

Sustained Investment in Health: Alabama Tobacco Quitline's Mission to Save Lives (and Dollars)

**PREPARED FOR
THE ALABAMA DEPARTMENT OF PUBLIC HEALTH
2024**

**By:
Sarah T. Dunlap
The Institute for Social Science Research
University of Alabama**

Executive Summary

In its most recent year serving the Alabama community, the Alabama Tobacco Quitline has provided a substantial return, both in dollars saved and lives improved, on the financial investment that makes its services to the state population possible. The Quitline's current activities and outcomes represent progress, even when compared to the success seen throughout the previous decade (Dunlap & McCallum, 2021; Dunlap & McCallum, 2015). As indicated in prior reports, the Quitline continues to be a successful program, saving lives as well as (vastly) more dollars than are spent to run the program, by reducing the negative health effects of tobacco use. The long-term outcomes of improved health and productivity that can be attributed to tobacco cessation translate into healthcare and economic cost savings by former tobacco users, the healthcare and government systems that support them, and industries that employ them.

In 2023, Alabama's Quitline enrolled approximately 2,130 participants, with a quit rate of 35.2% among participants who were successfully contacted for an independent follow-up survey six months after enrolling, and an intent-to-treat (ITT) quit rate (based on total number of enrollees) of 17.6%. At its current capacity, in a year's time, Alabama's tobacco quitline program helps approximately 367 tobacco users quit smoking. These successes save an estimated \$4.7 million per year in recouped medical and productivity expenses.

When this success is compared to the cost of the program, the return-on-investment (ROI) for funding the Quitline ranks high nationally. The cost of providing Alabamians with quitline services in this recent program year was \$1,023,003, amounting to just over one-fifth (approximately 22%) of the annual savings realized by the program. The reported ROI for other state-run tobacco prevention and control programs typically ranges from \$1 to \$4 saved for every dollar spent. Thus, Alabama Quitline's annual ROI of \$4.63 saved per \$1 spent is greater than the savings reported by most other similar programs.

Continuing to fund and expand the Quitline is in the best interest of the state of Alabama and its population. It is estimated that more than 8,600 tobacco users die each year in Alabama from tobacco-related causes (Campaign for Tobacco-Free Kids, 2024) and thousands more suffer from smoking-related illnesses. These deaths and illnesses also have a financial cost, an estimated \$7.8 billion in 2023. Tobacco quitlines are among the "best practices" proven to reduce the harms caused by smoking and other tobacco product usage, saving \$4,739,071 in Alabama in the currently reported period. As such, providing this service and encouraging its use is advantageous for the state and its people. Specifically at this time, augmentation of Quitline promotion is needed to amplify its impact.

Sustained Investment in Health: Alabama Tobacco Quitline's Mission to Save Lives (and Dollars)

Evaluating the success of Alabama's state-run tobacco cessation Quitline has become a regular, periodic practice over the past ten years, with previous examinations of its successes consistently revealing the program's value (Dunlap, McCallum, & Murphy, 2015; Dunlap & McCallum, 2021). With Alabama ranked 10th among US states for adult smoking prevalence (CDC, 2022), resulting in 8,600 deaths annually and costing approximately \$2.2 billion per year in healthcare costs alone (Campaign for Tobacco-Free Kids, 2024), reducing tobacco use should undoubtedly be a priority. Previous reports summarizing Quitline outcome data reflect the impressive quit rates resulting from Alabama residents' utilization of Quitline services, as well as the monetary return-on-investment for program funding. The current examination provides a recent snapshot of similar success seen throughout the service period encompassing calendar year 2023, utilizing caller outcome data gathered six months following program completion. This documentation of Quitline outcomes details the monetary costs of the program, the observable health outputs that result, and the financial return facilitated by these in the form of substantial dollars saved by Alabama residents and the systems that surround and support them. Taken together these outcomes illustrate, for program users and other stakeholders and decision makers, the value of the Quitline to the state not only in terms of its ability to support Alabamians in their efforts to improve their health, but also in terms of how successfully a preventative healthcare effort can reap monetary benefits as well.

