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10 Million Calls and Counting: Progress and Promise of Tobacco Quitlines in the United States

MC Fiore,

University of Wisconsin Center for Tobacco Research and Intervention

TB Baker

University of Wisconsin Center for Tobacco Research and Intervention

In 2019, an unheralded but remarkable milestone was achieved – the National Quitline Network (1–800-QUIT NOW) received its ten millionth call¹. This evidence based treatment, available in all 50 states and US territories, has helped millions of smokers since its inception. The history of the development of this population-based approach to reducing tobacco use deserves recounting and analysis as it provides both a model for implementing other bold public health actions and clues to how quitlines can have even greater impact. This commentary in this theme issue of the *American Journal of Preventive Medicine* describes the establishment of the United States Tobacco Quitline Network, reviews the current status and effectiveness of state-based quitlines, and explores the potential of quitlines to accelerate the elimination of tobacco use in the United States.

Establishing the National Tobacco Cessation Quitline Network

In 2002, the Secretary of the U.S. Department of Health and Human Services (HHS), Tommy Thompson, established the Subcommittee on Cessation, the first and only subcommittee of the HHS Interagency Committee on Smoking and Health. Secretary Thompson challenged the subcommittee to develop recommendations to markedly increase rates of tobacco cessation in the United States. Amongst its 10 key recommendations, the subcommittee proposed that HHS establish a National Tobacco Quitline Network – a single nationwide 1–800 portal providing uniform access to the state quitlines in existence at that time. The National Tobacco Quitline Network now provides telephone cessation services to individuals in all states and territories, ensuring universal access to this evidence-based treatment option. This nationwide effort was launched in 2004 with funding from the United States Centers for Disease Control and Prevention (CDC) and the National Institutes of Health via the National Cancer Institute, which together contributed approximately \$50 million in initial funding for 1–800-QUIT NOW.

Quitlines Today

State Quitlines share core characteristics that have advanced the chief goal set by Secretary Thompson: to increase tobacco cessation in the United States. They are science-based and

research over the past two decades shows that quitlines consistently increase a smoker's likelihood of successfully quitting. A United States Public Health Service Clinical Practice Guideline meta-analysis in 2008² documented that quitlines increased overall quit rates by about 60% when compared to minimal counseling, no counseling, or self-help. Further, these analyses showed that effectiveness was further enhanced when FDA approved smoking cessation medications were also provided to callers. Finally, quitlines are highly cost-effective^{3,4}. In fact, their cost-effectiveness compares favorably with other population-based strategies such as digital interventions, as well as hypertension and cholesterol control strategies.

The effectiveness of quitlines may arise from their capacity to efficiently deliver the key elements of evidence-based treatment for smoking, as recommended by the 2008 PHS Clinical Practice Guideline for Tobacco Use and Dependence and reinforced in the 2020 Report of the Surgeon General⁵. Such treatment involves the contributions of trained counselors who, in most states, coordinate the provision of FDA approved pharmacotherapy, the combination of counseling and pharmacotherapy has been shown to be both effective and cost-effective⁶.

Quitlines are not only effective and cost-effective, they have extraordinary reach into the smoking population as there are few barriers to their use: they typically require no travel, no insurance, and are free to the user. These advantages have led about half a million callers to contact the quitline each year⁷. These features also make them especially accessible to populations that have a high smoking prevalence and that have a dearth of other smoking treatment options: i.e., individuals living in poverty, those who have psychiatric diagnoses such as substance use disorders, and those who are uninsured.

The population impact of quitline treatment has been very successfully enhanced by media campaigns that have markedly increased calls to the quitline^{8,9}. Tips From Former Smokers® (“Tips®”), the CDC’s national media campaign launched in 2012, has been especially effective in motivating smokers to call the quitline^{10,11}. Analyses of Tips® have demonstrated strong evidence of quitting, with excellent return on investment. Such success is no doubt due, in part, to the quitline’s single, nationwide portal (1-800-QUIT NOW). Importantly, underserved populations can be targeted by such national media campaigns^{10,12}, resulting in enhanced quitline contacts by such populations¹³. Thus, the combination of barrier free, easy access, and targeted promotional activities likely accounts for quitlines’ extraordinary reach into populations that are typically medically underserved; 50% or more of callers to the quit line are uninsured or receive Medicaid^{14,15}.

The reach and effectiveness of quitlines reflects their funding support. There is a clear correlation between funding of quitline services and promotion on the one hand and quitline use on the other. While federal support of the quitlines has been ongoing, funding by states has varied across time and states. Research shows that states that boosted funding for quitline services and promotion (e.g., New York, Maine)^{14,16}, typically saw substantial increases in call volume, sometimes rising to 3% to 5% or more of adult cigarettes smokers per year versus an average of 1% nationwide¹¹. However, the converse is also the case; when quitline funding decreases, call volume and quitline use declines. In addition to funding that

supports quitline services and promotion, other tobacco control policy actions also affect quitline utilization. For example, in Wisconsin, two approximately contemporaneous actions markedly increased quitline utilization; viz. a substantial increase in the state cigarette excise tax and enactment of a comprehensive statewide smoke-free indoor air law¹⁷. In the first three months of 2008 following the implementation of these policies, the quitline received over 30,000 calls. Previously, calls had averaged 10,000 across an entire year. This reinforces the message conveyed by other evidence: the public health impact and reach of quitlines can be dramatically enhanced by funding and policy actions⁵.

