

The Things That Get Measured Are the Things That Get Done

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The things that get measured are the things that get done.¹ This simple, yet insightful statement underscores the priority of area of surveillance, one of the six core strategies from the Consumer Demand Workshop that has as its ultimate goal to increase demand among smokers for proven tobacco-cessation products and services.² The specific core strategy related to surveillance is, “Systematically measuring, tracking, reporting, and studying quitting and treatment use—and their drivers and benefits—to identify opportunities and successes.”² Surveillance is needed to assess all the steps on the quitter’s journey, starting from the decision to make a quit attempt, through the choice of method to quit, the actual quit attempt, short-term success including relapse and re-cycling, and long-term success.³ No national survey exists in the U.S. that measures all the dynamic changes in tobacco-use behavior (host), tobacco products (agent), tobacco industry (vector), and social, policy, and media environments (environment).⁴

Although this commentary addresses a specific part of the host domain, tobacco cessation, it is important to recognize that all domains influence the quitting process. The core strategy of surveillance for building consumer demand among smokers for proven tobacco-cessation products and services can also inform the other five core strategies: perspective on quitting, redesigning products and services, marketing and promotion, understanding policies as opportunities for cessation, and combining and integrating the strategies.

Four of the 27 U.S. Healthy People 2010 health objectives for tobacco are related to cessation: (1) increase smoking-cessation attempts by adult smokers (target of 80%; in 2006, 43%); (2) increase smoking cessation during pregnancy (target 30%; in 2005, 11%); (3) increase smoking-cessation attempts by adolescents (target 84%; in 2005, 59%); and (4) increase insurance coverage of

evidence-based treatment for nicotine dependency (target of 100% for managed care organizations; in 1998, 75%; target of 51 Medicaid programs in states and DC; in 1998, 24).⁵ The Healthy People 2010 Tobacco Use Progress Review, in August 2008, showed little or no change toward reaching the cessation goals related to adults, pregnant women, and adolescents.⁶ No data were available to track insurance coverage for effective treatments because the original baseline data source stopped collecting these data⁵; however, a 2006 survey of state Medicaid programs found that 39 state Medicaid programs and the District of Columbia covered some form of tobacco dependence treatment.⁷

While these Healthy People objectives are certainly goals that those of us in tobacco control would agree with, the challenge is to understand what contributes to these percentages in order to develop effective programs and practices in order to meet the Healthy People 2010 goals. Without effective surveillance and research into understanding the smoking-cessation process, it is not clear whether these cessation goals can be met. In addition, the development of objectives on use of effective treatments and programs should be considered. Creation of new objectives in this area would provide a focus for tracking the use of effective treatments and programs,⁸ and goals for national, state, and community tobacco control programs to work toward. Unfortunately, our current surveillance systems do not include all of the necessary questions to adequately address tobacco cessation and measure all the steps on the quitter’s journey.

As outlined in Table 1, we identified 11 U.S. state and national surveys, with two surveying both youth and adults, five surveying adults only, and four surveying youth only that include questions concerning smoking cessation. While all 11 surveys include questions about quitting behavior, there was less consistency among surveys addressing intentions to quit, expectations about quitting, and self-efficacy; beliefs and attitudes about quitting; whether healthcare providers advised smokers to quit or provided cessation services; knowledge and availability of services and methods used to quit; and nicotine dependence. For example, only three surveys asked whether a healthcare provider gave information about quitting, such as medications or services; only four surveys asked about beliefs and attitudes regarding quit-

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Table 1. Smoking-cessation measures in U.S. state and national surveys

