Community guide recommendations and state level tobacco control programmes: 1999–2004

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Objective: To identify the level of effort state tobacco control programmes and partners have expended on interventions recommended by the community guide and how those efforts have changed over time between 1999 and 2004.

Design: Longitudinal study.

Setting: United States.

Participants: State tobacco control partners, including the state health department, voluntary agencies and tobacco control coalitions.

Main outcome measure: We used the Strength of Tobacco Control survey responses in 1999, 2002 and 2004 to calculate the mean proportion of state tobacco control partners working on recommended interventions and subsequently analysed changes in effort over time.

Results: The proportion of state tobacco control partners working to promote clean indoor air legislation remained at more than 70% in all three years. The proportion working to increase taxes on tobacco rose significantly between 1999 and 2002 (from 54% to 70%), and those working to reduce patient costs for tobacco cessation treatments never exceeded 31% in any year. Use of mass media targeting youths decreased significantly in all years (from 40% to 32% to 26%), and the proportion of state tobacco control partners participating in a quitline has increased steadily and significantly in all years (from 24% to 36% to 41%). The level of effort in each area varied widely between states and over time.

Conclusions: State tobacco control partners are implementing evidence based interventions, but more focus is needed on the tobacco cessation and mass media campaign components of comprehensive tobacco control programmes.

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The 1990s was a period of tremendous growth for tobacco control. At the beginning of the decade, only four states supported tobacco control programmes.¹ Comprehensive state level tobacco control programmes grew rapidly after the 1991 National Cancer Institute (NCI) award of American Stop Smoking Intervention Study (ASSIST) cooperative agreements to 17 states²: the Robert Wood Johnson Foundation-American Medical Association partnership funded SmokeLess States coalitions in 19 states (and a youth specific project in Tucson, Arizona) in 1993³ and, by 1994, the Centers for Disease Control and Prevention (CDC) funded the remaining 32 non-ASSIST states and the District of Columbia through its Initiative to Mobilize for the Prevention and Control of Tobacco use (IMPACT) programme.¹ (California had its own well developed tobacco control programme and was not included in IMPACT.) On 30 September 1999, the 17 ASSIST states, the 32 IMPACT states and California all became part of the National Tobacco Control Program (NTCP). Today, the CDC's Office on Smoking and Health (OSH) provides financial support, technical assistance and training to support basic implementation programmes to prevent and control tobacco use in all 50 states, the District of Columbia, and seven US territories through the NTCP.⁴

The four goals of the NTCP are to

- (1) eliminate exposure to environmental tobacco smoke
- (2) promote quitting among adults and youth
- (3) prevent initiation among youth, and
- (4) identify and eliminate disparities among population groups.

Each goal area is achieved through four programme components: (1) population based community interventions, (2) countermarketing, (3) policy development, and (4) surveillance and evaluation. The tobacco control activities that each state programme performs are constituent parts of these programme components.

The current NTCP goals and components are supported by the *Guide to Community Preventive Services* (the community guide).^{5,6} The community guide represents the confluence of two movements: getting evidence based research into practice and addressing health related behaviours at the population level. Health areas are selected for inclusion in the community guide based on their impact on population health, and, in 2001, tobacco use became the second set of recommendations added.⁷ The community guide recommendations are comparable to those recommended by other groups, such as the US Surgeon General,⁸ to achieve the goals of the Healthy People 2010 initiative.⁹

The individual interventions recognised as effective for tobacco control in the community guide^{5,6} include the following:

- smoking bans and restrictions

Abbreviations: ASSIST, American Stop Smoking Intervention Study; CDC, Centers for Disease Control and Prevention; CIS, Cancer Information Service; IMPACT, Initiative to Mobilize for the Prevention and Control of Tobacco use; NCI, National Cancer Institute; NTCP, National Tobacco Control Program; OSH, Office on Smoking and Health; SAQ, self administered questionnaire; SoTC, Strength of Tobacco Control; STATE, State Tobacco Activities Tracking and Evaluation

- increasing the unit price for tobacco
- media campaigns when combined with other interventions
- health care provider reminder systems alone
- health care provider reminder systems with provider education
- reducing patient costs for cessation therapies, and
- quitter telephone support included in multi-component cessation interventions.

