NORTH AMERICAN QUITLINE CONSORTIUM

Youth Tobacco Cessation Brief

|December 2022|

Introduction

Aim of this NAQC Brief

The aim of this brief is to bring current research-based information on youth tobacco use, state quitline practices for supporting youth in quitting, and issues of importance to the quitline community going forward regarding youth tobacco cessation. This brief is informed by a comprehensive literature review and a North American Quitline Consortium (NAQC) learning community meeting held on July 12th 2022, *Quitline Practices for Youth Cessation*. The learning community aimed to find recommendations for quitlines on youth cessation services, however the available literature and quitline practice did not meet NAQC's criteria for best and promising practices. As a result, this brief serves to provide a literature review and summary of quitline practice while also highlighting areas where additional research is needed in order to identify best practices for quitlines in youth cessation services.

Youth tobacco cessation stands apart from adult tobacco cessation for the quitline community for several reasons, including approaches to outreach and engagement, treatment options (mode of counseling and limitations in using pharmacotherapy), and addressing relapse.

Audience

The intended audience for this brief is all NAQC members and the community interested in expanding their knowledge of youth cessation within quitline environments. This community includes funders (state entities who fund quitline services), service providers (operators of quitlines who develop and deliver services), researchers (those who advance the evidence base and evaluate quitlines), and national organizations (the federal agencies, foundations, and non-profit organizations that support quitlines and help advance their practice).

NAQC's Learning Community Initiative

NAQC began a Learning Community initiative in 2020 to provide a structured forum for quitline funders, service providers, researchers, national partners, and others to exchange experiences and learning on new and emerging areas of quitline practice. Learning Community participants help inform and review NAQC recommendations for best and promising practices for quitlines. The following highlights the Learning Community work from 2020 to present.

2020: The Learning Community initiated work on three focus areas: technology-mediated services, youth cessation, and vaping cessation. In September 2020, NAQC released a foundational Learning Community brief, Evolving Quitline Practices: Technology-Mediated Services, Youth Cessation, and Vaping Cessation and presented a corresponding webinar.

2021: The Learning Community focused on technology-mediated services, with the release of a report in November 2021, Recommended Best and Promising Practices on Technology-Mediated Services for Quitlines, with recommendations for Text, Web and Apps for improving reach,

engagement, and outcomes. Learning Community meetings and a webinar on technology-mediated practices preceded the report.

2022: The first focus has been adult vaping cessation, facilitating a meeting Quitline Practices for Adult Vaping Cessation (May 4th) and issuing recommendations for adult vaping cessation in the report Recommended Best and Promising Practices on Adult Vaping Cessation Services for Quitlines. The second focus has been youth cessation, facilitating a meeting Quitline Practices for Youth Cessation (July 12th) and issuing this brief.

Youth Cessation

Questions of Interest

NAQC developed questions of interest to guide the literature review and development of content for the learning community meeting. This section of the report answers NAQC's questions of interest:

1. What is the prevalence of youth tobacco use?
    a. What is prevalence by tobacco product type (e.g., combustible cigarettes, e-cigarettes)?
    b. What is the prevalence of dual/poly use versus singular use of one product type?
2. What are the major health concerns for youth use of tobacco products?
3. What factors lead to and sustain use of tobacco products among youth and what are motivations for quitting?
4. What are effective services to support youth in quitting tobacco use?
    a. What are effective ways to reach youth and engage them in cessation services?
    b. What is known about off-label use of nicotine replacement therapy and other cessation pharmacotherapy provided to youth with a doctor's prescription?
5. What youth cessation services do state quitlines offer?
    a. Under what circumstances is parental consent required?
    b. What are successes and challenges associated with offering youth cessation services?
6. What are issues of importance for state quitlines in youth cessation moving forward?

Prevalence of Tobacco Use

Table 1 provides tobacco use prevalence data for youth drawn from the nationally representative 2021 National Youth Tobacco Survey (NYTS) of high school and middle school students, showing e-cigarette use as the most commonly used tobacco product.[1] Of students reporting current use of tobacco, close to one-third reported currently using two or more tobacco products (28.4% high school, 32.5% middle school). Overall, 14.2% of students who identified as Lesbian, Gay, or Bisexual reported current tobacco use compared to 7.9% of students who identified as heterosexual. Eighty percent who used a tobacco product reported using a flavored product.

