

Evaluating the Strength of School Tobacco Policies: The Development of a Practical Rating System

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ABSTRACT

BACKGROUND: School tobacco control policies vary widely in their strength, extensiveness, and enforcement. Currently, no standardized method exists to assess the comprehensiveness of school tobacco policies. The purpose of this study was to develop a new practical rating system for school tobacco policies, assess its reliability, and present preliminary validation data.

METHODS: This study presents the systematic development of a rating system to assess the strength of school tobacco policies. Based on the empirical literature and the expertise of an advisory panel consisting of educational leaders and tobacco control advocates and practitioners, a “gold standard” school tobacco policy was developed and guided the content of the 40-point rating system. The 4 domains of the School Tobacco Policy Index were: Tobacco-free environment (14 points), Enforcement (12 points), Prevention and treatment services (6 points), and Policy organization (8 points).

RESULTS: The Index was pilot-tested using 95 Missouri public school district tobacco policies and proved to be highly reliable among coders. The evaluated policies varied greatly between school districts, with the lowest total policy score of 0 and the highest score of 21. School district policy scores were significantly related to a number of county-level tobacco policy characteristics, including support for a tobacco excise tax increase.

CONCLUSIONS: The Index is a user-friendly, practical tool for tobacco control professionals and educators, providing them with the ability to easily evaluate their own school policies. Their evaluation efforts will be useful in strengthening existing policies and developing new comprehensive policies to protect the health of students, staff, administrators, and visitors.

Keywords: smoking and tobacco; policy; evaluation.

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Currently, there are approximately 3 million youth under 18 who are regular smokers in the United States.¹ Every day, approximately 4000 kids experiment with cigarettes and about 1500 of them will become regular smokers.² If tobacco use continues at its current rate, approximately 25 million Americans (including 6 million of today's children) will die an early death as a result.^{3,4}

Objectives to reduce the burden of tobacco use on society were outlined in *Healthy People 2010*, the National Guidelines for Disease Prevention and Health Promotion.⁵ The *Healthy People* tobacco use objectives included reducing initiation of tobacco use among children and adolescents and increasing the average age of first use of tobacco products by adolescents and young adults. Increasing smoke-free and tobacco-free environments in schools, including school facilities, property, vehicles, and events was identified as an effective strategy to achieve these tobacco use objectives.

Schools have a unique and powerful role in the lives of youth when it comes to shaping health behaviors. In particular, school policies play an integral part in changing social norms by influencing the environmental and social factors contributing to smoking behaviors.^{3,6-11} Reinforcing environmental supports, such as a school's tobacco policy, can represent the acceptance level of tobacco prevention within the school and even reflect community expectations.¹²⁻¹⁴ A number of studies have shown that smoking rates among youth decrease when school policies include 100% tobacco-free environments.^{11,15,16} One study reported a significant negative correlation between the strictness of cigarette use monitoring and the amount of daily use by middle school students.¹⁷ A significant positive association between permitting staff to smoke on school property and the daily use of cigarettes by students was also reported.

There is also evidence that tobacco-free environment policies alone did not reduce uptake by adolescents; however, policies were shown to be effective in reducing uptake when enforced.^{18,19} Moreover, an additional study of students reported a lower daily smoking prevalence at schools with school-wide smoking bans and an enforced policy.¹⁵ In addition, an observational study reported fewer incidences of minors smoking on school grounds related to staff reports of school tobacco policy enforcement.¹⁹

At this time, schools are implementing tobacco policies to protect the health of their students and staff, due to the mandate made by the Pro-Children Act of 1994.²⁰ However, there is no standardized method to accurately assess the comprehensiveness of these policies to ensure that the maximum protection is achieved. Prevention efforts (ie, advocacy programs, curriculums) and policies have been initiated in many public schools to educate on the dangers of tobacco use,

reduce initiation, and promote cessation among students, school personnel, and parents.²¹ Our experience suggests that some schools have detailed and comprehensive policies that combine punitive and educational components, whereas other schools have cursory policies that lack specificity. As efforts increase to support comprehensive tobacco control policies, the need for reliable and validated methods to evaluate policies also increases.²¹

To date, only a few studies have developed or used formal tobacco control evaluation instruments. A North Carolina evaluation study by Jamison and Goldstein (2003) quantitatively rated policies based on tobacco-free environments only.²² Researchers in New York evaluated 8 components of a tobacco-free policy.²³ Detailed information was examined for some components (eg, tobacco prevention); however, the evaluation was not inclusive of all indicators for other components, including tobacco-free environments. A rating system to evaluate state clean indoor air policies was developed by Chriqui et al. (2002). This system included schools as 1 of 9 domains; however, it did not include a detailed evaluation of school district level policies, instead it concentrated on state-level policies.²⁴

