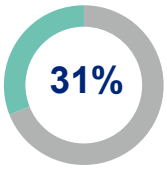
Missouri Tobacco Quitline Stakeholder Report



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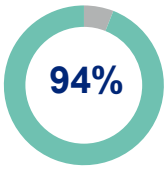
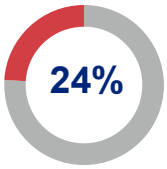
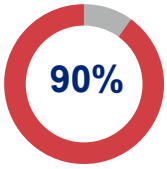


of multiple-call program participants would recommend the program to other tobacco users



of Web-Only program participants were quit 7 months after receiving treatment



of Web-Only program participants would recommend the program to other tobacco users

What is included in this document?

This document presents an overview of tobacco cessation services provided to Missourians through the Missouri Tobacco Quitline (MOQL). It includes national and state-level statistics on tobacco use; research on tobacco control efforts; data on demographics, tobacco use history, and program utilization for MOQL participants; and the results of the 7-month post-registration follow-up survey that assessed outcomes for the census of eligible MOQL phone program, Web-Only program, and Individual Services participants.

What is the Missouri Tobacco Quitline?

The MOQL provides empirically supported telephone- and web-based tobacco cessation coaching to all Missourians, including cessation medication support and education, nicotine replacement therapy (NRT), integrated Web Coach®, a Web-Only program, text messaging support, printed materials, and referral to community resources.

Why is the Quitline needed?

Over one in six adults in Missouri (17.8%) are current smokers,[1] and more than half (51.0%) of these smokers make a quit attempt in the course of a year.[2] The MOQL provides an easily accessible, free resource for those trying to quit.

What is the evidence for Quitline effectiveness?

Tobacco users who use Quitline services are 60% more likely to successfully quit compared to those who attempt to quit without help.[3,4,5] The United States Community Preventative Services Taskforce recommends quitline interventions based on 71 study trials of telephone counseling that show their effectiveness.[6]

How do we ensure continued success of the program in Missouri?

Missouri currently funds state tobacco control programs at only 3.3% of nationally recommended levels.[7] At last reporting, the funding was at 3.0%. The state should consider continuing to increase current funding levels to ensure the success of the Quitline and other tobacco control efforts. Additionally, the American Lung Association chapter in Missouri has called for elected officials to increase taxes on all tobacco products.[7] A portion of the resulting tax revenue could be earmarked for the MOQL.

Is the Quitline cost-effective?

An estimated $2.91 was saved in Missouri in medical expenditures, lost productivity, and other costs for every $1 spent on the Quitline and tobacco cessation media.

Who uses the Quitline?

- 54% enroll in a phone program
- 36% enroll in the Individual Services program
- 64% female
- 22% Black or African American
- 71% White
- 19% do not have a high school diploma or GED
- 53% live with a chronic health condition
- 63% live with a behavioral health condition
- 43% between ages of 41 and 60
- 65% with annual household income under $20,000

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Tobacco use in Missouri

"The epidemic of smoking-caused disease in the twentieth century ranks among the greatest public health catastrophes of the century, while the decline of smoking consequent to tobacco control is surely one of public health's greatest successes."

— US Department of Health and Human Services[8]

- In 2020, **17.8 % of adults in Missouri were current smokers, making Missouri's smoking prevalence one of the highest in the nation—only 15 states have higher rates.**[1,9] This translates to around 853,097 adult tobacco users in the state.[10] Approximately 11,000 Missourians adults die each year from smoking.[9]
- Approximately **6.5% of youth** in Missouri currently smoke. Each year, approximately 1,900 youth in the state start smoking.[9]
- **Smoking costs Missouri over $3.03 billion annually in health care expenditures**.[9] Nationally, it is estimated that smoking-caused health costs and productivity losses is $31.08 for each pack of cigarettes sold.[11]
- **Missourians who do <u>not</u> smoke are impacted** by tobacco use. The Centers for Disease Control and Prevention (CDC) estimates that 25.2% of nonsmokers are exposed to harmful secondhand smoke, increasing the risk for smoking-attributable illnesses.[12]
  - While this percentage dropped dramatically between 1988 and 2014, there are notable disparities in exposure. Children, non-Hispanic Blacks, persons living below the poverty level, and persons living in rental housing still face high secondhand smoke exposure rates.[12]
  - In the United States, secondhand smoke costs approximately $1.9 billion per year in healthcare costs for adults[13] and around $63 million per year in emergency room visits for children.[14]
- The American Lung Association's 2022 State of Tobacco Control Report **rated Missouri's policies on tobacco prevention and cessation funding, tobacco taxes, smoke free air, and flavored tobacco products an 'F'**.[7]
  - Missouri's excise tax on cigarettes was last increased in November of 1993.[15] At only $0.17 per pack, it is far below the national average of $1.91 and the lowest in the nation.[16] **Raising this tax is one of the most effective ways to reduce smoking, especially among youth**.[17] The Community Preventative Services Task Force recommends tobacco taxes as a method to increase the cost of tobacco as part of a comprehensive tobacco control strategy.[18] **The U.S. Surgeon General's report released in January 2020 reinforces these findings**.[19]

Missouri's high smoking prevalence and related costs underscore the importance of smoking cessation programs in improving the lives and health of Missourians.

Quitline research – What is the evidence base for state quitlines?

"Tobacco use treatment has been referred to as the 'gold standard' of health care cost-effectiveness."

