

NDQuits: North Dakota Quitline Program Annual Report, FY 2019



December 2019

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North Dakota Quitline Programs FY19 Evaluation Executive Summary

December 2019

Background

In fiscal year 2019 (FY19), July 1, 2018 to June 30, 2019, the North Dakota Department of Health contracted with National Jewish Health and the University of North Dakota to provide tobacco cessation services free of charge to North Dakotans. Programs include the Quitline and web program.

Each program offers nicotine replacement therapy (NRT), text messaging support, email support, and a quit guide. Professional Data Analysts (PDA) conducts an annual evaluation to examine program implementation and outcomes. This report presents measures of program use and effectiveness.

Program Enrollment and Reach

3,029 unique tobacco users were served



FY15 FY16 FY17 FY18 FY19



11% decrease in enrollments

The Quitline reached **1.3%** of North Dakota tobacco users. This is **above** the national average of 1.19%.



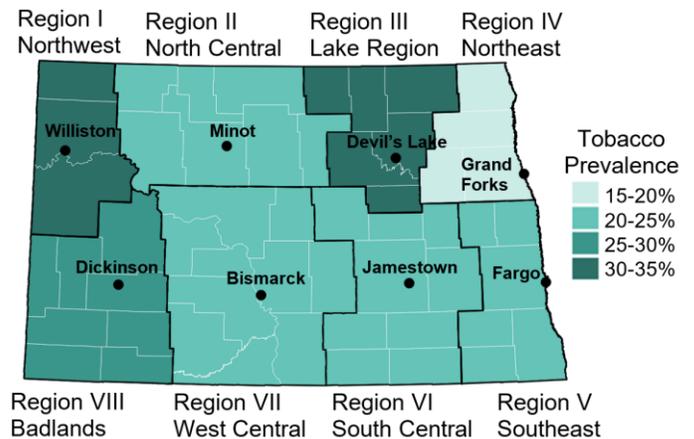
FY15 FY16 FY17 FY18 FY19

Note: The reach calculation changed in FY18 to align with the North American Quitline Consortium (NAQC) treatment definition; rates in FY18 and FY19 may be lower than prior years.

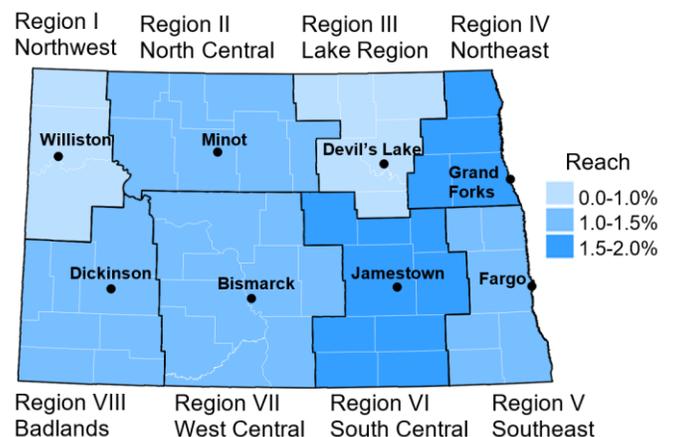
$$\text{Reach} = \frac{\# \text{ tobacco users receiving treatment}}{\# \text{ tobacco users statewide}}$$

Treatment reach **varies by human service region**, with the highest reach rates in the Eastern and Southern regions. Regions with the highest prevalence of tobacco use had the lowest treatment rates.

North Dakotan adult tobacco use prevalence in 2018 (Behavioral Risk Factor Surveillance System)



Overall reach in FY19 by human service region

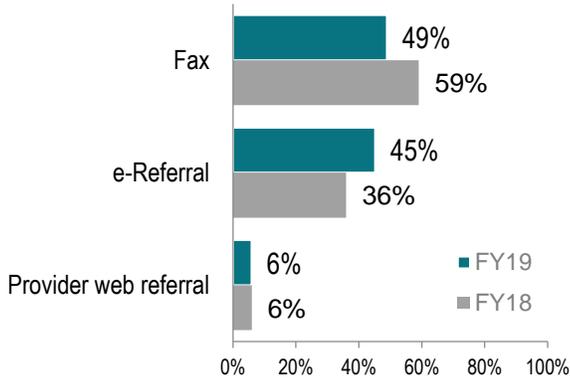




Referrals

1,523 referrals were received. Fax referrals remain the largest source, though this decreased from FY18. Conversion rate was highest among provider web referrals, whereas in FY18, conversion rate was highest among fax referrals.

Referrals to NDQuits in **FY19** (N=1,523) and **FY18** (N= 1,718)



26% of all referrals for unique tobacco users resulted in an enrollment.



Program Engagement

Once people are connected, average levels of engagement vary by program.



The general phone counseling program offers 5+ calls. Participants completed **3.3 calls** on average.



The Pregnancy/Postpartum program offers up to 9 calls. Participants completed **3.1 calls** on average.



The American Indian Commercial Tobacco Protocol offers up to 10 calls. Participants completed **4.0 calls** on average.



About **96%** of web program participants visited the website at least once.



About **70%** of all phone users that received a counseling call also received at least one text message.



Connections to services

61% of participants received evidence-based treatment. This is similar to the percentage of participants who received evidence-based treatment (counseling and/or NRT) in prior years.

Percent of participants who received evidence-based treatment across fiscal years



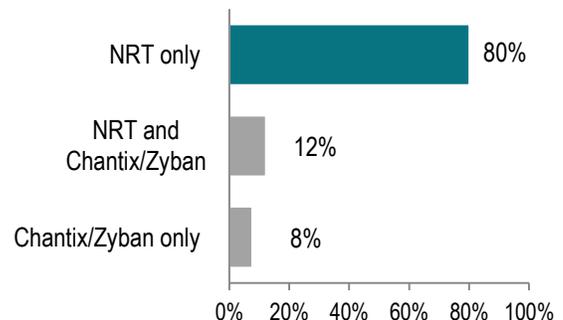
Medication Provision

Overall, **5 of 10** participants received NRT.

Patches only	51%
Gum only	17%
Lozenges only	14%
Combo NRT	13%

At follow up, nearly **8 of 10** respondents reported using NRT.

NRT use among those that used at least 1 cessation medication at follow up (N=401)



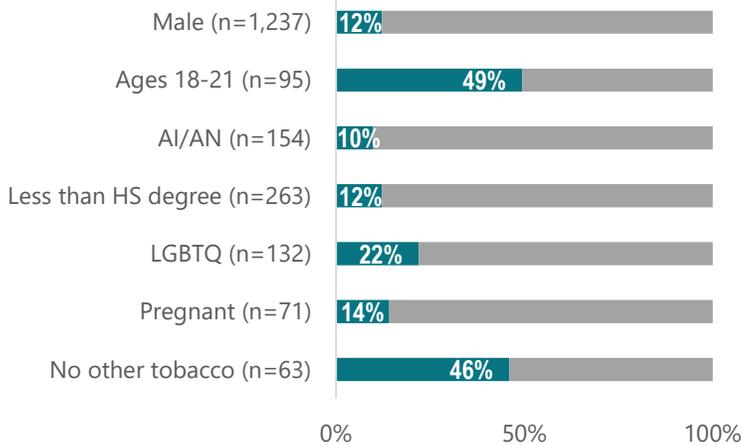


ENDS Use*

84% of ENDS users report using them as a quit aid, and **79%** of current users reported using other forms of tobacco at follow up.

Of people who reported no other tobacco use at intake, **46%** used ENDS.

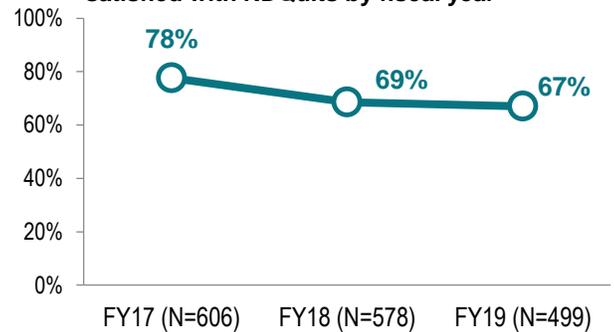
Percent of participants at intake who have used an ENDS product in the past 30 days



Satisfaction*

Participants' satisfaction with NDQuits continues to be lower than previous years but similar to FY18, with **67%** of participants reporting being very or mostly satisfied.

Percent of participants who were satisfied with NDQuits by fiscal year



Quit Outcomes*

The 30-day point prevalence abstinence rate across all programs was **38%**. The overall rate was higher because the point prevalence abstinence rate for the phone-web program was higher than the phone only or the web only program (the rates for those individual programs are displayed below). The rate may be higher for the phone-web program because it is a more intensive intervention. The phone-web program rate is not shown because the number of respondents for that program was too low.



* Due to the low survey response rate, the sample may be more likely to quit as compared to all tobacco users in North Dakota, which may inflate the outcomes reported here.



Conclusions and Recommendations

Overall call volume decreased, but treatment reach is still above average

While overall registrations decreased, those who do enroll in NDQuits are likely to receive treatment that meets national quality standards. This high quality of service is likely due to the use of counselors at the University of North Dakota. The decrease may be related to decreased media buys, as there is a relationship between broadcast media and quitline call volume.

Recommendations: The relationship between decreased broadcast media buys to quitline call volume in North Dakota will be examined in 2020.

The number of overall referrals decreased, but the conversion rate is in line with the North American Quitline Consortium (NAQC) average

The referral rates vary by referral type, with provider web referrals having the highest program intake (38%), whereas fax referrals and e-referrals were significantly lower. A conversion rate of over one-quarter for provider web referrals and for fax referrals are in line with the NAQC average, while e-referrals fall short of the NAQC average.

Recommendations: North Dakota may want to examine where referrals are leading to a higher percentage of enrollments. This information may help to increase the number of referrals while maintaining high conversion rates.

Provider referrals who enroll are likely to receive evidence-based treatment

Seven in ten NDQuits enrollees who were referred by a provider received minimal treatment. This indicates that treatment delivery among those entering the program through provider referrals is strongly evidence-based and meets the definition of NAQC treatment.

Recommendations: Continue the support and expansion of North Dakota's cessation programs in health systems – BABY & ME – Tobacco Free Program and North Dakota Quit Cessation.

NDQuits continues to serve priority populations, including heavy tobacco users and individuals with no health insurance

Compared to all tobacco users in North Dakota, participants in NDQuits show more addictive behaviors such as smoking more than 20 cigarettes per day and smoking within 5 minutes of waking. This indicates that NDQuits is reaching a population that struggles with quitting. This is important because individuals with heavy tobacco use is associated with a higher risk of certain chronic diseases, such as lung cancer.

NDQuits also serves a higher number of tobacco users insured by Medicaid as well as those with no health insurance, as compared to tobacco users in North Dakota. NDQuits serves about the same percentage of smokers who identify as LGBTQ as the North Dakota tobacco user population.

Recommendations: NDQuits served a lower percentage of tobacco users in some other priority populations, including young adults (18-24), American Indians, and males. Partnerships and media that target these populations might be considered to increase use of NDQuits. The FY20 evaluation should also examine the effect of National Jewish's *My Life, My Quit* program on youth and young adult enrollment.

Special protocols for priority populations serve a small percentage of tobacco users

Of those eligible at intake, 18% of American Indian enrollees opted to register in the American Indian Commercial Tobacco Protocol (instead of the general phone protocol). For the Pregnancy/Postpartum Protocol, 64% elected to register in the special protocol. The utilization of these protocols is varied.

Recommendations: The quitline vendor may consider examining why the enrollment of American Indians was low, and whether there are ways to increase enrollment and improve utilization moving forward. Specifically, the incentives for the pregnancy protocol were underutilized, which may warrant further investigation.



Conclusions and Recommendations

While the majority of ENDS users reported using the product to help quit tobacco, nearly eight of ten ENDS users reported use of at least one other form of tobacco at follow-up.

A common narrative from the tobacco and vaping industries is that ENDS use by adults may help smokers quit other forms of tobacco. The NDQuits data do not support this narrative. The message of the industry has resonated with North Dakota adult tobacco users, as the majority (84%) of those at follow-up who reported ENDS use did report using ENDS as a cessation support. Despite the intent to use ENDS to help quit tobacco, eight of ten ENDS users reported using at least one other form of tobacco in the past 30 days. Of those using other forms of tobacco, most report use of cigarettes with or without other forms of tobacco (76%) in addition to ENDS devices.

Recommendations: As ENDS use continues to increase in all age groups in North Dakota, education of the risks for ENDS use at any age should be prioritized. There is limited media and information for the general public about the risk of ENDS use for adults, though there is an increasing body of peer-reviewed literature that is documenting these risks. That research should be incorporated into general public media and educational materials.

Program outcomes are higher in North Dakota as compared to the national average. The satisfaction for the phone program nearly meets national goals.

The FY19 NAQC 30-day quit rate for NDQuits is 38%, which exceeds the NAQC goal that 30% of quitline users quit tobacco for 30 days when they receive a follow-up, seven months after enrolling in the quitline. This is the primary outcome of interest and is a strong indication of quitting tobacco. A second outcome is tracking a 24-hour quit after enrolling in NDQuits. Eight of ten survey respondents in North Dakota quit tobacco for 24 hours. Web users were less likely to report quit attempts as compared to individuals who use the phone program.

The highest satisfaction has consistently been reported for the phone program. For the combined web-phone program satisfaction drops by 8 percentage points. The satisfaction for the web only program is 16 percentage points lower than satisfaction with the phone program.

Recommendations: While the quit outcomes and satisfaction are above the national standards set by NAQC, the quit outcomes and satisfaction of the web only program has been consistently below these national standards. Consideration of how the experience of web users might be strengthened should be considered.

For every dollar spent on NDQuits, North Dakota saves

The savings takes into consideration the costs and benefits of cessation. For every \$1 spent, the state saves \$3.27 to \$3.75 under the current tax rate. The benefits would decrease but remain positive even if there was a tax increase (see the NDQuits 2018 report for that analysis).