Currently, no standardized empirical method exists to assess the comprehensiveness of written public school tobacco policies. This article presents the first such instrument, the School Tobacco Policy Index, consisting of a rating form and manual. The purpose of the Centers for Disease Control and Prevention (CDC)-funded study was to develop and test a tool that could be used to evaluate the comprehensiveness of written school tobacco policies throughout the nation. The Index was explicitly designed to be quick and easy to use. Our intention was that the Index would be useful for evaluators and health scientists, but more importantly for health educators and community tobacco control advocates to strengthen school policies. The development of the School Tobacco Policy Index was not directed by a specific theoretical framework, but was guided by (1) the empirical evidence-base of the effects of tobacco control policies,²⁵ (2) our experience in public health policy evaluation, and (3) an environmental policy model of chronic disease prevention.²⁶ The article presents (1) the development and pilot test of the School Tobacco Policy Index, and (2) a preliminary exploration of the construct validity of the Index.

METHODS

Rating System Development

An advisory panel, with 18 members, was established consisting of a local school board president, a superintendent, a district health director, a district

safe and drug-free schools coordinator, teachers, tobacco control practitioners, policy researchers, and representatives from the Missouri Department of Health and Senior Services (MDHSS), CDC Division of Adolescent and School Health, and CDC Office on Smoking and Health. The advisory panel met twice (March and July 2004) to provide guidance in the development of (1) the gold-standard policy (eg, levels of importance, usability, and relevancy to their fields), and (2) the Index.

An extensive literature search was performed to locate all existing information on the different components of school tobacco policies. The information was synthesized into a policy component matrix.^{3-6,23,27-30} The primary documents guiding the development of the matrix were the CDC School Health Index,²⁷ CDC Guidelines for School Health Programs to Prevent Tobacco Use and Addiction,²⁸ the 1989 Surgeon General Report,³ and the National Association of State Boards of Education Fit, Healthy and Ready to Learn.²⁹ The matrix contained all relevant school tobacco policy information classified by component area, which included rationale, tobacco-free environments, communicating the policy, enforcement, advertising, tobacco prevention, tobacco use cessation, and surveillance. All common information between the sources was highlighted and retained to be used in the Index. The 8 components were then synthesized into 4 domains using the matrix and the expertise of the advisory panel. The 4 primary tobacco control domains were identified as (1) tobacco-free environment (14 points), (2) enforcement (12 points), (3) prevention and treatment services (6 points), and (4) policy organization (8 points), totaling 40 points. Based on the evidence synthesized into the matrix, 100% tobacco-free environments are the most crucial portion of a policy; therefore, the most weight is given to this domain.^{3,23,27-30} Next, the literature supported the idea that a policy with tobacco-free environments is only effective when properly enforced; therefore, this domain has the second highest number of possible points.^{3,15,18,23,27-30} The third domain, policy organization, includes the communication, surveillance or updating, and rationale of the policy. The literature supports having these components in a comprehensive policy.^{3,23,28-30} In addition, evidence supports not only having punitive measures within a policy; therefore, prevention and treatment services are crucial to an effective policy.^{3,21,23,27-30}

For each domain, a set of targets were defined that represented the “gold standard” policy recommendations based on the literature (Table 1). For example, the gold standard for a tobacco-free environment is that the policy applies to students, staff, and visitors; includes all school property, events, and transportation; and is in effect 24 hours a day, 365 days a year. Because the policy assessment instrument was

designed to capture all possible important elements of a school tobacco control policy, the resulting score represents the extent to which a particular school policy approaches the “gold standard.” Lower scores (eg, 20 compared to 30 or 40) suggest that the policy does not include as many important tobacco control elements as possible. For many reasons, it may not be possible for any particular school system to ever have a policy with the maximum possible score. That being said, based on the empirical literature on the effects of tobacco control policies,²⁵ we would expect that schools with more extensive tobacco control policies would also see positive changes in smoking behavior. This would need to be verified by future research.

The Index consisted of a rating form and manual and was modeled after the National Cancer Institute (NCI) State Cancer Legislative Database policy rating system.^{10,24,31} The Index rating form was explicitly designed to be quick and easy to use. The form was a 1-page document that included 40 indicators with binary yes/no answers with 1 point awarded for each “yes” answer, organized by the 4 domains. Simple yes/no indicators were used for several reasons. First, we wanted to facilitate dissemination and utilization of the Index by keeping it as straightforward to learn and use as possible. Second, by avoiding more complex items it would be able to be adopted and integrated into existing state and national tracking and monitoring systems. Finally, the tobacco control policy field lacks theory specific enough which would lead to a specific weighting system for the school policy scale. Summing up individual items gives an overall “policy extensiveness” score that does not give differential weight to any individual items (see below).