— US DHHS, Clinical Practice Guideline: Treating Tobacco Use and Dependence[3]

Quitlines

- **Available in every state**
- **Proven to help tobacco users quit**
- **Best outcomes with multiple sessions + NRT**
- **Remove barriers**
- **Cost-effective**

- Quitting smoking reduces a person's risk for numerous chronic health conditions and premature death, with greater benefits the younger a person quits.[20] Quitting smoking before age 40 cuts a person's risk of dying from smoking by about 90%.[21]
- Extensive research and meta-analyses have proven the efficacy and real-world effectiveness of tobacco quitlines.[3,4,5,6]
  - **Tobacco users who receive Quitline services are 60% more likely to successfully quit** compared to tobacco users who attempt to quit without assistance.[3]
  - **Tobacco users who receive medications and quitline counseling have a 30% greater chance of quitting** compared to using medications alone.[3]
- State quitlines **eliminate barriers** that may be present with in-person cessation interventions because they are free to callers, often available evenings and weekends, convenient, provide services that may not be available locally, and reduce disparities in access to care.[22]
- The Community Preventative Services Taskforce has concluded that quitlines are cost-effective based on a review of 27 studies.[6]
- Three strategies have been proven to be especially effective in promoting Quitline use:[6]
  - Wide-reaching health communications campaigns through channels such as television, radio, newspapers, and cigarette pack health warning labels that provide tobacco cessation messaging and the Quitline phone number.
  - Offering tobacco cessation medication and nicotine replacement therapy through the Quitline.
  - Referral to the Quitline by a health care provider.

Assuring Quitline Service Best Practices for Missourians

The Missouri Tobacco Quitline is **operated and evaluated in line with North American Quitline Consortium (NAQC) best practices**. Since the Quitline's inception in 2005, Missouri has selected Optum as its Quitline service vendor.

Optum specializes in behavioral coaching to help people identify health risks and modify their behaviors so they may avoid or manage chronic illness and live longer, healthier lives. Five large federal and state-funded randomized clinical trials have demonstrated the effectiveness of Optum's tobacco cessation program.[23,24,25,26,27]

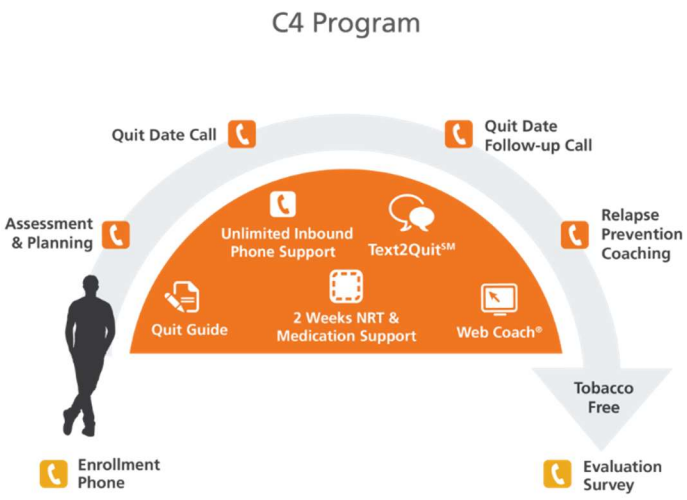
Additional vendor qualifications:

- More than 30 years of experience providing phone-based tobacco cessation services.
- Provision of tobacco cessation services to 23 tobacco quitlines (21 states, Washington DC, and Guam) and more than 750 commercial organizations (76 in the Fortune 500).
- Participant in national tobacco control and treatment policy committees and workgroups.
- Quit Coach® staff complete more than 200 hours of rigorous training and oversight before speaking independently with participants.

Quitline services are culturally appropriate, available 24 hours per day, 7 days per week, and incorporate evidence-based strategies for tobacco dependence treatment as outlined in the USPHS Clinical Practice Guideline, Treating Tobacco Use and Dependence: 2008 Update.[3]

Phone-based tobacco cessation services:
For non-commercially insured callers:

- **One-call (C1) tobacco cessation program**
  - Initial coaching session with Quit Coach® staff.
- **Four-call (C4) tobacco cessation program** for all callers ready to quit within 30 days
  - Initial coaching session and three additional proactive follow-up calls.
- **Intensive 10-call (C10) program for pregnant tobacco users**
  - Intensive behavioral support tailored to unique needs during pregnancy and including postpartum contact to prevent relapse.
- **Tobacco Cessation Behavioral Health Program (TCBHP)** for Medicaid-insured tobacco users with a behavioral health condition[28]
  - Intensive behavioral support tailored to unique challenges faced by tobacco users with behavioral health condition(s).
  - Program launched on March 18th, 2021.
- **Youth Support Program (YSP) for tobacco users ages 13 to 17**
  - Behavioral support tailored to unique challenges faced by youth tobacco users.



- **All phone participants also have access to web- and text-based tobacco cessation services:**
  - **Integrated Web Coach®**: Interactive, web-based cessation tool designed to complement and enhance phone counseling.
  - **Text2Quit**: Interactive text messaging cessation aid designed to help guide smokers through the quitting process over a 12-month period.

Stand-alone Web Coach® program (Web-Only)

- Online participant application designed to guide tobacco users through an evidence-based process of quitting tobacco.

Individual Tobacco Cessation Services (IS) Program:

- This program offering allows tobacco users to choose which program components they want to use to help them quit tobacco. Participants can choose as many or as few program components as they wish:
  - Text2Quit
  - NRT Starter Kit: 2-week supply of NRT (patch or gum) + NRT follow-up call
  - Printed or digital Quit Guide
  - Coaching emails

Nicotine Replacement Therapy (NRT)

2 weeks of patch or gum

for all C4, C10, Web-Only, and Individual Services participants planning to quit in the next 30 days

8 weeks of patch or gum was available for TCBHP participants from March 18, 2021 until January 30, 2022 (two shipments of a 4-week supply)

Nicotine Replacement Therapy

Nicotine replacement therapy (NRT) is a vital component in a multifaceted approach to tobacco cessation. It is available in several forms, including gum, patches, lozenges, inhalers, and nasal spray. **The U.S. Surgeon General's report released in January 2020 reinforces the following findings.**[19]