Detailed evidence supporting the effectiveness of these interventions and practical information about how to implement them into a tobacco control programme are disseminated to state programmes by OSH.^{4 10 11} While individual states have performed extensive evaluations of their own programmes,^{12–15} the complex nature of comprehensive tobacco control programmes and individual state differences make them challenging to evaluate at a national level. Although the Center for Tobacco Policy Research at St Louis University¹⁶ has begun to address this challenge by conducting in-depth process and outcome analyses for a subset of states, limited data are available to document the ongoing work occurring in all 50 states.

While some databases do include tobacco related information on all 50 states, they may only track one aspect of tobacco control programmes. For example, the American Nonsmokers' Rights Foundation maintains a database of state and local clean indoor air laws¹⁷ and the Campaign for Tobacco Free Kids maintains current information about state excise taxes,¹⁸ while the State Legislative Cancer Database is regularly updated with information about tobacco control relevant legislation.¹⁹ The CDC's OSH maintains the State Tobacco Activities Tracking and Evaluation (STATE) System,²⁰ an electronic warehouse for state level data on tobacco related behaviours, health effects, demographics, economic measures, policies, funding and legislation. Although this warehouse contains a wide variety of outcome data from state tobacco control programmes, it does not contain information on all effective interventions, nor does it document the efforts of the programme's state partners.

The Strength of Tobacco Control (SoTC) survey is a unique resource in that it contains comprehensive information about the intervention efforts of each state's major tobacco control partners in a given year. As such, it is one of the only available measures of state level tobacco control activities that has used the same protocol over time to collect data from all 50 states and the District of Columbia. The SoTC was developed to evaluate ASSIST,²¹ and has since been used to evaluate the SmokeLess States programme of the Robert Wood Johnson Foundation. The SoTC survey contains items that are suitable for identifying state activities that are related to the community guideline recommendations in the areas of clean indoor air, state tax increases, mass media campaigns and cessation.

In this article, we used the 1999, 2002 and 2004 SoTC survey responses to describe whether state tobacco control programmes and their partners were working on the tobacco control strategies that were recommended in the community guide during this period. We subsequently analyse changes in these efforts over time and discuss national and state level factors that may account for these changes. While the SoTC survey was used to examine reported state based activities across the nation at the end of ASSIST,^{22 23} this analysis represents the first time that it has been used to examine these activities over time. The analysis is especially valuable because the 1999 data provide a baseline measure of tobacco control activities that state partners were engaged in at the inception of the NTCP. Changes in state partner tobacco control activities subsequent to this time may be evaluated to determine how states and their partners have benefited from the identification

and dissemination of effective community based interventions for tobacco control.

METHODS

Data source

The SoTC index was developed to meet a challenge posed by the ASSIST evaluation—how to measure state level exposure to tobacco control.²¹ The SoTC survey incorporated the extant literature on tobacco control programmes along with input from the research community. Details of the development and validation of the survey can be found in Stillman *et al.*²² The community guide intervention areas covered by the SoTC survey are summarised in table 1.

Participants

The SoTC survey respondents were selected to represent each state's tobacco control programme and were defined as the state health department and its state level tobacco control partners (primarily the voluntary agencies, American Cancer Society, American Heart Association, and American Lung Association, and any state level tobacco control coalitions). This definition is rooted in the historical development of US tobacco control,² and each agency's tobacco control efforts were weighted equally, albeit a potential source of bias. In addition, although relying on a single respondent to represent an organisation (or a component programme of an organisation) may introduce a reporting bias, this potential is minimal because (other than the state health department) most respondent organisations were either very small or had only one person with major responsibilities for tobacco control. In fact, the agency presence in some states was so small that a subset of respondents had tobacco control responsibilities for multiple states. In this case, research staff interviewed respondents and asked them to identify and differentiate their efforts by state. A 100% response rate was required for the health department, American Cancer Society, American Heart Association, and American Lung Association and coalition respondents in each state and was obtained in all three survey administrations.

