Final Quitline Evaluation Report:

FY 2010 – FY 2011

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Executive Summary

The Connecticut Department of Public Health (DPH) provides a comprehensive tobacco use prevention and control program which strives to enhance the well-being of Connecticut's residents by promoting tobacco-free lifestyles and by educating communities about the economic and health costs and consequences of tobacco use. The Connecticut Tobacco Quitline is one component of this comprehensive program.

DPH has contracted with Professional Data Analysts, Inc. (PDA), to conduct an independent, comprehensive evaluation of the Connecticut DPH tobacco control efforts. This report answers key evaluation questions regarding Quitline services provided during FY 2011, and the quality and effectiveness of those services. The report also examines the quality of evaluation services including participant follow-up provided by the Quitline vendor. The primary audience for this report is the Connecticut DPH. Results from this evaluation may be used by DPH to assess vendor performance in providing quitline and evaluation services, consider areas for improvement, and recognize areas of strength and success.

Quitline service delivery during FY 2011

In FY 2011, the Connecticut Quitline experienced a substantial increase in both the number of callers and reach among tobacco users statewide, as compared to FY 2010. In addition to media promotions, the Quitline vendor's outbound recruitment efforts contribute to the increase. Fax referrals contribute a small but steady number of enrollments, and are an area for potential growth. The vendor's attempts to contact and enroll fax referrals result in an acceptable fax enrollment rate. Efforts by DPH and funded community grants to strengthen the fax referral network, in terms of the number of agencies who refer, the number of referrals made per agency, and the quality of the referrals (i.e., tobacco users are ready to quit and interested in the Quitline) could contribute to increased enrollment levels.

The Quitline is successfully reaching important groups of tobacco users, including some with high tobacco use prevalence and those who may not have access to other kinds of cessation treatment. These groups include tobacco users who have less than a high school education, are uninsured, or participate in Medicaid. Conversely, men and younger tobacco users are underrepresented among Quitline callers, and may benefit from additional promotion or outreach efforts.

Most callers do not take full advantage of the Quitline services available to them. Few callers complete the full number of calls offered, and so are missing out on additional support contacts planned to occur after the quit date. Since there is a demonstrated dose-response relationship between the amount of Quitline counseling and outcomes, it is important that the Quitline encourage callers to complete a greater amount of counseling.

The majority of multi-call program participants receive free nicotine replacement therapy (NRT) offered by the Quitline. This should contribute to good caller outcomes, since the combination of counseling plus NRT gives tobacco users the best chance for success. The NRT eligibility guidelines, based on health insurance status, are consistently enforced. This ensures that resources are allocated to callers who have the greatest need. However, few Medicaid callers receive the full 8-week supply of NRT for which they are eligible. This is likely due to callers dropping out before receiving the second or third counseling call. We recommend that DPH and the Quitline vendor review the contact protocols and

consider ways to encourage all participants, and Medicaid callers especially, to follow through with the entire counseling program.

Finally, the online Web Coach program is available to all callers who have an email address. This resource is available 24/7/365, and is another way to obtain ongoing support to quit tobacco. However, use of the Web Coach program is low among Connecticut callers. We suggest that the Quitline consider promoting the use of Web Coach in voice messages left for callers and in the final attempt letter that is sent to callers who cannot be reached.

Quality of outcome evaluation

The DPH contracts with the Quitline vendor to conduct participant follow-up surveys and report quit rates and other outcome data. PDA reviewed the vendor's evaluation methodology and reports and compared them to accepted standards set by the North American Quitline Consortium (NAQC). PDA finds that the vendor adheres to nearly all of the recommendations, and in addition presents analyses and reports that are specific to the needs and interested of the DPH. The quit rates and other follow-up data are reported by the vendor along with extensive contextual information which facilitates accurate interpretation and appropriate comparisons to other Quitline results.