Alabama's Quitline: The Investment

In addition to its pervasive and well-known health effects, tobacco use is additionally a heavy financial burden to its users, their state governments, health insurers, and employers, as well as members of their communities (Dunlap & McCallum, 2019), while causing more than 480,000 deaths per year nationwide. Therefore, effective state-run quitlines are valuable, both in terms of how many lives they save every year by helping tobacco users quit, and in terms of the dollars saved by tobacco users and the systems that surround and support them. Alabama's telephone and web-based tobacco Quitline has a history of success in its mission to provide cessation services to tobacco users who wish to quit (Dunlap & McCallum, 2015; Dunlap & McCallum, 2021).

Throughout 2023, the Alabama state-run Quitline operated with a total one-year budget for administration and operations of \$1,023,003, much of which was provided by CDC grant funding and Medicaid reimbursement. The majority of these costs represent those incurred by the Quitline vendor (Information and Quality Healthcare; IQH) for materials, counseling, and nicotine replacement therapy (NRT) medications provided directly to program participants. The remaining

funds support the state management of Quitline data, promotional media costs, and evaluation of program outcomes. On average, this equates to slightly more than \$85,250 per month of the Alabama Department of Public Health’s Tobacco Prevention and Control Program budget. Costs per user, calculated by dividing the annual cost of the program by the annual number of enrollees (approximately 2,130), are approximately \$480.

| Alabama Quitline Costs per User | |
|---------------------------------------|--------|
| Average cost per enrolled participant | \$ 480 |

Alabama’s Quitline: Success Rates

The effectiveness of a tobacco quitline can be estimated utilizing data from follow-up surveys completed by program participants after completion of the program. For Alabama’s Quitline, IQH employs follow-up satisfaction surveys by contacting willing program participants six months after their enrollment in the program. These surveys gauge not only participants’ satisfaction with the program itself, but also the success of their quit attempts following receipt of its services. Not all potential participants can be reached; therefore, reported quit rates are considered rough estimates, as they represent only a sample of the Quitline participant population. For the purposes of this report, Alabama Quitline outcome data for callers who enrolled in the program in the one-year period between January and December of 2023 were examined. Quit rates of these callers were gathered during the six-month satisfaction survey following this period and thus represent data collected between July 2023 and June 2024. At follow-up, program participants were asked if they had “smoked any cigarettes or used other tobacco, even a puff or pinch, in the last 30 days.” Those responding “no” to this question are considered a successful quit. The follow-up survey data also include information concerning each individual’s participation in telephone coaching sessions, as well as whether or not they received NRT.

The table below presents data on quit rates for these six-month follow-up telephone surveys. The intent to treat (ITT) quit rate represents the quit percentage based upon the number of callers who agreed to be contacted for follow-up surveys (call attempts), regardless of their level of program participation. A small percentage of participants do not agree to follow-up contacts. Because many of the program participants for whom a contact attempt was made could not be reached, the ITT quit rate, which treats these non-contacts as non-quits, is a very conservative metric and likely underestimates the quit rate. Therefore, the responder quit rate, which represents the percentage of program participants who have quit among those who were reached for follow-up, is also important to examine, although it is likely to be an overestimate.