Recommendations: An increasing number of North Dakotans are using electronic nicotine products, and over 80% of NDQuits users report using other forms of tobacco with ENDS at follow-up. The health care and cost implications of this trend should be considered when the North Dakota Legislature considers taxes on tobacco products during the 2021 Legislative Session.

NDQuits Program and Evaluation

The North Dakota Department of Health (NDDoH) administers a menu of tobacco cessation programs as part of their comprehensive tobacco prevention and control program. The following programs, branded as NDQuits, are available to all North Dakota residents¹.

Tobacco users in North Dakota can select from three programs: phone, phone and web, and web. Individuals from two priority populations can elect to enroll in either the general protocol or one of the two special protocols. Details about each NDQuits option are listed below (the phone and web option is a combination of both protocols).

 Phone Mode			 Web Mode
General Protocol:	Pregnancy / Postpartum Protocol:	American Indian Commercial Tobacco Program (AICTP):	General Protocol:
Calls: 5+ free calls* Re-enroll every 60 days after last contact	Calls: 9 free calls Re-enroll every 60 days after last contact	Calls: 10 free calls Re-enroll every 60 days after last contact	Calls: 0 Lifetime enrollment
Add-on options: Printed quit guide ✓ Emails ✓ Text ✓	Add-on options: Tailored quit guide ✓ Emails ✓ Text ✓	Add-on options: Tailored quit guide ✓ Emails ✓ Text ✓	Add-on options: Online quit guide ✓ Emails ✓ Text ☒

Nicotine Replacement Therapy (NRT) benefits:

Registrants in any protocol and any program mode who are **uninsured or underinsured** are eligible for up to **eight weeks of free NRT** (combination or mono-therapy) in the form of patches, gum, or lozenges. NRT is provided in four-week shipments and participants can receive two 4-week shipments of NRT every six months. **Medicaid** insured may get **additional NRT** coverage beyond the eight weeks if needed.

*The average number of calls was 3.29 (SD=2.39), ranging from 1 to 21 days of counseling.

The NDQuits program contracts with National Jewish Health (NJH) to provide telephone and online cessation services, as well as NRT and optional text and email support. Telephone counseling is provided by tobacco treatment specialists at the University of North Dakota (UND).

¹ The North Dakota Department of Health also administers the BABY & ME – Tobacco-Free Program and the NDQuits Cessation Grant Program with health systems across the state, <https://ndquits.health.nd.gov/providers/>.

About this Report

Since 2012, Professional Data Analysts (PDA) has been contracted by the NDDoH to evaluate NDQuits. PDA has a long history of evaluating state quitline programs in the United States and has written a white paper for the North American Quitline Consortium (NAQC) on how to calculate quit rates. The goals of this evaluation are to provide ongoing monitoring and data about service quality of NDQuits, and to assess the effectiveness of this program in supporting North Dakota residents to quit tobacco.

This report presents several measures of program use and quality that are provided to the NDDoH on an annual basis to evaluate the NDQuits program. These analyses primarily draw from three datasets and answer the following evaluation questions:

1. How many people does **NDQuits serve**?
2. How many **referrals** does NDQuits receive?
3. **Who** is using NDQuits?
4. **What services** did participants use?
5. To what extent were **stop-smoking medications** provided and used?
6. What were the trends in **Electronic Nicotine Delivery System (ENDS)** use?
7. What were the program **quit** outcomes?
8. To what extent were participants **satisfied** with NDQuits?
9. What is the **cost benefit** of the NDQuits program?

Full evaluation methods are provided in Appendix 1.

Definition of Terms

Program. The NDDoH administers the three primary programs provided by a single vendor: phone, web, or web and phone. These programs are provided by National Jewish Health, though counselors for the general phone program are at UND. Individuals who are pregnant can opt to enroll in a special protocol, which was launched in July 2016. Individuals who identify as American Indian may opt to enroll in the American Indian Commercial Tobacco Protocol (AICTP), which was launched in October 2017. Individuals enrolling in either of these special protocols receive phone counseling from tobacco treatment specialists at National Jewish Health.

Enrollment. An enrollment is defined as registration in the phone, web, or phone and web programs. PDA defines program as the program requested at time of registration, which is aligned with NAQC best practices.

Unique Individual. This refers to a single tobacco user. PDA matches records within and across the three programs to identify unique individuals who may have more than one enrollment. The results are reported at the unique individual level throughout this report.

Data Sources

Multiple data sources were used for the NDQuits analysis. Details are provided in Appendix 2. To aid readability, icons are used at the beginning of each section to indicate which data sources were used for results in that section.



Intake



Program use



Referral



7-month follow-up respondents



Surveillance

Limitations

The response rate for the 7-month follow-up survey was 26%, which is much lower than the NAQC recommended 50%. PDA conducted a post-stratification weighting method to weight the follow-up survey respondents back to the NDQuits population based on age, education, race, and gender.

PDA also conducted a response bias analysis to assess if and how the survey respondents were representative of all NDQuits participants (unique tobacco users that enrolled in NDQuits for the first time between December 2017 and November 2018). Differences were assessed for 14 demographic and clinical variables, detailed in Appendix 5. Compared to all North Dakota tobacco users, the NDQuits users who responded to the survey in FY19 were:

- Older at intake
- More likely to enroll in the phone program
- More likely to have Medicare or private health insurance
- More likely to report a higher education level
- More likely to have received evidence-based treatments (NRT, phone counseling)

These characteristics most likely inflated the FY19 quit rate, and results may not be fully generalizable to the larger population that enrolls in NDQuits.

How many people does NDQuits serve?

One dataset informed this section.

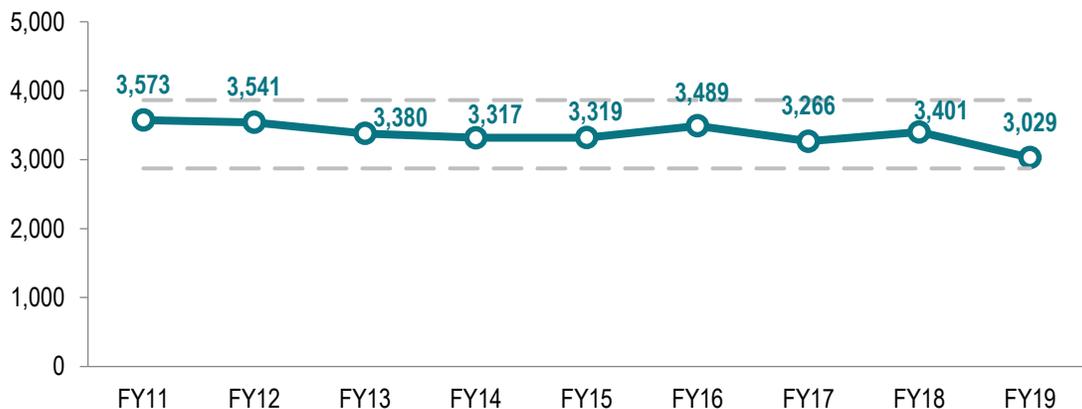


Intake. Details are provided about the number of unique tobacco users who registered for NDQuits overall and by human service region.

Program registrations declined in FY19.

There was a 10.9% decrease in registrations. Upon closer inspection, the FY19 registrations followed similar trends as the prior year, but with slightly fewer registrations each month. However, the total number of registrations in FY19 is still within three standard deviations of the mean number of registrations since FY11 (indicated by the upper and lower control limits). A small percentage of this decline is due to a decision made in FY19 to exclude NDQuits enrollees who were younger than 18 because it is not covered in the current IRB (n=17). Reduced broadcast media may also reduce quitline calls².

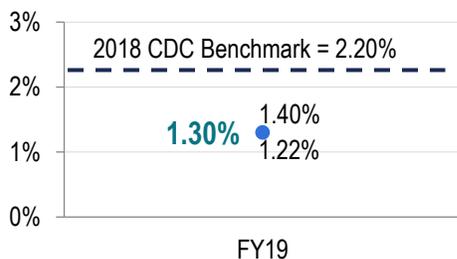
Number of unique tobacco registrations since 2011



NAQC treatment reach dropped but remains above the national average.

The FY18 statewide treatment reach was 1.55%; the FY19 reach was 1.30% (confidence interval 1.40% to 1.22%). North Dakota's treatment reach is still above the average treatment reach among the 28 quitlines that participated in the 2018 NAQC survey, which was 1.19%.

Treatment reach is below CDC Grant Objective



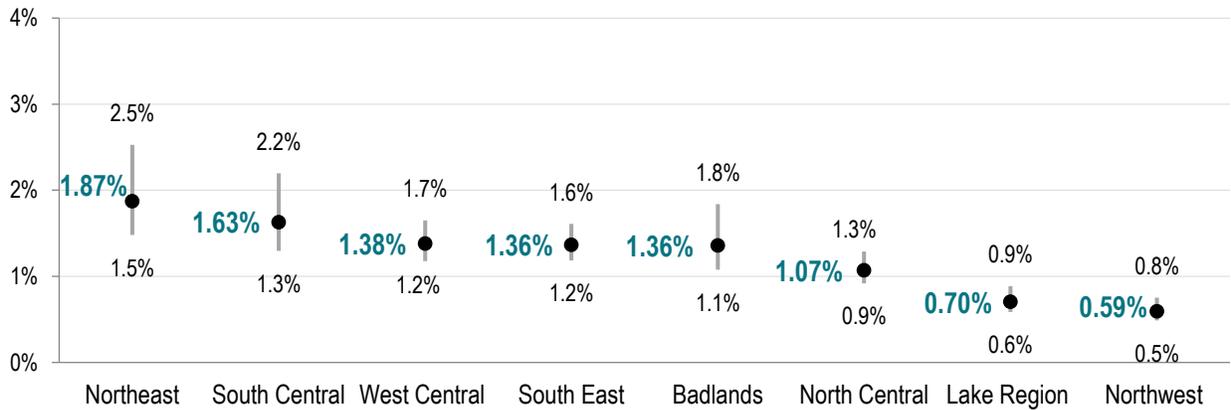
Treatment reach is the ratio of tobacco users who receive treatment from a state's tobacco cessation quitline to the number of tobacco users statewide. It is an important consideration because it helps the tobacco control community understand the potential impact of quitline services to tobacco prevalence in the state.

² <https://www.thecommunityguide.org/sites/default/files/assets/SET-Quitlines-MassReach2.pdf>

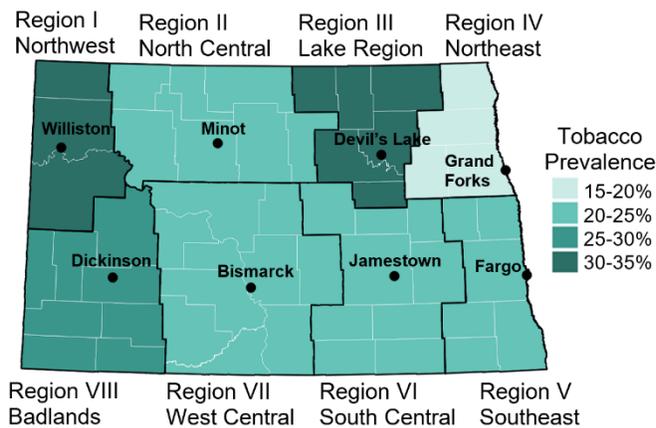
Treatment reach varies by Human Service Region.

As seen in previous reports, reach was high in the eastern and the southern regions. Consistent with FY18 trends, regions with the highest prevalence of tobacco use had the lowest treatment reach rates (Northwest Region and Lake Region). There are notable contextual factors to consider when interpreting prevalence and reach. First, the eastern side of the state is more urbanized than the western side and has a higher density of health services through which to reach and treat tobacco addiction. Second, some regions are home to Tribal Nations which have higher rates of commercial tobacco use in combination with sparse population density, meaning they may have fewer resources to hear about or connect to cessation programs, including NDQuits.

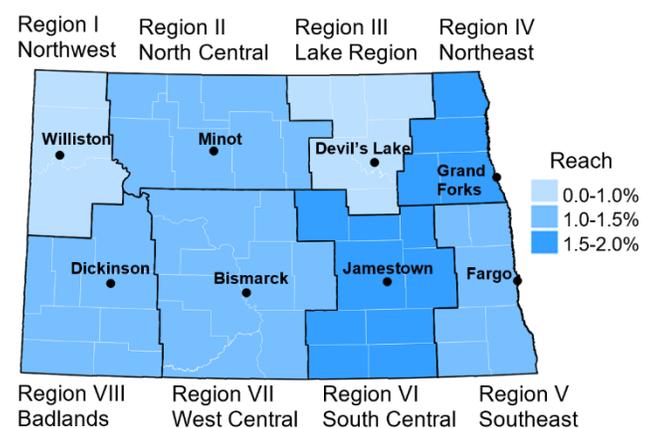
FY19 Comprehensive treatment reach by Human Service Region



North Dakota adult tobacco use prevalence in 2018 (Behavioral Risk Factor Surveillance System)



Overall reach in FY19 by human service region



Smokeless tobacco prevalence is higher than the national prevalence, but statewide treatment reach remains lower than the overall reach.

In North Dakota, smokeless tobacco prevalence with or without other forms of tobacco is 12% for adult males (BRFSS 2018) as compared to 6.6% nationally³. This means that smokeless tobacco use is a significant contributor to tobacco use prevalence across the state. Despite some regional differences in smokeless tobacco use (western regions at 8.1% and eastern regions at 5.3%), treatment reach to smokeless users is still lower than the overall reach across the state (0.50% overall, 0.41% in western regions, and 0.60% in eastern regions). The NDDoH should continue to promote NDQuits as a cessation tool for not only cigarettes but also other forms of tobacco including smokeless tobacco, especially in the western regions where smokeless tobacco use is more prevalent.

Reach to North Dakota's American Indian population increased in FY19.

Reach to the American Indian/Alaska Native population in North Dakota increased from 0.80% in FY18 to 0.91% (with a confidence interval of 0.75% and 1.16%) in FY19. This may be in part to the special protocol for American Indians (AICTP), which launched in October 2017 by National Jewish Health. Due to the continued high prevalence of commercial tobacco use in Tribal Nations (46.5% according to 2018 BRFSS data) and historically low levels of engagement in quitline programming, the NDDoH should continue to explore cessation programs and outreach methods to best meet treatment needs of this community and provide American Indian commercial tobacco users with cessation services.