- A combination of quitline counseling and medication is particularly effective in treating nicotine dependence. Those who use quitline counseling and medication are 30% more likely to successfully quit than those who use medication alone.[3]
- Using a combination of medications at the same time has also been shown to aid in quitting tobacco, especially for highly dependent smokers.[3] For example, combining a long-acting form of NRT, such as the patch, with a short-acting form like nicotine lozenges or gum is often more effective than using a single form of NRT.
- NRT is often used as an incentive to engage tobacco users with quitline services. Several studies have shown that when quitlines promote free medication for callers, call volume and quit rates increase.[26]

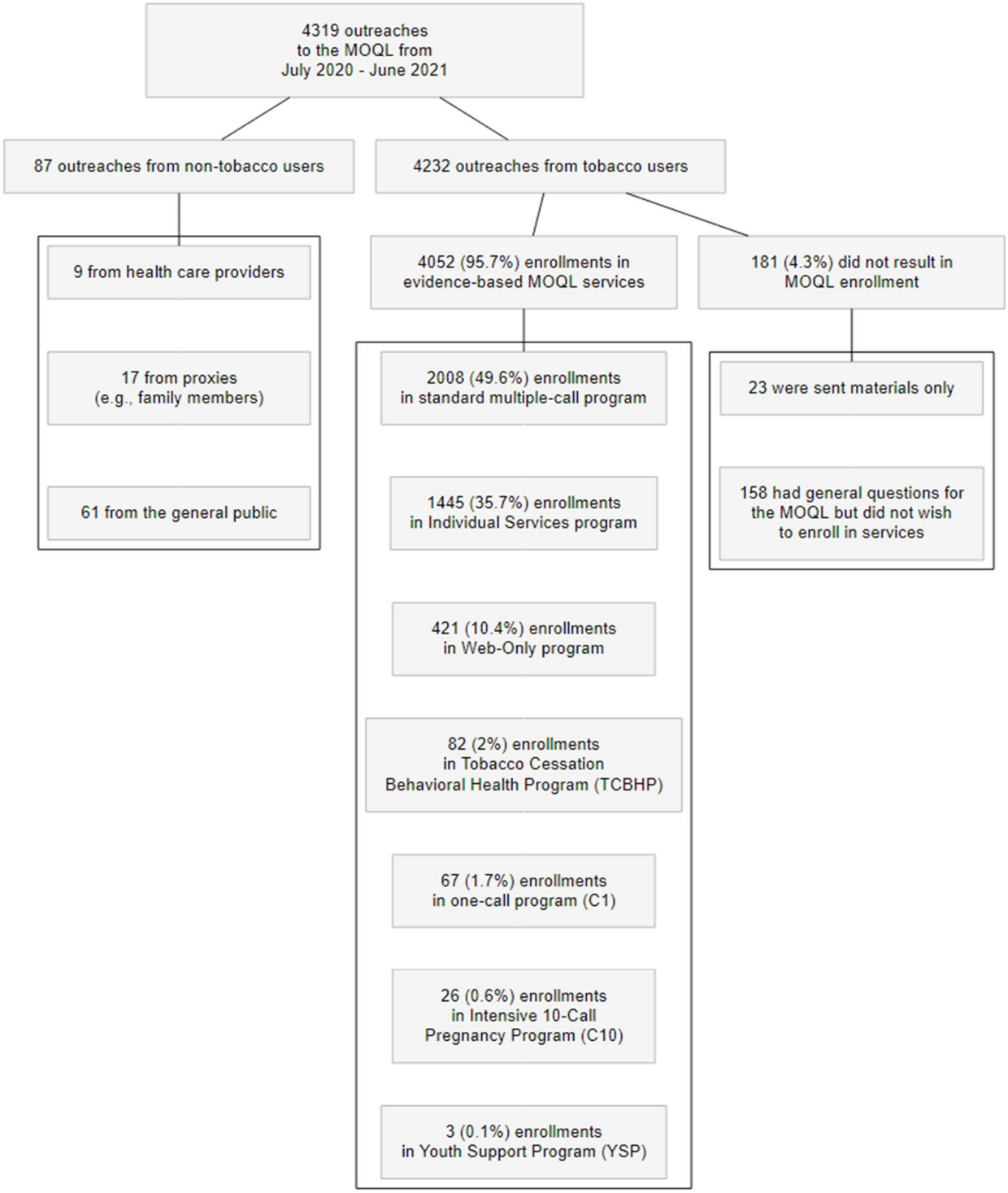
From July 1, 2020 to June 30, 2021 the Missouri Tobacco Quitline offered a 2-week supply of patches or gum to all non-commercially insured participants in the one-call and four-call programs, and to all participants in the pregnancy program, Web-Only program, and Individual Services program.

The Tobacco Cessation Behavioral Health Program (TCBHP) was launched for Medicaid-insured participants on March 18, 2021. From March 18 – June 30, 2021 participants in this program were in eligible for an 8-week supply of either patches or gum, provided in two 4-week shipments.

Among respondents to the follow-up survey at 7 months post enrollment:

- 90% of multiple-call phone program, 83% of Web-Only program, and 94% of Individual Services respondents were sent NRT through the quitline.
- Regardless of whether they were sent NRT through the quitline, 83% of multiple-call phone program respondents, 84% of Web-Only program respondents, and 83% of Individual Services respondents reported having used any tobacco cessation medications to help them quit.
- NRT patches were the most commonly reported medication used (66% of multiple-call phone program, 68% of Web-Only program, and 65% of Individual Services respondents). The second most commonly reported medication for all programs was NRT gum (31% of multiple-call phone program, 26% of Web-Only program, and 30% of Individual Services respondents).
- Multiple-call phone program and Individual Services respondents who were sent NRT through the MOQL were more likely to be satisfied with the MOQL services (94% vs. 69%, $p < .0001$ for multiple-call phone, and 89% vs. 60%, $p < 0.01$ for Individual Services)

Who contacts the Missouri Tobacco Quitline?