The responder quit rate is the metric recommended by the North American Quitline Consortium for reporting and comparing quit rates.

| Alabama Quitline quit data-July 2023 to June 2024 | | | | | |
|---|---------------|-----------------|-----------------|---------------------|---------------|
| Participant Group | Call Attempts | Callers Reached | Number Who Quit | Responder Quit Rate | ITT Quit Rate |
| All callers | 2084 | 1044 | 367 | 35.2 | 17.6 |

Overall, the ITT quit rate for all call attempts was 17.6 percent and the responder quit rate was 35.2 percent, as a total of 367 tobacco users who called the quit line between July 2023 and June 2024 were tobacco-free six months later, placing Alabama squarely at the U.S mean for state quit rates (range 22-43.3 percent). Results based on this latest analysis reflect consistent success and progress, as the 2021 rates were 15.7% (ITT) and 32.3% (responder), respectively. Current quit rates for Alabama’s quitline also place it well above the North American Quitline Consortium target of 30% (NAQC, 2023). This is good news for the state, with a caveat: despite excellent success rates, reduction in the volume of callers to the Quitline over time has resulted in a smaller *number* of tobacco users who have quit compared to past reporting periods. Specifically, NAQC call volume metrics indicate that fewer residents called the Alabama Quitline in 2023 (total callers = 14,796) than in any of the previous eight years. These statistics indicate that while the services provided by the Quitline are well implemented and effective, greater promotion of these services is needed to increase public awareness of the program’s efficacy and drive greater call traffic.

Alabama’s Quitline: The Return

Smoking-related healthcare costs and productivity losses in Alabama totaled nearly \$7.8 billion in 2023 (Campaign for Tobacco Free Kids, 2024). Data reported above represent the financial costs of maintaining Alabama’s state-run tobacco Quitline and the number of tobacco users who make use of the Quitline to quit smoking or using other tobacco products. To estimate the cost savings of investing substantial funds in a cessation program such as a quitline, the dollar amounts associated with the healthcare and lost productivity costs incurred by smokers and other tobacco users over and above what would be expected for non-smoking individuals must be considered. These costs represent savings, in dollar amounts, which can be expected as a result of a successful cessation program. Such estimates should include savings that affect not only individual tobacco users and their families, but also the larger communities to which these individuals belong.

For instance, estimates of the annual medical costs for individual smokers, over and above what would be expected for a non-smoker, have been calculated by numerous sources for numerous populations. These dollar amounts are not necessarily a direct burden to smokers themselves, but to the health care systems and the state and local governments that are responsible for covering the costs of their members' and constituents' health care expenses. Based on a recent analysis estimating these expenditures for each U.S. state, the dollar amount for direct medical expenses per person in 2023 attributable to tobacco use, was approximately \$3,023 (McCann, 2024). The same analysis calculated the estimated productivity losses per smoker as well and concluded that an additional \$9,890 in income and investments was lost per person due to smoking-related illness. In combination, financial losses attributable to smoking each year (per smoker) equal \$12,913. With an estimated 618,100 current smokers residing in Alabama, the overall total comes to well over \$7 billion in healthcare and lost productivity costs per year (CTFK, 2024). These numbers, when compared to the per smoker cost of Quitline administration of \$2,787 tallied above, illustrate the monetary value of the program.

Return-on-Investment (ROI) Estimates for Alabama's State Quitline

When choosing whether to invest in a tobacco cessation program, it is advantageous for states to consider not only the health and life improvements that result when tobacco users quit, but also the financial return on the state's monetary investment in the program. Return-on-Investment (ROI) is an economic measure used to compare the value of a program to the costs associated with implementing it. ROI can be calculated by dividing the financial benefit (return) of the state's investment by the cost of the investment. Published ROI for state-run tobacco prevention and control programs is generally between \$1 and \$4 saved for every \$1 spent (Campaign for Tobacco Free Kids, 2013).