³ Centers for Disease Control, Office on Smoking and Health, National Center for Chronic Disease Prevention and Health Promotion. Smokeless Tobacco Use in the United States.
https://www.cdc.gov/tobacco/data_statistics/fact_sheets/smokeless/use_us/index.htm

How many referrals does NDQuits receive?

Three datasets informed this section.



Intake. The intake dataset was used to calculate the number of tobacco users with referrals that enrolled in NDQuits (called the conversion rate).



Referrals. This includes fax referrals, e-referrals, and provider web referrals.

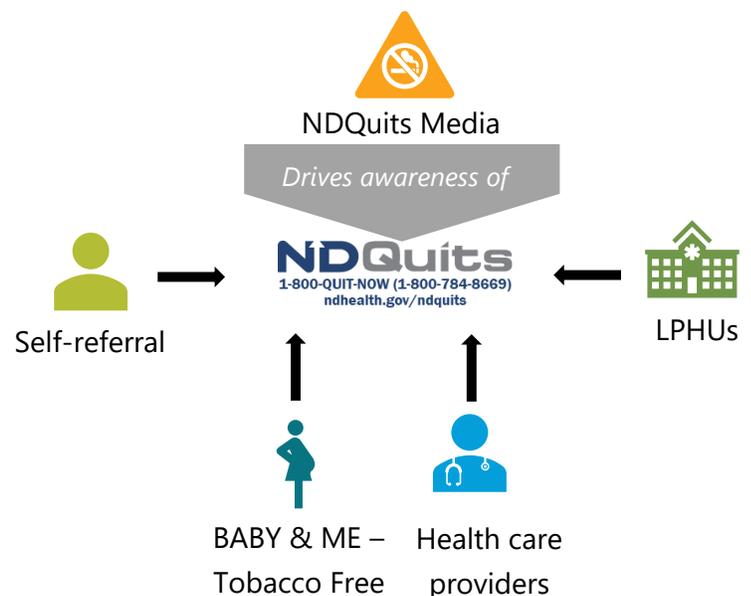


Program use. This dataset was used to calculate the number of registrants that received at least one counseling call or NRT (minimal treatment).

Counter-tobacco media, such as the NDQuits media campaign, drives awareness of NDQuits. There is support in the peer-reviewed research that sustained, state-driven counter tobacco media is an essential component of sustaining quitline call volume.⁴ For each \$1,000 increase in spending for television, radio and newspaper, quitline call volume was shown to increase by 0.1%, 5.7% and 2.8%, respectively.⁵

Increased awareness of the quitline through media can support referral systems.

Individuals are referred to NDQuits through health care providers, local public health, self-referral, or by friends and family. Some referral sources can be more effective than others for specific populations. Previous research has found that referrals through health care systems can increase the proportion of referrals to quitlines for individuals of color.⁶ Further, clinicians can assess their patients' readiness to quit using Ask-Advise-Refer, providing support to individuals with mental health challenges, and referring individuals to the quitline.⁷



⁴ Duke JC, Mann N, Davis KC, MacMonegle A, Allen J, Porter L. The impact of a state-sponsored mass media campaign on use of telephone quitline and web-based cessation services. *Prev Chronic Dis*. 2014;11:E225. Published 2014 Dec 24. doi:10.5888/pcd11.140354

⁵ Effectiveness and cost effectiveness of television, radio, and print advertisements in promoting the New York smoker's quitline. https://tobaccocontrol.bmj.com/content/tobaccocontrol/16/Suppl_1/i21.full.pdf

⁶ Russo, E.T., Reid, M., Taher, R., Sharifi, M., & Shah, S.N. (2018). Referral strategies to a tobacco quitline and racial and/or ethnic differences in participation. *Pediatrics*, 141, http://pediatrics.aappublications.org/content/141/Supplement_1/S30.

⁷ https://www.integration.samhsa.gov/Smoking_Cessation_for_Persons_with_MI.pdf

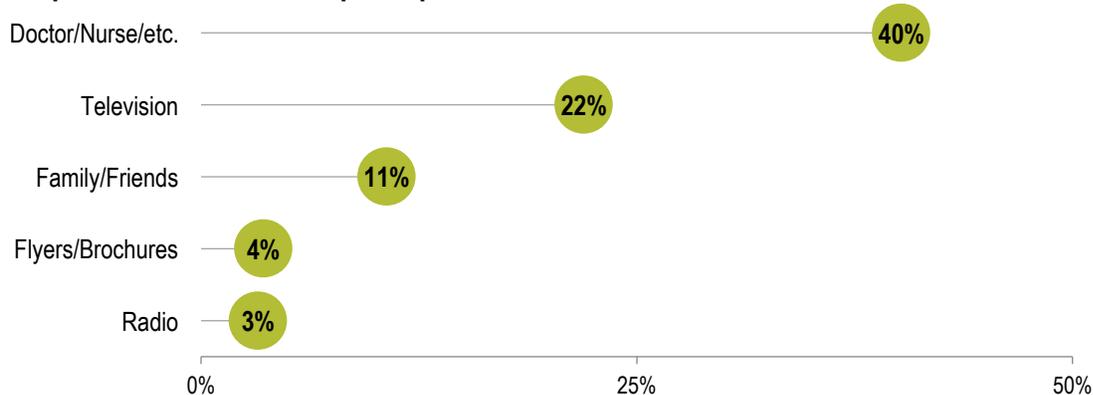
Of FY19 phone enrollees, over half were aware of the CDC Tips media campaign.

The Tips campaigns are created and funded through the Centers for Disease Control and Prevention (CDC), not North Dakota. Of the 1,174 participants who completed intake for the phone program in FY19, **56% reported awareness of the CDC Tips campaign**. The CDC campaigns have generated increased quitline call volume nationally since they first aired,⁸ and these campaigns continue to compliment state-specific media and branding. A recent study of media buying strategies in relation to tobacco quitline call volume found that the number of state-funded broadcast GRPs was a significant predictor of that state's quitline call volume, with 29% more calls per week for every 250 GRPs.⁹ In FY20, evaluation resources will be dedicated to examining the effectiveness of media campaigns, including the increased use of digital and social media and messaging around ENDS.

Nearly half of NDQuits participants heard about NDQuits from a health care provider and one-fifth heard about NDQuits through broadcast media.

The majority of NDQuits participants heard about NDQuits from a health care provider or a traditional media source (television). This has been fairly stable over time, though it should be noted this item is only asked of individuals who register by phone. This could inform where the NDDoH should concentrate their efforts when expanding and strengthening outreach efforts.

Top five sources for how participants heard about NDQuits



⁸ Calls to Quitline hit record high after CDC national tobacco ad campaign launch. Press release, April 2, 2012. Retrieved from http://www.cdc.gov/media/releases/2012/p0402_quitline.html

⁹ Murphy-Hoefer, R., Madden PA, Dufresne RM. Media flight schedules and seasonality in relation to quitline call volume. J Public Health Mang Pract. 2019 Nov/Dec; 25(6): 547-553. Doi: 10.1097/PHH. 0000000000000770.

How did enrollees learn about and connect with NDQuits in FY19?

There are three methods to refer individuals to NDQuits: 1) fax referrals, 2) e-referrals, and 3) provider web referrals. In some instances, e-referral systems are bi-directional, meaning once the referral data are received by the quitline vendor, registration information is sent back to the clinic of origin for tracking in patients' health records.

Since 2017, the NDDoH has been working on growing the referral network for NDQuits to reach tobacco users from communities with higher than average rates of tobacco addiction: Tribal Nations, pregnant smokers, individuals who identify as lesbian, gay, bisexual, transgender, or queer (LGBTQ), individuals with low socioeconomic status, behavioral health/addiction, and individuals using Medicaid.

Referral methods to NDQuits

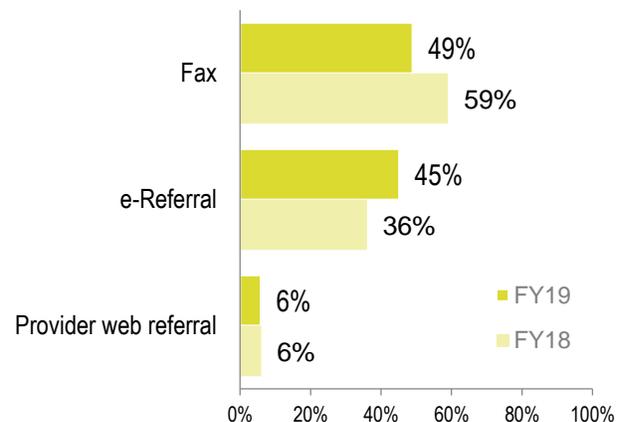
-  Fax referrals
-  e-Referral
-  Provider web referral

The number of overall referrals slightly decreased; half of referrals are via fax.

In FY19, a total of 1,523 referrals were made to NDQuits through a provider referral source, corresponding to 1,242 unique people. As compared to FY18, this is a decrease of 126 people referred to NDQuits services.

Of the unique people referred to NDQuits, almost half (608) were referred via fax. The expansion of e-referrals in FY19 likely contributed to the increase in the total number of referrals to NDQuits as well as the significant increase in the proportion of total referrals made through the e-referrals system.

Referrals to NDQuits in FY19 (N=1,523) and FY18 (N= 1,718)



The conversion rate from referral to intake completion increased from the previous year and remains comparable to NAQC reported averages.

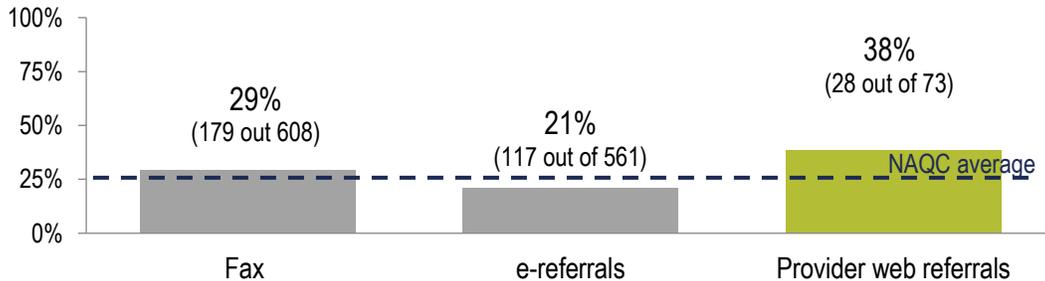
Of the 1,242 unique tobacco users referred to NDQuits in FY19, 324 completed intakes for NDQuits, resulting in a conversion rate of 26% (324 of 1,242). This is a slight increase from the conversion rate of 25% in FY18 but still a decrease from 35% in FY17. The FY19 rate is commensurate with the average conversion rate reported by other states of 26.8%.¹⁰

¹⁰ North American Quitline Consortium (NAQC). (2017). Results from the 2017 NAQC Annual Survey of Quitlines. Retrieved from <https://www.naquitline.org/page/2017survey>.

Provider web referrals have the highest conversion rate.

Of unique referrals, provider web referrals were significantly more likely to complete program intake as compared to fax or e-referrals ($\chi^2(2) = 17.2084, p < .001$). A conversion rate of over one-quarter for provider web referrals and for fax referrals are in line with the NAQC average, while e-referral rates fall just short of this goal.

Conversion rates were in line with the NAQC average for fax referrals and provider web referrals, but below average for e-referrals



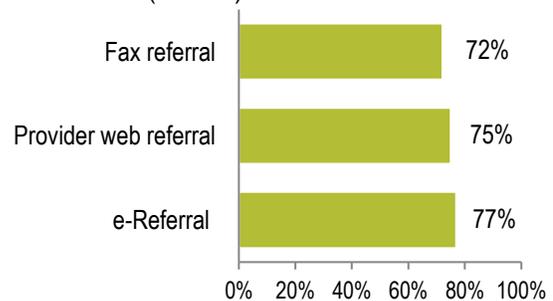
Most referrals originated from NDDoH-funded entities and conversion rates were slightly higher for these referrals.

In total, 96% (1,181 of 1,236) of unique people referred to NDQuits originated from NDDoH funded cessation programs,¹¹ or from LPHUs. The conversion rate among the NDDoH-funded entities was 26%, which is the same as the overall conversion rate and higher than the 20% conversion rate for non-NDDoH funded entities.

Seven in ten participants who were referred by providers and registered for NDQuits received minimal treatment.

Among referrals who registered for NDQuits, 74% (240 of 324) received NAQC defined minimal treatment (a call and/or NRT).¹² This indicates that treatment delivery among those entering the program through provider referrals is strongly evidence-based and meets the definition of NAQC treatment. Delivery of evidence-based treatment to referrals is a success of the referral process and should be celebrated.

Minimum treatment rate by referral type for participants that registered for NDQuits (N=324)



Minimal treatment indicates a level of treatment for tobacco cessation that has been identified as effective and experimentally validated.

¹¹ BABY & ME – Tobacco Free Program and the NDQuits Cessation (NDQC) Program

¹² Fiore MC, Jaén CR, Baker TB, et al. Treating Tobacco Use and Dependence: 2008 Update. Clinical Practice Guideline. Rockville, MD: U.S. Department of Health and Human Services. Public Health Service. May 2008.

Who is using NDQuits?

Two data sources were used to analyze results reported in this section.



Intake: PDA examined the characteristics of tobacco users registered for the NDQuits program in FY19 using the FY19 intake dataset.



Surveillance: Data for North Dakota tobacco users is from the Behavioral Risk Factor Surveillance System (BRFSS) and the North Dakota Adult Tobacco Survey (NDATS).

See Appendix 4 for a complete table of participant characteristics.