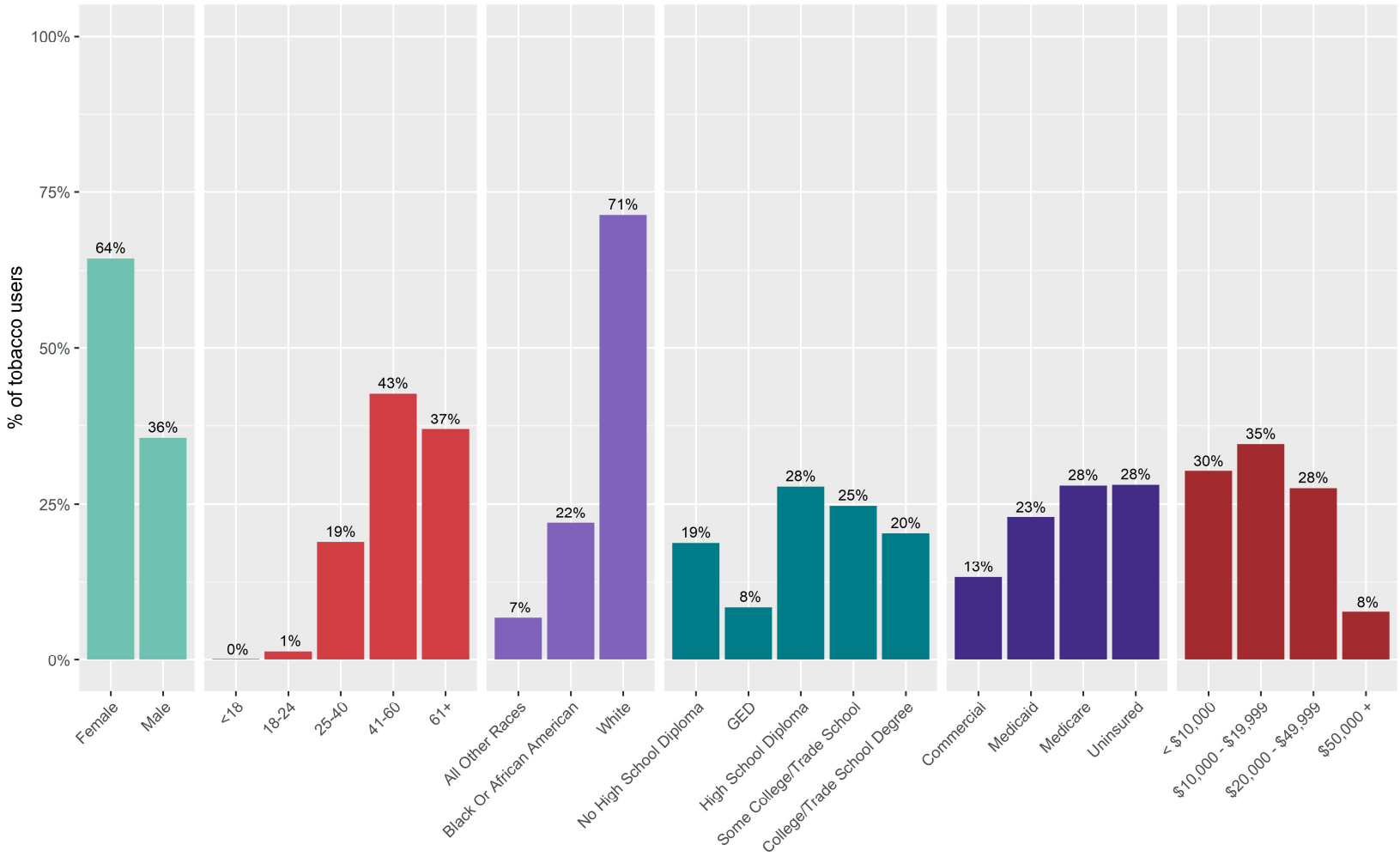
The figure above represents all outreaches to the MOQL in 2020/2021 for enrollment or other services. For individuals who reached out and/or enrolled in Quitline services multiple times, every outreach is included.

Who enrolls in Missouri Tobacco Quitline services?

During FY 2020/2021 (July 2020 to June 2021), there were a total of 4,052 enrollments into either a phone-based program, Web-Only program, or the Individual Services program. Of those total enrollments, 1,856 were *unique* individuals who enrolled in a phone-based program, 418 were *unique* individuals that enrolled in the Web-Only program, and 1,438 were *unique* individuals who enrolled in the Individual Services program. The difference in total enrollments versus unique individuals is due to some participants choosing to re-enroll in services for additional support.