Table 1: Tobacco Use Prevalence Among Middle and high school students, NYTS 2021

	High School	Middle School
Ever used a tobacco product	34.0%	11.3%
Current use of any tobacco product (past 30 days)	13.4%	4.0%
Current users using two or more products	28.4%	32.5%
In the last 30 days used:		
E-cigarettes	11.3%	2.8%
Cigars	2.1%	0.6%

Cigarettes	1.9%	1.0%
Used two or more tobacco products	3.8%	1.3%
Characteristics of those with current tobacco use		
Male	13.0%	3.6%
Female	13.8%	4.4%
White – non-Hispanic	16.2%	3.4%
Black – non-Hispanic	11.0%	4.5%
Hispanic	9.1%	5.3%

Data from the 2019 and 2020 NYTS showed that current e-cigarette use fell from 20.0% in 2019 to 13.1% in 2020 for high school and middle school youth combined.[2] Data from the 2021 survey cannot be compared to previous years' data due to changes in data collection methods.[3]

Health Concerns

Health concerns associated with youth use of tobacco products are well documented and nearly 90% of adult tobacco users start their use before the age of 18.[4,5] The U.S. Surgeon General's Report, The Health Consequences of Smoking—50 Years of Progress, concluded that the evidence is suggestive that nicotine exposure during adolescence, a critical window for brain development, may have lasting adverse consequences for brain development.[6] Furthermore, the report indicates that adolescents appear to be particularly vulnerable to the adverse effects of nicotine on the central nervous system and it is likely that nicotine exposure during adolescence adversely affects cognitive function and development, with the potential for long-term cognitive effects of exposure to nicotine.

The U.S. Surgeon General's website, Know the Risks—E-cigarettes and Young People, describes that the part of the brain that is responsible for decision making and impulse control is not yet fully developed during adolescence and as such, young people are more likely to take risks with their health and safety, including use of nicotine and other drugs.[7] In addition, youth and young adults (up to age 25 years) are uniquely at risk for long-term, long-lasting effects of nicotine exposure to the developing brain including nicotine addiction, mood disorders, and permanent lowering of impulse control; nicotine also changes the way synapses are formed, which can harm the parts of the brain that control attention and learning.[8]

In addition to health concerns surrounding the use of nicotine, there are other concerns associated with smoking. According to the U.S. Surgeon General's Report, Preventing Tobacco Use Among Youths, smoking in youth can reduce lung function, impact lung growth, and impair the cardiovascular system.[9]

A connection between youth mental health and tobacco use is emerging. While youth are drawn to tobacco – particularly e-cigarettes – to reduce feelings of stress, anxiety, and depression, nicotine can worsen these conditions.[10,11] In addition, a subgroup analysis using data from the 2018 National Youth Tobacco Survey showed that youth who started using e-cigarettes in middle school or earlier had significantly higher odds of self-reported serious difficulty concentrating, remembering, or making decisions because of a physical, mental, or emotional condition than youth who started using e-cigarettes in high school.[12]

Factors Leading to and Sustaining Use and Motivations for Quitting

The 2021 NYTS of high school and middle school students provides self-reported data on reasons for first using and currently using e-cigarettes, the most commonly used tobacco product by youth.[13] Table 2 shows that while "I was feeling anxious, stressed or depressed" was the third highest reason given for first using e-cigarettes (23.3%), it was the top reason for current use (43.4%).

Table 2: Top reasons for using e-cigarettes among middle and high school students, NYTS 2021

Reasons for e-cigarette use	First use	Current use
A friend used/uses them	57.8%	28.3%
I was/am curious about them	47.6%	10.3%
I was/am feeling anxious, stressed, or depressed	25.1%	43.4%
To get a high or buzz from nicotine	23.3%	42.8%

The 2021 NYTS also found that 65.3 percent of middle and high school students had seriously thought about quitting the use of all tobacco products, and 60.2 percent had made one or more quit attempts in the past year. A study of user interactions with *This Is Quitting* found common reasons that teens wanted to quit use of e-cigarettes include health (50.9%), financial cost (16.7%), freedom from addiction (12.5%), physical or mental performance (12.4%), and social influence (10.8%).[14]

Analysis of 2017 National Youth Tobacco Survey data included in the U.S. Surgeon General's Report, Smoking Cessation shows that 27 percent of high school youth that tried to quit smoking during the year (61.1 percent of youth reporting current cigarette use reported making a quit attempt) made 10 or more quit attempts during the year.[15] Data on youth quit success is more difficult to find. The U.S. Surgeon General's Report decided not to include quit ratios for youth as the numbers often conflate true quit success and the end of experimentation.[15]