The five agencies and the appropriate respondents within those agencies were identified through federal and non-profit funding sources, national offices of voluntary agencies, internet searches and screening telephone calls. Additional agencies and respondents were identified through snowball sampling—that is, through referrals that were identified by each respondent. Each snowball referral was screened to ensure that the organisation was active in tobacco control at the state level. To ensure that we interviewed the respondent who was the most knowledgeable about the tobacco control programme area of interest, the survey was broken into several modules—general programme efforts, coalition activities, policy advocacy activities, relationships with other state agencies and their perceptions of state officials' support for tobacco control. Before starting each module, the respondents were asked whether they were the person in their agency who was the most knowledgeable about the activities that were the module's focus. If the response was "yes," the module was administered. If the response was "no," the participant was asked for the name and telephone number of the person in the organisation who was the most knowledgeable in that area and the referred person was subsequently contacted to complete the module. Thus, more than one person may have been interviewed to complete the agency's survey.

The total number of respondent organisations interviewed in each year (1999, 2002 and 2004) were 372 (state $M = 7.3$), 402 (state $M = 7.9$), and 278 (state $M = 5.5$), respectively. The decreased number of respondents for the 2004 survey was the

Table 1 Community guide (CG) recommendations and associated Strength of Tobacco Control (SoTC) question(s)

CG recommendation	SoTC question*	Response level
Smoking bans and restrictions	In the past year, has your organisation worked to promote clean indoor air?	Yes/no
Increasing the unit price for tobacco	In the past year, has your organisation worked to increase taxes on tobacco?	Yes/no
Media campaigns with interventions	In the past year, has your organisation purchased mass media, or had in-kind donations of mass media, to inform the public about tobacco related issues? If YES then: What media did you use?	Yes/no Newspapers Billboards Radio TV Transit Other Youth
	What groups did you specifically target with your messages?	Adults Policy makers Other ethnic or minority groups Yes/no
Reducing patient costs for [tobacco cessation] treatments (2002 and 2004 only)	Did you purchase media coverage that focused on tobacco industry efforts or tactics? In the past year, has your organisation worked to require health insurance coverage for tobacco cessation aids, such as prescriptions and counselling?	Yes/no
	In the past year, has your organisation worked to require or expand Medicaid coverage of tobacco cessation services, such as prescriptions and counselling?	Yes/no
	In the past year, has your organisation worked to help the uninsured obtain tobacco cessation services, such as prescriptions and counselling?	Yes/no
Quitting telephone support with interventions	In the past year, has your organisation provided or sponsored telephone or internet counselling services for those who want to quit?	Yes/no

*Respondents were asked about all activities for the "past 2 years" in the 1998–9 survey and about all activities for the "past 1 year" in the 2002 and 2004 survey.

result of two trends. Firstly, the voluntary agency respondents were more likely to be regional representatives (that is, one person had the responsibility for several states) in 2004 than in earlier years. Secondly, a number of ad hoc groups formed to pursue a single goal (for example, passage of a clean indoor air law) in earlier years had disbanded by 2004.

Survey instruments

In the first wave of the survey (1998–9), two survey instruments were developed, tested and used to measure SoTC in the 50 states and the District of Columbia. Respondents completed a self administered questionnaire (SAQ) about state agency resources (including funding earmarked for tobacco control from any source) and were asked to estimate the percentage of time and money spent on administrative tasks, and specific programme activities (for example, programmes targeted at individuals, programmes intended to change the social climate of tobacco use). All other questions were included in a computer assisted telephone survey. It was our original intention to obtain completed SAQs from all of the respondents. However, when it became clear that this could not be achieved, we focused on obtaining SAQs from those agencies that received funding from either federal sources or from the Smoke Less States programme. Although we were able to obtain a 100% response rate from these organisations, the data collection burden was very high. In addition, many respondents did not fully or accurately complete the estimations of time and money spent on specific tasks. Therefore, during 2002, financial

information was obtained from the STATE system website,²⁴ and, in 2004, the data were obtained from the American Lung Association website.²⁵