To calculate the ROI for Alabama's Quitline, the information that is needed includes a) the effectiveness of the program (or how many users successfully quit tobacco use); b) how many dollars will be saved in health care costs and productivity indices for each successful quit; and c) the administrative and implementation costs of the program. As detailed above, Alabama's Quitline has an annual intent-to-treat quit rate of 17.6 percent and a responder quit rate of 35.2 percent during the period examined. This represents a total of 367 individuals who quit their tobacco use during a one-year period or 30.6 quits per month. This number is based only on those reached for the follow-up call, yielding a conservative estimate of the total number of successful quits. In other words, there were *at least* 367 Quitline participants who quit smoking within that time; among those who could not be contacted and those who did not consent to be called, there were most likely additional unreported successful quits. The cost per reported quit can be calculated by dividing the total annual cost of the program (\$1,023,003) by the estimated number

of successful quits per year (367), yielding \$2,787 per reported quit for the one-year period examined.

| Alabama Quitline Costs per Quit | |
|--|----------|
| Average cost per successful quit at 6 months | \$ 2,787 |

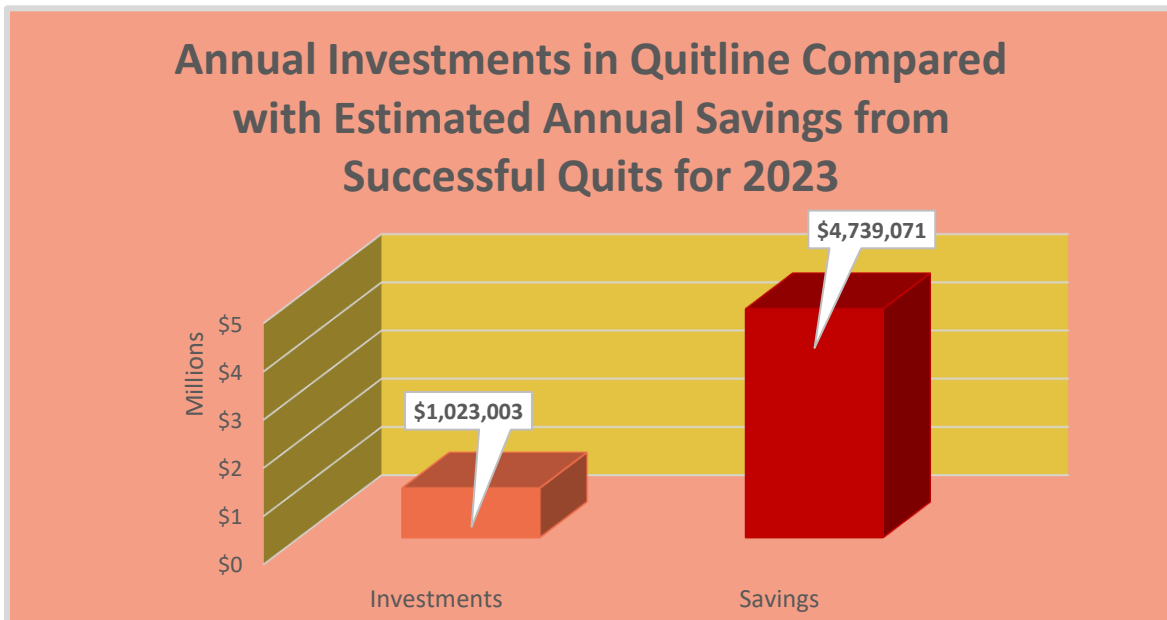
As detailed above, each Alabama smoker who quits represents an annual health care cost savings of approximately \$3,023 per year, as well as \$9,890 in productivity savings for a total amount of \$12,913 that could accrue per year for every smoker who quits. Given these numbers, it can be estimated that Alabama’s Quitline, which helps approximately 367 tobacco users quit in a given year, will save the state and its residents an average of \$4,739,071 per year, just in health care costs and regained productivity associated with major medical issues and deaths. Clearly, while not all Alabama tobacco users call the Quitline for help, the number of callers who do quit translates to a significant cost savings for each year following those quits. By comparison, the cost of offering the service seems negligible.

| Annual Costs and Savings for Alabama’s Tobacco Quitline 2023 | | | |
|--|--------------|---------------------------------------|--------------|
| Annual Costs | | Annual Savings | |
| Total program costs per year | \$ 1,023,003 | Total savings from enrollees who quit | \$ 4,739,071 |
| Cost per quit | \$ 2,787 | Savings per quit | \$ 12,913 |
| Cost per enrollee | \$ 480 | Health care cost savings | \$ 3,023 |
| | | Productivity loss savings | \$ 9,890 |

