Organization, Financing, Promotion, and Cost of U.S. Quitlines, 2004

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Background: Quitlines have been established as an effective, evidence-based, population-wide strategy to deliver smoking-cessation treatment, and are now available in most states across America. However, little is known about the organization, financing, promotion, and cost of state quitlines.

Methods: In 2004, the North American Quitline Consortium surveyed the 50 states and Washington DC to obtain information about state quitlines. Data were analyzed in fall 2005 through spring 2006. Analyses of these data are reported in this paper.

Results: Analyses were limited to the 38 states that reported having a quitline in 2004. State governments funded most (89.5%) quitlines. Median state quitline operating budgets in 2004 were $500,000; this translates into a modest annual median operating cost of $0.14 per capita or $0.85 per adult smoker. A lesser amount was spent for quitline promotion. Quitline services varied, with 97.4% of respondents providing mailed self-help resources, 89.5% providing proactive telephone counseling, and 89.2% providing referrals to other services. Many quitlines provide services in languages other than English. Only 21.1% of quitlines reported providing cessation medication at no cost. Promotional strategies varied widely.

Conclusion: A large majority of U.S. smokers live in states with tobacco quitlines, which provide cessation treatment at a remarkably modest per capita cost. There is a great deal of congruence in services and promotional strategies among states. Further research is required to determine how external factors such as the federal National Network of Tobacco Cessation Quitlines funding for state quitlines and the availability of a national portal number (1-800-QUITNOW), both implemented in 2004, affect state quitlines. Additional research to evaluate the cost effectiveness of quitline services is also warranted.
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Introduction

Millions of Americans attempt to quit smoking each year, but few use evidence-based treatments to aid their quit attempt.[1] Quitlines provide an evidence-based method for delivering smoking-cessation services on a population-wide basis. Smokers can call quitlines directly to request services. Some quitlines also proactively contact smokers who express an interest in cessation services through clinic-based referral programs (e.g., "fax to quit"). Once contact is initiated, quitlines offer telephone-based counseling designed to aid the smoker in successfully quitting through one or more calls. In some instances, quitlines also provide U.S. Food and Drug Administration–approved medications for smoking cessation.

Quitlines have the potential to reach a broad population of tobacco users, and they eliminate the need for transportation to receive counseling, requiring only that a smoker have access to a telephone. Quitline services tend to be available many hours during the day and on weekends, further enhancing their potential reach. Because of these features, smokers are four times more likely to use a quitline than to seek face-to-face counseling.[2] Quitlines also have the potential to reach the elderly, those living in rural areas, those of lower socioeconomic status, and racial/ethnic minorities—populations that may not have ready access to in-person cessation services. Researchers in California[3–5] and Maine[6] have demonstrated the effectiveness of their state quitlines in reaching rural residents, racial/ethnic minorities, and the uninsured.

There is robust evidence of quitlines' efficacy and effectiveness. Lichtenstein et al.[7] conducted a meta-analysis of published research on proactive quitlines,

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noting a significant increase in cessation rates in comparison with the control groups at both short- and long-term follow-up points (odds ratio [OR]=1.34, 95% confidence interval [CI]=1.19–1.51, and OR=1.20, 95% CI=1.06–1.37, respectively). The U.S. Public Health Service Clinical Practice Guideline Panel conducted a meta-analysis of proactive telephone counseling, finding this treatment to be effective compared to no intervention (OR=1.2, 95% CI=1.1–1.4).[8] The Cochrane Collaborative Review[9] updated its meta-analysis of telephone counseling for smoking cessation in July 2006, finding that telephone counseling is effective in helping smokers to quit (OR=1.33, 95% CI=1.21–1.47). Further, the authors noted that there was evidence of a dose–response relationship, with three or more calls increasing the odds of successful cessation compared to minimal interventions or when compared to pharmacotherapy alone.