The computer assisted telephone interview was administered in all three years. The full 1999 survey is available in a recent monograph chapter.²³ Modifications were made to the survey in 2002 and 2004 in response to limitations identified in the original survey and emerging issues in tobacco control. Because the 1999 survey questions required only a yes/no response, it was difficult to determine each organisation's level of effort and an importance rating (anchored at 1 (not at all important) to 3 (very important)) was added to each activity question in 2002 and 2004 but was not used in our analysis. In addition, only the 2002 and 2004 respondents were asked whether their organisations worked to require insurers to include coverage for cessation aids, to require Medicaid coverage for cessation aids, or to provide cessation aids to the uninsured. Finally, while the respondents in the 1999 survey were asked to describe their organisation's activities in the preceding two years (as a baseline), in the subsequent surveys, they were asked to describe their activities in the preceding one year.

Data analyses

Because multiple agencies were surveyed within each state, the data were summarised based on the distribution of state-wide average responses to each question that was repeated across these three waves of data collection in the SoTC survey. Mean scores and their respective standard error for each response

were calculated. For questionnaire items having a yes/no response, the state level mean score represents the proportion of agencies in that state who responded in the affirmative.

A longitudinal model using a mixed modelling approach was fit to the state-wide average responses to each questionnaire item to describe the degree to which the states incorporated the community guideline interventions and to assess the changes in the use of these interventions over time. The basic form of the models were as follows:

Linear model: $Y_{ij} = \beta_0 + \beta_1 (Year_{ij} - 1999) + \delta_{0i} + \delta_{1i} (Year_{ij} - 1999) + \epsilon_{ij}$

Quadratic model: $Y_{ij} = \beta_0 + \beta_1 (Year_{ij} - 1999) + \beta_2 (Year_{ij} - 1999)^2 + \delta_{0i} + \delta_{1i} (Year_{ij} - 1999) + \epsilon_{ij}$

where Y_{ij} represents the average questionnaire response from the i th state in the j th wave of the SoTC survey; where β_0 , β_1 , and β_2 represent the intercept, linear slope, and quadratic slope fixed effects that describe the trajectory of the response variable Y_{ij} as a function of time across the entire population of states (where β_0 is parameterised to coincide with the predicted value of the response in the baseline 1999 survey); where δ_{0i} and δ_{1i} are random effect intercept and slope parameters that allow each state to have their own linear departures from the fixed effects governed by β_0 , β_1 and β_2 ; and where ϵ_{ij} represents the residual error not explained by the model (deviations from state specific linear trajectories). In this model, it is assumed that δ_{0i} and δ_{1i} jointly follow a multivariate normal distribution with mean zero and covariance matrix

$$\Sigma = \begin{bmatrix} \sigma_{11}^2 & \sigma_{12}^2 \\ \sigma_{21}^2 & \sigma_{22}^2 \end{bmatrix}$$

and that ϵ_{ij} follows a normal distribution with mean zero and variance σ_{Error}^2 . This longitudinal model estimates the overall trend adjusted for variability within and between states.

The model based estimates and respective standard errors for the three contrasts of interest (predicted differences in the response between 1999 and 2002; 1999 and 2004; and 2002 and 2004), based on both the linear and quadratic models, were calculated for each item of interest to describe change over time, but only the results from the best fit model (linear or quadratic) are reported here.

RESULTS

State-wide averages were calculated for responses to each question that is described in table 1. The means and standard errors in table 2 represent a simple longitudinal description of the questionnaire data from 1999, 2002 and 2004. The data that are summarised on these pages are based on the distribution of state-wide average responses to each question that was repeated across these three waves of data collection in the SoTC survey. Table 2 also provides the parameter estimates from fitting the two simple longitudinal models (linear or quadratic) to the data.

Funding

Table 2 shows that the mean funding for tobacco control in each state increased by more than \$9 million (£4.45 million; €6.6 million) between 1999 and 2002 and subsequently decreased by more than \$6 million between 2002 and 2004. However, owing to the large between-state variance in funding, these changes were not statistically significant.

Policy advocacy

Since the survey participants could respond only “yes” or “no” to the questions about whether or not they worked to promote clean indoor air or increase tobacco taxes in their state, the state level measures of these items represent the proportion of

agencies in that state who responded in the affirmative. As table 2 shows, the mean proportion of agencies in each state working on clean indoor air issues remained high for all three years. In contrast, the mean proportion of agencies per state who reported working to increase tobacco taxes increased significantly between 1999 and 2002 and decreased slightly, although not significantly, between 2002 and 2004.