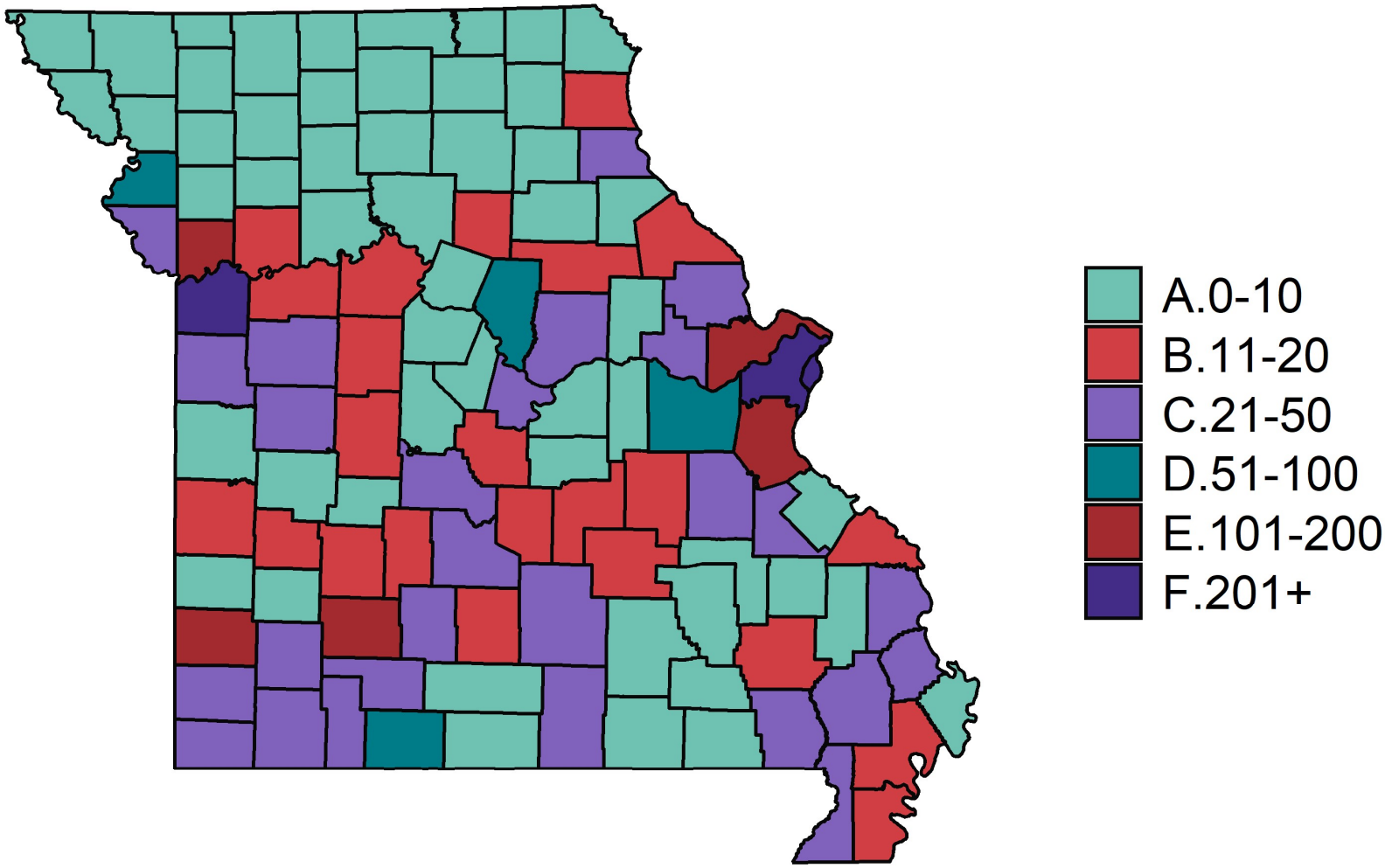
- Over six out of ten participants were female (64%); the majority (80%) were over age 40.
- The Quitline serves tobacco users who may have limited access to other resources:
  - 51% of enrollees were either uninsured (28%) or Medicaid-insured (23%).
  - 19% did not have a high school diploma or GED.
  - 30% of those who provided an income level reported a yearly income of less than $10,000.
- The MOQL also serves tobacco users whose health status is especially vulnerable:
  - 53% live with at least one chronic health condition, most commonly COPD (34%), asthma (22%), and diabetes (17%).
  - 63% live with at least one behavioral health condition, most commonly depression (45%), anxiety (40%), PTSD (23%), and bipolar disorder (22%).
- Services were provided in English (99.9%) and Spanish (0.05%, 2 participants); translation services were also available for callers who speak other languages.
- Most participants sought help to quit cigarettes (97%), but also cigars (3%), smokeless tobacco (3%), pipes (0.9%), and other tobacco products (11%).
- Over one in ten participants (11%) reported using e-cigarettes or “vaping” at enrollment.
- Over half of the MOQL program participants learned about the Quitline through TV commercials (52%). Other callers learned of the Quitline through a health professional (14%), family or friends (10%), or a website (6%).

Demographics of Tobacco Users Who Enrolled in Quitline Services[1]



[1] Participants who enrolled in the Individual Services program were not asked to provide race or income level during program enrollment.

Constituents served by county of residence



County	Total Served	County	Total Served	County	Total Served	County	Total Served
ADAIR	9	DAVIESS	3	MARIES	5	ST. CLAIR	5
ANDREW	3	DEKALB	4	MARION	31	ST. FRANCOIS	44
ATCHISON	4	DENT	12	MCDONALD	25	ST. LOUIS	741
AUDRAIN	13	DOUGLAS	2	MERCER	3	STE. GENEVIEVE	9
BARRY	28	DUNKLIN	41	MILLER	12	SALINE	14
BARTON	8	FRANKLIN	72	MISSISSIPPI	9	SCHUYLER	2
BATES	7	GASCONADE	8	MONITEAU	7	SCOTLAND	4
BENTON	14	GREENE	154	MONROE	3	SCOTT	25
BOLLINGER	7	GRUNDY	5	MONTGOMERY	8	SHANNON	6
BOONE	53	HARRISON	1	MORGAN	10	SHELBY	8
BUCHANAN	82	HENRY	21	NEW MADRID	15	STODDARD	27
BUTLER	39	HICKORY	8	NEWTON	30	STONE	24
CALDWELL	7	HOLT	4	NODAWAY	7	SULLIVAN	3
CALLAWAY	31	HOWARD	1	OREGON	6	TANEY	56
CAMDEN	28	HOWELL	39	OZARK	6	TEXAS	21
CAPE GIRARDEAU	46	IRON	7	PEMISCOT	18	VERNON	12
CARROLL	5	JACKSON	526	PERRY	14	WARREN	23
CARTER	4	JASPER	127	PETTIS	18	WASHINGTON	23
CASS	44	JEFFERSON	103	PHELPS	20	WAYNE	15
CEDAR	11	JOHNSON	26	PIKE	16	WEBSTER	24
CHARITON	1	KNOX	4	PLATTE	31	WRIGHT	13
CHRISTIAN	31	LACLEDE	27	POLK	20		
CLARK	3	LAFAYETTE	16	PULASKI	19		
CLAY	110	LAWRENCE	27	PUTNAM	4		
CLINTON	9	LEWIS	13	RALLS	4		
COLE	39	LINCOLN	31	RANDOLPH	14		
COOPER	4	LINN	8	RAY	11		
CRAWFORD	16	LIVINGSTON	8	REYNOLDS	2		
DADE	4	MACON	10	RIPLEY	8		
DALLAS	11	MADISON	6	ST. CHARLES	114		