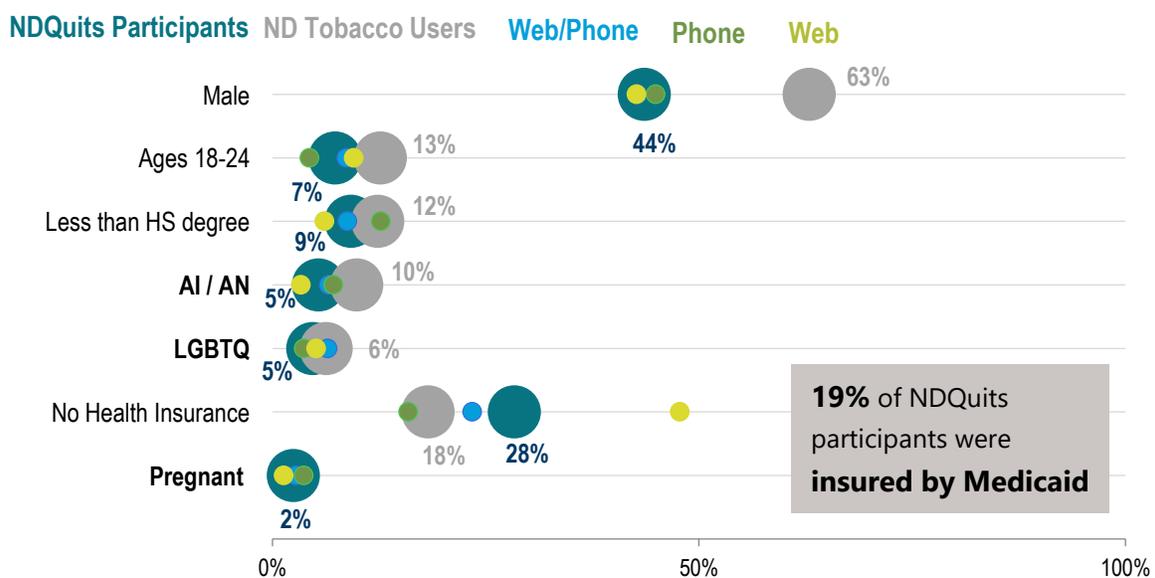
Addressing the needs of priority populations

Inequalities in health outcomes and status exist for a variety of population groups in the United States and in North Dakota. Recognizing priority populations and then allocating resources and state funding to prevent negative health outcomes is an essential public health strategy.

NDQuits continues to serve priority populations, particularly individuals with no health insurance and pregnant women.

NDQuits is providing cessation services to a variety of priority populations. Specific groups of tobacco users that the NDDoH is especially interested in reaching include American Indians/Alaskan Natives, LGBTQ individuals, pregnant women, and those with Medicaid health insurance.

NDQuits participants from special populations compared to tobacco users in North Dakota

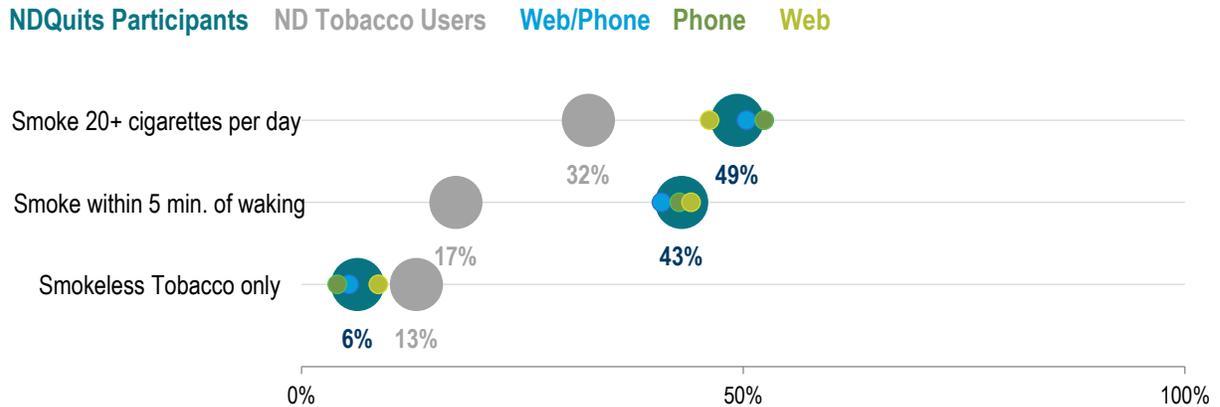


Note: there were zero pregnant respondents on the 2018 BRFSS

NDQuits participants show heavier tobacco use patterns.

Compared to all tobacco users in North Dakota, participants in NDQuits show more addictive behaviors such as smoking more than 20 cigarettes per day and smoking within 5 minutes of waking. This indicates that NDQuits is reaching a population that struggles with quitting. Notably, NDQuits serves a lower percentage of those who use only smokeless tobacco compared to statewide trends for tobacco use.

NDQuits participants tobacco use patterns compared to tobacco users in North Dakota



What services did participants use?

This section details results of program use. Two datasets were used for analysis in this section.



Program use data. The utilization dataset includes all NDQuits participants' program use from July 1, 2018 to July 31, 2019. PDA includes an extra month of utilization data so that the June enrollees are able to accrue at least one month of utilization.

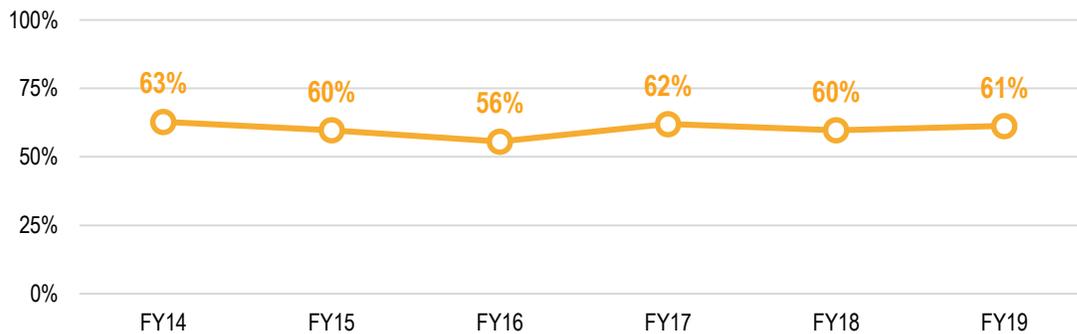


Intake. PDA examined the characteristics of tobacco users registered for the NDQuits program in FY19 using the FY19 intake dataset.

Six in ten registrants received NAQC-defined minimal treatment in FY19.

Evidence-based treatment is defined by NAQC as at least one counseling call or provision of NRT. This falls below the average of 83% across US quitlines in FY18 (n=53 quitlines).¹³

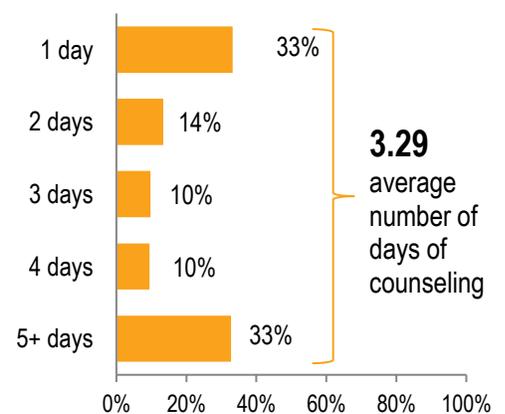
Percent of registrants who received evidence-based treatment across fiscal years



Three in ten phone users completed five or more days of counseling.

Among the unique tobacco users who registered for any NDQuits program (phone, web, or web-phone), 37% went on to receive at least one day of phone counseling. This is the same as FY18. The average number of days of counseling for participants with at least one day was 3.29 (SD=2.39), ranging from 1 to 21 days of counseling. Most participants who received at least one day of counseling received at least one shipment of medication from NDQuits (864/1,117 phone users, 77%); similar to the past two years. About 70% of phone users (n=783/1,117) received at least one text message, which is similar to FY18 at 69%.

Number of days of counseling for phone users in FY19 (n= 1,117)



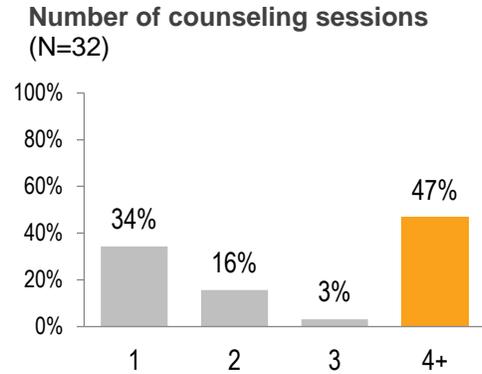
¹³ North American Quitline Consortium (NAQC). (2017). Results from the 2017 NAQC Annual Survey of Quitlines. Retrieved from <http://www.naquitline.org/?page=2017Survey>.

About 64% of eligible women elected to register in the Pregnancy/Postpartum Protocol.

Overall, there were 74 pregnant women eligible for the Pregnancy/Postpartum Protocol at time of registration. Among those, 64% (n=47) elected to register in the special protocol and 68% (n=32) went on to receive at least one day of counseling. The average days of counseling received in the Pregnancy/Postpartum Protocol was 3.1 days among participants that completed at least one call and is similar to overall use of the NDQuits phone program.

Amount of counseling received per Pregnancy/Postpartum enrollment

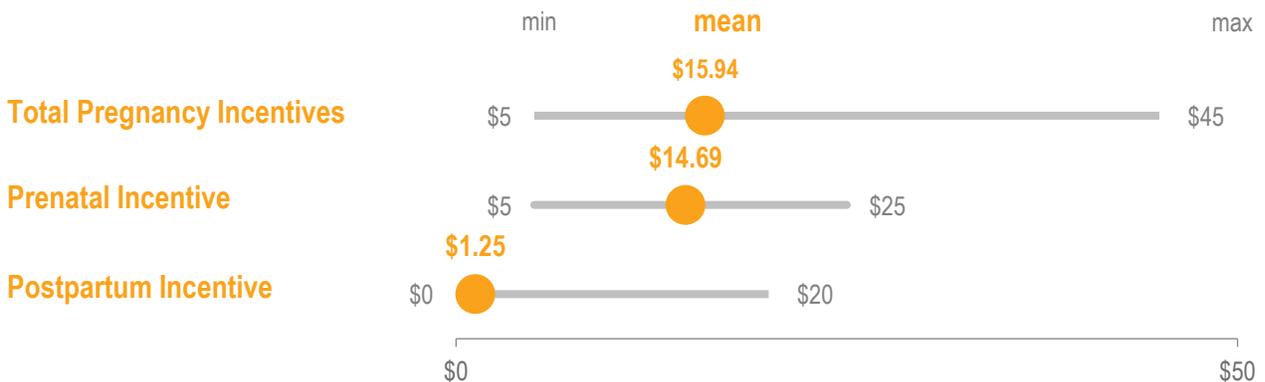
	N	Mean	Median	Min - Max
Number of days of counseling received in Pregnancy/ Postpartum Protocol.	32	3.1	2.5	1-7



On average, about one third of the possible incentive for pregnant and postpartum women was used. Overall and postpartum incentives decreased from FY18.

The total possible incentives are \$65; the prenatal incentives are \$5 per call for a total of 5 calls (\$25 total), and postpartum incentives are \$10 per call for a total of \$40. Those enrolled in the Pregnancy/Postpartum Protocol are awarded \$5 per call completed in prenatal and \$10 per call completed in postpartum. In sum, \$510 of pregnancy incentives were awarded to women throughout the year; \$470 for prenatal incentives and \$40 for postpartum incentives. The average total incentive payout was \$15.94, which breaks down into \$14.69 for prenatal sessions and \$1.25 for postpartum session completion.

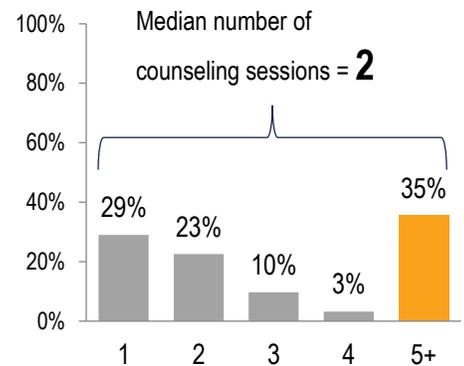
Pregnancy/Postpartum Protocol FY19 incentive payouts (n=32)



A small percentage of American Indian registrants elected to register for the AICTP in FY19; however, delivery of evidence-based treatment was high among those who chose to enroll.

Of the 205 American Indians registered for NDQuits in FY19, 37 (18%) went on to register in the AICTP. Service delivery among those who registered was high with 84% of AICTP enrollees receiving one or more days of counseling; this is compared to 65% of American Indians receiving at least one or more days of counseling among those who requested the phone only or phone and web general protocols at time of registration. On average, registrants using this protocol received four coaching calls, with a median of two coaching calls.

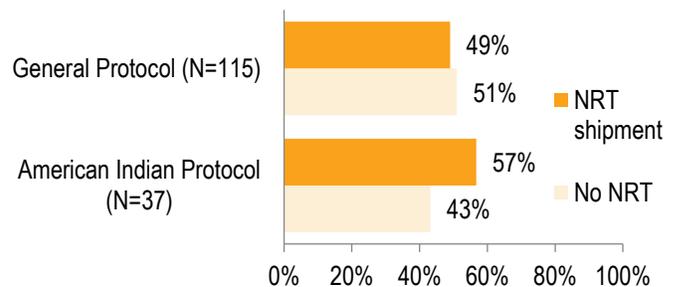
Number of phone counseling sessions for American Indians (N=31)



American Indian registrants used NRT at a higher rate as compared to the general protocol enrollees.

Rates of NRT shipment from NDQuits are higher for enrollees in the AICTP (57%, n=21) versus those who registered for the general protocol (49%, n=56). The successful delivery of evidence-based treatment to those registering for the AICTP is an observed benefit of the program. The NDDoH is actively involved in work to engage Tribal Nations.

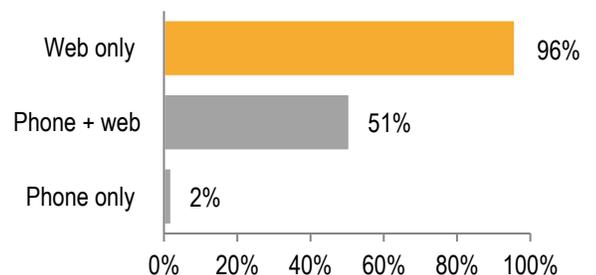
NRT shipment in American Indian Protocol vs General Protocol



Half of respondents have used the NDQuits website for one or more days in FY19.