Questions assessing whether participants engaged in working toward policies that increase access to cessation services were added in 2002. The mean proportion of the agencies in each state working to require insurers or Medicaid coverage for cessation aids did not change significantly between 2002 and 2004 nor did the mean proportion of agencies in each state working to provide cessation services to the uninsured.

Mass media

The aggregate mass media score was calculated by adding the responses to all media related questions. The overall use of mass media did not change over time; however, changes did occur in the media outlets employed, the targeted audience of the mass media and the message conveyed. The use of billboards decreased linearly and significantly over time. In addition, mass media that targeted youths also decreased linearly and significantly over time. Mass media that targeted policy makers decreased between 1999 and 2002 and increased between 2002 and 2004; however, only the change from 2002 to 2004 was statistically significant. Finally, mass media messages focusing on tobacco industry tactics decreased linearly and significantly over time.

Provision of quitlines

The mean proportion of agencies per state reporting that they provided or sponsored a telephone or internet quitline increased linearly and significantly over time.

DISCUSSION

The SoTC data allowed us to examine state efforts on several evidence based tobacco control interventions that are recommended by the community guide and by the CDC's NTCP—smoking bans and restrictions, increasing the unit cost of tobacco, media campaigns, increased access to cessation services and quitter telephone support—and to test whether those efforts changed over time from 1999 to 2004. The 1999 data represent a baseline measure of state level tobacco control programmes, before the current NTCP and just before the initial recommendations in the community guide were first widely disseminated.¹¹ Our analyses showed that state efforts focused on secondhand smoke legislation remained high throughout this time period, and their efforts to raise tobacco excise taxes increased significantly between 1999 and 2002 and remained high thereafter. While the use of mass media remained unchanged, communications targeting youth and those featuring tobacco industry tactics decreased in all years, while media targeting policy makers increased between 2002 and 2004. The mean proportion of state agencies participating in an internet or telephone quitline steadily increased, but the proportion of state agencies working to increase third party payment (insurers and Medicaid) for cessation services remained low.

These findings suggest that the community guide recommendations were effectively disseminated to the states. The changes identified can be understood in the context of national factors and state level factors.

National factors

While efforts to pass clean indoor air laws and increase tobacco excise taxes were integral components of ASSIST, IMPACT, and SmokeLess States, two major events at the national level

Table 2 Mean state Strength of Tobacco Control (SoTC) measures: 1999, 2002 and 2004

Description of the variable	Mean proportion of agencies in each state (means (SE))			Model based contrasts			Best model fit
	1999	2002	2004	2002 vs 1999	2004 vs 1999	2004 vs 2002	
Policy intervention:							
Clean indoor air	0.77 (0.027)	0.74 (0.026)	0.78 (0.025)	0.004	0.006	0.003	Linear
Increase tobacco taxes	0.54 (0.037)	0.70 (0.029)	0.64 (0.039)	0.158	0.097	0.006	Quadratic
Require insurers to include coverage for cessation aids		0.29 (0.032)	0.31 (0.030)			0.017	Linear
Require Medicaid coverage for cessation aids		0.23 (0.031)	0.27 (0.034)			0.035	Linear
Provide cessation aids to the uninsured*		0.28 (0.033)	0.29 (0.033)			0.004	Linear
Provide or sponsor quit line	0.24 (0.022)	0.36 (0.024)	0.41 (0.024)	0.102	0.171	0.068	Linear
Mass media used:							
Newspapers	0.50 (0.029)	0.50 (0.029)	0.48 (0.027)	-0.007	-0.012	-0.005	Linear
Billboards	0.32 (0.028)	0.26 (0.027)	0.22 (0.028)	-0.057	-0.095	-0.038	Linear
Radio	0.48 (0.028)	0.47 (0.027)	0.52 (0.029)	0.021	0.035	0.014	Linear
Television	0.40 (0.031)	0.37 (0.029)	0.36 (0.029)	-0.023	-0.039	-0.015	Linear
Anti-tobacco targets:							
Youth	0.40 (0.030)	0.32 (0.023)	0.26 (0.030)	-0.083	-0.138	-0.055	Linear
Adults	0.52 (0.025)	0.51 (0.028)	0.56 (0.028)	0.022	0.037	0.015	Linear
Policy makers	0.44 (0.025)	0.39 (0.023)	0.48 (0.030)	-0.048	0.037	0.038	Quadratic
Minority groups	0.28 (0.030)	0.27 (0.030)	0.30 (0.030)	0.007	0.012	0.005	Linear
Message focused on tobacco industry tactics	0.24 (0.026)	0.19 (0.023)	0.16 (0.022)	-0.049	-0.082	-0.033	Linear
Aggregate mass media score*	3.70 (0.176)	3.29 (0.184)	3.37 (0.174)	-0.214	-0.356	-0.142	Linear
Money received (in millions)	9.2 (3.804)	18.91 (3.782)	12.33 (2.252)	9.706	3.124	-1.361	Quadratic