The second component of the Index, the rating manual, provided users with definitions for each of the 4 domains, detailed descriptions of the rating indicators, and coding rules. The rating form and manual were used in tandem to maximize accuracy and reliability and are available at <http://ctpr.wustl.edu/policy.php>.

The process implemented to rate policies included: scoring each individual indicator by circling yes or no while using the rating manual as a reference, totaling the indicator scores for each domain, and then summing the domain scores to determine the total policy score. It took approximately 3–5 minutes to rate each tobacco policy.

Example Policy Ratings

To provide context for understanding the policy scores, actual tobacco policies for 2 districts are presented in Figure 1. The Index indicators included in each policy are highlighted in italics. District A had a brief policy that lacked important details. It received a total policy score of 5 out of 40 possible points, 1 of the

Table 1. Tobacco Policy Gold-Standard Components

Component	Target
1. Tobacco-free environment (14 pts)	<p>Policy requires:</p> <ul style="list-style-type: none"> ● For students, staff, and visitors/contractors/patrons ● On school campus, property, and grounds ● In all district-owned vehicles and all vehicles on school property ● At all school-sponsored events and meetings on and off campus ● And prohibits possession for all students and anyone less than 18 years of age ● Is in effect 24 hours a day/365 days a year
2. Enforcement (12 pts)	<p>Policy requires:</p> <ul style="list-style-type: none"> ● Prohibition of advertising in the form of tobacco industry sponsorship (eg, contributions, financial support, material paid for, or produced by the tobacco industry) is prohibited ● Designated individual(s) to enforce written and disciplinary consequences of policy violation(s) ● Specific consequences according to grade level, number of offenses, and communication to parents/guardians about offenses for possession or usage of any tobacco product(s) ● Cessation and/or education for offenses for students and employees, not just punitive measures ● A dress code prohibiting the display of tobacco-industry brand names, logos, and other identifiers for students and staff ● Specific consequences identified for policy violation(s) by visitors/contractors/patrons
3. Prevention and treatment services (6 pts)	<p>Policy requires:</p> <ul style="list-style-type: none"> ● Cross-curricular age-appropriate educational opportunities about tobacco use and prevention in the health curriculum for students ● The school offers tobacco use cessation programs for students and staff and/or offers referral to outside tobacco use cessation program(s)
4. Policy organization (8 pts)	<p>Policy requires:</p> <ul style="list-style-type: none"> ● A rationale addressing the health and environmental consequences of tobacco products for students, staff, and visitors/contractors/patrons ● A definition of any and all tobacco products ● That the written tobacco policy should be distributed to all visitors/contractors/patrons, students, parents/guardians of students, and staff: <ul style="list-style-type: none"> ○ Through student and staff handbooks, parent newsletters, and announcements at school events ○ With signage prohibiting use of all tobacco products on campus ● An applicable enforcement date ● An identified individual(s) to review and keep the policy current ● Reference to any additional supporting documents

lowest scores from our sample. This policy prohibited students from smoking and using any tobacco products in district buildings and in district-owned vehicles. However, it allowed designated smoking areas in district buildings that were not occupied by students. This policy reported an applicable adoption date and made reference to additional documents that supplement the existing policy. There was no mention of enforcement and communication of the policy, tobacco prevention curriculum, or cessation programs in the policy.

In comparison, the District B policy received a total score of 21 out of 40 possible points, the highest score from our sample. This policy provided a rationale for and prohibited smoking and the use of all tobacco products for students, staff, and visitors in all school buildings, vehicles, grounds, and at all school-sponsored events. It also included general enforcement for students, staff, and visitors and specified an individual to enforce the policy. General tobacco prevention curriculum was mentioned for students; however, tobacco use cessation programs were not addressed. In addition, this policy stated that

all regulations were in effect 24 hours a day/365 days of the year and had a specific adoption date.

Policy Collection

A convenience sample of tobacco policies were collected from all school districts within the Kansas City Metropolitan area (Cass, Clay, Jackson, and Platte counties), the Springfield area (Christian, Greene, Webster), and St. Louis Metropolitan area (Franklin, Jefferson, St. Charles, St. Louis) (Figure 2). These areas were chosen because they were the most populated regions in the state—thus, the school district policies would apply to the greatest number of students, and subsequent validity analyses would be easier to perform. A standardized phone script was followed to explain the project and request a written copy of the school district’s core tobacco policy. A “core tobacco policy” was defined as a policy that contains a formal reference identifier (eg, policy number, file number, legal references). A follow-up letter was faxed to the superintendent of each district explaining the project in further detail. Districts not submitting their policies received

Figure 1. Examples of School District Tobacco Control Policies Collected During the Pilot Study

School A
SMOKING ON SCHOOL PREMISES

State law prohibits smoking, or other use of tobacco products, in any classroom or student occupant elementary or secondary school building or facility or on any school bus used to transport students to or from school or to or from any other place for educational purposes. However, smoking in nonclassroom or non student occupant buildings of the district is not prohibited and will be confined to designated smoking areas as allowed by law.