Tobacco Use and Behavioral Health Conditions

Adults with behavioral health conditions (BHC) smoke at higher rates than the general population; in 2016, 34.6% of adults with a BHC were current tobacco users, compared to 23.3% of adults without a BHC.[29] Adult smokers with BHCs also tend to be heavier smokers,[30,31] more nicotine dependent, experience worse nicotine withdrawal, and have more trouble successfully quitting.[31]

Many people with BHCs want to quit and can successfully quit smoking. Contrary to previous popular belief, tobacco cessation appears to enhance outcomes for individuals with BHCs:

- Research indicates that quitting smoking is linked to *decreased* anxiety, depression, and stress, and *increased* quality of life and overall mood—**regardless of whether a person has a BHC**.[32]
- Tobacco cessation interventions with smokers in substance abuse treatment have been associated with a 25% **greater likelihood of long-term sobriety**.[33]
- Among smokers in inpatient psychiatric care, tobacco cessation interventions have been associated with a **lower likelihood of readmission**.[34]

Quitlines have been shown to be an effective resource for those living with BHC in cutting down tobacco use and achieving abstinence, especially when combined with NRT and more intensive treatment.[35] Participants who report a BHC may benefit from additional benefits, such as targeted counseling sessions or additional NRT shipments.

Overall, approximately **63% of MOQL participants reported one or more BHCs**, including depression (45%), anxiety (40%), post-traumatic stress disorder (PTSD; 23%), bipolar disorder (22%), drug or alcohol abuse (13%), attention-deficit/hyperactivity disorder (ADHD; 12%), and schizophrenia (8%).

Among respondents to the follow-up survey at 7 months post enrollment:

- 67% of the multiple-call phone program respondents, 62% of the Web-Only respondents, and 50% of Individual Services[i] respondents reported having one or more behavioral health conditions during enrollment.
- Across all programs, depression was the most common behavioral health condition reported, followed closely by anxiety disorder.

[i] Individual Services respondents were infrequently asked to provide information on chronic conditions or behavioral health conditions during enrollment. The behavioral health outcomes for this program are based on small group of respondents and should be interpreted with caution, as a small number of additional responses can greatly impact current outcomes.

Electronic Nicotine Delivery Systems

"The potential benefit of e-cigarettes for cessation among adult smokers cannot come at the expense of escalating rates of use of these products by youth."

— US Department of Health and Human Services[19]

Electronic nicotine delivery systems (ENDS), also called vapes, e-cigarettes, electronic, or vapor cigarettes, are battery operated devices that vaporize nicotine, flavoring, and other chemicals for a user to inhale. A 2018 report released by the National Academies of Science, Engineering, and Medicine concluded that while e-cigarettes are less harmful than cigarettes, they are not without risk.[36] More research is needed to understand the long-term effects of e-cigarettes and their utility as a potential smoking cessation aid. The January 2020 U.S. Surgeon General report concluded that "**There is presently inadequate evidence to conclude that e-cigarettes, in general, increase smoking cessation.**"[19]

There is particular concern about e-cigarette use among youth and young adults, and in 2018 the Surgeon General declared an epidemic of e-cigarette use among youth.[37] In 2020, almost one in five high school students and about one in twenty middle school students used e-cigarettes, translating to about 3.6 million US youth. Though these rates have decreased since 2019, they are still much higher than just a few years ago: from 2017 to 2020, **e-cigarette use increased by 68% among high school students** (from 11.7% to 19.6%). **While use among middle-schoolers decreased from 10.5% in 2019 to 4.7% in 2020, usage among this population is still greater than in 2017 (3.3%)**.[38,39,40] In addition, the drop in prevalence may be related to the extreme limitations on social situations during the COVID-19 pandemic, and not a true indication of trend.

Research has shown that **e-cigarette companies are using tactics to target youth and young adults**, such as adding flavorings that appeal to kids and using social media campaigns directed at young people.[38] While the FDA issued a ban on flavored e-cigarettes in February 2020, the ban makes significant exceptions on flavored e-cigarette cartridges/pods, specifically. **Flavored nicotine e-liquids, refillable e-cigarettes, and cheap, disposable e-cigarettes are still widely available** in flavors like cool mint, pink lemonade, and gummy bear. In addition, **all menthol-flavored e-cigarettes (including pods) are still available**.[41,42,43] These tactics, loopholes, and the high prevalence of ENDS use among youth and young adults are especially concerning given **research indicating that nicotine exposure may harm brain development in this vulnerable population**.[44]

In 2019, about 10.9 million adults in the United States were e-cigarette users (4.5% of the adult population).[45] Among adults, ENDS use is highest among those aged 18 to 24, and use rates tend to drop off with age.[46] Current cigarette smokers and former smokers who quit within the last year are more likely to use ENDS than the general population.[47,48] However, the rate of current **e-cigarette use among young adults (18-24) who have *never smoked combustible cigarettes* increased significantly** from 1.5% in 2014 to 4.6% in 2018.[46]

MOQL participants were asked about their e-cigarette use at both enrollment and 7-month follow-up. **About 11.1% of all MOQL enrollees reported using e-cigarettes or "vaping" within the 30 days prior to enrollment into the quitline**; use was more common at enrollment among Individual Services (13.3%) and Web-Only (14.3%) participants compared to participants who enrolled into a phone program (9%; $p < .0001$).