Survey/recent year ^a	Cessation topic(s)									
	Sponsor	Sample	Behavior	Nicotine dependence	Intentions; expectation; self-efficacy	Beliefs; attitudes	Quit Advice	Provider: R/X or Services	Knowledge/availability of services ^b	Method used ^c
Adults and youth										
Tobacco-Use Supplement, Current Population Survey: 2006-2007	NCI and CDC	National State	✓	✓	✓	—	✓	✓	Emp, TQ, SH	TQ
NHANES: 2007-2008	CDC	National	✓	✓	—	—	—	—	—	P ^d
Adults only										
National Adult Tobacco Survey ^e	CDC	National State	✓	✓	✓	—	✓	✓	Con, TQ, HI	Con, P, TQ, CT
Health Information National Trends Survey: 2005	NCI	National	✓	—	✓	—	—	—	—	—
NHIS: 2009; 2010 ^f	CDC and NCI	National	✓	—	✓ ^g	—	✓ ^g	—	—	Conf P ^f , TQ ^f
ATS: 2009 ^g	CDC	State	✓	✓	✓	✓	✓	✓	C ^g , Emp ^g , TQ ^g	Con, P, TQ ^g , SH ^g , AT ^g , O ^g
Behavioral Risk Factor Surveillance System: 2009	CDC	State	✓	—	—	—	—	—	—	—
Youth only										
Youth Risk Behavior Surveillance System: 2009	CDC	National State	✓	—	—	—	—	—	—	—
National Youth Tobacco Survey: 2009	CDC	National	✓	✓	✓	✓	✓	—	—	Con, P, TQ, SH, CT, O
Monitoring the Future Survey: 2009	NIDA	National	✓	—	✓	✓	—	—	—	—
YTS: 2009	CDC	State	✓	✓ ^h	✓	✓ ^h	✓	—	Sch ^h	O ^h

^aThe measures reflected in the table are based on survey instruments from the most recent survey administration year. The following website includes more detailed descriptions of each survey: www.cdc.gov/tobacco/data_statistics/surveys/index.htm.

^bKnowledge/availability of services: Community (C); One-on-One/Individual or Group Counseling, Class, Program, Support Group (Con); Employer (Emp); Covered by Health Insurance (HI); School (Sch); Telephone Help/Quitlines (TQ); Self-Help Materials/Books/Videos/Internet (SH).

^cQuit methods: One-on-One/Individual or Group Counseling, Class, Program, Support Group (Con); Pharmacotherapy (P); Telephone Help/Quitline (TQ); Self-Help Materials/Books/Videos/Internet (SH); Alternative therapies (AT); Cold Turkey (CT); Other (O).

^dNHANES asked about past 5 day use of any nicotine replacement product to help the user stop smoking.

^eThis survey has not yet been implemented, and information reflects current proposed questions. Also includes items on awareness and exposure to smoking-cessation media campaigns including "Become an EX."

^fThe Cancer Control Supplement to the NHIS was last conducted in 2005, and the next administration is scheduled for 2010.

^gThese are optional questions that the states can include in their ATS survey as needed.

^hThese are optional questions that the states can include in their YTS survey as needed.

ATS, Adult Tobacco Survey; NCI, National Cancer Institute; NHANES, National Health and Nutrition Examination Survey; YTS, Youth Tobacco Survey

ting; five surveys asked about various pharmacotherapies used to quit smoking and telephone quitlines; and six surveys assessed nicotine dependence. Some of these questions are optional for inclusion and questions often vary from year to year within surveys, making analysis of trends challenging. Consequently, there are numerous gaps in our understanding of tobacco-use cessation, including a lack of surveillance data on awareness and utilization of effective treatments.

While the strengths of state and national surveys in Table 1 include large sample sizes and large numbers of variables, these surveys also have considerable limitations. These limitations include limited space for tobacco questions in general health surveys (e.g., Behavioral Risk Factor Surveillance System [BRFSS] and National Health and Nutrition Examination Survey [NHANES]); infrequent tobacco-specific surveys (e.g., Tobacco Use Supplement of the Current Population Survey [TUS-CPS], and the proposed National Adult Tobacco Survey); timeliness of data; delays in the dissemination of findings; the inability to measure low-frequency behaviors among a subset of respondents (e.g., use of effective cessation treatments among specific racial/ethnic populations); and gaps in measures and definitions.