*Additive score: combining number of media used, targets, and message.
Statistically significant contrasts are in bold.

ensured that they became central components of tobacco control in every state after 1999. First and foremost the Office on Smoking and Health took leadership of the first truly national tobacco control programme, and its *Best Practices* document¹⁰ quickly became a universal resource for state tobacco control programmes. Secondly, in 2000 the Board of the Robert Wood Johnson Foundation made what they described as a “major shift” in the SmokeLess States programme by expanding it into all 50 states and narrowing its focus to the promotion of tobacco control policy interventions.³ SmokeLess States thereby provided the increased capacity and technical assistance for state level organisations to educate and lobby (where appropriate) for clean indoor air laws and tobacco excise tax increases.

However, while NTCP and the SmokeLess States programme also provided national leadership on policies to ensure third party (that is, Medicare, Medicaid and private insurance) coverage for cessation aids from at least 2000, states efforts in this area have remained consistently low, probably because the determination of services covered is controlled by a combination of federal and state governments and private industry. While the Federal Government determines the services covered by Medicare, it only mandates the core services covered by Medicaid. States can opt to cover additional services under Medicaid or, under some circumstances, omit core services. Federal law does not mandate services covered by private insurance, but many states require that insurers cover specified services (for example, treatments for diabetes) and some states have allowed employers to offer mandate-free policies.²⁶ This trend suggests that achieving widespread mandated coverage for tobacco dependence treatment will continue to be a challenge in the future.

The increased proportion of state agencies supporting quitlines may have also been influenced by national events. From its inception the NTCP included quitlines as an effective and appropriate component of a comprehensive tobacco control programmes to address cessation at the population level.^{27–28}

Quitlines gained additional support in 2002 when the Center for Tobacco Cessation, a collaborative effort of the RWJF and the American Cancer Society, published their “blueprint” for adult tobacco cessation.²⁹ In November 2004, the CDC’s OSH and the NCI’s Cancer Information Service (CIS), in partnership, created a new national network of quitlines. Through the network, the states received funding as part of the CDC’s National Tobacco Control Program, either to establish a quitline or to enhance existing quitline services, in addition to training and technical assistance from the North American Quitline Consortium.³⁰ A national telephone number sponsored by the NCI/CIS (800-QUIT-NOW) links callers to the free quitline serving the area where they live and is designed to ensure that proactive counselling services are available to all smokers who want to quit.³¹ Currently, all 50 states directly provide telephone quitline services to callers, and we would expect to see even higher levels of state agency focus on quitlines during 2006.

