have smoked at least 100 cigarettes in their lifetime, the percentage who have tried to quit in the past year:
 - CA-IE. Data source: School-Based Youth Survey.
- ❑ Among students who have smoked at least 100 cigarettes in their lifetime, the percentage who would like to quit:
 - CA-IE. Data source: School-Based Youth Survey.

APPENDIX D: PROTECTION MEASURES

Policy Interventions

Smoking Restriction Policies

Smoking Restrictions in General

Implementation of Smoking Restriction Policies

- Number of local bylaws restricting indoor smoking:
 - MA:5. In regard to restaurant restrictions, the state records the extent of policy restrictions (e.g., no restrictions, a moderate level of restrictions, or a high level of restrictions) and whether or not this is associated with TCP community funding. Data source: MTCF management information system.
 - CA-IE. Data source: Local Policy Data.

Support for Smoking Restriction Policies

- Percentage of people who support smokefree policies in various settings:
 - CA-IE. Settings include bars and outdoor public places. Data sources: Adult and Opinion Leader Surveys.
 - MA:5. Setting refers to public places. Data source: Massachusetts Adult Tobacco Survey.

Exposure to ETS

- Percentage of people reporting no exposure to ETS in their everyday experience.
- Percentage of people who say they avoided places where they would be exposed to ETS:
 - MA:5. Data source: Massachusetts Adult Tobacco Survey.
- Exposure to ETS in places other than work or home:
 - CA:98. California Tobacco Survey response categories include restaurants, bars, other public places, other's home/car, outdoors, and other. Data source: California Tobacco Survey (1996).
 - CA-IE. Respondents report on ETS exposure in relation to family car. Data source: Adult Survey.

Behaviour

- Percentage of people (smokers and nonsmokers) asking an acquaintance or a stranger not to smoke in their presence:
 - CA-IE. Data sources: 10th grade School-Based Youth and Adult Surveys.
 - MA:5. An increase over time of the percentage of people asking others to butt out not only suggests improved social skills at handling ETS issues, but supports the notion that smoking in public is becoming denormalized. In interpreting this finding, however,

evaluators need to consider changes in smoking prevalence. A decrease in smoking, for instance, suggests that fewer smokers will be interacting with people likely to ask them to butt out. Data source: Massachusetts Adult Tobacco Survey (1995-1998).

Knowledge, Attitudes, and Beliefs

- ❑ Percentage of people aware of smoking policies:
 - CA:98. Respondents queried about their views on which establishments in their community, such as fast food restaurants, family restaurants, bars & taverns, bowling alleys, and bingo halls, are smokefree. Survey results are compared with existing regulations on smoking restrictions. Data source: California Tobacco Survey.
- ❑ Percentage of people who believe that ETS causes harm:
 - MA:5. Parallel questions refer to harm to children and ETS as a cause of lung cancer. Data source: Massachusetts Adult Tobacco Survey.
- ❑ Percentage of people indicating that they would increase their patronage of smokefree clubs or bars:
 - MA:5. Data source: Massachusetts Adult Tobacco Survey.

Economic Impact

- ❑ Economic impact on restaurants adopting smoking restrictions:
 - MA:5. Examination of the association between implementation of smoking restrictions and either state meal tax or employment data. Data sources: Massachusetts Adult Tobacco Survey (1995-1999), Massachusetts 4th Annual Report (MA:4), and Bartosch & Pope (1998).

Workplace Smoking Restrictions

Implementation of Workplace Smoking Restrictions

- ❑ Number of workplaces having smokefree policies:
 - CA:98. Data from the CTS enables evaluators to classify the work sites of respondents by number of employees (i.e., <50 or 50 + employees) and by the degree of restrictions on smoking (i.e., total ban, ban in work area only, less stringent or no restrictions). Data source: California Tobacco Survey.
 - MA:5. Data source: MTCP Management Information System.
- ❑ Proportion of employees covered by workplace smoking policies:
 - CA:98. Distinction made between indoor and outdoor workers. Data examined by population subgroups. Data source: California Tobacco Survey (1990, 1992, 1996).
 - MA:5. Data source: Massachusetts Tobacco Survey (1993), Massachusetts Adult Tobacco Survey.

Support for Workplace Smoking Restrictions

- ❑ Percentage of people agreeing that smoking should be banned in all worksites:

- MA:5. Data source: Massachusetts Adult Tobacco Survey.

Exposure

- ❑ Proportion of non-smoking indoor employees exposed to ETS within their work area over the previous two weeks:
 - CA:98. Measures degree of non-compliance. Data source: California Tobacco Survey (1990, 1993, 1996).
- ❑ Average hours per week that respondents are exposed to ETS at work:
 - MA:5. Data source: Massachusetts Adult Tobacco Survey.

Household Smoking Restrictions

Implementation of Household Smoking Restrictions

- ❑ Percentage of homes having a smokefree policy:
 - CA:98. Response category examples include smokefree, partial restrictions, or unrestricted. Because many homes do not have a resident smoker, data from homes having at least one smoker should be analyzed separately. Data source: California Tobacco Survey (1992, 1993, 1996).
- ❑ Proportion of youth (less than 18 years) residing in smokefree homes:
 - CA:98. Youth classified as unexposed if a) no one in the home smoked or, b) if someone smoked, smoking was prohibited in the home. Data from this question can be tabulated across several attributes such as age (e.g., under 6 vs. over 6 years), ethnicity, and socio-economic status. Further analyses allow an indication of which groups are or are not protected from ETS. In California, for instance, the homes of black children offered less protection from ETS compared to the homes of other racial/ethnic groups. Data source: California Tobacco Survey (1992, 1993, 1996).