Reaching Youth and Engaging them in Tobacco Cessation

Public Education Campaigns

According to data from the 2021 NYTS, 75.2% of high school and middle school students had heard or seen a public education campaign about tobacco in the past year.[16] The Federal Food and Drug Administration's (FDA) *The Real Cost* campaign aims to prevent youth from starting and continuing to use tobacco products.[17] The campaign has an e-cigarette and cigarette prevention focus and conducts research with teens on an ongoing basis to gain insights about potential campaign messages and ads. The campaign website links youth to resources and information such as the FDA's Vaping Prevention and Education Resource Center, Teen.smokefree.gov, and the Quit Builder Tool. The FDA aimed to reach at least 75% of the target audience 15 times or more per quarter, identified "passion points" for at-risk teens including alternative music, extreme sports, snarky comedy, high-sensory gaming, and science fiction, used a national media buy as well as social media, and engaged communities to manage the social media campaign.[18] A recent study of the impact of the *Real Cost* campaign found that increased levels of exposure to campaign advertising was associated with a significant increase in the odds of reporting agreement with campaign-specific beliefs about the harms of e-cigarette use and cigarette smoking among youth.[19]

In an effort to equip parents to engage their children in conversations about vaping, The American Lung Association and the Ad Council recently launched the campaign *#DoTheVape Talk.* The campaign website Talk About Vaping links parents to information about the health impact of vaping and why teens vape, as well as a conversation guide.

The Campaign for Tobacco Free Kids is a nonprofit organization working in the United States at the national, state, and local levels utilizing strategic communication and policy advocacy campaigns to protect children and save lives from tobacco use. Youth specific activities include Take Down Tobacco

and the National Day of Action, the Youth Engagement Alliance (in collaboration with the Truth Initiative), and National Youth Ambassadors.

NAQC has not found sufficient evidence on implementation of public education campaigns within a quitline environment to make a recommendation for quitlines at this time.

Web-Based Tobacco Cessation Programs

There are a number of web-based tobacco cessation programs designed for youth with youth input, some of which include interactive texting programs.

National Cancer Institute: Smoke Free Teen offers a text message program, a smartphone app, and online chat to support youth in quitting tobacco.

National Jewish Health: My Life, My Quit features a self-guided online program to help youth quit tobacco and offers text messages for encouragement and tips. Coaches are also available through text, chat, and phone. Though data has not been published or made widely available, National Jewish Health reported a 66% responder quit rate at the 7-month follow-up (8.4% Intent to Treat).[20]

RVO Health: Live Vape Free℠ is a youth cessation program that includes automated texting dialogues, links to digital content, and access to live coaches. Help Teens Live Vape Free is an online course for adults that includes facts about vaping, vignettes that model good communication between concerned adults and teens, a conversation guide, and a toolbox to help adults establish conversation with their teen. Concerned adults can also engage with coaches via live chat.

Truth Initiative: This is Quitting is a text messaging program designed to help youth and young adults quit vaping. The program features peer support and coping strategies. A study found that the abstinence rate at seven months was higher for program participants (24.1%) than for the control group (18.6%).[21] Truth Initiative reports that This is Quitting has reached more than 500,000 youth and young adults.[22]

University of California: Kick It California – Quit Vaping offers support through text, chat, telephone, web, and app. The program also provides support to proxies, such as parents and caregivers who want to help youth quit.

While it is encouraging to see a growing number of youth-oriented programs being offered, additional data and evaluation within quitline environments are necessary before NAQC can make a recommendation on a specific program or even specific elements of a program.

Pharmacotherapy

Cessation pharmacotherapy (nicotine replacement therapy, bupropion SR, and varenicline), which is an evidence-based best practice for adult tobacco cessation, is not approved by the Food and Drug Administration (FDA) for youth under age 18 years. Nevertheless, the American Academy of Pediatrics (AAP) in its publication *Youth Tobacco Cessation: Considerations for Clinicians* indicates that Nicotine Replacement Therapy (NRT) can be an important adjunct to behavioral support for treating nicotine dependence in youth, and that AAP policy recommends that pediatricians consider prescribing off-label NRT for youth who are moderately or severely dependent on nicotine.[23]