Adopted: 11/15/2001

Legal Refs: 191.765- .77,RSMo

P.L.103-227,Goals 2000 : Educate America Act (Pro-Children Act of 1994)

School B
SMOKING

The [school] Board of Education believes that smoking and the use of any tobacco product is *detrimental to the health and well being of the [school] staff and student body*. Research has established that a direct link exists between the use of tobacco products and increased health risks. The board is also concerned that *allowing smoking on campus by employees increases the risks for non-smokers*, due to unwanted exposure to secondhand smoke. Furthermore, as an educational institution, allowing smoking on our campuses and in our buildings illustrates practices which conflict with our beliefs and expectations.

The board believes that the development of a total wellness concept for all employees and students in the district is basic to sound education and productive living. The board has approved a *health curriculum framework for the [school] District* which reflects this philosophy and includes an *educational component* on the dangers of using drugs, including alcohol and tobacco.

With this in mind, *smoking and the use of tobacco products will not be permitted at any time. These restrictions apply to district buildings, district grounds, district-owned vehicles and school-sponsored events.* In addition, *smoking and the use of tobacco products by employees and visitors will not be permitted. Persons found in violation of this policy will be referred to the building principal and/or district level policy and guidelines for strategic implementation of the policy.* These restrictions on the use of tobacco products also *extend to all citizens and patrons attending school-sponsored events and meetings* held in district buildings and to any group or organization contracting for public or private use of district facilities.

POLICY REAPPROVED: October 18, 2000

SUPERSEDES: JFGC

POLICY ADOPTED: January 8, 1997

LEGAL REFERENCE:

CROSS SECTION: JK

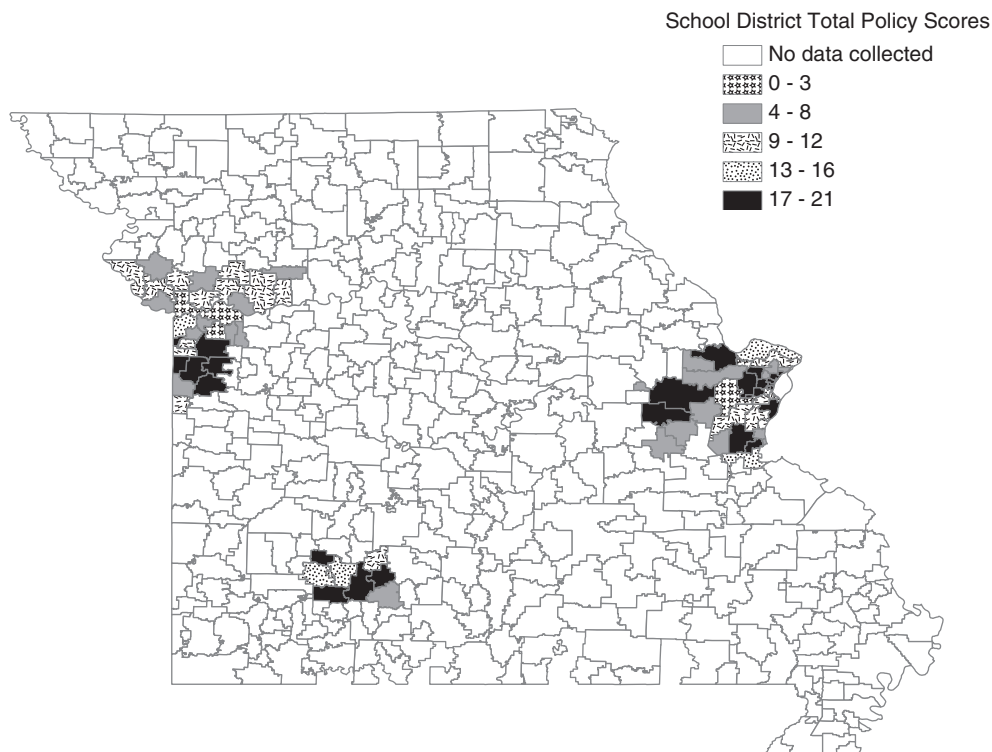
2 additional follow-up phone calls. Districts that did not submit their policies by March 2004 were faxed a reminder letter to submit their policies. Districts that missed the final submission deadline were recorded as missing.