The most significant divergence from the recommended practice is the structure of the survey instrument. Two items are not fully compatible with NAQC recommendations: the "readiness to quit" and "30-day abstinence" items. These two items measure tobacco use behaviors that are critical to describing Quitline effectiveness, and we recommend that going forward these items be modified to exactly match the standard , or that the vendor provide evidence that the their questions produce equivalent responses. If comparisons are made between Connecticut's caller outcomes and those reported by other state quitlines, we recommend that key differences in data collection or survey methodology be noted.

Quality Assurance

It is important that Connecticut callers receive high quality services from the Quitline vendor. PDA conducted a site visit to the Quitline vendor facility and interviewed key staff to assess quality assurance procedures and protocols. We find that the hours of operation and staffing levels are sufficient to meet the needs of tobacco users in Connecticut. All calls are handled in the order they are received, and have the same priority, regardless of the state or location in which the calls originate. Extensive forecasting is done to determine the staffing levels necessary to meet anticipated demand. The remote agent program (which allows employees to work from home) likely increases the availability of quit coaches in the Eastern time zone and during peak calling times, and should be considered an advantage.

The qualifications and initial training provided to employees appears to be sufficient to ensure quality delivery of services. The ongoing training offered through the certification program provides an opportunity for employees to gain skills and demonstrate improvement over time.

The vendor has multiple processes in place to assess and ensure quality delivery of Quitline services, including employee training, system controls, performance monitoring, data review, and troubleshooting teams. These quality assurance processes are complimentary and designed to work together. PDA's observation of the intake and counseling processes in action lead us to conclude that the quality assurance protocols are consistently implemented, and are both thorough and effective.

There are several strengths of the vendor's NRT protocol. Quit Coach training on cessation medications is extensive and includes the full range of approved medication types. The protocol as described includes discussion about medication options, instruction for use are provided both verbally and via mail, and the need for and use of medication is reassessed at each subsequent call. Quit coaches may offer corrective advice or recommend an adjusted dosage as needed.

The caller-driven decision process used to select cessation medications has both benefits and drawbacks. By nature it is tailored to the desires of the caller, which likely results in a short and focused conversation. However, since callers have a wide range of knowledge (and possibly misinformation) about medications, many callers may never hear about the full range of options available to them. This will likely result in greater use of free products provided by the DOH, and in some cases callers will not learn about or consider other options that may be appropriate for them. We recommend DOH review the medication decision process and consider whether greater emphasis should be placed on informing callers about all medication options, including prescription medications.

In summary, PDA's assessment of caller data provided during FY 2011, our review of the existing outcome evaluation, and our on-site assessment of quality assurance processes suggest that the Connecticut Quitline is functioning well overall, and delivers services of consistent quality to the state of Connecticut. Finally, PDA welcomes feedback on this report, and we suggest that the DPH consider the recommendations for improvement that we have outlined in this report and review them with the Qutiline vendor with the goal of making this quality program even stronger.

Introduction

The Connecticut Department of Public Health (DPH) provides a comprehensive tobacco use prevention and control program which strives to enhance the well-being of Connecticut's residents by promoting tobacco-free lifestyles and by educating communities about the economic and health costs and consequences of tobacco use. The Connecticut Tobacco Quitline is one component of this comprehensive program.

About the Quitline

The Quitline is a free stop-smoking service offered to Connecticut residents. The Quitline offers telephone cessation counseling and nicotine replacement therapy (NRT) to eligible callers. Quitline services are provided under a contract with Alere Wellbeing, Inc. ("Alere," formerly Free & Clear, Inc.).

About the evaluation

DPH has contracted with Professional Data Analysts, Inc. (PDA), to conduct an independent, comprehensive evaluation of the Connecticut DPH tobacco control efforts. This multi-component effort evaluates media campaigns, community-based cessation programs, as well as the Quitline. Alere is also contracted to provide some Quitline evaluation services, including providing monthly reports of Quitline use, conducting follow-up with callers to assess smoking status and satisfaction, and using the follow-up data to create quit rates.