Using the budget period roughly aligned (fiscal year 2023) with the above detailed user data, the return-on-investment can be calculated, with recent annual costs of operating Alabama’s Tobacco Quitline totaling approximately \$1,023,003 (\$2,787 per successful quit), and future estimated annual savings of approximately \$4.7 million (\$12,913 per successful quit). For the one-year period examined, \$4.63 will be saved annually in medical and productivity costs for every \$1 that was spent on Alabama’s Quitline. This places the Quitline well above the ROI range (\$1-\$4; average \$3 saved per dollar spent) for tobacco prevention and control programs reviewed by the Campaign for Tobacco Free Kids (2013), among other sources (U.S HHS, 2020).

While these numbers are positive, encouraging signs for the efficacy of Alabama’s Quitline services, of note is the *decrease* in the *number of callers* to the Quitline in recent years. For instance, following increased CDC funding for Quitline expansion and a promotional push in 2015, call volume rose to an annual peak of 34,248 calls in 2017 and an annual average call volume throughout that 5-year funding period of 28,019. Most importantly, these volume metrics are reflected in the number of quits noted in previous return-on-investment reports from 2015 (quits

= 380) and 2021 (quits = 602) as compared to the 2023 data (quits = 367), as well as in the higher ROI amounts made possible when more tobacco users access and utilize Quitline services. For instance, the ROI reported in 2021 was \$7.57 saved per dollar spent, comparatively higher than the current ROI of \$4.63.



Amounts and calculations reviewed thus far have reflected the most straightforward data in the simplest terms. Fully examining all aspects of the return on investment for Alabama’s (or any) Quitline necessarily involves considering the more long-term outcomes of the program, as well as those that can easily be quantified within a single snapshot of time, such as a one-year period. For example, some smokers who quit will relapse, reducing the savings that would be expected in the long run if all quitters continued to abstain from tobacco use. According to previous research (Hughes, Peters, & Naud, 2008), a 10 percent relapse rate for those who have quit at the six-month follow-up can be expected within one year of cessation. Applying additional declining relapse rates over a seven-year period, when the rate falls to 1 percent or less (Krall, Garvey, & Garcia, 2002), the number of successful Alabama Quitline users for whom data is reported here who can be expected to permanently abstain from tobacco falls from 367 to 290.

Additionally, long-term examination of cost savings that result from smoking cessation reveals how savings accumulate throughout each former smoker’s lifetime. It takes an average of about seven years for full annual savings to be achieved (O’Donnel & Roizen, 2011), but after that point, these savings of health care costs and productivity losses will be realized each year of each former smoker’s life. That is, in the seven-year period following a quit, annual cost savings increase from year 1 (\$1,845), to years 2 (\$3,689), 3 (\$5,534), 4 (\$7,379) and so on until, by year 7 the full annual

savings (approximately \$12,913) is achieved, and the accumulated savings per former smoker equals \$51,652. The annual savings of \$12,913 continues in the years that follow.

If these two adjustments for expected relapse and gradual savings are both made to the ROI calculation, the return is somewhat reduced; however, the complete cost of treatment will be recouped during the second year following the successful quits of the individuals receiving services in the current cohort. All health care and productivity savings after that are positive returns on investment. By the end of the second year, annual savings (\$1.72 million) exceed the initial investment (\$1,023,003). By the seventh year, the accumulated savings would be \$15.47 million or \$15.13 for every \$1 spent in the year treatment was received. The annual savings in Year 7, when further relapse is minimal and annual savings have reached the full level, would be \$3.74 million, with an annual ROI of \$3.65 per \$1 spent in the treatment year. Thus, this more conservative approach also yields an ROI that is at the higher end of the typical range for state tobacco prevention and control programs.