By August 2004, policies were collected from 93 of 95 districts (98%). The final 2 district administrative offices were called repeatedly, but the policies were never sent and the districts were classified as missing. There were 6 policies collected that did not meet the definition of a core tobacco policy and therefore received total policy scores of zero.

Core Versus Expanded Documents

During the collection phase of the project, several school districts were sending supporting documents (eg, student/staff handbooks, enforcement policies, drug/alcohol/tobacco education policies) in addition to the core tobacco policy. It was seen that several of the indicators listed in the Index could be found in these supporting documents. To determine the extent of the discrepancy, 24 districts in St. Louis County, MO, were asked to send any of the supporting materials mentioned above. Seventeen of 24 districts returned supporting documents and the tobacco policy scores were reevaluated.

Figure 2. Missouri School District Tobacco Policy Ratings by Region (N = 93)



Establishing Index Reliability

To establish interrater reliability of the Index, a subsample of 10 policies was taken and rated independently by 3 coders, who then met to discuss any discrepancies in coding. Coders were graduate students with training in public health research and evaluation. Consensus was reached regarding disagreements resulting in final revisions to the Index. The subscores of the 4 domains and the total policy scores of this subset of 10 policies were used to calculate the intraclass correlation coefficient (ICC).³²

Tobacco Policy Scores Analysis

Independent reviews of the 93 district policies were conducted by 2 of the 3 trained coders. Two scores were given to each policy, the third coder compared these scores, resolved any discrepancies based on the specifications in the Index manual, and assigned the final score.

Descriptive statistics were calculated for the 4 individual domain subscores and the total policy score. The internal consistency within each subscale and for all Index items was calculated using Cronbach alpha.³³ Preliminary validation of the Index was conducted by comparing total policy score with several relevant district- and county-level variables using Pearson's correlation coefficient.³⁴ The district-

level variables were limited to data collected by the Missouri Department of Elementary and Secondary Education and those available on their Web site which included average per pupil expenditure, percent of non-White students, total district enrollment, median household income, percent of students receiving free or reduced-lunch program, and percentage of graduates scoring at or above the national ACT average.³⁵ Several county-level variables were obtained from the 2003 MDHSS County-Level Studies, which was a population-based tobacco survey based on the Behavior Risk Factor Surveillance System methods.³⁶ The county-level variables included were the opinions of restricting secondhand smoke in all public places and of increasing the tobacco excise tax. These tobacco policy and socioeconomic variables have been shown to be important factors in the relationship between community-level policies and individual health behavior.²⁶

RESULTS

Reliability of the Index

The ICC of .98 for the initial 10 policies scored by 3 coders showed a high level of interrater reliability between the coders. Because the initial ICC was high, interrater reliability was not thought to be a high

source of variation in the coding of the remaining policies, therefore the ICC for all 93 policies was not calculated. The internal consistency of the 4 subscales and all the items within the instrument were assessed and the results are shown in Table 2. The internal consistency of the entire 40-item instrument was excellent (.873). The reliability of 3 of the individual subscales was high, ranging from .774 to .902. The policy organization subscale had lower internal consistency (.536), suggesting that it should not be used on its own as a separate scale.

Missouri School District Tobacco Policies Characteristics

The descriptive statistics for the total policy score and the 4 subscales are reported above in Table 2. On the whole, there was a wide gap between actual school district tobacco policies in Missouri and the highest possible score on a scale. The average total policy score on a scale from 0 to 40 was 10.96 with a minimum score of 0 and a maximum score of 21. Fifty percent of the school districts had policy scores ranging from 7 to 16. The regional variation of school district policy scores can be seen in Figure 2.

When looking at the average scores within each subscale, the majority of points were obtained in the tobacco-free environment domain (7.69) followed by the policy organization domain (2.81). The enforcement (0.29) and prevention and treatment services (0.17) domain scores were extremely low.

Core Versus Expanded Documents

Table 3 presents the mean scores for the 4 subscales and total scores for the core tobacco policy and the expanded tobacco policy (ie, includes the supporting documentation). The expanded tobacco policy scores were on average 5 points higher when taking the supporting materials into account.