Quitlines' ubiquitous availability and absence of barriers allow them to serve multiple roles in tobacco use treatment¹⁸, including serving as important 'treatment extenders' in healthcare settings. About 75% of adult cigarette smokers have at least one primary care healthcare visit in any given year¹⁹ and quitlines can provide a referral option when clinical staff are reluctant or unable to intervene themselves extensively with patients who smoke. Ideally, the quitline should be offered with complementary support from clinical staff such as medication or follow-up counseling and medical management. Finally, in recent years, the quitlines have served as conduits to additional, diverse forms of tobacco treatment that are offered by quitline providers. These include websites and text-based interventions, which many state quit lines make freely available.

Innovations and the Future of Quit Lines

While quitlines already play a vital role in tobacco treatment, reaching an estimated half a million cigarette smokers in the United States each year, they have the potential to play an even bigger role in reducing tobacco use, costs, and disparities. Fax referral has been widely used to link patients who smoke with quitlines in healthcare settings, however, recent research indicates that quitline referral and use is enhanced by newly developed electronic health record (EHR)-based referral methods ("eReferral"), which can increase quitline referrals 3–6-fold^{20,21}. Moreover, eReferral systems such as interoperable closed loop feedback return quit line treatment outcomes to referring healthcare systems and clinical personnel via EHR messages^{21,22}. Such innovations serve to more fully integrate quitline treatment with the patient's ongoing healthcare. Minimally, this serves to remind busy clinicians to follow up and address a patient's tobacco use. Strategies such as warm handoffs (i.e., in which a healthcare clinician contacts the quitline and connects a patient directly to its services during a healthcare visit)²³ also appear to increase patients' engagement in quitline services²¹. In sum, more widespread implementation of eReferral and warm handoff strategies can further drive quitline utilization and reduce tobacco use prevalence and harms.

Quitlines also present a tremendous research opportunity. As demonstrated in this theme issue of the *American Journal of Preventive Medicine*, because quitlines can effectively engage underserved, priority populations, they offer the opportunity to develop and evaluate the effectiveness of tailored interventions for different sub-groups of tobacco users, including nondaily smokers, dual users of cigarettes and e-cigarettes, youth, underserved smokers, and e-cigarette users. In addition, because many quitlines offer multiple forms of intervention, they offer the opportunity to use factorial experiments²⁴ to determine which

combinations of treatment resources (e.g., quit line counseling, websites, text messaging, social media, adjuvant cessation medications) work best for which users.

While existing quitline treatment is certainly cost-effective and clinically effective, evidence shows that they could have a greater population-based impact with expanded funding for both quitline research and, in particular, quitline treatment services. As noted previously, communication campaigns can greatly increase quitline use^{7,8}, including use by priority populations with limited tobacco treatment options (e.g., the poor, the least educated, and those with comorbid psychiatric and substance use diagnoses)². Such populations tend to have high smoking prevalence and to suffer disproportionate harms from smoking. Thus, additional targeted communication campaigns would be an important means of addressing widening and refractory tobacco related disparities. In addition, research shows that increasing the intensity or service provision of quitline treatment can meaningfully enhance effectiveness; e.g., using combination nicotine replacement therapy instead of monotherapy increases long-term abstinence rates²² as does using 3 or more counseling calls versus fewer². States, however, have frequently been forced to limit the comprehensiveness of their quitline services, including the number of counseling calls, typically because of budget constraints²⁵.

Quitline treatment pays high health and economic dividends to tobacco users, health insurers, and society at large. Over the last 15 years, countless individuals have sought out this treatment resource, generating over 10 million quitline calls. Yet, quitlines still reach only about 1% of individuals who smoke in the United States, which is unfortunate given that the means of increasing quitline reach are known and highly feasible. Quitlines are certainly a resource that merits continued and enhanced support at the national and state levels to bring more evidence-based treatment services to individuals who smoke and want to quit.

References

1. Centers for Disease Control and Prevention. 1–800-Quit-Now: 15 years of helping people quit 2019. <https://www.cdc.gov/tobacco/features/quitlines/15th-anniversary/index.html>. Accessed 14 April 2020.
2. Fiore MC, Jaen CR, Baker TB, et al. Treating tobacco use and dependence: 2008 update. Rockville, MD: U.S. Department of Health and Human Services, U.S. Public Health Service; 2008.
3. Hollis JF, McAfee TA, Fellows JL, Zbikowski SM, Stark M, Riedlinger K. The effectiveness and cost effectiveness of telephone counselling and the nicotine patch in a state tobacco quitline. *Tob Control*. 2007;16 Suppl 1:i53–59. [PubMed: 18048633]
4. Fellows JL, Bush T, McAfee T, Dickerson J. Cost effectiveness of the Oregon quitline “free patch initiative”. *Tob Control*. 2007;16 Suppl 1:i47–52. [PubMed: 18048632]
5. Fiore MC, Adsit R, Baker TB. Clinical-, system-, and population-level strategies that promote smoking cessation. In: *Smoking cessation - A Report of the Surgeon General*. Atlanta, GA: US Department of Health and Human Services, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention, Office on Smoking and Health; 2020:577–640.
6. Wilson DK, Lorig K, Klein WMP, Riley W, Sweeney AM, Christensen A. Efficacy and cost-effectiveness of behavioral interventions in nonclinical settings for improving health outcomes. *Health Psychol*. 2019;38(8):689–700. [PubMed: 31368753]