The California Smoker's Helpline was the first statewide quitline in the nation, serving smokers starting in 1992. States began adding quitlines to their tobacco-control programs in growing numbers in the early 2000s. By 2004, a total of 38 states, representing just over 80% of the U.S. population, had established quitlines. Other organizations at the local and national level have also invested in quitlines, including the Great Start quitline for pregnant smokers funded by the American Legacy Foundation, quitlines operated by healthcare delivery systems for their enrollees, and the National Cancer Institute's Cancer Information Service.

The North American Quitline Consortium (NAQC) was established in 2004 to bring together health departments, quitline service providers, researchers, and national organizations in the United States and Canada to achieve the following goals: (1) maximize the access, use, and effectiveness of quitlines; (2) provide leadership and a unified voice to promote quitlines; and (3) offer a forum to link those interested in quitline operations. Later that year, it conducted its first survey of quitlines in the United States. This paper is the first to describe the organization, financing, promotion, and cost of every state quitline in the United States based on that survey.

Methods

In June 2004, the NAQC surveyed the 50 states and the District of Columbia to obtain baseline information about the organization, financing, promotion, and cost of state quitlines in the United States. The goal of the survey was to develop state-specific quitline profiles and to share information with states and the U.S. Department of Health and Human Services before its launch of a new federal quitline network initiative. The survey instrument was adapted from a survey developed by the Centre for Behavioural Research and Program Evaluation, University of Waterloo, with funding from HealthCanada.[10] Questions were modified and added to reflect the perspective of the United States. The survey was co-sponsored by the NAQC and the Association of State and Territorial Health Officials, and was funded by the American Legacy Foundation. The Tobacco Technical Assistance Consortium provided database and analytical support.

The NAQC contacted state tobacco-control program directors in May 2004 by e-mail to alert them to the upcoming survey. The survey instrument was also e-mailed to the states to allow the tobacco-control program directors time to begin to collect the necessary data. In June 2004, the NAQC e-mailed the state tobacco-control program directors to formally request that they complete the survey using a web-based survey program (Zoomerang, San Francisco CA, 2004).[11] Nonresponders were contacted by telephone and e-mail and asked again to complete the survey. Data collection was completed in July 2004. All but one state responded to the survey (50/51, 98% response rate).

The data were entered into a SAS database by staff at the Tobacco Technical Assistance Consortium (SAS Institute, Cary NC, 2005). Data were entered twice; states were contacted by e-mail or telephone if a response was unclear. States also verified their state-specific data prior to analysis. The database was converted to an SPSS database for analysis (SPSS Inc., Chicago IL, 2005). Two project staff independently coded open-ended questions, and results were compared for consistency. Differences in coding were resolved by the coders reviewing the output together and choosing the most appropriate category for the response. The data were analyzed in fall 2005 through spring 2006.

U.S. Census data (2004 estimates) were used in combination with survey data to calculate per-capita expenditures.[12] Adult smoking prevalence data from 2004 were used in combination with census estimates and survey data to calculate per-smoker expenditures.[13]

Results

Results are limited to the states responding affirmatively when asked if they provided quitline services at the time of the survey. On May 31, 2004, 38 states reported that they provided quitline counseling services (Figure 1). States reported that the primary aim of the quitline was to provide cessation-counseling services (65.8%) and comprehensive cessation services including counseling and medications (29.7%). The remaining 5.4% of respondents either did not respond or selected "other" as a primary aim.

Figure 2 delineates the year in which state quitline services began. As depicted, the number of state quitlines almost doubled in calendar year 2000, and doubled again in calendar year 2001. State government was the most commonly reported funder of quitlines (89.5%), followed by the federal government (10.5%), nongovernmental organizations (5.3%), and charitable foundations (5.3%); 21.2% of states reported other funders (e.g., insurance companies, employer organizations). The percentages exceed 100% because multiple responses were allowed. Over three quarters