Web utilization was tracked for those receiving the phone counseling and web program, phone counseling only, and web only. For those enrolled in the web only program, 96% used the website at least once.

Use of website for one or more days across FYs



To what extent were stop-smoking medications provided and used?

This section details which cessation medications were used by NDQuits registrants. To examine provision and use of NRT and other cessation medications, three datasets are used.



Individual tobacco user data. These analyses are done to describe NRT provision through the NDQuits program among unique tobacco users that registered in FY19.



Program use data. The utilization dataset includes all NDQuits participants' program use from July 1, 2018 to July 31, 2019. PDA includes an extra month of utilization data so that the June enrollees are able to accrue at least one month of utilization.



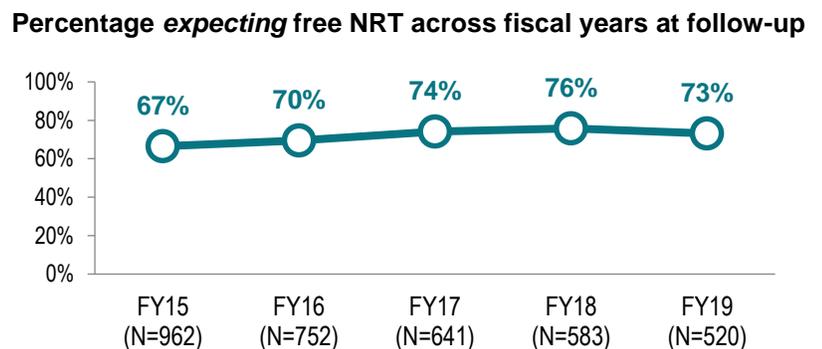
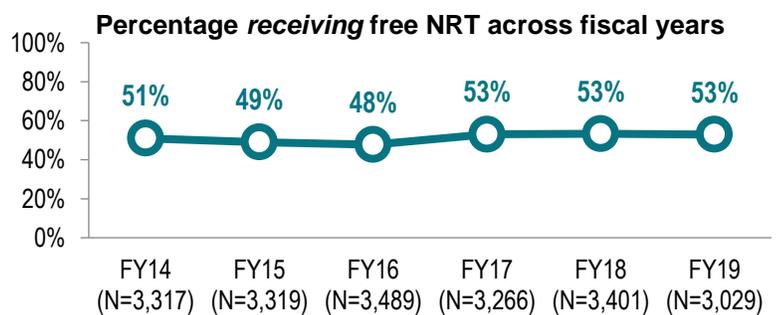
Follow-up survey respondent data. Survey data reflect self-reported use of cessation medication which could include NRT provided through NDQuits and/or medications used beyond what is provided by NDQuits. Participants' expectations about NRT receipt through the program is also analyzed through this dataset.

Eight weeks of NRT is available for North Dakota tobacco users who are uninsured or underinsured. Individuals insured through Medicaid may get additional NRT coverage beyond the 8 weeks, if needed. Interested enrollees may select either a single type of NRT (gum, patch, lozenge) or combination NRT.

About three quarters of 7-month follow-up respondents reported expecting to receive NRT from NDQuits. Over half received at least one NRT shipment.

The percentage of enrollees that received NRT, which is recorded at intake, has remained steady across fiscal years.

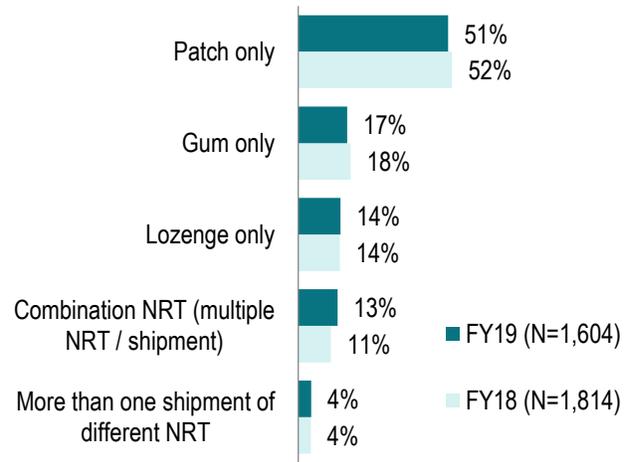
The reported expectations for NRT through NDQuits steadily increased from FY15 to FY18 but declined slightly in FY19. However, the findings demonstrate that a majority of NDQuits registrants are aware of the potential to receive NRT through the NDQuits program.



Most participants who are shipped NRT receive patches. Most receive one shipment of NRT.

Registrants to the phone program are able to receive combination NRT. This is not available to web only users. NRT recipients were most likely to be shipped patches only (51%). A minority of NRT recipients received combination NRT (13%), which was a slight increase from FY18 (11%). Most participants are not fully leveraging the two shipments of NRT that are available to them through the NDQuits program. The majority (65%) receive at least one shipment of NRT (1,045 out of 1,604), 33% receive two shipments, and a few (2%) receive three or more shipments through multiple program registrations in the same fiscal year.

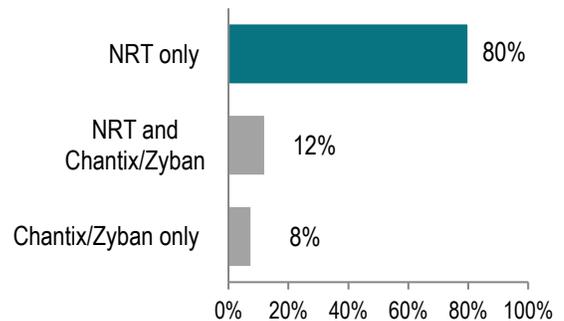
Type of NRT shipped among those with at least one NRT shipment by FY



Nearly eight in ten respondents reported use of cessation medications at time of follow-up.

Overall in FY19, 77% of survey respondents reported use of at least one type of cessation medication (406 out of 529 respondents). Among respondents who reported use of at least one type of cessation medication, a majority reported use of NRT only (80%, n=321/401).

NRT use among those that used at least 1 cessation medication at follow up (N=401)



Use of cessation medications is a best practice in the treatment of tobacco addiction according to the U.S. Department of Health and Human Services

Treating Tobacco Use and Dependence: 2008 Update.¹⁴ As such, the high report of cessation medication use is a strength among survey respondents. Use of cessation medications received through NDQuits or outside of NDQuits should continue to be encouraged.

¹⁴ Treating Tobacco Use and Dependence: 2008 Update. Content last reviewed October 2018. Agency for Healthcare Research and Quality, Rockville, MD. <http://www.ahrq.gov/professionals/clinicians-providers/guidelines-recommendations/tobacco/index.html>

What were the trends in electronic nicotine delivery system (ENDS) use?

The NDDoH does not support use of ENDS as a cessation tool.¹⁵ **ENDS use, either exclusively or in combination with other types of tobacco, is treated through NDQuits counseling.** In this section, two data sources were used.



Individual intake ENDS user data: PDA examined the extent to which ENDS are reported at time of registration using the FY19 intake dataset.

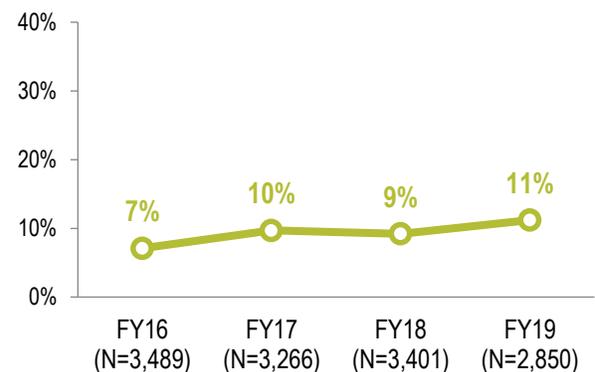


Follow up ENDS use: PDA examined how ENDS use impacted quit outcomes for respondents at time of follow-up.

Overall, the percent of current ENDS users at NDQuits intake is increasing.

The percent of NDQuits registrants who report ENDS use in the past 30 days has increased from FY16 to FY19. Prior to FY16, ENDS use data was not consistently collected across all NDQuits registrants. This increase mimics findings in national surveillance data. According to the 2018 BRFSS, 5.4% of adults reported current use of ENDS.

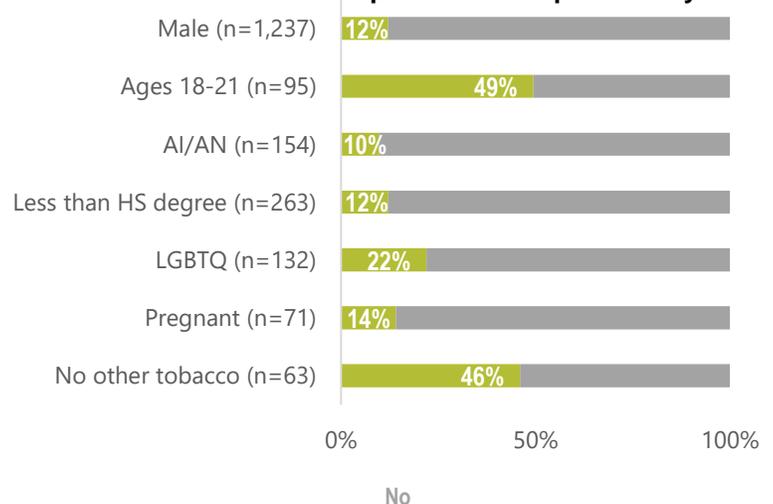
ENDS use prevalence at intake



Nearly half of those age 18-21 years reported ENDS use at intake.

Upon intake, 11% of all NDQuits participants said they had used an ENDS device in the past 30 days. Each of the groups to the right reported a higher percentage of ENDS use at intake. Of people who reported no tobacco use at intake, 46% used ENDS.

Percent of participants at intake who have used an ENDS product in the past 30 days

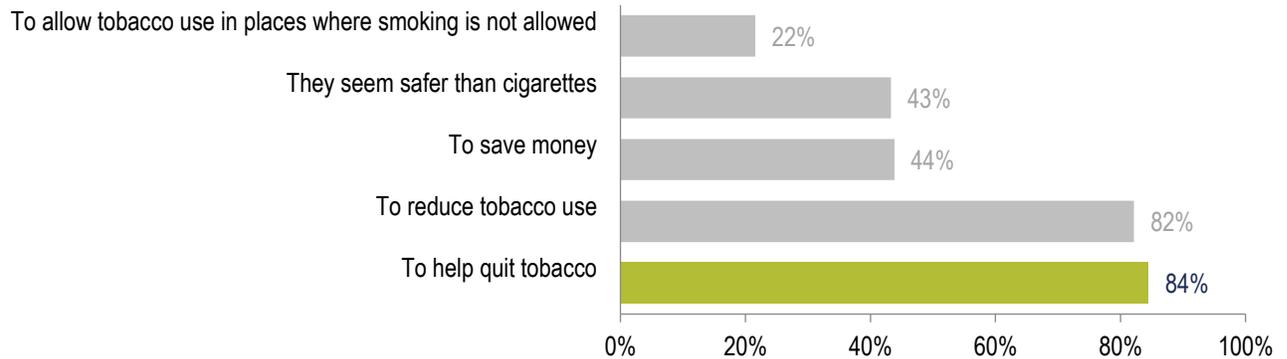


¹⁵ NDDoH position statement on ENDS, https://www.ndhealth.gov/tobacco/ENDS_Position_Statement.pdf?v=1

The most common reason for using ENDS at follow-up is as a cessation device.

Of the 56 respondents reporting ENDS use at follow-up (11% of all respondents), **84% reported using ENDS to help them quit using tobacco.** Nearly the same percentage reported the reason was to reduce tobacco use (82%).

Reason for ENDS use at Follow-up (N=56)



Despite intending to use ENDS as a cessation device, nearly eight of ten ENDS users at follow-up reported use of at least one other form of tobacco in the past 30 days.

Of ENDS users at follow-up that were also using other forms of tobacco, most report use of cigarettes with or without other forms of tobacco (76%) in addition to ENDS devices. Only 12% reported use of pipe, smokeless tobacco and/or other forms of tobacco in addition to their ENDS use. While the total number of respondents who report ENDS use at time of follow-up is low (n=56), these findings point to the high rate of dual use of tobacco products and ENDS among NDQuits follow-up survey respondents. The touted harm reduction benefits of exclusive ENDS use will not be experienced by those who continue to use other tobacco products and will especially not be experienced by those who continue to use combustible tobacco products in conjunction with ENDS.

What were the program quit outcomes?

There was one primary dataset used for the results in this section.



Follow-up survey respondent data. Survey data program quit outcomes seven months after enrollment. There were 537 respondents.

Since participant outcomes are measured seven months following enrollment, there was a lag before quit rates could be produced. The representativeness of the follow-up survey sample is essential to be able to generalize the results of this survey to NDQuits users more broadly (details in Appendix 5). The consent rate among registrants who were asked consent was 83%, which is higher than FY18 and is above the NAQC-recommended 80% consent.

Of concern is the overall response rate of 26%, which falls short of the 50% NAQC recommended rate. **Due to the low response rate, the sample may be more likely to quit as compared to all tobacco users in North Dakota, which may inflate the quit rate.** The full response bias analysis is in Appendix 5.

The basic overall respondent 30-day abstinence rate is 34%, but it should be interpreted with caution.

The primary measure of program success is the percent of participants who report being abstinent from tobacco for 30 days or longer at the time of the follow-up survey, seven months after enrollment. This rate is slightly higher than FY18, though due to the low response rate and participant bias, this is likely an over-estimate of the true quit rate that would be found if all NDQuits registrants responded to follow-up.