Conclusions

It is by now inarguable that Alabama's state-run Quitline has sustained its successes over time, leading to long-term results both as a healthcare resource and an excellent economic investment. As reviewed above, Alabama's 1-800-QUIT-NOW program facilitates the efforts of approximately 367 tobacco users who quit smoking each year, likely improving their health and prolonging their lives, while saving the state of Alabama in excess of \$4.74 million per year, well above and beyond the cost of the program. Based on regular, periodic reviews of its successes, the Alabama Quitline has proven itself to be a positive, sustained investment in the health of Alabamians. And augmented promotion of this successful service would also amplify its impact.

References

Campaign for Tobacco-Free Kids. (2024). The Toll of Tobacco in Alabama.

<https://www.tobaccofreekids.org/problem/toll-us/alabama>

Campaign for Tobacco-Free Kids. (2013). State Tobacco Prevention and Cessation Programs Save Money. <http://www.tobaccofreekids.org/research/factsheets/pdf/0370.pdf>

Centers for Disease Control and Prevention; CDC. (2022). Tobacco Product Use Among Adults-United States, 2020, Morbidity and Mortality Weekly, 71, 397-405.

<https://www.cdc.gov/tobacco/php/data-statistics/adult-data-cigarettes/>

Dunlap, S.T. & McCallum, D. (2021). Investment in Health Update: Alabama's Tobacco Quitline Continues to Save Lives (and Dollars). Tuscaloosa, AL: Institute for Social

Science Research, University of Alabama. Available at
<https://www.alabamapublichealth.gov/tobacco/quitline.html>

Dunlap, S. T. & McCallum, D. (2018). Update: The Burden of Tobacco in Alabama, 2019. Tuscaloosa, AL: Institute for Social Science Research, University of Alabama. Available at
<https://www.alabamapublichealth.gov/tobacco/assets/tobaccoburdenreport2019.pdf>

Dunlap, S. T., McCallum, D.M., & Murphy, S. M. (2015). Investment in Health: How Alabama's Tobacco Quitline Saves Lives (and Dollars). Tuscaloosa, AL: Institute for Social Science Research, University of Alabama. Available at
https://www.alabamapublichealth.gov/tobacco/assets/Quitline_ROI_report_Final1215.pdf

Hughes, J.R., Peters, E.N., & Naud, S. (2008). Relapse to smoking after 1 year of abstinence: A meta-analysis. *Addictive Behaviors*, 33(12), 1516-1520.

Krall E.A., Garvey, A.J., Garcia, R.I. (2002). Smoking relapse after 2 years of abstinence: Findings from the VA Normative Aging Study. *Nicotine and Tobacco Research*, 4(1), 95-100.

McCann, A. (2024, January 10). The Real Cost of Smoking by State (2024). WalletHub. July 25, 2024 from <https://wallethub.com/edu/the-financial-cost-of-smoking-by-state/9520>

North American Quitline Consortium (2023). FY23 Annual Survey of State Quitlines: Results. K. Mason, editor. <http://www.naquitline.org/page/2023survey>

O'Donnell, M.P., & Roizen, M.F. (2011). The SmokingPaST Framework: Illustrating the impact of quit attempts, quit methods, and new smokers on smoking prevalence, years of life saved, medical costs saved, programming costs, cost effectiveness, and return on investment. *American Journal of Health Promotion*, 26(1), e11-e23.

Stead L, Hartmann-Boyce, J., Perera R, & Lancaster T. (2013). Telephone counseling for smoking cessation. *Cochrane Database of Systematic Reviews*, 8. Available at
<http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD002850.pub3/full>

United States Department of Health and Human Services (U.S. HHS). (2020). Smoking Cessation: A Report of the Surgeon General. <https://www.cdc.gov/tobacco-surgeon-general-reports/reports/2020-smoking-cessation/index.html>