This report

The purpose of this report is to answer key evaluation questions regarding Quitline services provided during FY 2011, and the quality and effectiveness of those services. The report also examines the quality of evaluation services provided by Alere. The primary audience for this report is the Connecticut DPH. Results from this evaluation may be used by DPH to assess vendor performance in providing quitline and evaluation services, recognize areas of strength and success, and to consult with the vendor on ways to improve programming.

Report organization

The report is organized in three major sections, each reporting on a separate component of the evaluation. Each section closes with its own Summary listing conclusions and recommendations. Section 1 describes Quitline service delivery during FY 2011, including the number and characteristics of callers, the enrollment and fax referral process, Quitline reach overall and by demographic groups, and the extent to which callers make use of the counseling, medications, and online support offered by the Quitline. Section 2 examines the quality of evaluation data, methodology and reports provided by the vendor, as compared to accepted standards in the field of tobacco cessation evaluation. Section 3 describes and critiques the vendor's quality assurance protocols and staffing levels, and the extent to which these protocols ensure the delivery of quality services to Connecticut tobacco users.

Section 1. FY 2011 Quitline service delivery

EQ 1. To what extent are the quitline vendor's call back attempts and protocols successful at enrolling, reaching and retaining callers for service?

In this section we present the number of tobacco users who registered with the Quitline in FY10, the method of entry including the fax referral program, and how callers hear about the Quitline. We describe callers' demographic and clinical characteristics, and the extent to which the Quitline is serving all tobacco users in the state, including target population groups. Finally, we present callers' use of the counseling, NRT and online support services available to them.

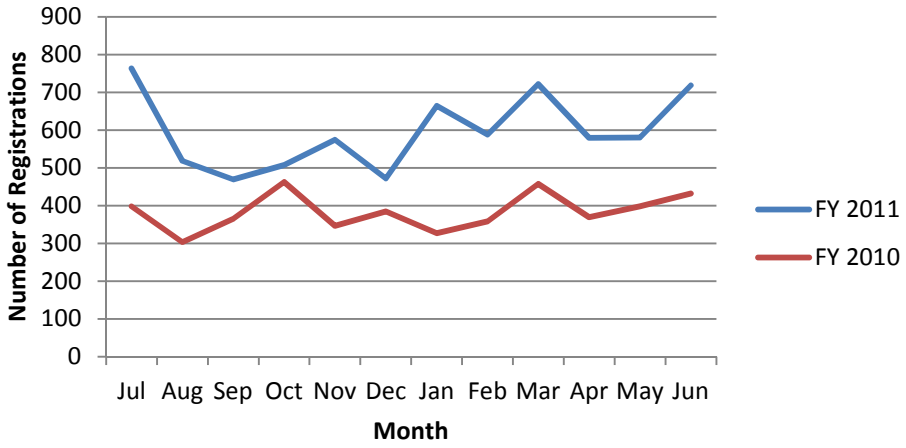
Data sources and Methodology

The Quitline vendor provides a monthly Quitline Experience Extract (QEE), which contains intake data for all new registrants along with service use data documenting the number and type of counseling calls received by each registrant and the distribution of NRT. The vendor also provides a Registration Experience Extract, which provides additional detail about fax referrals and other registration processes. PDA analyzed these data for all callers who registered with the Connecticut Quitline during FY 2011 (July 1, 2010 – June 30 2011). In addition we accessed data from the 2010 Connecticut Behavioral Risk Factor Surveillance System (BRFSS).

Numbers served

As shown in Figure 1, a total of 7,154 callers registered with the Connecticut Quitline during FY 2011. This represents a large increase over the number of registrations in the previous fiscal year (4,552)1. The majority of callers, 93% are tobacco users calling for help with quitting (see Table 1).

Figure 1. Quitline registrations by month by fiscal year



[1] For information about Quitline reach among tobacco users in Connecticut, and about the relationship between media promotions and call volume, please see the report *Adult Cessation Media Impact on Quitline Call Volume and Website Visits: FY 2010 – FY 2011*, submitted by Professional Data Analysts, Inc. to Connecticut Department of Public Health, October 2011.

