IV Surveillance and Evaluation

Justification

Publicly financed programs need to have accountability and demonstrate effectiveness. A comprehensive tobacco control program must have a system of surveillance and evaluation that can monitor and document short-term, intermediate, and long-term intervention outcomes in the population to inform program and policy direction, as well as to ensure accountability to those with fiscal oversight.

State surveillance is the process of monitoring tobacco-related attitudes, behaviors, and health outcomes at regular intervals of time. Statewide surveillance should monitor the achievement of the four primary program goals: 1) preventing initiation of tobacco use among youth and young adults, 2) promoting quitting among adults and youth, 3) eliminating exposure to secondhand smoke, and 4) identifying and eliminating tobacco-related disparities among population groups. Participation in national surveillance systems (e.g., the Behavioral Risk Factor Surveillance System, Youth Risk Behavior Surveillance System, and Pregnancy Risk Assessment Monitoring System) enables a state to compare some of its long-term tobacco measures to those of other states.[1-3] These data can be used to compare a state's program impact and outcomes with national trends. In addition, states have enhanced these national systems by adding state-specific questions and modules, increasing sample sizes to capture local and specific population data, and modifying sampling procedures to provide more data on intermediate performance objectives.

Specific systems to collect evaluation data are also needed. Process and outcome evaluation activities should be ongoing and should be used to assess individual program activities and to guide program improvement. Program evaluation efforts should build on and complement data collection by linking statewide and local program efforts to monitor progress toward program objectives. Additionally, evaluation can provide valuable data on the relative effectiveness of specific innovative program activities. States can contribute to the literature on best practices by publishing their evaluation results.

Flexible survey instruments for use in program evaluation include the Youth Tobacco Survey and Adult Tobacco Survey.[4] These surveys maintain some standard "core" components, but they also allow states to include questions to evaluate current program activity. Both surveys provide state-level data that can be compared with those from other states and include data on many key outcome indicators for evaluation of comprehensive tobacco control programs. For both evaluation tools, estimates can be obtained at the regional, county, or city level, with appropriate sampling. State-level data also can be compared with national data.

Program evaluation requires that a wide range of short-term and intermediate indicators of program effectiveness be measured, including policy changes, changes in social norms, and exposure of individuals and communities to statewide and local program efforts. Evaluation efforts should also include counter-marketing surveillance to track new products and examine the impact of pro-tobacco influences, including the actual cost of cigarettes, free samples, advertising, promotions, media coverage, and events that glamorize tobacco use. In addition, evaluation requires collection of data such as information from the quitline Minimal Data Set, legislative tracking, vital statistics, Synar compliance data, observational studies, Nielsen data, opinion surveys, air quality studies, media evaluation, or program monitoring data (e.g., tracking alignment of local program efforts with statewide priorities).

Evaluation planning should be integrated with program planning. A comprehensive state tobacco control plan—with well-defined goals; objectives; and short-term, intermediate, and long-term indicators—requires appropriate surveillance and evaluation data systems. Collection of baseline data related to each objective and outcome indicator is critical to ensuring that program-related effects can be clearly measured. For this reason, surveillance and evaluation systems must have first priority in the planning process.

CDC's Office on Smoking and Health developed *Introduction to Program Evaluation for Comprehensive Tobacco Control Programs,* a "how-to" guide for planning and implementing evaluation activities.[5] *Key Outcome Indicators for Evaluating Comprehensive*

Tobacco Control Programs is a companion piece that provides information on selecting evidence-based indicators and linking them to program outcomes.[6] *Surveillance and Data Resources for Comprehensive Tobacco Control Programs* provides a summary of the tobacco-related measures, sampling frame, and methodology for many national and state surveys and tools for use in conducting surveillance and evaluation efforts.[7]

In order to develop effective interventions and to monitor progress, most states need more information on populations disproportionately affected by tobacco use. If standard data collections do not provide adequate data to characterize health disparities related to tobacco use, additional data collection systems or approaches may be needed (e.g., snowball sampling techniques with disparate groups). For instance, in 2004 California conducted population-specific tobacco use surveys to identify tobacco-related knowledge, attitudes, and behaviors among the state's Asian Indian; Korean American; Chinese American; active duty military; and Lesbian, Gay, Bisexual, and Transgender adult populations. Similarly, several major North American tribes have conducted tobacco use surveys both in schools and among adults to collect more detailed data on their populations to inform program development. For more information on identifying and eliminating tobacco-related disparities, see Appendix D. Some available tools for surveillance and evaluation include:

- The Youth Tobacco Survey (YTS) is a school-based state-level survey of young people in grades 6 through 12. Core questions assess students' knowledge, attitudes, and behaviors related to tobacco use and exposure to secondhand smoke, as well as their exposure to prevention curricula, community programs, and media messages aimed at preventing and reducing youth tobacco use. YTS also collects information on the effectiveness of enforcement measures. The Adult Tobacco Survey is a telephone survey of adults aged 18 years and older. Core questions assess adults' knowledge, attitudes, and behaviors related to tobacco use, exposure to secondhand smoke, use of cessation assistance, and their awareness of and support for evidence-based policy interventions.
- The State Tobacco Activities Tracking and Evaluation (STATE) System is an online data warehouse that includes epidemiologic data on many long-term key outcome indicators, as well as economic data and tobacco-related state legislation.[8]
- NCI and CDC added tobacco modules to the Current Population Surveys in 1992–1993, 1995–1996, 1998–1999, 2002–2003, and 2006–2007.[9] These modules provide state-specific estimates on factors such as smoking prevalence, quit attempts, exposure to secondhand smoke at home and work, workplace policies, and cessation counseling by physicians and dentists among adults aged 18 years and older.
- The quitline Minimum Data Set identifies a recommended set of indicators collected in a consistent manner to facilitate performance monitoring and make comparisons possible, while not imposing undue burdens on quitlines.[10]
- In conducting more detailed evaluation of major program elements, particularly media campaigns, several states have conducted periodic special statewide surveys of adults and young people. Examples of methodology for state-specific surveys are described in California's evaluation reports.[11]

CDC's *Evidence of Effectiveness: A Summary of State Tobacco Control Program Evaluation Literature* provides examples of state tobacco control program evaluations and their outcomes, as well as references to scientific literature by major findings (e.g., heart disease mortality, youth smoking prevalence/initiation, or per capita consumption).[12]

Additional resources will soon be available, including CDC's *Introduction to Process Evaluation in Tobacco Use Prevention and Control*, which provides guidance to states about how to evaluate inputs, activities, and outputs of a tobacco control logic model; *Tobacco Counter-Marketing Paid Media Evaluation Manual*, which outlines various ways of evaluating state media campaigns; and a National Cancer Institute (NCI) media monograph with information about the relevant theories behind media campaigns, descriptions of effective campaigns, and information on campaign evaluation.

IV Surveillance and Evaluation

Budget

All federally funded tobacco prevention and control programs are expected to engage in strategic surveillance and program evaluation activities. State health departments currently manage most tobacco surveillance systems. Many states work in conjunction with universities to implement and coordinate surveillance, evaluation, and research activities. Standard practice dictates that about 10% of total annual program funds be allocated for surveillance and evaluation.[13,14] Additional resources beyond 10% of program funds may be required for development of effective local capacity for evaluation and for conducting detailed evaluation of specific media, cessation, and community interventions. For example, obtaining population-representative data for local jurisdictions (e.g., counties) or conducting cohort studies to assess the effectiveness of media campaigns can be resource intensive. Thus, health departments must be able to expand their evaluation resources as needed.

Reaching the national goal of eliminating health disparities related to tobacco use will necessitate improved collection and use of standardized data to correctly identify disparities in both health outcomes and efficacy of interventions among various population groups.[15] Additional data collection mechanisms and standardized systems may be needed to better characterize health disparities related to tobacco use and measure progress toward eliminating these disparities.

Experience has shown that evaluation efforts can be used both for statewide surveillance and evaluation systems and for increased technical capacity of local programs to perform process and outcome evaluation activities. For example, in California, every grantee must spend 10% of its budget on evaluating its own activities. To aid this activity, the California Tobacco Control Program publishes a directory of evaluators who can consult with their local programs and conduct local program evaluations and funds a local program evaluation center that provides technical assistance to its contractors.[11]

Core Resources

MacDonald G, Starr G, Schooley M, Yee SL, Klimowski K, Turner K. *Introduction to Program Evaluation for Comprehensive Tobacco Control Programs.* Atlanta: Centers for Disease Control and Prevention; 2001. Available at http://www.cdc.gov/tobacco/tobacco_control_programs/surveillance_evaluation/evaluation_manual/index.htm.

Yee SL, Schooley M. *Surveillance and Evaluation Data Resources for Comprehensive Tobacco Control Programs.* Atlanta: Centers for Disease Control and Prevention; 2001. Available at http://www.cdc.gov/tobacco/tobacco_control_programs/surveillance_evaluation/surveillance_manual/index.htm.