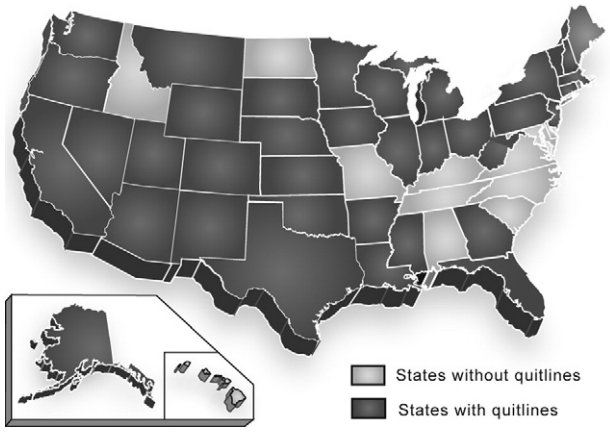

Figure 1. States with quitlines, May 31, 2004. (As of November 2004, all states had access to quitline services.)

(76.3%) of respondents indicated that one organization funded their quitline, 15.8% indicated two or more organizations funded their quitline, and 7.9% offered no response. The most commonly reported (39.5%) organizations responsible for providing quitline services were nongovernmental organizations under contract with a state government (e.g., American Cancer Society, Center for Health Promotion [now known as Free and Clear]); healthcare institutions (26.3%); universities (13.2%); local, state, or federal government (10.6%); and other (10.4%).

Table 1 lists median and per-capita operating and promotional budgets and ranges for quitlines in 2004. Table 1 also includes a calculation of per-smoker costs for quitline operations and quitline promotion. In an effort to quantify the cost for services provided, the median cost per call was calculated using annual call volume data and operating cost data for 2003 for states that reported these data (2003 is the most recent year comparable data were available; data on promotion costs were not included in this calculation). The median cost per call was $98.52 (range $5.76 to $341.61, n=25). The most commonly reported source of funding for state quitlines was Master Settlement Agreement funds (68.4%), other state funds (21.1%), tobacco tax revenues (15.8%), or no state funds (7.9%). These percentages exceed 100% because multiple responses were permitted for this item. The majority of state quitlines are funded by a single funding source (89.5%), 7.9% of respondents reported two funding sources, and 2.6% reported three funding sources.

Services provided by quitlines are summarized in Table 2. The three most commonly reported services were self-help materials (97.4%), proactive counseling (89.5%), and referral to other services (89.2%).

Other findings (not tabulated) noted that 31.2% of states offer services to all smokers regardless of stage of change or readiness to quit, 31.2% reported offering services to callers ready to quit within 30 days or less, and 13.2% reported that callers must be ready to set a quit date, but did not specify a time period. "Other" and nonresponses comprised the remaining 23.8% of responses (e.g., providing counseling only to persons without insurance or those with Medicaid coverage). States also reported providing counseling to special populations, including pregnant smokers (73.7% of respondents), racial/ethnic or other priority populations (70.3% of respondents), youth aged 12 to 17 (42.1% of respondents), and the uninsured (71.1%). Only 21.1% of respondents reported that they provided cessation medications at no cost. Quitline services are offered in multiple languages, with 57.2% of respondents indicating that Spanish-language services were provided and 28.9% of respondents reporting that services were available in multiple languages through a language line or translation service.

Quitline promotional methods are listed in Table 3. The three most commonly reported promotional methods were brochures or fact sheets (97.4%), posters or flyers (94.7%), and radio advertising (94.6%). Almost 87% of states reported using television advertising to promote their quitline. States reported several different entities that were responsible for developing quitline promotional strategies, including state organizations (56.8%), funding organizations or partners (40.5%), the quitline via outsourcing to a commercial agency (36.1%), and the quitline through in-house staff (35.1%). Over half (56.8%) of respondents indicated that developing promotional strategies for the quitline was part of the state's comprehensive tobacco strategy (data not tabulated). The percentages exceed 100% as states were asked to identify all entities that develop quitline promotional strategies.