Table 1. FY 11 registrants by caller type

Caller Type	N	%
Tobacco User	6,659	93.1%
Proxy	83	1.2%
Provider	157	2.2%
General Public	255	3.6%
Total new registrants	7,154	100.0%

Method of entry

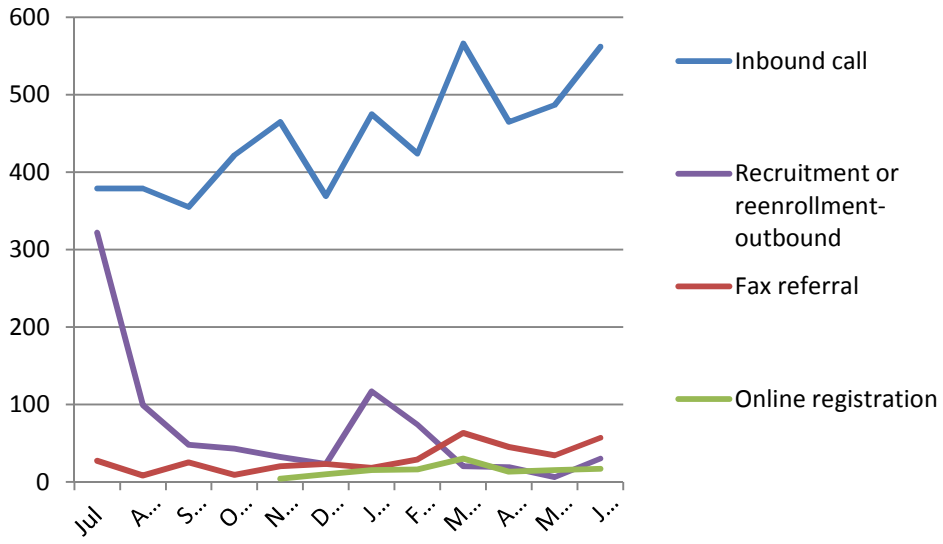
Callers may enter the Quitline by four routes.

- ***Inbound call.*** This is the most common entry method. Callers may hear about the Quitline through the media, a referral from a physician, from a friend, or in other ways, and place a call to sign up. A total of 5,348 callers, about 83%, enter this way, and inbound calls trended upward over the course of the fiscal year (see Table 2 and Figure 2).
- ***Outbound recruitment call.*** During times of low call volume, Alere may make outbound recruitment calls to callers who have registered previously but have not quit and are currently eligible to receive additional services. During FY11, outbound recruitment contributed substantially to Quitline volume. About 13% of registrations originated from outbound recruitment calls, with large spikes occurring in July 2010 and January 2011 when Alere devoted extra resources to this effort. Looking back to Figure 1 on the previous page, the outbound recruitment effort in July 2010 contributed greatly to the spike in enrollments during that month.
- ***Fax referral.*** The Quitline service includes a process by which physicians and other healthcare providers connect patients to the Quitline via fax referral. Quitline counselors make outbound calls to referred patients and offer them Quitline services. Fax referrals can provide a low cost, sustainable method of promoting Quitline use. Just over 5% of registrations, or a total of 358, originated as fax referrals, and referrals increased during the second half of the year.
- ***Online registration.*** Beginning in late November 2010, the CT Quitline added online registration as an option. Just under 2% of registrations were made online, and this has remained steady from month to month since online registration was launched.

Table 2. Method of entry to the Quitline in FY11

	N	%
Inbound call	5,348	80.3
Outbound recruitment offer	833	12.5
Fax referral	358	5.4
Online registration	120	1.8
Total	6,659	100.0

Figure 2. Monthly Quitline Registrations by method of entry



How Heard about Quitline

When asked how they heard about the Quitline, 30% of callers report hearing about the service from a professional, usually by a health care provider. This suggests a strong familiarity with the Quitline among health providers in Connecticut, which is a positive finding. Once a strong referral system is built, it can continue to provide Quitline referrals without the direct costs of a media campaign. A similar proportion, 29%, hears about the Quitline from a family member or friend, and 21% learn about the Quitline through the media, most commonly through a television ad.