We do not have good measures of awareness and use of effective treatments among those who want to quit; for example, among those who use these products, we cannot answer questions on how they use them. Only one survey addressed cessation for tobacco products other than cigarettes, the 2006–2007 TUS-CPS, which asks about quitting smokeless tobacco (snuff and chewing tobacco), pipes, and cigars. Only one survey assessed smoking cessation among pregnant women (National Health Interview Survey); however, state-level information on smoking cessation during pregnancy can also be obtained from states participating in the Pregnancy Risk Assessment Monitoring System and from states using the 2003 revised birth certificate.^{9,10}

Other existing sources include data regarding smoking cessation. In addition to the surveys outlined in Table 1, other surveys include health marketing surveys such as Healthstyles¹¹ and ConsumerStyles,¹² pharmaceutical industry data such as sales data, data from state telephone quitlines, data from HMOs on clinical practices and prescription medications, Healthcare Effectiveness Data and Information Set (HEDIS) data,¹³ and Veterans Administration (VA) data, which are all potential sources of information regarding cessation. As previously noted, no one data source is comprehensive regarding cessation, and this gap represents a major obstacle in understanding the quitting journey. One strategy that has substantial potential to help to address this issue is the development of resources that are capable of managing the sharing, com-

bination, synchronization, and analysis of multiple large datasets. One such initiative currently under development is the National Cancer Institute's (NCI) Population Science Grid (PopSci Grid), which is based on the NCI Cancer Bioinformatics Grid (CaBIG).¹⁴ This project aims to make multiple datasets available within a single cyber-infrastructure with applications that allow for the manipulation and analysis of data elements across datasets.

Previous studies have identified smokers' misperceptions about nicotine replacement products and a lack of knowledge about evidence-based treatment.^{15–17} One option to address our gap in quitting knowledge, awareness, utilization, and behavior is to implement a longitudinal study to understand the smoker's journey. A longitudinal research study would inform future surveillance efforts by helping to identify short-, intermediate-, and long-term cessation outcomes that tobacco control programs should intervene in and track.¹⁸ Under the direction of the NCI, researchers convened in July 2005 to discuss the feasibility, design, and analysis issues around implementing a National Longitudinal Study of Tobacco Use and Cessation (NLSTUC). The rationale for this proposed study is to identify the most important research issues in tobacco-use behavior and quitting and how these issues could be addressed through a new longitudinal data collection, given that existing cohort studies could not address key tobacco use–cessation research questions.

Consensus was reached on a number of important topics including the need to study the motivators of quitting and events triggering a quit attempt; what, how and why quitting methods are used; the period between quit attempts and what happens during this time; and the events that lead to a lapse or relapse back to smoking. An advantage of this type of study is that it can capture specific information for which responses would be too small in number to get adequate data on in national surveys. For example, national surveys could not measure a new medication that may not be in widespread use or individual motivators for quitting by subpopulations. Other benefits of conducting a longitudinal study are the ability to add new questions in a timely fashion to capture changes, as well as the ability to conduct more intensive and detailed data collection among select representative or specific subsamples using new informatics and communications technology in real time. Although the NLSTUC has not been funded, it remains the ideal in terms of studying a nationally representative sample of smokers regarding understanding the process-of-quitting journey.

Opportunities for surveillance exist now with numerous effective methods to quit smoking. For those surveys that currently include questions about quitting, we must

assure that the same questions are asked across surveys when measuring a particular construct so comparisons can be made across various demographic populations, geographic units, and time periods. Some key questions can be addressed by adding a few short questions to national surveillance systems. For example, more specificity could be added to address not only the method of quitting used, but how and why the method was chosen, and the length of time the method was used. Questions on the full array of effective cessation methods, knowledge about methods and services, and how the smoker became aware of various methods could also be added. And, as new, effective treatments are identified; new questions will need to be developed and incorporated into these surveys. Current cessation research studies could also add questions to address the full range of the quitting journey.

And so, we end where we began. If the things that get measured are the things that get done, then we need to assure that we are measuring all components of the quitter's journey in a systematic way. We can do that only by focusing on surveillance, research, and evaluation if we want to make progress in tobacco cessation.¹⁹

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