7. Schauer GL, Malarcher AM, Zhang L, Engstrom MC, Zhu SH. Prevalence and correlates of quitline awareness and utilization in the United States: an update from the 2009–2010 national adult tobacco survey. *Nicotine Tob Res.* 2014;16(5):544–553. [PubMed: 24253378]
8. Guide to Community Preventive Services. Using the Community Guide. 2019. <https://www.thecommunityguide.org/about/using-community-guide>. Accessed 14 April 2020.
9. U. S. Department of Health and Human Services. Smoking cessation: a report of the Surgeon General. Atlanta, GA: 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; 2020.
10. Duke JC, Davis KC, Alexander RL, et al. Impact of a U.S. antismoking national media campaign on beliefs, cognitions and quit intentions. *Health Educ Res.* 2015;30(3):466–483. [PubMed: 25976009]
11. McAfee T, Davis KC, Alexander RL Jr., Pechacek TF, Bunnell R. Effect of the first federally funded US antismoking national media campaign. *Lancet.* 2013;382(9909):2003–2011. [PubMed: 24029166]
12. Davis KC, Alexander RL Jr., Shafer P, Mann N, Malarcher A, Zhang L. The dose-response relationship between tobacco education advertising and calls to quitlines in the United States, March–June, 2012. *Prev Chronic Dis.* 2015;12:E191. [PubMed: 26542143]
13. SHiFT Incorporated. STEPP/Adult Cessation Annual Project Report: Colorado QuitLine TV Campaign with John Lynch and Kyle Johnson. Denver, CO: SHiFT Incorporated; 2007.
14. Swartz SH, Cowan TM, Klayman JE, Welton MT, Leonard BA. Use and effectiveness of tobacco telephone counseling and nicotine therapy in Maine. *Am J Prev Med.* 2005;29(4):288–294.
15. Campaign for Tobacco-Free Kids. Quitlines help smokers quit. 2017. <https://www.tobaccofreekids.org/assets/factsheets/0326.pdf>. Accessed 14 April 2020.
16. Mann N, Nonnemaker J, Chapman L, Shaikh A, Thompson J, Juster H. Comparing the New York State Smokers' Quitline reach, services offered, and quit outcomes to 44 other state quitlines, 2010 to 2015. *Am J Health Promot.* 2018;32(5):1264–1272. [PubMed: 28805074]
17. Sheffer MA, Redmond LA, Kobinsky KH, Keller PA, McAfee T, Fiore MC. Creating a perfect storm to increase consumer demand for Wisconsin's Tobacco Quitline. *Am J Prev Med.* 2010;38(3 Suppl):S343–346. [PubMed: 20176306]
18. MD Anderson Cancer Center. UT MD Anderson study shows new approach connecting smokers to quit lines increases smoking cessation treatment enrollment. 2013. <https://www.mdanderson.org/newsroom/ut-md-anderson-study-shows-new-approach-connecting-smokers-to-qu.h00-158827278.html>. Accessed 14 April 2020.
19. King BA, Dube SR, Babb SD, McAfee TA. Patient-reported recall of smoking cessation interventions from a health professional. *Prev Med.* 2013;57(5):715–717. [PubMed: 23872172]
20. Jenssen BP, Muthu N, Kelly MK, et al. Parent eReferral to tobacco quitline: a pragmatic randomized trial in pediatric primary care. *Am J Prev Med.* 2019;57(1):32–40. [PubMed: 31122792]
21. Fiore M, Adsit R, Zehner M, et al. An electronic health record-based interoperable eReferral system to enhance smoking Quitline treatment in primary care. *J Am Med Inform Assoc.* 2019;26(8–9):778–786. [PubMed: 31089727]
22. Adsit RT, Fox BM, Tsiolis T, et al. Using the electronic health record to connect primary care patients to evidence-based telephonic tobacco quitline services: a closed-loop demonstration project. *Transl Behav Med.* 2014;4(3):324–332. [PubMed: 25264471]
23. Richter KP, Faseru B, Shireman TI, et al. Warm handoff versus fax referral for linking hospitalized smokers to quitlines. *Am J Prev Med.* 2016;51(4):587–596. [PubMed: 27647059]
24. Collins LM, Baker TB, Mermelstein RJ, et al. The Multiphase Optimization Strategy for engineering effective tobacco use interventions. *Ann Behav Med.* 2011;41(2):208–226. [PubMed: 21132416]
25. North American Quitline Consortium. Quitline Profiles 2020. <http://map.naquitline.org/>. Accessed 15 April, 2020.