Table. How callers hear about the Quitline

Source	N	%
Professional Referrals		
Health Professional	1,381	22
Community Organization	280	4
Pharmacy	97	2
Health Department	95	1
Employer/Worksite	54	1
Health Insurance	29	0
All professional referrals	**1,936**	**30**
Family/Friend	**1,862**	**29**
Media		
TV/Commercial	714	11
Brochure/Newsletter/Flyer	254	4
Website	228	4
Radio	60	1

Source	N	%
Newspaper/Magazine	46	1
Outdoor Ad	34	1
TV/News	30	0
Cigarette Pack (Quit Assist)	7	0
All media	**1,373**	**21**
Outbound Recruitment	**712**	**11**
Other	**505**	**8**
TOTAL	**6,388**	**100**

EQ 2. To what extent is the Quitline reaching targeted populations? To what extent are callers to the Quitline representative of all Connecticut smokers?

To answer this evaluation question, we first present the "reach" of the Quitline. The reach of a cessation program describes the extent to which the program has been successful in drawing in and engaging members of target populations. This section reports the overall rate of reach of the Connecticut Quitline for FY 2011, and provides a comparison to the rate of reach achieved in FY 2010. (For a fuller discussion of reach, including reach among target groups, please see PDA's 2011 report on the relationship between media and Quitline call volume.2)

PDA calculates two types of program reach, using NAQC-recommended processes:

- Promotional reach is a measure of the effectiveness of media and other promotional efforts. Promotional reach is calculated by dividing the number of tobacco users that registered or enrolled in the Quitline by the number of tobacco users residing in the state.
- Treatment reach describes the percent of tobacco users in the state that received evidence-based cessation treatment from the Quitline. The treatment reach rate will usually be lower than the promotional reach rate, since treatment reach is based only on those callers who go on to participate in Quitline counseling after enrollment.

Promotional Reach

The Connecticut Quitline reached approximately 1.67%, of cigarette users in the state (see Table 4). This means that nearly 17 out of every 1,000 smokers in the state called the Quitline last year. We also calculated a 95% confidence interval for promotional reach. This calculation yielded a confidence interval on promotional reach of 1.50% to 1.86%. In other words, we can report with 95% accuracy that the overall promotional reach of the Connecticut Quitline is between 1.50% and 1.86%.

Compared to FY 2010, the FY 2011 promotional reach is substantially higher (0.87% vs. 1.67%). In fact, reach nearly doubled during the past year, a very positive finding for the campaign.

[2] For information about Quitline reach among tobacco users in Connecticut, and about the relationship between media promotions and call volume, please see the report *Adult Cessation Media Impact on Quitline Call Volume and Website Visits: FY 2010 – FY 2011*, submitted by Professional Data Analysts, Inc. to Connecticut Department of Public Health, October 2011.

Table 4. Promotional Reach of the Connecticut Quitline by fiscal year

	FY 2010	FY 2011
State population estimate, age 18 and over	2,740,650[3]	2,757,082 [4]
Tobacco use prevalence (95% confidence interval)	15.4%[5] (13.9% - 17.0%)	13.2 [6] (11.8% - 14.6%)
Estimated number of smokers	422,060	361,178
Quitline call volume [7]	3,611	6,040
Reach percentage (95% confidence interval)	**0.86%** (0.78% - 0.95%)	**1.67%** (1.50% – 1.86%)

The reach of the Connecticut Quitline compares favorably with the reach of other U.S. quitlines. Results from a recent study published in the Journal of Tobacco Control indicates the average quitline in the United States during 2005 achieved a reach of approximately 1%, although individual state quitline reach ranged from 0.01% to 4.3%.8 The 2010 NAQC Annual Survey of Quitlines9 provides similar but more recent contextual information. In 2010, the average quitline reach for states responding to the survey was 1.11% (N=48 quitlines).