Several indicators were used to measure quitline promotional strategies, including call volume (100%), asking how callers heard about the quitline (91.9%), the source of referrals (78.4%), tracking calls from specific groups such as the underserved or diverse populations (64.9%), media coverage (51.4%), the percent of the target population reached (51.4%), and population awareness of the quitline (48.6%) (data not tabulated). The percentages exceed 100% as states were asked to identify all indicators used to measure promotional strategies.

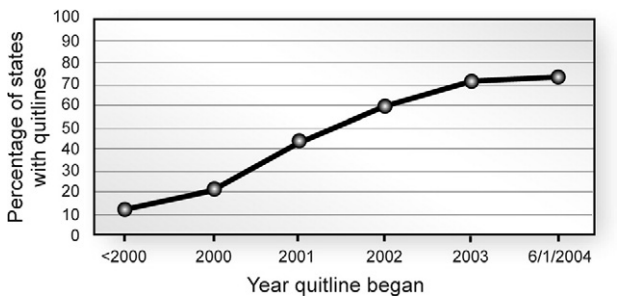

Figure 2. Cumulative percentage of states with quitlines.

Table 1. Quitline funding and costs

	2004 median funding (range)	2004 median per capita cost (range)	2004 median per adult smoker cost (range)	2003 median cost per call (range)
Quitline operations (n=35)	$500,000 ($45,000–$3,800,000)	$0.14 ($0.01–$1.10)	$0.85 ($0.05–$6.06)	$98.52 ($5.76–$341.61) ($n$=25)
Quitline promotions (n=33)	$325,000 ($0–$3,750,000)	$0.09 ($0–$1.08)	$0.68 ($0–$10.04)	

Discussion

These findings represent an initial description of the organization, financing, promotion, and cost of state quitlines in the United States. As of May 31, 2004, nearly 75% of states and the District of Columbia provided quitline services, covering just over 80% of the U.S. population. Quitlines are typically funded by state governments, and Master Settlement Agreement funds are the most commonly reported funding source within states. There is a relatively high degree of congruence among the services most commonly provided by quitlines (e.g., self-help materials, proactive counseling, referrals to other services, and the ability to speak with a counselor during set hours of service). States use a variety of strategies to promote their quitlines, and typically evaluate their promotional efforts by measuring call volume, asking callers how they heard about the quitline, and tracking referral sources. Of interest is that over half of the states reported that quitline promotional strategies are part of the state's comprehensive tobacco-control strategy, possibly indicating a growing degree of integration of quitline services into state tobacco-control efforts. While the survey asked states to report whether they had goals for the reach of the quitline and the types of evaluations conducted (e.g., satisfaction surveys, outcome evaluations), reach rates and results of such evaluations were not collected.

Quitlines represent an extraordinarily modest expense for states that provide these services. The median annual per-capita cost for providing quitline services was $0.14 ($n$=35 states) and $0.09 for quitline promotional activities (n=33 states). When annual per adult smoker costs were calculated, these costs increased to $0.85 for operations and $0.68 for promotion. The Centers for Disease Control and Prevention (CDC) estimates that the total economic cost of smoking (excess medical expenditures, lost productivity, and smoking-attributable neonatal expenditures) is $3931 per smoker per year.[14] Given the proven effectiveness of quitlines, a modest investment in this population-wide cessation service, coupled with promotional strategies that drive smokers to use this service, has the potential to result in considerable cost savings to states through reduced Medicaid expenditures and other healthcare costs for smoking-attributable illnesses, as well as increased productivity. Unfortunately, tobacco-control efforts remain under-funded relative to the disease burden resulting from tobacco use. In the

Table 2. State quitline services[a]

	Percentage
Mailed information or self-help resources	97.4
Proactive quit-smoking counseling	89.5
Referral to other services (quit-smoking group programs, professional services)	89.2
Speak with a counselor during set hours of service	81.6
Reactive quit-smoking counseling	62.2
Recorded messages	57.9
Web-based information	36.8
E-mail messages	21.1
Provision of quit-smoking medication at no cost	21.1
Speak with a counselor at any time (available 24 hours)	21.1
Provision of quit-smoking medication at low cost	16.2
Web-based interactive counseling	16.2
Group cessation programs	2.7
Other	23.7

[a]States without quitlines were excluded from the analysis. Multiple responses were permitted.