NDQuits respondents tend to differ in the following ways from all North Dakota tobacco users:

- Older at intake
- More likely to enroll in the phone program
- More likely to have Medicare or private health insurance
- More likely to report a higher education level
- More likely to have received evidence-based treatments (NRT, phone counseling)

The 30-day abstinence rate for the phone program is higher than the overall rate, and the web rate is lower at 31%. There were not enough individuals in the dual phone and web category to calculate a responder quit rate.

Overall 30-day basic quit rates by program registered for FY19 survey respondents



The FY19 NAQC quit rate is 38%, which exceeds the 30% NAQC goal.

PDA calculates two quit rates for the NDDoH. The previous quit rate (basic quit rate) included participants that have web only use. This differs from the NAQC quit rate, which defines minimum treatment as at least one counseling call and/or receipt of NRT. While the quit rates in FY19 and FY18 are comparable, prior to that quit rates should not be compared as only a basic quit rate was calculated.

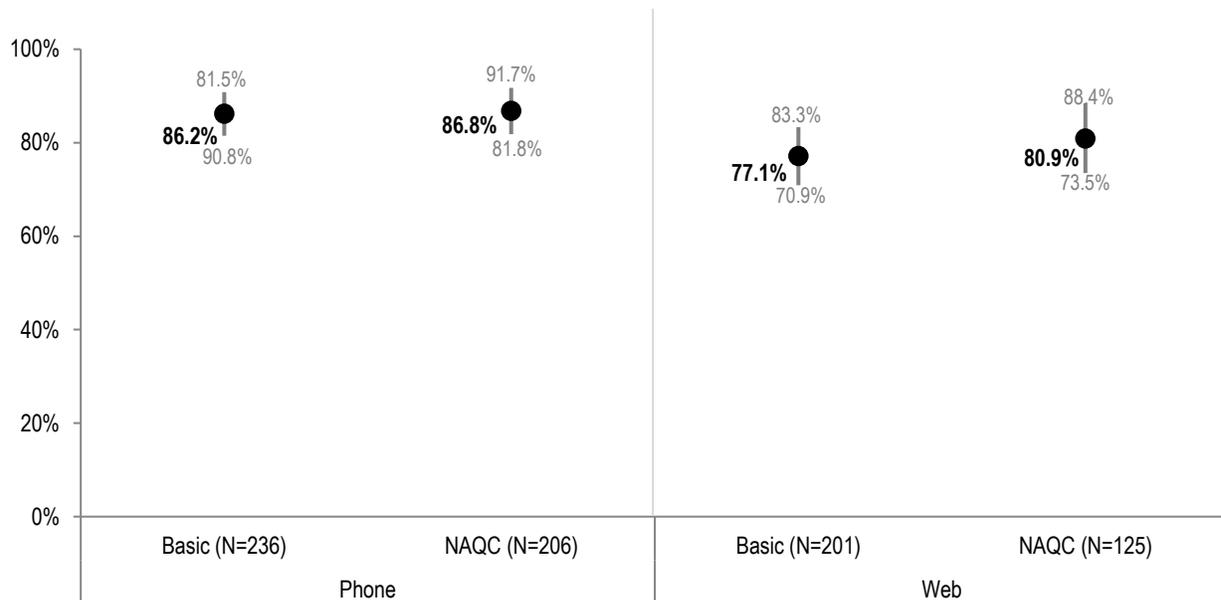
Standard NAQC 30-day quit rate by program, FY18 and FY19



Over eight of ten survey respondents quit tobacco for 24 hours, nearly meeting the goal of 85%.

Quitting for 24 hours is a preliminary indicator of abstinence from tobacco. Overall, 84% of survey respondents achieved this outcome. There were variations by program selected at time of registration. Individuals who requested the phone program at the time of registration had a higher rate, with 87% of survey respondent reporting a 24-hour quit attempt (NAQC rate). Individuals who selected the web program had the lowest rate, with 81% achieving a 24-hour quit attempt (NAQC rate). Generally, PDA expects to see at least 85% of program participants (from either mode of program delivery) making at least one 24-hour quit attempt from time of registration to time of 7-month follow-up.

24-hour abstinence rates for FY19 survey participants by program registration



To what extent were participants satisfied with NDQuits?

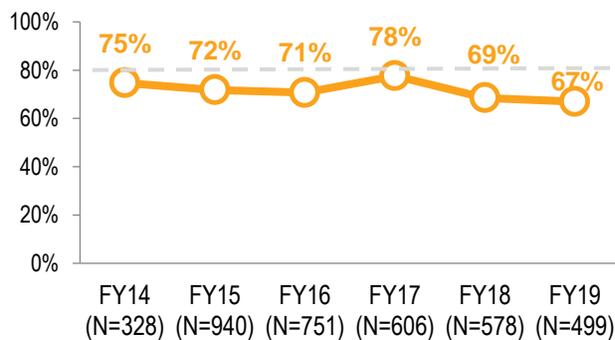
There was one primary dataset used for the results in this section.



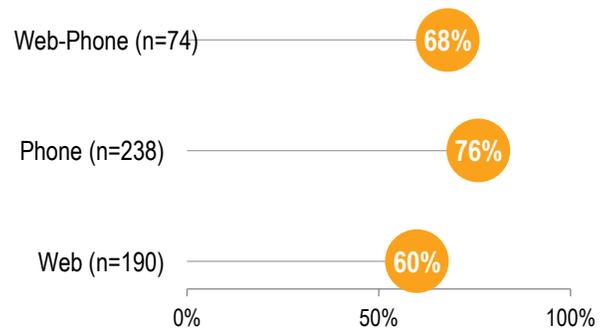
Follow-up survey respondent data. Survey data reflects self-reported satisfaction rates and which program components participants felt were most helpful.

Participants' satisfaction with NDQuits continues to track lower compared with previous years, and lower than the 80% goal.¹⁶ Program satisfaction was lowest for respondents who selected the Web program at intake.

Percent of participants satisfied with NDQuits



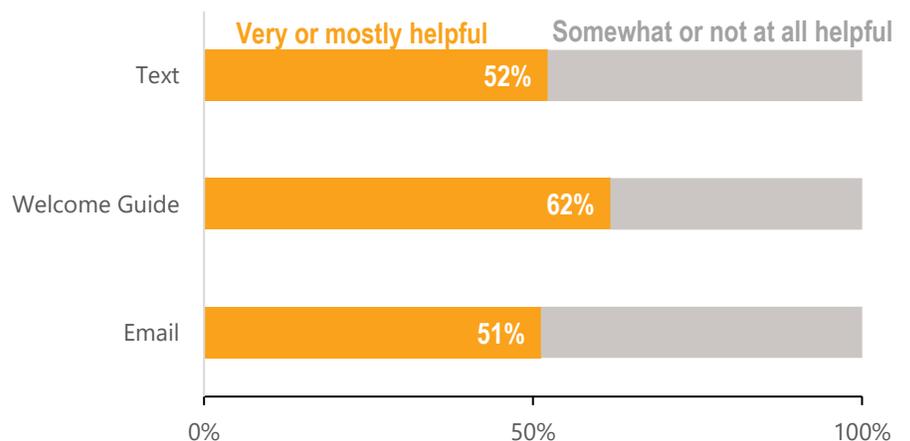
FY19 satisfaction by program type



Many participants found components of the NDQuits program to be very or mostly helpful

For each component, over half of the participants found them to be helpful. Similar rates between the different program components suggests participants experience similar satisfaction rates despite the component they receive.

Satisfaction with NDQuits program components



¹⁶ Participants are considered "satisfied" with NDQuits if they reported being "very or mostly satisfied" and "unsatisfied" if they selected "somewhat or not at all satisfied" with the program.

What is the cost benefit of the NDQuits program?

An annual cost-benefit analysis for the NDQuits program is calculated to understand the monetary value of the program. The methodology was first used in FY18, and details of the calculations can be found in Appendix 1. The major components of the cost benefit calculation are: the amount of cigarette smoking in North Dakota, benefits gained from cessation, and the cost of cessation. All dollar amounts were adjusted for inflation to 2019 dollars.

For every \$1 spent on NDQuits, North Dakota saves \$3.27 - \$3.75 under the current tax rate (\$0.44 per pack).

Cost Benefit Ratio

Component	Quit Rate 32.9%	Quit Rate 28.1%
Benefits of cessation	\$4,511,905	\$3,853,633
Costs of cessation		
Cessation program	\$1,031,483	\$1,031,483
Lost tax revenue	\$173,235	\$147,960
Total cost of cessation	\$1,204,718	\$1,179,443
Benefit/Cost Ratio	\$3.75	\$3.27

Limitations of cost benefit analysis

While we are confident that the cost benefit of NDQuits cessation program is positive, there are some limitations to this analysis. First, the most recent health care expenditure data available and estimates of productivity losses are now outdated. Changes in health care costs, insurance coverage, and salary are all factors that will alter the cost of tobacco use. Second, the response rate to the quit survey used to produce the responder quit rate is only 26% and falls short of the NAQC recommended 50% response rate. It is reasonable to believe that those who quit tobacco are more likely to respond to the survey, therefore we believe that the quit rate is inflated. This means the cost per quit may be slightly higher than estimated in this calculation and would decrease the final cost benefit. Third, this analysis is limited to cigarette users, though other types of combustible tobacco products are also known to be dangerous. Last, the number of packs of cigarettes sold includes cross-border sales, meaning the number of packs per smoker in North Dakota is an overestimate. If the number of packs sold to non-residents were removed, the benefits gained per pack would increase, meaning the benefits per pack (detailed in Appendix 1) are likely an underestimate of the true benefits gained per pack.

Appendices

Appendix 1. Detailed evaluation methods

Appendix 2. Data sources, types of data, and survey attrition

Appendix 3. Reach calculations

Appendix 4. Participant characteristics

Appendix 5. Follow-up respondent representativeness

Appendix 1. Detailed evaluation methods

Since 2012, PDA has been contracted by the NDDoH to evaluate the NDQuits program. The goals of the evaluation are to provide the NDDoH with ongoing monitoring and understanding of the use and quality of services provided. Outcomes in the form of quit attempts, reach, and program satisfaction are also monitored and reported annually. The evaluation of NDQuits is one component of a comprehensive evaluation of North Dakota's Tobacco Prevention and Control Partnership (TPCP) and NDQuits is one of four available cessation programs. The other cessation support includes health systems grants (NDQuits Cessation program), a BABY & ME – Tobacco Free Program, and in person cessation support provided by some of the LPHUs. Referrals to NDQuits are supported by these other cessation programs.

PDA takes a utilization-focused approach to our evaluation-work, meaning that we identify and work closely with the primary intended users of the evaluation deliverables to ensure the processes and products are created to address programmatic needs and the information needs of key stakeholders.

The primary datasets used to inform this evaluation are detailed in Appendix 2. In addition, PDA used surveillance results to interpret NDQuits results in light of overall trends. Specifically, PDA uses results from the Behavioral Risk Factor Surveillance System (BRFSS) and the North Dakota Adult Tobacco Survey (NDATS).

Finally, PDA uses results from the NAQC annual survey as a way to understand North Dakota's results as compared to other quitlines in the United States.

Some of the key methodology is described below.

Treatment Reach

Quitline "reach" refers to the percentage of a state's tobacco-using population that is served by a state's tobacco cessation quitline. One type of reach is "treatment reach," a measure of the impact of the quitline. This methodology is detailed in Appendix 3.

Conversion rates

An important measure of quitline success is the calculation of conversion rates, the proportion of individuals referred to NDQuits who subsequently register for the program.

Comparing NDQuits characteristics to BRFSS/NDATS statewide tobacco user characteristics

To assess the extent to which NDQuits is successfully enrolling all tobacco users across the state, PDA compares key demographic and clinical characteristics of NDQuits registrants to the characteristics of tobacco users statewide as reported in the BRFSS and the NDATS. Participant characteristics are detailed in Appendix 4.

Program utilization (web, phone, text, NRT)

NJH tracks enrollees' use of the phone and web programs, including number of calls or log-ins, and provision of NRT. The FY19 intake dataset includes program utilization between July 1, 2018 – July 31, 2019. PDA includes an extra month of utilization data so that the June enrollees are able to accrue at least one month of utilization.

Follow-up analysis weighting

Two types of weighting were conducted with the follow-up survey results. First, PDA weighted data for the three programs combined by program weight to address differing response rates between the phone, phone web, and web programs. Second, to address the low response rate (26%), PDA used post-stratification weighting methods to weight the follow-up survey back to the study population based on key demographic variables. The details for both of these weighting methods are in Appendix 5.

Quit rate calculations

NAQC was formed as an independent, non-profit organization with the mission of improving quitline services. This group has developed a standard evaluation protocol that all quitlines are encouraged to follow. While originally intended to address telephone programs, as quitlines have addressed additional cessation modalities, such as stand-alone web programs, PDA has seen the expansion of NAQC protocols to these services as well. PDA has developed the evaluation of NDQuits in accordance with NAQC's standards.

In 2009, NAQC sponsored the creation of a white paper to standardize the way quitlines calculate and report quit rates. The paper was updated in 2015. Key recommendations include:

1. Following up with participants seven months after they enroll
2. Reporting responder rates as the standard (versus Intent-to-Treat rates)
3. Excluding those who received less than minimal treatment
4. Excluding those who quit 31 days or more before calling the quitline
5. Reporting 30-day abstinence
6. Including confidence intervals with quit rates

Each is discussed in greater detail below.

[Calculating outcomes seven months after enrollment.](#) This time period was chosen because many quitlines use a four or five call intervention that takes about one month to complete. In this case, the survey is conducted six months after the end of the program.

[Reporting responder rates.](#) A "Responder Rate" only includes those who respond to the survey, versus an "Intention to Treat" (ITT) rate, where all non-responders are assumed to still be smoking. The latter rate is considered to be overly conservative, while the former may

potentially overestimate quit rates, as those who don't respond have been found in the literature to be still smoking at higher rates than respondents.

The NAQC white paper sought to recommend one rate calculation method that all quitlines should use. The paper demonstrated that responder rates are likely to be at least as accurate or perhaps more accurate than ITT rates.¹⁷ Therefore, NAQC recommends responder rates be used so this report only includes responder rates.