Treatment Reach

We calculated treatment reach for the Connecticut Quitline to determine the proportion of smokers in Connecticut who receive at least minimal evidence-based treatment. Treatment reach indicates the potential impact of the Quitline, as those who receive at least minimal treatment are expected to have a greater chance of quitting and potentially impacting state prevalence.

The Connecticut Quitline reached approximately 1.34% of cigarette smokers in the state, with a 95% confidence interval of 1.21% to 1.50%. In other words, approximately 13 out of every 1,000 cigarette smokers in the state received counseling via the Quitline in FY 2011. Like promotional reach, treatment reach also improved significantly from FY 10 to FY 11. In FY 10, the promotional reach was 0.74%.

However, it should be noted that some callers who register with the Quitline do not receive a minimal level of treatment; the extent to which the Quitline vendor could provide counseling to these individuals would likely increase the number of quitters in Connecticut even more and potentially impact state prevalence.

[3] Source: 2009 U.S. Census population estimates
[4] Source: 2010 U.S. Census
[5] Source: 2009 Connecticut BRFSS
[6] Source: 2010 Connecticut BRFSS
[7] Source: Alere Wellbeing, Inc., Quitline caller intake data
[8] Sharon E Cummins, Linda Bailey, Sharon Campbell, Carrie Koon-Kirby, and Shu-Hong Zhu. Tobacco cessation quitlines in North America: a descriptive study. Tob. Control, Dec 2007; 16: i9 - i15.
[9] North American Quitline Consortium. 2011. Results from the 2010 NAQC Annual Survey of Quitlines. Available at http://www.naquitline.org/?page=survey2010

Table 5. Treatment Reach of the Connecticut Quitline by fiscal year

	FY 2010	FY 2011
State population estimate, age 18 and over	2,740,650[10]	2,757,082[11]
Tobacco use prevalence (95% confidence interval)	15.4%[12] (13.9% - 17.0%)	13.2%[13](11.8% - 14.6%)
Estimated number of cigarette smokers	422,060	361,178
Number of Quitline callers receiving evidence-based treatment [14]	3,085	4,877
Reach percentage (95% confidence interval)	0.73% (0.66% - 0.81%)	1.34% (1.21% – 1.50%)

Caller characteristics

PDA compared the demographic characteristics of Quitline callers to those of all smokers residing in Connecticut, using the 2010 Connecticut Behavioral Risk Factor Surveillance System (BRFSS) dataset. In Table 5 below, demographic groups which are under-represented among Quitline callers are highlighted in yellow, and groups which are over-represented among callers are highlighted in green.

- *Age.* Younger smokers are under-utilizing the Quitline, which is common experience among quitlines in the U.S.
- *Gender.* The Connecticut Quitline serves a disproportionate number of female smokers, which is common for cessation services.
- *Education level.* The Quitline is serving a large proportion of callers who did not graduate from high school. This group has a high smoking prevalence and is an important target group for Quitline services.
- *Race and ethnicity.* Due to differences in the way race is collected by the Quitline and BRFSS, the comparison of racial background should be interpreted with caution. Tobacco users who identify as White are underrepresented among callers as compared to all smokers in Connecticut. Conversely, the Quitline is serving a larger than representative proportion of callers who identify as Black or African American.
- *Hispanic ethnicity.* Callers who identify as Hispanic or Latino are over-represented among Quitline callers.
- *Insurance status.* The Quitline also reaches a larger proportion of uninsured smokers than is found in the general population of smokers. This is a positive finding, since callers without health insurance may lack access to free or low-cost cessation assistance.
- *Medicaid.* Nearly half of all Quitline callers participate in Medicaid. The Connecticut Public Health Policy Institute reports that Medicaid members smoke at a much higher rate than other Connecticut residents. A recent report estimates that between 36% and 40% of Medicaid participants use tobacco[15]. The fact that the Quitline is successfully reaching this population is a