Starr G, Rogers T, Schooley M, Porter S, Wiesen E, Jamison N. *Key Outcome Indicators for Evaluating Comprehensive Tobacco Control Programs.* Atlanta: Centers for Disease Control and Prevention; 2005. Available at http://www.cdc.gov/tobacco/tobacco_control_programs/surveillance_evaluation/key_outcome/index.htm.

Centers for Disease Control and Prevention. *Sustaining State Programs for Tobacco Control: Data Highlights 2006.* Atlanta: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2006. Available at http://www.cdc.gov/tobacco/data_statistics/state_data/data_highlights/2006/index.htm.

Kuiper NM, Nelson DE, Schooley M. *Evidence of Effectiveness: A Summary of State Tobacco Control Program Evaluation Literature.* Atlanta: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2005. Available at http://www.cdc.gov/tobacco/tobacco_control_programs/stateandcommunity/sustainingstates/00_pdfs/lit_Review.pdf.

Centers for Disease Control and Prevention. *Introduction to Process Evaluation in Tobacco Use Prevention and Control.* Atlanta: Centers for Disease Control and Prevention. In press.

Murphy-Hoefer R, Porter S, Nierderdeppe J, Farrelly M, Sly D, Yarsevich J. *Introduction to Countermarketing Evaluation for Comprehensive Tobacco Control Programs.* Atlanta: Centers for Disease Control and Prevention. In press.

North American Quitline Consortium. Quitline Minimal Data Set. Available at http://www.naquitline.org/index.asp?dbid=2&dbsection=research.

Centers for Disease Control and Prevention. State Tobacco Activities Tracking and Evaluation (STATE) System. Available at http://apps.nccd.cdc.gov/statesystem.

Centers for Disease Control and Prevention. Smoking & Tobacco Use website. Available at www.cdc.gov/tobacco.

References

1. Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System (BRFSS). Available at http://www.cdc.gov/brfss/.
2. Centers for Disease Control and Prevention. Youth Risk Behavior Surveillance System (YRBSS). Available at http://www.cdc.gov/healthyyouth/yrbs/index.htm.
3. Centers for Disease Control and Prevention. Pregnancy Risk Assessment Monitoring System (PRAMS). Available at http://www.cdc.gov/PRAMS/.
4. Centers for Disease Control and Prevention. Youth Tobacco Survey (YTS). Available at http://www.cdc.gov/tobacco/data_statistics/surveys/YTS/index.htm.
5. MacDonald G, Starr G, Schooley M, Yee SL, Klimowski K, Turner K. *Introduction to Program Evaluation for Comprehensive Tobacco Control Programs.* Atlanta: Centers for Disease Control and Prevention; 2001.
6. Starr G, Rogers T, Schooley M, Porter S, Wiesen E, Jamison N. *Key Outcome Indicators for Evaluating Comprehensive Tobacco Control Programs.* Atlanta: Centers for Disease Control and Prevention; 2005.
7. Yee SL, Schooley M. *Surveillance and Evaluation Data Resources for Comprehensive Tobacco Control Programs.* Atlanta: Centers for Disease Control and Prevention; 2001.
8. Centers for Disease Control and Prevention. State Tobacco Activities Tracking and Evaluation (STATE) System. Available at http://apps.nccd.cdc.gov/statesystem.
9. National Cancer Institute. Tobacco Use Supplement to the Current Population Survey (TUS-CPS). Available at http://riskfactor.cancer.gov/studies/tus-cps/.
10. North American Quitline Consortium. Quitline Minimal Data Set. Available at http://www.naquitline.org/index.asp?dbid=2&dbsection=research.
11. California Department of Health Services, Tobacco Control Section, Evaluation Resources. Available at http://www.dhs.ca.gov/tobacco/html/resourceseval.htm#evaluation.
12. Kuiper NM, Nelson DE, Schooley M. *Evidence of Effectiveness: A Summary of State Tobacco Control Program Evaluation Literature.* Atlanta: Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2005.
13. World Health Organization European Working Group on Health Promotion Evaluation. *Health Promotion Evaluation: Recommendations to Policy-makers: Report of the WHO European Working Group on Health Promotion Evaluation.* Copenhagen, Denmark: World Health Organization, Regional Office for Europe; 1998.
14. Centers for Disease Control and Prevention. *Best Practices for Comprehensive Tobacco Control Programs—August 1999.* Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 1999.
15. U.S. Department of Health and Human Services. *Reducing Tobacco Use: A Report of the Surgeon General.* Atlanta: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health; 2000.