Preliminary Validation of the Index

A preliminary examination of the concurrent validity of the Index was conducted by relating policy scores to school district and county-level variables. Regression and correlation analyses found no significant relationships between school district tobacco policy scores and school district characteristics, including average per pupil expenditure, percent of non-White students, total district enrollment, median household income, percent of students receiving free or reduced-lunch program, and percentage of graduates scoring at or above the national ACT average. At the county-level, the school district tobacco policy score was significantly related to a number of county-level policy relevant characteristics including percent of homes allowing smoking in all areas

Table 2. Descriptive statistics for Each Domain and Tobacco Policy Score for School District Tobacco Policies in Missouri (N = 93)

Domain	Mean	Standard Deviation	Range	Cronbach alpha
Tobacco-free environment	7.69	4.31	0–13	.902
Enforcement	0.29	0.89	0–6	.774
Prevention and treatment services	0.17	0.76	0–6	.853
Policy organization	2.81	1.18	0–5	.536
Total policy score	10.96	5.24	0–21	.873

Table 3. Mean Scores for Core Versus Expanded Policies (n = 17)

	Core Policy	Expanded Policy
Tobacco-free environment	10.2	11.5
Enforcement	.53	3.0
Prevention and treatment services	.53	1.4
Policy organization	3.4	3.6
Total policy score	14.6	19.5

($r = -.281, p = .006$), percent of worksites allowing smoking in all areas ($r = .245, p = .018$), percent of respondents who think smoking should not be allowed in indoor areas ($r = .232, p = .025$), percent of respondents who would support a smoke-free restaurant ordinance ($r = .321, p = .002$), and percent of respondents who would support a tax increase of \$1 per pack ($r = .289, p = .005$).

These results show that individuals who live in areas with stronger school district policies have stronger support for tobacco control policies, and they are more likely to live in homes where smoking is not allowed. However, the relationship appears to be in the opposite direction regarding worksites: communities with higher total policy scores have a higher percent of worksites that allow smoking in all areas. It is possible that there is a contextual interaction happening here: In areas with greater social norms for smoking in the workplace, schools have needed to respond by enacting stronger school district tobacco control policies. This possibility is not testable given these cross-sectional data, and should be examined in future studies. However taken together, these results provide preliminary validation support showing that school district tobacco control policies are related to individual and community-level tobacco attitudes and behavior.

DISCUSSION

Thousands of youth try smoking every day and approximately 40% of them will become regular smokers.² School tobacco policies play an important

role in shaping the school environment where youth spend the majority of their time.^{3,6-11} Until this study, there has not been a standardized method to determine whether school tobacco policies were comprehensive or to identify the areas of the policies that need strengthening.

As the Missouri pilot data suggest, the majority of school district policies have room for improvement (mean total score of 11 out of 40). Overall, the tobacco-free environment and the policy organization domains received the highest scores. This indicated a focus on the school environments, although provisions addressing possession by anyone under 18 years of age and the enforcement of the policy 24 hours a day year round were missing from the majority of the policies (ie, 82% and 72% of the policies did not contain these provisions, respectively). Conversely, the enforcement and prevention and treatment domains received the lowest scores, providing additional evidence that these areas are where policies are lacking and need the most improvement. Research has shown that comprehensive policies that lack enforcement may not protect children as intended.³⁷ Furthermore, school districts may need to improve and increase their disciplinary actions for those that violate the policy. This could include education or cessation classes, instead of only punitive measures.

Missouri has passed laws regarding the tobacco-free school environments (RSMo 191.775) and youth possession of tobacco (RSMo 407.933).³⁸ In addition, the Missouri School Board Association has recommended tobacco-free school environments in their school wellness policies.³⁹ However, many of the school district policies evaluated were not consistent with even the general state laws or the school board recommendations. Because the School Tobacco Policy Index measures the gold-standard policy components, it is an important resource in the development and refinement of policies that exceed the minimal requirements of state laws.

The Index will provide educators and tobacco control practitioners with the means to easily evaluate their school tobacco policies. The high level of internal consistency of 3 out of 4 domains (tobacco-free environment, enforcement, and prevention and treatment services) indicates the flexibility of the application of the Index. This allows the user to tailor the Index for specific desired outcomes. This is an important aspect of the Index because the tobacco-free environment may be of primary interest to many tobacco control practitioners. However, all domains should be required for a comprehensive tobacco policy.

Challenges to Assessing School Policies

One challenge was that some school districts reported not having a written core tobacco policy.

School districts reporting no core tobacco policy received a zero policy score. Although school districts must be in compliance with the state law, having a written tobacco policy is an important communication tool to educate students, staff, and parents about the school district's restrictions regarding tobacco use. This is an important area for community tobacco control advocates to work with school districts to ensure that, at the very least, a basic policy is written in support of the state laws.

For school districts with written tobacco policies, many of the policies did not contain all the necessary provisions in 1 document. School districts sent supporting documents along with their core tobacco policies. For example, the enforcement measures for students, staff, and visitors were more likely to be found in a school district handbook or separate section that outlined the disciplinary measures for a variety of violations. The subscores for the enforcement domain for many school districts were lower because enforcement provisions were not addressed in the core policy. For a policy to be considered comprehensive, all the provisions should be included in 1 document. One inclusive document allows for easy access to and communication of the school district's tobacco policy to parents, students, and staff.