Among survey respondents:

- ENDS use was slightly higher among Web-Only program respondents than Individual Services and multiple-call phone program respondents, with 40% of Web-Only program respondents reporting having ever used ENDS compared to 32% of Individual Services respondents and 34% of multiple-call program respondents.
- About 10% of Individual Services respondents, 11% of Web-Only program respondents, and 8% of multiple-call phone program respondents were current ENDS users (used in the last 30 days) at follow-up.

How do we know the Missouri Tobacco Quitline works?

Best practices in quitline evaluation and measurement of outcomes

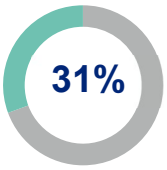
To encourage quality standards and comparability of findings across state quitlines, the North American Quitline Consortium (NAQC) has established a series of recommendations and best practices for the evaluation of tobacco cessation quitlines. These standards include:

- Ongoing evaluation to maintain accountability and demonstrate effectiveness.[49]
- Assessment of outcomes 7 months following callers' enrollment in services, utilizing NAQC methodology and measurement guidelines.[50]
- Reporting of 30-day point prevalence tobacco quit rates (the proportion of callers who have been tobacco-free for 30 or more days at the time of the 7-month follow-up survey) in conjunction with survey response rates.[50]

The Missouri Tobacco Quitline has a strong commitment to evaluation and identifying ways to improve their program to benefit the health of Missourians. Evaluations are designed utilizing strong methodology and adequate sample sizes for confidence and accuracy in outcome estimates. **The findings on the following page include data from the MOQL's eighth annual evaluation and represent 7-month outcome data from a census sample of July 2020 through June 2021 enrollees** who received treatment through the multiple-call phone program (i.e., completed one or more coaching calls), the Web-Only program (i.e. logged in to Web Coach or were sent NRT), or the Individual Services program (i.e., received either NRT, emails, written materials, or the T2Q program). The survey response rates for the multiple-call program, Web-Only program, and the Individual Services program were 26.4%, 27.1%, and 21.3%, respectively.

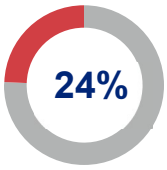
What are the program outcomes?

About 31% of multiple-call phone program respondents, 24% of Web-Only program respondents, and 20% of Individual Services respondents successfully quit. Additionally, continued tobacco users also made important reductions in their use and dependence, increasing their likelihood of future success.



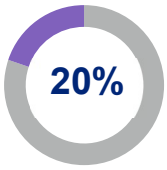
of multiple-call phone program participants were quit at the 7-month follow-up evaluation survey (30-day responder quit rate)

29% were quit from both tobacco and ENDS at 7-month follow-up



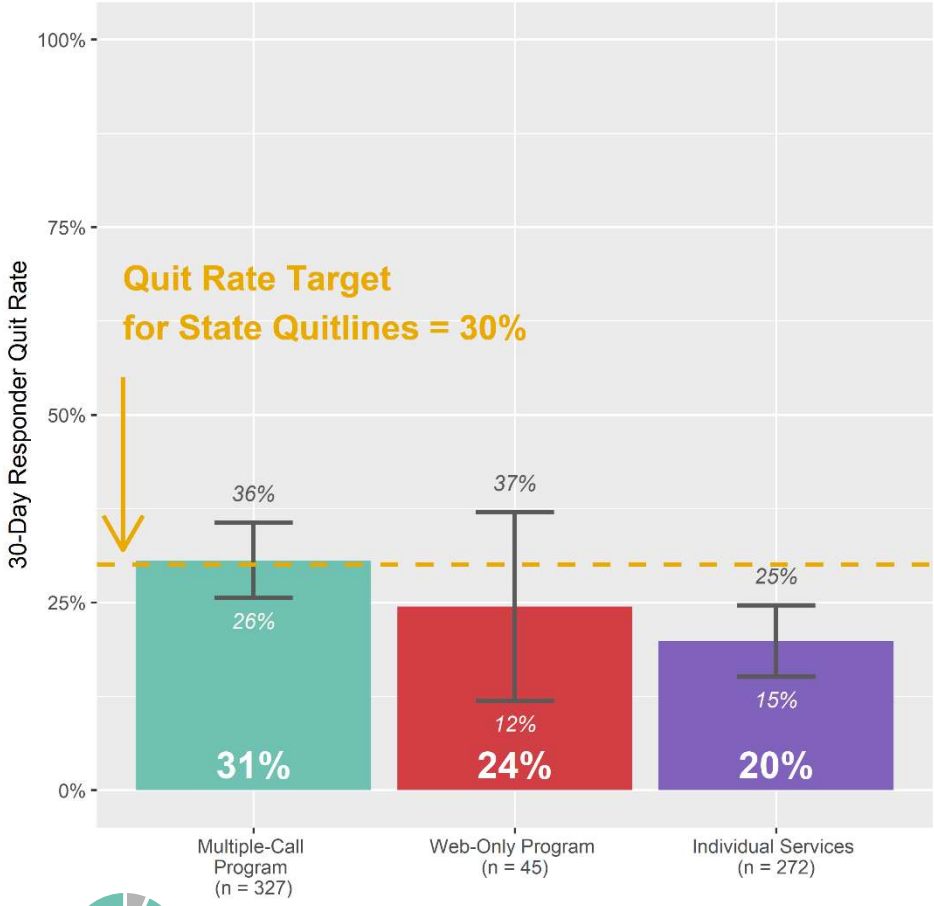
of Web-Only program respondents were quit at the 7-month follow-up evaluation survey (30-day responder quit rate)