Enforcement

- ❑ Reported number of enforcement staff who respond to inquiries and complaints:
 - CA-IE. Data source: Enforcement Agency Staff Survey.
- ❑ Number of warnings, citations, and fines issued for smoking policy infractions:
 - CA-IE. Data source: Enforcement Agency Staff Survey.
- ❑ Compliance with worksite smoking restrictions, as measured by the average hours per week that respondents are exposed to ETS at work:
 - MA:5. An analysis over time indicates a change in worker compliance. Data sources: Massachusetts Tobacco Survey (1993) and Massachusetts Adult Tobacco Survey (1998).
- ❑ Barriers to enforcement of ETS policies:

- CA-IE. Response examples include limited staff, low priority of community, lack of money, and lack of support from community leaders. Data source: Enforcement Agency Staff Survey.

Media-Based Public Education Campaigns

General

- ❑ Media campaign funding in regard to ETS:
 - CA-IE. Data sources: Media Financial Statements and Funding and Budget Information from Department of Health Services and California Department of Education.
- ❑ Degree to which media campaign focused on ETS issues:
 - CA-IE. Data source: Content Analysis of Statewide Media Campaign.

Behaviours, Support, Knowledge, Attitudes, and Beliefs

- ❑ Recall of media messages related to protection:
 - MA:5. Data source: Massachusetts Adult Tobacco Survey.
- ❑ [MA:5] Comparisons of respondents exposed and unexposed to media campaign with regard to:
 - Purposefully avoiding places that are smokey
 - Asking an acquaintance or a stranger not to smoke
 - Intentions to increase patronage of bars and clubs if these establishments implement smokefree policies
 - Support for smoking bans in workplaces, restaurants, and drinking establishments
 - Views on the importance of ETS as a health issue (e.g., causes cancer)

Community-Based Interventions

Local Programs and Activities

- ❑ In regard to promoting smoking restrictions at worksites, organizational reports detail information on several measures including:
 - Number of contacts local boards of health initiate
 - Number of requests to which local boards respond
 - Number of technical assistance/information referrals boards provide to worksites
 - Number of worksites implementing tobacco control policies subsequent to board help
 - Number of workers covered by these policies
- ❑ Number of contacts an organization has had with community members:
 - Contacts can be broken down into residents or employers, and according to demographic characteristics including age, sex, occupation, and race or ethnicity.

- ❑ Number of community events sponsored or events in which an organization participated including regulatory hearings, contests for children, school presentations, health exhibitions, and award ceremonies (e.g., for employers who have implemented smokefree policies).

Other Measures

- ❑ Comparison of communities with and without tobacco control program funding for local Boards of Health with respect to the existence of restaurant smoking restrictions [MA:5].
- ❑ Percentage of tobacco control-funded organization programs and activities addressing ETS related issues as a function of total reported activities:
 - CA-IE. Data source: Content analysis of Progress Reports from local community agencies.

School Programs and Activities

Implementation of Tobacco-Free Policies

- ❑ Percentage of school districts adopting a tobacco-free policy:
 - CA-IE. Data sources. School District Tobacco Use Prevention Education (TUPE) Coordinator Survey and Interviews.
 - MA:DOE. An additional question asks if policy applies to all schools in district. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.
- ❑ Percentage of school districts whose tobacco-free policies have provisions for violations:
 - MA:DOE. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.
- ❑ Student awareness of school tobacco-free policy:
 - CA-IE. Data source: School-Based Youth Survey (5th, 8th, and 10th graders).

Enforcement of Tobacco-Free Policies

- ❑ Means by which tobacco-free policy is publicized:
 - MA:DOE. A parallel question refers to publicizing policy during off-school hours when schools may be open to public. Response examples include handbook, signs, written materials, and announcements. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.
- ❑ Enforcement of tobacco-free policy during special school events such as athletic competitions:
 - MA:DOE. Additional question asks if police are used to enforce policy during public events. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.
- ❑ Means by which policy is enforced when community groups use the school during off-hours:

- MA:DOE. Response examples include sign an agreement, no active enforcement, and other. Additional question asks if police are used to enforce policy during public events. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.

Violations of Tobacco-Free Policies

- ❑ Student consequences of violating school tobacco-free policy:
 - CA-IE. Responses included calling parent, suspension or expulsion, special tobacco education class or program. Data source: School Administrator Survey.
 - MA:DOE. Separate questions ask whether parents are notified and whether an option exists for tobacco education. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.
- ❑ Teacher consequences of violating school tobacco-free policy:
 - MA:DOE. Responses include written, verbal, suspension, referral to cessation services, and dismissal. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.
- ❑ Comprehensiveness of policy with respect to whether it explicitly lists consequences for 1st, 2nd, and 3rd offences:
 - MA:DOE. Data source: Self Evaluation Tool for School-Based Tobacco Control Programs.
- ❑ Percentage of students witnessing smoking on school property in the past two weeks:
 - CA:98. Data source: California Youth Tobacco Survey (1990, 1993, 1996).
- ❑ Perceptions of student compliance with school tobacco-free policy:
 - CA:98. Data source: California Youth Tobacco Survey (1990, 1993, 1996).
 - CA-IE. Response categories: “none,” “few,” “some,” “most,” or “all.” Data sources: 10th grade School-Based Youth and Teacher Surveys.