[10] Source: 2009 U.S. Census population estimates
[11] Source: 2010 U.S. Census
[12] Source: 2009 Connecticut BRFSS
[13] Source: 2010 Connecticut BRFSS
[14] Source: Alere Wellbeing, Inc., Quitline caller data
[15] *Examining Tobacco Use, Consequences and Policies in Connecticut: Smoke and Mirrors?* The Connecticut Public Health Policy Institute, April 28, 2010. Retrieved October 12, 2011, from: http://www.ct.gov/sustinet/lib/sustinet/taskforces/tobaccotaskforce/07012010report/appendix_1tobacco_issue_brief_final.pdf

positive finding. In early 2012, Connecticut Medicaid benefits for cessation services will be expanded. As a result we expect the number of Medicaid callers may increase even further.

Table. Demographic characteristics of Quitline callers and Connecticut smokers

	Quitline Callers %	Smokers in Connecticut [16] %
Age		
18 – 24	6.9	17.4
25 – 34	17.6	22.3
35 – 44	22.3	17.9
45 – 54	32.5	19.7
55 – 64	16.3	15.9
65 +	4.4	6.9
Total	100.0.0	100.0
Gender		
Male	42.6	56.1
Female	57.4	43.9
Total	100.0	100.0
Education level		
Did not graduate from high school	21.2	9.5
High school or GED	38.9	37.3
Some college or trade school	25.2	28.9
College/tech/trade school degree	14.7	24.4
Total	100.0	100.0
Race		
White	68.3	85.5
Black or African American	16.4	4.5
Asian	0.4	2.4
Native Hawaiian/ Other Pacific Isl.	0.1	0
American Indian or Alaskan Native	1	0.7
Other / Mixed race	13.7	1.6
Total	100.0	100.0
Hispanic Ethnicity		
Hispanic/Latino	16.5	8.6
Non-Hispanic/Latino	83.5	91.3
Total	100.0	100.0
Health insurance status		
Insured	81.0	85.1
Uninsured	19.0	14.9
Total	100.0	100.0

[16] In order to provide comparable Quitline and BRFSS datasets, this analysis is limited to "current cigarette users."

Health insurance type	Quitline Callers (all ages)
Uninsured	19
Medicaid	48.1
Medicare	11.2
Private	21.7
Total	100.0

Sexual orientation	Quitline Callers
Heterosexual	94.2
Homosexual	2.8
Bisexual	2.4
Transgender	0.1
Other	0.4
Total	100.0
Missing	*6.8*

EQ 3.To what extent is the fax referral system used, and how successfully does the system enroll referred callers?

Fax Referrals

Physicians, clinics, hospitals and other health and social service providers may send fax referrals to connect their clients with the Quitline. Once fax referrals are received by the Quitline, the protocol is to enter them into the system within 24 hours and make the first outbound call within 48 hours. The Quitline makes up to 3 attempts to enroll the referred client, and if they do not connect an attempt letter is mailed. The fax referral form documents whether the referring agency is HIPAA-covered; the Quitline sends all covered entities a reply indicating whether the referred client enrolled in the quitline, received services, received NRT, and the amount of NRT.

At this time, Connecticut providers do not send electronic referrals to the Quitline, although the vendor, Alere, has established this process in some other states. A common challenge to establishing electronic referral is that many healthcare providers do not have the capacity and/or understand the need for secure data transfer. The benefit to electronic referral is that it provides easy two-way communication between the Quitline and the physician (or other referring agent), which could be beneficial to the DPH-funded community-based cessation programs which refer clients to the Quitline. As use of electronic medical records and capacity for secure transfer increases in the future, electronic referral may become a viable strategy for Connecticut.

Enrollments generated by fax referrals

The Quitline makes up to 3 attempts to reach each fax referral to offer them Quitline services. Some callers accept services, while others decline services or are never reached, and a small proportion is found to be already enrolled in the Quitline. PDA used data from the monthly Registration Experience Extract to calculate an enrollment rate for fax referrals.