The Cochrane Database of Systematic Reviews 2017 review of youth cessation interventions, *Tobacco cessation interventions for young people*, did not find sufficient evidence to suggest that behavioral support or medications increase long-term quit success in youth. The review cited the need for further quality research to investigate what helps youth quit.[24]

Youth Tobacco Cessation Services Offered by State Quitlines

According to NAQC's FY2021 Annual Survey of Quitlines, 92 percent of 52 state quitlines provide services to youth.[25] Among state quitlines providing services to youth, the most common youth services reported in the survey are phone counseling (100%), referrals to other cessation services (94%), and web-based self-help (90%), and more than one-half (56%) offer web-based counseling and automated 2-way texts to youth. Just four states offer NRT to youth, two of which require parental consent for this treatment. The FY2021 Annual Survey also indicated that 28 state quitlines conducted special outreach to youth and 19 states conducted special outreach specifically to youth ENDS users. Of note, however, the unduplicated number of youth served with evidence-based cessation services from the FY2021 Annual Survey (defined in the survey as proactive telephone counseling or pharmacotherapy or both) was 479, about 0.20% of all tobacco users who received this level of service from quitlines. Some state quitlines use additional vendors outside of their primary service provider to provide youth services, and additional information on this practice is being collected in NAQC's FY2022 Annual Survey of Quitlines.

NAQC Recommendations – Youth Cessation Services

NAQC has adopted criteria for quitline services presented by Anderson (2016) for best practices, promising practices, and insufficient evidence to recommend.[26]

A. Best Practices

- Research-validated practices whose efficacy has been demonstrated as effective based on results of established meta-analytic reviews such as Cochrane Reviews.
- Field-tested practices that have a compelling rationale from widespread practice and success.

B. Promising Practices

- Practices that have one or more limited examples of success in the research literature or quitline practice.

C. Insufficient to Recommend

- Practices that lack strong examples and consistent findings assessing efficacy within the literature and/or quitline practice

Although practices are emerging in the quitline setting to reach and engage youth in cessation services, at this time, NAQC has not identified any practices that have strong examples and consistent findings on youth cessation for reach, engagement, and impact. As such, NAQC is not currently issuing recommendations for quitlines on youth cessation services.

Issues of Importance for State Quitlines in Youth Cessation

Although NAQC is not recommending quitline practices for youth cessation at this time, NAQC is committed to following the development of new literature and practice findings to identify recommendations for quitlines in the future. The quitline community should continue the dialogue around how to best help youth quit tobacco. Specifically, additional dialogue is needed around:

The role of quitlines: Quitlines can offer a variety of youth cessation services through various modes, including web, text, and phone, tailoring the approach to the needs and concerns of youth. Quitlines can also provide support and education for proxies such as parents and guardians, and partner with schools and other organizations to help reach and serve youth.[27] NAQC plans to facilitate future discussions with

state quitlines to discuss services that are appropriate to add or strengthen to serve youth and to use resources most effectively.

Challenges unique to serving youth: To meet the unique needs of youth and their preferences for digital communication, quitlines may find it more effective and cost efficient for quitlines to partner with organizations that have invested in producing youth-specific programs. NAQC can assist by facilitating ongoing discussion with quitlines on what they would like to achieve in serving youth. NAQC can also assist in facilitating discussion about development of new methods for measuring unduplicated youth engagement and quit rates, especially since most youth engagement is digital and not telephonic. NAQC will also continue to follow quitline practice for promising ways to reach and engage youth with quitline services. NAQC will also track emerging literature to better understand the risks and benefits of cessation medications for youth and treatment for relapse in youth.

Moving Forward

More research is needed to determine which strategies are cost-effective in helping youth quit tobacco. NAQC recommends the following questions be part of a national research agenda:

1. What cessation medications are safe and effective for youth who want to quit tobacco? What dosing is appropriate for youth?
2. What methods are best suited to reach and engage youth in cessation services in a cost-effective manner?
3. What forms of behavioral support are effective in helping youth quit tobacco?
4. How can technology be leveraged to effectively reach, engage, and help youth quit?
5. Are incentives effective for reaching, engaging, and helping youth to quit?
6. How can youth quit rates best be measured? How can youth relapse rates best be measured?

Moving forward, NAQC will continue to track youth cessation services through the annual survey. NAQC will also monitor emerging literature around youth cessation. Dialogue should continue among the quitline community about the role of quitlines in youth cessation and how to best meet the cessation needs specific to youth.

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