This rate is calculated as:

$$\textbf{Responder Rate} = \frac{\# \textit{abstinent}}{\# \textit{who responded to the survey}}$$

[Excluding those who received less than minimal service.](#) The rationale for excluding those with less than minimal service is that it ensures outcomes reported are those that would be expected for participants who receive treatment.

[Excluding those who quit for 31 days or more prior to calling NDQuits.](#) NAQC's third recommendation is that callers be removed if they were quit for more than 30 days at the time of enrollment since it may not be feasible to attribute someone's outcomes to NDQuits if they had already been quit for an extended period of time when they first called for services. Very few participants were removed for this reason (n=13).

[Reporting 30-Day abstinence.](#) This rate means callers have **not used** tobacco for the 30 days immediately prior to the survey. They were asked, "Have you smoked any cigarettes or used any other tobacco, even one puff or pinch, in the last 30 days?" Participants who respond "no" are considered 30-day abstinent. This is the primary outcome measure for quitlines.

[Confidence intervals.](#) Tobacco cessation experts also encourage quitlines to consider using confidence intervals. A confidence interval reminds us that our results represent a sample of individuals. Since we sampled carefully and used rigorous procedures, we can make some inferences about all enrollees, but our inferences are not perfect. They contain some error. The confidence interval is a mechanism to calculate the amount of potential error in our estimates.

Confidence interval bars illustrate that 95 out of 100 times¹⁸ the "true" quit rate for the population is above or below the rate observed in the sample data by a certain amount, depending on the sample size.

¹⁷ NAQC. (2009). *Measuring Quit Rates. Quality Improvement Initiative* (L. An, A. Betzner, M. Luxenberg, J. Rainey, T. Capesius, & E. Subialka). Phoenix, AZ, p.18.

¹⁸ In 95 out of 100 times a sample is drawn

Cost benefit methodology

PDA calculates a cost benefit for the NDQuits program annually. The purpose of this analysis to examine the financial benefits of this program in relation to the costs. The results of the cost benefit have consistently been that there is financial benefit to North Dakota to provide the NDQuits program. This is true even if there is a tax increase on the cost of tobacco (see the FY18 report for details).

In the following tables are details of the data sources and calculation methods for each component of the cost benefit analysis.

Amount of cigarette use in North Dakota

Metric	Amount	Data Source and Calculation Description (the "x" symbolizes a multiplication symbol)
Total number of adult cigarette smokers	111,043	2018 Census estimate of the number of adults in North Dakota (581,379) x 2018 BRFSS weighted percent of current cigarette smokers (19.1%)
Total number of packs of cigarettes sold	49,400,000	FY17 cigarette pack sales from the Campaign for Tobacco Free Kids 2018 report on "State Cigarette Tax Rates & Rank, Date of Last Increase, Annual Pack Sales & Revenues, and Related Data." (https://www.tobaccofreekids.org/assets/factsheets/0099.pdf , Accessed August 15, 2018)
Average number of packs of cigarettes sold per smoker per year	445	Total # packs of cigarettes sold/Total # adult cigarette smokers
Number of quitters due to NDQuits		Number of NDQuits registrants in FY19 that were using cigarettes at enrollment (2,690) x Percent of cigarette users that quit smoking. For the percent that quit, we use two estimates – the responder quit rate, 32.9%, and, for a more conservative estimate, the lower bound of the 95% confidence interval on the responder quit rate, 28.1%.
Estimated number	885	
Conservative number	756	

Benefits gained from cessation

Benefit Component	Total	Per Pack	Per Smoker	Data Source/Calculation Description
Health care expenditures (Adult)				Smoking Attributable Mortality, Morbidity, and Economic Costs (SAMMEC), Centers for Disease Control and Prevention (CDC). Tobacco Use Data Portal. 2009 data adjusted for inflation to 2019 dollars. (https://chronicdata.cdc.gov/health-area/tobacco-use , Accessed Nov 13, 2019)
Ambulatory	\$38,625,330	\$0.78	\$347.84	
Hospital care	\$215,538,900	\$4.36	\$1,941.03	
Prescription drugs	\$74,389,530	\$1.51	\$669.91	
Nursing home	\$38,625,330	\$0.78	\$347.84	
Other (includes home health care, durable & nondurable medical equipment, other professional services)	\$21,220,090	\$0.43	\$191.10	
Total	\$388,399,180	\$7.86	\$3,497.72	
Health care expenditures (Neonatal)	\$443,399	\$0.01	\$3.99	Estimate of 2018 live births in ND from NDDoH vital statistics (10,630; http://www.ndhealth.gov/vital/pubs/ff2018.pdf) * Percent of 2018 pregnant women who smoke from NDDoH vital statistics (11.0%; https://www.ndhealth.gov/tobacco/Data/Tobacco%20Surveillance%20Data%20Table.pdf) * Amount in smoking attributed neonatal expenditures per maternal smoker (\$379.20 [\$279 in 2004 dollars adjusted for inflation to 2019 dollars] from Adams, et al., 2011. Infant Delivery Costs Related to Maternal Smoking: An Update. Nicotine & Tobacco Research, 13(8), 627-637. https://pdfs.semanticscholar.org/87fd/eba22b4de1c755c843567dcaf8280b0e8133.pdf)
Total health care expenditures	\$388,842,579	\$7.87	\$3,501.72	Adult + Neonatal expenditures
Productivity losses	\$177,272,127	\$3.59	\$1,596.42	Number of current smokers in the work force (111,043 * 69.6% [% of NDs in work force from Census Bureau 2018 1-yr ACS]) * Bunn estimate of smoking attributable losses (\$1807 in 2006 dollars; converted to 2019 dollars: \$2293.71)
Total Benefit	\$566,114,705	\$11.46	\$5,098.14	Health care expenditures + Productivity losses

Cost of cessation

Cost Component	Total	Per Pack	Per Smoker	Data Source/Calculation Description
Cessation program costs	\$1,031,483	\$0.02	\$9.29	NDQuits Budget & Media Costs as reported from NDDoH FY19
Lost tax revenue (by quit rates below)				Tax rate (\$0.44) * Estimated number of FY19 NDQuits related cigarette quitters (2,690 cigarette smoker enrollments into NDQuits in FY19 * quit rate [responder rate of 32.9% or lower bound of 28.1%]) * Average number of packs sold per smoker (445, from Table 1)
32.9%	\$173,235	\$0.0035	\$1.56	
28.1%	\$147,960	\$0.0030	\$1.33	

Component	Current tax rate (\$0.44/pack)	
	Quit Rate 32.9%	Quit Rate 28.1%
Benefits of cessation	\$4,511,905	\$3,853,633
Costs of cessation		
Cessation program	\$1,031,483	\$1,031,483
Lost tax revenue	\$173,235	\$147,960
Total cost of cessation	\$1,204,718	\$1,179,443
Benefit/Cost Ratio	3.75	3.27

Appendix 2. Data sources, data types, and survey attrition

As is described in various parts of this report, the NDQuits evaluation is based on three datasets. A brief overview of these datasets is provided in the following table.

	Form		
	Registration	Utilization	Follow-up
Collects what?	Participant characteristics, tobacco use, consent to follow-up	Documentation of number of calls, login attempts, NRT received	Program satisfaction, use of NRT, quit attempts, quit behavior, additional quitting support
Completed by?	NJH	NJH	Wyoming Survey & Analysis Center (WYSAC)
Completed when?	Prior to first counseling session	Ongoing	Seven months from program registration
Used how?	Referrals, enrollees, demographics and tobacco use	Reach, utilization	Outcomes

Descriptions of each data source

[Referral data](#)

NJH tracks all incoming referrals in the Referral Detail Extracts. For analysis, PDA selected those referrals with a referral closed date within FY19 that originated from one of the following referral types: 1) fax referral, 2) e-referral, or 3) provider web referral. To calculate a conversion rate - defined as the proportion who complete intake for NDQuits on or after the referral closure date - PDA tied the Client Data Extract (Intake data) to the Referral Details Extract via participant ID (PTID), to determine whether an intake record existed for the referral record. Referral records with an intake date on or after the referral date are considered "converted" to intake completion. Conversion is reported for referrals belonging to unique tobacco users to prevent multiple referrals/enrollments from impacting the conversion rate.

[Intake data](#)

NJH provided PDA with individual-level registration extracts for all individuals who enrolled in the telephone and web programs between July 1, 2018 – June 30, 2019. NJH collects data similar to the Minimal Data Set (MDS) items developed by the NAQC, including information on participant demographics, tobacco use characteristics, and quit histories. NJH collects intake data at the time of enrollment or re-enrollment. Once NJH sends the intake data, PDA thoroughly cleans the data and checks for quality assurance.

[Program use data](#)

NJH tracks enrollees' use of the phone and web programs, including number of calls or log-ins, and provision of NRT. The FY19 program use dataset includes program utilization between July 1, 2018 – July 31, 2019, and for unique enrollees between July 1, 2018 – June 30, 2019. We include an extra month of utilization data, so the June 2019 enrollees are able to accrue at least one month of utilization.

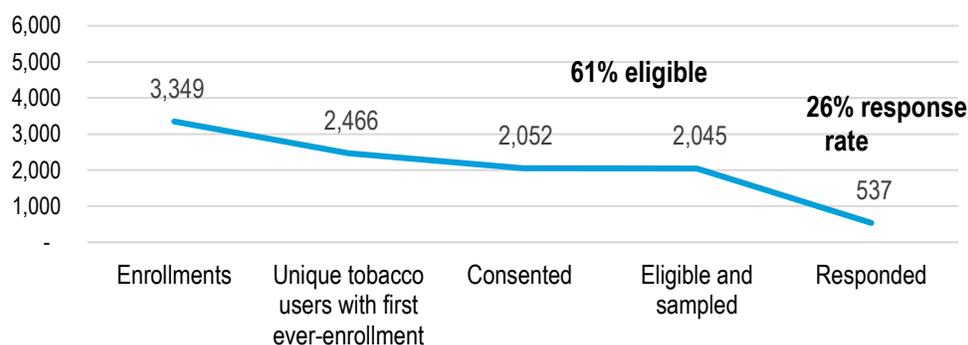
FY19 intake dataset attrition table

	Phone registration	Web registration	Web-Phone registration	Total
Tobacco users requesting services	1,252	1,405	459	3,116
Unique tobacco users requesting services	1,203	1,387	439	3,029
Unique tobacco users receiving NAQC minimal treatment	886	1,330	371	2,587

Sampling and weighting

Survey attrition. There were 3,349 enrollments in NDQuits from December 2017 – November 2018. Enrollees were eligible to be sampled if it was their first enrollment, if they were aged 18 years or older, lived in North Dakota, and if they provided a valid phone number or email address, and consented to follow-up. Of the 2,466 unique tobacco users with a first-ever enrollment, 2,052 consented to follow-up (83.2%), counting missing as not consented. There were 2,045 unique people who met all of the sampling the eligibility criteria, or 61.1% of all enrollments. NDQuits conducts an exhaustive sample of eligible participants. Of those sampled, 26.3% (n=537) responded to the survey.

Survey attrition for FY19



FY19 follow-up attrition

	Phone registration	Web registration	Web-Phone registration	Total
Total registrations for help quitting or staying quit from tobacco	1,398	1,472	479	3,349
All enrollments eligible for follow-up (first time ever program enrollment, unique tobacco user)	963	1,162	341	2,466
Consent rates (rates include missing as no consent)	912/963 (94.7%) missing <1%	831/1,162 (71.5%) missing 3%	309/341 (90.6%) missing 1%	2,052/2,466 (83.2%) missing 2%
Eligible (18 years+, valid phone or email, lives in ND) and sampled for follow-up survey	908	829	308	2,045
Follow-up survey respondents	268/908 (29.5%)	191/829 (23.0%)	78/308 (25.3%)	537/2,045 (26.3%)

Appendix 3. Reach calculations

Quitline “reach” refers to the percentage of a state’s tobacco-using population that is served by a state’s tobacco cessation quitline. One type of reach is “treatment reach,” a measure of the impact of the quitline. The NAQC defines treatment reach as “the proportion of the target population who receives an evidence-based treatment from a quitline.”¹⁹ The NAQC defines the target population as all adult tobacco users and evidence-based treatment as including both telephone counseling and pharmacotherapy. CDC’s *Best Practices for Comprehensive Tobacco Control Programs*²⁰ set as a goal that quitlines should annually reach 8% of smokers. However, according to data collected by NAQC, in FY09, only 1.2% of tobacco users in the United States received cessation counseling and/or medications through quitlines.²¹

PDA calculated a NAQC treatment reach which includes in the numerator those that were cigarette and/or smokeless tobacco users (excludes exclusive pipe, cigar, or other tobacco users) at registration, were over the age of 18, and received at least one phone counseling call, or received a shipment of NRT.

Tobacco use (cigarettes/SLT) prevalence data from the 2018 BRFSS are used for estimates of the number of tobacco users in North Dakota (the denominator in reach calculations). The number of tobacco users in North Dakota is estimated using the 2018 Census adult population estimates. There were two participants that could not be assigned a region due to missing address information. They are included in the statewide reach estimate but excluded from the reach by region estimates.

¹⁹ North American Quitline Consortium (NAQC). (2009). *Measuring Reach of Quitline Programs. Quality Improvement Initiative* (S. Cummins, PhD). Phoenix, AZ.

²⁰ Centers for Disease Control and Prevention. (2014). *Best Practices for Comprehensive Tobacco Control Programs—2014*. Atlanta: U.S. Department of Health and Human Services, CDC, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.

²¹ Barry, M.B., Saul, J., & Bailey, L.A. (2010). *US quitlines at the crossroads: Utilization, budget, and service trends 2005-2010*. Phoenix, AR: North American Quitline Consortium.