Table 3. Quitline promotion methods, 2004

Methods[a]	Percentage
Print materials (brochures, pamphlets, fact sheets)	97.4
Posters, flyers	94.7
Radio	94.6
Liaison with health professionals or community groups	86.8
Television	86.8
Newspaper	86.5
Website	84.2
Outreach (presentation to groups)	78.9
Outdoor advertising/transit advertisement	71.1
Worksite campaigns	65.8
Phone directory	44.7
Special events	44.7
Journal/magazine	36.1
School campaigns	28.9
Contests	15.8
Other	26.3

[a]States without quitlines were excluded from the analysis. Multiple responses were permitted.

current fiscal year (FY06), only four states met or exceeded the CDC's minimum recommended funding levels for state tobacco-control programs.[15]

In 2003, the median cost per call for quitline services was determined to be $98.52 (range $5.76 to $341.61). This cost reflects all calls to the quitline, which not only includes calls from smokers seeking assistance in quitting smoking, but also typically includes a small number of calls from healthcare providers or community members seeking information to help patients or loved ones. This estimate is limited to the 25 states that provided both operating budget information and call volume information for 2003. The cost estimate does not include promotional budget information. We anticipate that future surveys will allow us to calculate a more robust estimate of cost per call and potentially, cost per quitter.

Researchers have evaluated smoking-cessation interventions and found them to be cost effective.[16–18] We are unaware of cost-effectiveness studies of U.S. quitlines. Tomson et al.[19] published a cost-effectiveness analysis of the Swedish quitline, finding the cost per quitter to be $1052 to $1360 (in 2002 U.S. dollars). Further research is needed to measure the cost effectiveness of U.S. quitlines.

These findings provide researchers and policymakers with a baseline description of state investment in quitlines. These findings can also assist in understanding whether a new $25 million/year federal initiative, the National Network of Tobacco Cessation Quitlines, has an impact on state programs. This network, an initiative of the U.S. Department of Health and Human Services, was first announced in February 2004 and implemented later that year. The National Cancer Institute provides and maintains a national portal number, 1-800-QUITNOW, that connects callers with the quitline in their states; and the CDC provides grants to the states to either build capacity to begin offering quitline services (if a state did not have an existing quitline) or to enhance existing quitline services (if a state had a quitline). In addition, cessation-counseling services are provided through the National Cancer Institute's Cancer Information Service as a safety net until all states are able to develop their own quitlines. As a result of this initiative, all states now have access to quitline services. Since these data were gathered before the CDC awarded grants to the states as part of this initiative, future research can help determine whether the new federal funds supplant existing state resources for quitlines or serve as a catalyst to enhance state outlays in support of quitline services.

Limitations

First, only state quitlines were included; quitlines operated by health insurers, employer groups, or other organizations were not included in the sample. Second, the initial North American Quitline Consortium survey was not designed for research purposes; rather, it was used to obtain information from the states about their quitlines to share with the states and the Department of Health and Human Services before the National Network of Tobacco Cessation Quitlines initiative was fully implemented. The 2005 North American Quitline Consortium survey, which was fielded in October 2005, addressed some of these limitations by adding definitions and structuring the instrument to facilitate more complete and accurate reporting.

Since 1990, states have increasingly chosen telephone quitlines as a population-based strategy of choice to foster smoking cessation. Initial experience suggests that these services can be provided for a modest investment of state resources. It remains to be seen whether the recent infusion of federal financial support, through the National Network of Tobacco Cessation Quitlines, achieves its mission of expanding the reach and effectiveness of state quitlines so that more American smokers can access these services and successfully quit.

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