We recognize that the supporting materials may need to be collected along with the core tobacco policies. However, the challenge is identifying which specific documents should be collected because of the variety and number of documents we received from school districts. We were only able to suggest a broad list of materials for the schools to send in hopes that some of the materials would contain tobacco policy information. There was very little consistency in which documents contained additional tobacco policy information and not all school district personnel were aware of where policy information was documented. This presents a feasibility issue with attempting to gather and evaluate all the additional documents. However, the Index does account for any reference of supporting materials in the core tobacco policy and awards 1 point for the reference.

This pilot assessment of the Index has provided some support for the utility of the Index; however, more extensive evaluation of the instrument is needed. There are several areas of evaluation that should be conducted, including evaluating public versus private school policies and policies from rural, suburban, and urban schools. It would also be useful to compare policies in states with varying levels of the social acceptability regarding smoking. Despite the success of the tobacco control movement throughout the United States, schools in different communities and states still vary dramatically in the comprehensiveness of their policies to protect the health of students and

staff. This easy-to-use school tobacco policy assessment instrument presented can be an important tool for local school administrators and tobacco control advocates.

REFERENCES

1. Calculated based on 2004 National Survey on Drug Use and Health data. Substance Abuse and Mental Health Services Administration, Department of Health and Human Services. Available at: <http://www.oas.samhsa.gov/nhsda.htm>. Accessed April 25, 2008.
2. Substance Abuse and Mental Health Services Administration, Department of Health and Human Services, Results from the 2004 National Survey on Drug Use and Health: Detailed Tables. Available at: <http://www.oas.samhsa.gov/NSDUH/2k4nsduh/2k4tabs/2k4tabs.pdf>. Accessed April 25, 2008.
3. U.S. Department of Health and Human Services. Reducing the health consequences of smoking: 25 years of progress. A report of the Surgeon General. US Department of Health and Human Services, Public Health Service, Centers for Disease Control, Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health. DHHS Publication No. (CDC) 89-8411. 1989. Available at: <http://profiles.nlm.nih.gov/NN/B/B/X/S/>. Accessed April 25, 2008.
4. Centers for Disease Control and Prevention. Sustaining state programs for tobacco control: Data highlights 2004. Available at: http://www.cdc.gov/tobacco/data_statistics/state_data/data_highlights/00_pdfs/DataHighlights.pdf. Accessed April 25, 2008.
5. U.S. Department of Health and Human Services. *Healthy People 2010*. 2nd ed. *Understanding and Improving Health*. 2 vols. Washington, D.C.: U.S. Government Printing Office, November 2000. Available at: <http://www.healthypeople.gov/Document/tableofcontents.htm#volume1>. Accessed April 25, 2008.
6. U.S. Department of Health and Human Services. *Preventing tobacco use among young people. A report of the Surgeon General, 1994*. Atlanta, Ga.: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health, 1994. Available at: http://www.cdc.gov/tobacco/sgr/sgr_1994/index.htm. Accessed April 25, 2008.
7. Shopland DR, Haenlein M. Reducing lung cancer through smoking prevention and control. *Epidemiol Lung Cancer*. 1994; 437-464.
8. U.S. Department of Health and Human Services. *Strategies to Control Tobacco Use in the United States: A Blueprint of Public Health Action in the 1990s*. Bethesda, Md.: Public Health Services, National Institutes of Health, National Cancer Institute; 1991;(NIH Publication No 92-3316).
9. U.S. Department of Health and Human Services. *Tobacco-Control Activities in the United States, 1992-1993: Biennial Report to Congress*. Atlanta, Ga.: Public Health Services, Centers for Disease Control and Prevention; 1995.
10. Alciati MH, Frosh M, Green SB, et al. State laws on youth access to tobacco in the United States: measuring their extensiveness with a new rating system. *Tob Control*. 1998;7:345-352.
11. Pentz MA, Brannon BR, Charlin VL, et al. The power of policy: the relationship of smoking policy to adolescent smoking. *Am J Public Health*. 1989;79:857-861.