19% were quit from both tobacco and ENDS at 7-month follow-up



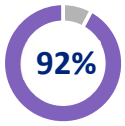
of Individual Services program respondents were quit at the 7-month follow-up evaluation survey (30-day responder quit rate)

18% were quit from both tobacco and ENDS at 7-month follow-up



would recommend the multiple-call phone program to other tobacco users

would recommend the Web-Only program to other tobacco users



would recommend the Individual Services program to other tobacco users

Tobacco Reduction Among Continued Users

Although the goal of the Quitline program is to achieve tobacco abstinence, important health improvements were made among continued tobacco users across programs:

- **Quit attempts:** Since enrolling in the MOQL, the majority of participants had stopped using tobacco for 24 hours or longer because they were trying to quit (86% of multiple-call phone program, 87% of Web-Only program, 78% of Individual Services).
- **Reduction in use:** 65% of multiple-call program, 78% of Web-Only program, and 64% of Individual Services continued tobacco users reduced the number of cigarettes they smoked per day by over half a pack (13 cigarettes for multiple-call, 10 cigarettes for Web-Only program, and 11 cigarettes for Individual Services respondents), on average.
- **Reduction in dependence level:** There was a 33% decrease for multiple-call and a 41% decrease for the Individual Services program in the number of continued smokers who reported smoking their first cigarette within 5 minutes of waking. There was no decrease among Web-Only participants, though the sample was extremely small.
- **Reduction in smoking frequency:** There was a 19% decrease for multiple-call, 19% decrease for Web-Only program, and 16.5% decrease for the Individual Services program in the number of continued smokers who reported smoking every day.

Is the Missouri Tobacco Quitline cost-effective?

Estimated $2.91* saved **in medical expenditures, lost productivity, and other costs** ***for every $1 spent*** **on the MOQL standard multiple-call program, Web-Only program, Individual Services program, and tobacco cessation media.**

Return on Investment (ROI)	
Quit Rate • 30-day respondent quit rate for standard multiple-call phone program respondents	30.6%
• 30-day respondent quit rate for Web-Only program respondents	24.4%
• 30-day respondent quit rate for Individual Services respondents	19.9%
Estimated Total Quit • 30.6% quit rate x total of 1647 unique tobacco users enrolled in the multiple-call phone program received a phone intervention: 504 • 24.4% quit rate x total of 167 unique tobacco users enrolled in the Web-Only program received NRT or logged into Web Coach: 41 • 19.9% quit rate x total of 1239 unique tobacco users enrolled in the Individual Services program received NRT: 247	792
Total $ Saved • Medical expenses (one year):[51] $312 x 792 = $247,104 • Lost productivity:[52] $1,066 x 792 = $844,272 • Worker's compensation:[53] $146 x 792 = $115,632 • Secondhand smoke (one year):[13,14,54] $55 x 792 = $43,560	$1.25 M
Total $ Spent • Total MOQL operating ($429,714)[55] and tobacco cessation media ($0.00)[56] costs	$429,714
Return on Investment • Amount saved per $1 spent on the MOQL (ratio of Total $ Saved / Total $ Spent)	**$2.91**

*ROI calculated in this report is based on the standard multiple-call, Web-Only program, and Individual Services programs (participants who received services from July 2020 – June 2021). The calculations excluded operating costs for the TCBHP program as that was not included in the evaluation. Medical expenses are calculated using the estimated short-term medical savings per quitter for one year from Milliman, Inc. (2006).

In the words of Quitline callers…

"It was so beneficial to me. Anytime I needed anything or was going through something I would just pick up the phone and call. They really gave me good tips to curve the cravings. I think they were calling like once a week."

"They really helped me stay focused on not smoking. I've seen the pictures and the explanations of why I should quit."

"If they want to quit smoking they should call the Missouri Tobacco Quitline"

"It worked well for me, it was a good way to get the patches and it just helped me quit."

"Because it helped me quit. I quit smoking and I am really satisfied."

"Because it really helped me. I didn't think I'd ever be able to quit."

"I felt really supported and that my actions were accounted for through the check ins which really helped me stay on track. I quit so easily with the support of the texts and the patches that were sent were used so sparingly and eventually just quit cold turkey because it was more of just making a new routine which was encouraged by my web coach/texts."

"It was very supportive when I first started to quit. The text reminders were helpful."

"I'm alone, and I'm a loner. [The MOQL] was basically my only lifeline. I know other people that live the same way I do and that would be the best way for them to do it."

"The help I received from the [MOQL] has been invaluable. I did quit, but because of chronic pain, I broke down and started back. But I was able to quit with the help of my phone coaches at your program. I have set another quit date and am hoping that your resources will still be available to me again."

"For anybody trying to stop, it's a program that can help them. There's also good information to help quit."

"So they can get the help they need. The program works and will actually help you stop smoking. The patches were great."

"Because it helps, I actually didn't smoke for 2 weeks, I would recommend the program because the patches really do work if you set your mind to it!"

"Because when I was first talking with the young lady about quitting, the information that she shared with me made me understand why I was addicted. The ingredients and how it effects the brain. It's very frustrating and I'm the kind of person that don't like nothing controlling me. I have relatives that just quit with no medications just by doctors order. They gave me patches, they offered the Chantix also but I just didn't want any medications or anything like that but they offered support, they offer a helpline where you can call in and get help, they offer hands-on, that was a good thing for me too."

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