FY19 treatment reach to North Dakota tobacco users (cigarettes and/or smokeless tobacco)

Region	Population (2018 Census)	Prevalence (2018 BRFSS)	ND Tobacco Users	Participants (Any Program)	Reach (Any Program)	Reach (Any Program) 95% Confidence Interval	
<i>Statewide</i>	581,379	23.4%	136,043	1,767	1.30%	1.22%	1.40%
<i>Statewide AI/AN (only)</i>	31,230	46.5%	14,522	132	0.91%	0.75%	1.16%
Western Service Regions	269,093	25.1%	67,650	778	1.15%	1.05%	1.27%
Eastern Service Regions	312,286	22.7%	70,889	987	1.39%	1.26%	1.56%
1. Northwest	36,327	33.9%	12,315	73	0.59%	0.49%	0.75%
2. North Central	75,325	24.4%	18,379	197	1.07%	0.92%	1.29%
3. Lake Region	29,173	32.1%	9,365	66	0.70%	0.58%	0.89%
4. North East	71,905	18.5%	13,302	249	1.87%	1.48%	2.53%
5. South East	168,155	21.7%	36,490	498	1.36%	1.18%	1.61%
6. South Central	43,053	24.8%	10,677	174	1.63%	1.30%	2.20%
7. West Central	122,702	22.4%	27,485	379	1.38%	1.18%	1.65%
8. Badlands	34,739	27.3%	9,484	129	1.36%	1.08%	1.84%

FY19 treatment reach to North Dakota cigarette users (with or without other tobacco)

Region	Population (2018 Census)	Prevalence (2018 BRFSS)	ND Cigarette Users	Participants (Any Program)	Reach (Any Program)	Reach (Any Program) 95% Confidence Interval	
<i>Statewide</i>	581,379	19.1%	111,043	1,653	1.49%	1.37%	1.62%
Western Service Regions	269,093	20.0%	53,819	723	1.34%	1.20%	1.52%
Eastern Service Regions	312,286	18.9%	59,022	928	1.57%	1.40%	1.78%

FY19 treatment reach to North Dakota smokeless tobacco users (with or without other tobacco)

Region	Population (2018 Census)	Prevalence (2018 BRFSS)	ND Smokeless Users	Participants (Any Program)	Reach (Any Program)	Reach (Any Program) Confidence Interval	
<i>Statewide</i>	581,379	6.5%	37,790	189	0.50%	0.44%	0.59%
Western Service Regions	269,093	8.1%	21,797	89	0.41%	0.34%	0.51%
Eastern Service Regions	312,286	5.3%	16,551	100	0.60%	0.49%	0.78%

FY19 treatment reach to North Dakota dual cigarette and smokeless users

Region	Population (2018 Census)	Prevalence (2018 BRFSS)	ND Both Cigs and Smokeless Users	Participants (Any Program)	Reach (Any Program)	Reach (Any Program) Confidence Interval	
<i>Statewide</i>	581,379	2.2%	12,790	75	0.59%	0.46%	0.81%
Western Service Regions	269,093	2.9%	7,804	34	0.44%	0.32%	0.67%
Eastern Service Regions	312,286	1.6%	4,997	41	0.82%	0.57%	1.64%

Appendix 4. Participant characteristics tables

Demographic characteristics of tobacco users enrolled in the NDQuits (broken down by program selected at intake) as compared to North Dakota tobacco users

		Web-Phone	Phone	Web	NDQuits	All ND tobacco users
		Jul 2018–Jun 2019				BRFSS 2018 or ND ATS 2019
<i>Number of tobacco users in sample</i>		439	1,203	1,387	3,029	1,006
		%	%	%	%	%
Gender	Female	57.2	55.1	57.3	56.4	37.1
	Male	42.8	44.9	42.7	43.6	62.9
Age*	18-24	8.7	4.3	9.5	7.3	12.6
	25-34	24.4	18.8	35.3	27.1	26.0
	35-44	22.6	17.0	28.1	22.9	20.4
	45-54	20.3	16.1	15.1	16.2	14.8
	55-64	17.3	27.2	9.4	17.6	16.7
	65+	6.8	16.5	2.6	8.8	9.5
Education level attained	Less than high school	8.8	12.7	6.1	9.2	12.3
	High school grad or GED	31.8	40.8	32.1	35.6	38.2
	Some college/technical school	34.6	29.8	37.3	33.8	38.4
	College graduate	24.9	16.7	24.5	21.4	11.1
Race	White	88.4	84.9	92.5	88.8	85.2
	American Indian/ Alaskan Native	6.6	7.1	3.3	5.4	9.8
	Black or African American	2.4	3.1	1.2	2.2	2.8
	Other (Multiple, Asian, NHPI, Other)	2.6	4.8	2.9	3.6	2.2
Hispanic/Latino**	Hispanic	4.6	2.5	16.7	4.4	3.6
	Non-Hispanic	95.4	97.5	83.3	95.6	96.4
LGBTQ	Yes	6.5	3.7	5.1	4.7	6.3
	No	93.5	96.4	94.9	95.3	93.7
Pregnant***	Yes	2.7	3.7	1.3	2.4	
	No	97.3	96.3	98.7	97.6	N/A
Health Insurance	Yes	76.6	84.1	52.3	71.7	81.8
	No	23.4	15.9	47.7	28.4	18.2
Health Insurance Type****	Uninsured	23.6	16.0	48.5	28.6	
	Private	38.9	26.5	34.6	31.1	
	Medicaid	22.0	25.9	7.2	18.7	
	Medicare	10.5	24.4	1.7	14.4	
	Other	5.1	7.3	8.0	7.3	N/A

* Instead of asking age-range, BRFSS directly asks for age.

**Hispanic is only asked of participants who complete registration over the phone, missing 46% of data.

***Pregnant % here is reported out of all enrollees (regardless of gender/age). If they did not answer the pregnancy question, we are assuming they are not pregnant.

****Health insurance type is not asked consistently on web registration, missing 31% of data.

Tobacco use characteristics

		Web-Phone	Phone	Web	NDQuits	All ND tobacco users
		Jul 2018–Jun 2019				BRFSS 2018 or ND ATS 2019
<i>Number of tobacco users in sample</i>		439	1,203	1,387	3,029	1,006
Cigarette Use Frequency	Every day	95.4	92.2	96.2	94.4	
	Some days	2.0	3.3	3.8	3.3	
	Not at all	2.5	4.5	0	2.3	N/A
Cigarettes per day	1-9	14.6	16.1	13.1	14.5	17.2
	10-19	35.0	31.5	40.8	36.2	50.4
	20 or more	50.4	52.4	46.2	49.3	32.4
Tobacco Type*	Cigarettes only	86.7	89.7	84.4	86.9	52.0
	Smokeless Tobacco only	5.4	4.0	8.7	6.3	13.0
	Other only (Cigars, Pipe, Other)	1.2	1.5	0.7	1.1	N/A
	More than one tobacco type	6.8	4.8	6.2	5.7	27.4
Smokeless Use Frequency	Every day	73.7	68.5	81.8	76.5	
	Some days	23.7	25.8	18.2	21.4	
	Not at all	2.6	5.6	0	2.1	N/A
Time to first cigarette after waking	Within 5 minutes	40.7	42.8	44.1	43.0	17.5
	6-30 minutes	36.6	35.0	36.8	36.0	27.7
	31-60 minutes	12.0	13.2	11.9	12.5	18.4
	>60 minutes	10.7	9.1	7.1	8.5	36.5
Times you have tried to quit	None	8.6	10.6	12.0	10.9	
	1 to 2	33.9	31.4	37.9	34.5	
	3 to 4	24.8	22.1	29.8	25.8	
	5 to 6	16.6	13.4	11.3	13.0	
	7 to 8	2.8	3.7	3.3	3.4	
	9 to 10	4.0	4.6	1.4	3.2	
	11 or more	9.4	14.3	4.3	9.3	N/A
E-cigarette use at intake**	Yes	10.6	7.1	15.4	11.2	16.0
	No	89.4	93.0	84.6	88.8	84.0

* Tobacco type here is reported among cessation program participants as each individual form *only*, with the final option being “more than one type,” which captures anyone who reports using more than one form of tobacco, while the ND ATS categories here are “multi-select,” representing any individual who chose that option, even if they also selected another one (so the total will sum to over 100%).

**E-cigarette question for ATS is different from intake form with asks “Have you used an e-cigarette or other electronic ‘vaping’ product in the past 30 days?” ATS asks about E-cig use frequency and what is reported is “currently every day or some days”.

Appendix 5. Follow-up respondent representativeness

PDA's ongoing follow-up survey of NDQuits participants is conducted with an exhaustive sample of eligible participants who enroll each month. By design, the sample mirrors the general population of all participants in terms of the proportion enrolled in each of the three primary programs. Despite the exhaustive sample, response rates differed across programs resulting in a respondent group that overrepresented phone program enrollees and under-represented dual program enrollees.

The follow-up survey includes standard questions developed by NAQC, with additional questions developed by PDA and the NDDoH. WYSAC administers the survey to all eligible participants as a mixed-mode survey (via web and phone – these run in different systems and do not run concurrently). Those eligible include tobacco users who are: calling for help with quitting or staying quit, age 18+, North Dakota resident, and first time ever NJH program enrollment. As previously stated, PDA exhaustively samples those eligible.

Once the sample is chosen, WYSAC sends an email to potential respondents with a valid email address (~70% of the sample in ND). By clicking on this email, individuals are directed to the online follow-up survey. According to WYSAC, it is also a pre-notification for the phone survey, as the pool of respondents are informed that if they do not complete a web survey, they will receive a call from WYSAC to complete the survey over the phone. The first two weeks of follow-up use the web survey only. During the second two weeks, individuals who have not completed a web survey are called and asked to take the survey via phone. When WYSAC calls to administer the follow-up survey, they first ask participants for their consent (as the first question).

Weighting

Due to differing consent and response rates between the phone, web-phone, and web programs, survey data for the three programs combined were weighted by a program weight to more accurately reflect actual levels of the study population in each of the programs. The program weights were as follows:

Program	N of Surveys	Weight
Phone	268	0.7825
Web	191	1.3248
Web-Phone	78	0.9520

To address the low response rate (26%), we used post-stratification weighting methods to weight the follow-up survey responders back to the study population based on age, education, race, and gender. This was completed using a raking macro in SAS (David Izrael, David C. Hoaglin, and Michael P. Battaglia; Abt Associates Inc., Cambridge, Massachusetts; Paper 258-25;

A SAS Macro for Balancing a Weighted Sample; 2000). The final post-stratification weights are available by request. The follow-up analyses with all programs combined have a 2-level weight (program sample weight x post-stratification weight), while the follow-up analyses by program are only weighted by the post-stratification weight. All weights were scaled back to the responder sample size for consistency (n=537).

Response bias analysis

In order to assess if and how survey respondents were representative of all NDQuits participants, PDA conducted a response bias analysis, comparing survey respondent characteristics with those of non-survey respondents in the study population (unique tobacco users that enrolled in NDQuits for the first time December 2017 – November 2018). Differences were assessed for 14 demographic and clinical variables: program requested at enrollment, gender, age, race, education, health insurance, LGBTQ, pregnancy status, types of tobacco used, time to first cigarette upon waking, number of cigarettes per day smoked for cig users, receipt of NRT, completion of a coaching call, and received text message.

For the FY19 follow-up data cohort, the survey respondents differed in a few ways from the non-respondents (significant at the p<.05 level). Specifically, responders were more likely to be in the phone program, be older at intake, have Medicare or private health insurance, report higher education level, receive NRT, complete a counseling call, and participate in the text program.

Variables that differed significantly by response status for FY19

 = survey respondents had **higher** outcomes  = survey respondents had **lower** outcomes

			Survey Respondents	Non-respondents
Program				
(Pearson $\chi^2(2) = 40.403, p < .0001$)				
	Phone only		49.9%	36.0%
	Phone and web		14.5%	13.6%
	Web only		35.6%	50.3%
Age at Enrollment				
(Pearson $\chi^2(5) = 58.457, p < .0001$)				
	18-24		6.5%	9.5%
	25-34		19.9%	30.4%
	35-44		20.3%	21.8%
	45-54		18.4%	17.3%

			Survey Respondents	Non-respondents
	55-64	↑	20.5%	13.8%
	65+	↑	14.3%	7.2%
Education				
(Pearson $\chi^2(3) = 15.674$, $p = .0013$)				
	Less than high school	↓	8.4%	9.8%
	High school degree/GED	↓	30.9%	38.0%
	Some college or technical school	↑	33.5%	31.8%
	College degree	↑	27.2%	20.4%
Health Insurance				
(Pearson $\chi^2(4) = 45.388$, $p < .0001$)				
	Uninsured	↓	17.7%	30.7%
	Private Insurance	↑	36.1%	30.6%
	Medicaid	↓	15.6%	18.8%
	Medicare	↑	21.2%	12.0%
	Other	↑	9.4%	7.8%
NRT shipment				
(Pearson $\chi^2(1) = 41.706$, $p < .0001$)				
	NRT shipped	↑	62.0%	46.1%
	NRT not shipped	↓	38.0%	53.9%
Phone counseling				
(Pearson $\chi^2(1) = 100.464$, $p < .0001$)				
	Phone counseling	↑	54.4%	30.8%
	No phone counseling	↓	45.6%	69.2%
Text program				
(Pearson $\chi^2(1) = 12.705$, $p < .0001$)				
	Sent texts	↑	46.7%	38.1%
	No texts	↓	53.3%	61.9%

Implications of response bias on program outcomes

Because there are several significant differences in the responders versus non-responders, the follow-up survey responses should be interpreted with caution. A few of these characteristics were associated with quit rates: health insurance type, NRT, and counseling. The effect of these associations is likely that our quit rate is an overestimate of the true quit rate in NDQuits. Because of these differences, results may not be entirely generalizable to the entire NDQuits population.

Variables that were associated with quit rate for FY19

			30 day quit rate
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Health Insurance			
(Pearson $\chi^2(4) = 9.619, p < .047$)			
	Uninsured	⬇️	38.7%
	Private Insurance	⬆️	47.7%
	Medicaid	⬇️	25.8%
	Medicare	⬇️	37.8%
	Other	⬆️	40.0%
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NRT shipment			
(Pearson $\chi^2(1) = 41.706, p < .0001$)			
	NRT shipped	⬆️	40.2%
	NRT not shipped	⬇️	29.4%
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Phone counseling			
(Pearson $\chi^2(1) = 100.464, p < .0001$)			
	Phone counseling	⬆️	42.1%
	No phone counseling	⬇️	29.0%