12. Flay BR. Approches to substance use prevention utilizing school curriculum plus social environment change. *Addict Behav*. 2000;25:861-885.
13. Pentz MA. Institutionalizing community-based prevention through policy change. *J Community Psychol*. 2000;28: 257-270.
14. Goodstadt MS. Substance abuse curricula vs. school drug policies. *J Sch Health*. 1989;59:246-250.
15. Moore L, Roberts C, Tudor-Smith C. School smoking policies and smoking prevalence among adolescents: multi levels analysis of cross-sectional data from Wales. *Tob Control*. 2001;10:117-123.
16. Wakefield MA, Chaloupka FJ, Kaufamn NJ, et al. Effect of restriction on smoking at home, at school, and in public places on teenage smoking: cross sectional study. *BMJ*. 2000;321: 333-336.
17. Kumar R, O'Malley PM, Johnston LD. School tobacco control policies related to students' smoking and attitudes toward smoking: national survey results, 1999-2000. *Health Educ Behav*. 2005;32:780-794.
18. Wakefield MA, Chaloupka FJ, Kaufman NJ, Orleans CT, Barker DC, Ruel EE. Effect of restrictions on smoking at home, at school and in public places on teenage smoking: cross sectional study. *BMJ*. 2000;321:333-337.
19. Adams ML, Jason LA, Pokorny S, Hunt Y. The relationship between school policies and youth tobacco use. *J Sch Health*. 2009;79:17-23.
20. Pro Children Act of 1994, S 20 USC. § 6083; 1994.
21. Glasgow RE, Boles SM, Lichtenstein E, et al. Tobacco policy rating form: a tool for evaluating worksite and tribal smoking control policies. *Tob Control*. 1996;5:286-291.
22. Jamison NM, Goldstein A. An analysis of North Carolina school district tobacco use policies. Master's thesis at North Carolina Chapel Hill School of Public Health; 2003.
23. Stephens YD, English GA. A statewide school tobacco policy review: process, results, and implications. *J Sch Health*. 2002;72: 334-339.
24. Chriqui JF, Frosh M, Brownson RC, et al. Application of a rating system to state clean indoor air laws (USA). *Tob Control*. 2002;11:26-34.
25. Warner KE. *Tobacco Control Policy*. Princeton, N.J.: Robert Wood Johnson Foundation; 2006.
26. Brownson RC, Haire-Joshu D, Luke DA. Shaping the context of health: a review of environmental and policy approaches in the prevention of chronic diseases. *Annu Rev Public Health*. 2006;27:341-370.
27. Centers for Disease Control and Prevention. *School Health Index: A Self-assessment and Planning Guide*. Middle school/high school version. Atlanta, Ga.: Centers for Disease Control and Prevention; 2005.
28. Centers for Disease Control and Prevention. Guidelines for school health programs to prevent tobacco use and addiction-recommendations and reports. *MMWR*. 1994;43:1-18.
29. Bogden JF, Vega-Matos CA. Fit, healthy and ready to learn: a school health policy guide. National Association of State Boards of Education. 2005. Available at: <http://www.nasbe.org/HealthySchools/fithealthy.html>. Accessed April 25, 2008.
30. Partnership for a Tobacco-Free Maine. Creating and maintaining a tobacco-free school policy. Partnership for a Tobacco-Free Maine. Bureau of Health, Department of Human Services; 1999.
31. Luke DA, Stamatakis KA, Brownson RC. State youth access tobacco control policies and youth smoking behavior in the United States. *Am J of Prev Med*. 2000;19:180-187.
32. Bartko JJ. The intraclass correlation coefficient as a measure of reliability. *Psychol Rep*. 1966;19:3-11.
33. Cronbach LJ. Coefficient alpha and the internal structure of tests. *Psychometrika*. 1951;16:297-333.
34. Pagano M, Gauvreau K. *Principles of Biostatistics*. 2nd ed. Pacific Grove, Calif.: Duxbury Thomson Learning; 2000;400-404.
35. Missouri Department of Elementary and Secondary Education. Available at: http://dese.mo.gov/schooldata/school_data.html. Accessed April 25, 2008.
36. Missouri Department of Health and Human Services-Missouri County-Level Studies. Available at: <http://www.dhss.mo.gov/>

SmokingAndTobacco/county_studies.htm. Accessed April 25, 2008.

37. Hahn EJ, Rayens MK, Rasnake R, York N, Okoli CTC, Riker CA. School tobacco policies in a tobacco-growing state. *J Sch Health*. 2005;75:219-225.
38. Missouri Department of Health and Senior Services, Health Promotion Unit, Tobacco Use Prevention Program. Factsheet

Tobacco-Free schools in Missouri 2004. Available at: http://www.dhss.mo.gov/SmokingAndTobacco/youth_use.html. Accessed April 25, 2008.

39. Missouri School Boards Association. Tobacco-Free District Policy. Available at: http://www.msbanet.org/Core/ContentManager/uploads/PDFs/Advocacy/wellness/Tobacco_Free_District.pdf. Accessed April 25, 2008.

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