The decreased emphasis on youth as targets of mass media communications may reflect other changes occurring at the national level during this period. After the 2000 US Supreme Court ruling that the FDA had no authority to regulate tobacco, the FDA’s tobacco compliance check programme was quickly dismantled, leaving only state run programmes. Shortly thereafter, controversy arose about the effectiveness of youth access programmes,^{32–33} the degree to which resources should be allocated to prevention programmes focused on minors at the expense of young adults,³⁴ especially when those programmes were not employed in conjunction with a comprehensive tobacco control programme.³⁵ Other national trends that may have affected state willingness to invest in youth targeted media campaigns include a decrease in prevalence of cigarette smoking among this group,³⁶ decreases in funding for tobacco control,³⁷ or it may be that, given the expense of mass media, the states instead relied on the proven success of the American Legacy Foundation’s Truth Campaign to deliver this message to youths.^{38–40}

A California lawsuit may have made states wary of negatively characterising the tobacco industry during the 2002–3 period

when RJ Reynolds and Lorillard tobacco companies unsuccessfully sued the State of California for using cigarette and tobacco products surtax funds to create and air advertisements that vilified them (RJ Reynolds Tobacco Company and Lorillard Tobacco Company vs Diana M Bonta, Director of the California Department of Health Services and Dileep G Bal, Acting Chief of the Tobacco Control Section of the California Department of Health Services Case No CIV S-03-659 LKK/GHH. This suit was settled on 22 June 2003.).

State factors

Tobacco control efforts are also highly sensitive to state level factors, directly or indirectly associated with tobacco issues. These include changes in funding,^{41–43} elected officials and their priorities,^{44–45} by tobacco industry actions,^{46–51} and by past successes and failures. For example, during the period for which the respondent agencies reported in the 1999 survey (that is, 1997–9), 14 states increased their cigarette taxes. In 2000–2, 27 states raised their cigarette taxes, mirroring the increased proportion of state agencies working on tobacco tax increases. Likewise, the sustained focus on increasing tobacco taxes in 2003–4, was reflected in the fact, that during 2003 and 2004, 24 states increased their cigarette taxes.¹⁸ As tobacco excise taxes are successfully raised, it remains to be seen whether efforts in this area will remain high. On the other hand, while significant progress has been made in smoking restrictions (limiting where smoking can occur),⁵² efforts in this area were and are likely to remain high because few states totally ban smoking in public areas,⁵² and partial restrictions do not adequately protect non-smokers from secondhand smoke.⁵³

Decreases in the use of billboards to communicate mass media messages may simply be an unintended consequence of the billboard bans enacted in thousands of cities and counties over the past decade.⁵⁴

Limitations and conclusion

The SoTC data provide the first look at how states are incorporating the community guide recommendations into their tobacco control programmes. Because the community guide recommendations were the focus of this paper, we did not analyse state efforts in other areas and we restricted our analysis to the identification of mean trends over time. In addition, while the SoTC data have been aggregated into an index that successfully measured state tobacco control programmes,²² this is the first time they have been used to identify state level trends in specific effort areas.

The degree to which each state focused on a particular intervention varied widely, both from other states and over time, and this variability made it difficult to identify clear

trends over time in state programme efforts. Some of this variability may be accounted for by state level factors that could be included in future analyses, such as associating the cumulative effect that a state's past funding investment has on its current tobacco control expenditures⁴² with its level of efforts and subsequent outcomes. Alternatively, the time between data collection periods may be too long to document subtle changes and the five year time frame under investigation may be too short to allow identification of real trends. Ongoing and future survey administrations, along with additional analyses incorporating state factors and outcome measures can begin to resolve these questions.

The interventions recommended by the community guide will help the states address the tobacco control objectives for Healthy People 2010.⁵⁵ Our analyses show that the majority of the state partners are working on policy efforts that will insure clean indoor air and increased tobacco taxes, and that they are targeting mass media messages at the policy makers who can effect these changes. However, more state efforts need to be expended on population based tobacco cessation interventions and a renewed focus is needed on mass media campaigns. Comprehensive tobacco control programmes must be fully implemented in every state and territory to accelerate the reduction in smoking prevalence in the United States and to decrease the public health burden of smoking related morbidity and mortality.

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What this paper adds

- The Strength of Tobacco Control (SoTC) survey represents the only survey of state level tobacco prevention and control capacity and activities collected over time (1999, 2002 and 2004) from all 50 US states and the District of Columbia
- This analysis illustrates several important issues: (1) changing trends in the areas of tobacco control emphasised in the United States; (2) the wide differences between each state's tobacco control focus (despite standardised direction from the NTCF); and (3) the surprisingly disparate changes in tobacco control focus within states over time

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