- A total of 1,073 fax referrals were received by the Quitline in FY 2011.
- 358 referrals resulted in a completed registration
- By dividing the number of fax referral registrations by the number of fax referrals received, we obtain a fax enrollment rate of 33%.

PDA's review of published literature on enrollment rates from Quitline fax referrals identified a wide range of reported enrollment rates for fax referral programs (21% - 53%). The 2010 NAQC Annual Survey of Quitlines[17] reports that among U.S. quitlines responding to the survey (n=40 quitlines), 41% of fax referrals result in a completed registration. At 33%, the enrollment rate estimated for the Connecticut Quitline appears to be in the lower half of the expected range. A good enrollment rate for a fax referral program may indicate effective attempts on the part of the Quitline to reach and enroll tobacco users. It may also indicate a strong referral system within the state, in which providers have been trained to provide brief interventions and appropriately refer callers who are ready to quit.

Agencies providing referrals

During FY 2011, a total of 18 providers or agencies made referrals to the Quitline (see Table 3). Both the number of referrals and enrollment rates contribute to increasing Quitline volume. One agency, St. Vincent's Medical Center, provided a very large number of fax referrals to the Quitline, although this agency's enrollment rate is among the lowest of all referring agencies. Conversely, other agencies, such as Rushford Center, Hill Health, Birmingham Group, and Bridges provided fewer referrals but had enrollment rates of 60% or greater. This suggests that agencies may refer clients who are at varying stages of readiness to quit or who are more or less easily reached by the Quitline enrollment efforts. Efforts by DPH and funded community grants may contribute to strengthening the fax referral network.

Table 3. Number of fax referrals and enrollment rates by agency in FY2011

Referring Agency	Number of referrals	Enrollment rate
St. Vincent's Medical Center	463	22%
Richard Jablow, MD	158	24%
Project E.D. Health Iv Smoking Cessation Study- Yale New Haven Hospital Ed	108	45%
Lawrence Memorial	103	32%
Communicare, Inc.	102	53%
Generations Family Health Center-Nrt	33	55%
Rushford Center	25	64%
Edward Rippel, MD	22	59%

[17] North American Quitline Consortium. 2011. Results from the 2010 NAQC Annual Survey of Quitlines. Available at http://www.naquitline.org/?page=survey2010.

Referring Agency	Number of referrals	Enrollment rate
Smilon Cancer Center- Smoking Cessation Service	21	48%
Hill Health Corporation-NRT	13	69%
Communicare - Birmingham Group Health Services, Inc	10	60%
Communicare, Inc- Bridges	6	83%
Hospital Of Saint Raphael Haelen Center	4	50%
City Of Hartford, Health & Human Services Dept	1	0%
Rite Aid Pharmacy #3440	1	100%
Staywell Health Care	1	100%
Unknown Clinic – CT	1	0%
Woodstock Academy	1	0%
Total	**1073**	**33%**

EQ 4. To what extent are callers making use of available cessation services?

Quitline Counseling

Enrollment in Counseling

Tobacco users who call the Quitline may request answers to general questions, mailed self-help materials, or telephone counseling. During FY11, 94% of tobacco users requested counseling, which is an evidence-based cessation treatment (see Table 6).

Callers who are not ready to quit in the next 30 days receive a single counseling call, which includes motivational interviewing techniques designed to increase readiness to quit. Callers who indicate that they are not interested in receiving multiple calls may also be enrolled in the 1-call program. In FY 11, 19% of callers who enrolled in counseling elected to receive just one call.

All callers who want help with quitting are eligible to enroll in the multi-call program. This program includes up to 5 outbound, pro-active counseling calls, and free nicotine replacement therapy (for callers who desire it and who meet medical screening criteria). Among callers who enrolled in counseling, the majority (81%) selected this more intensive counseling option.

Participation in Counseling

Once callers enroll in the multi-call program, however, only about half (50.4%) go on to complete multiple calls. Another 25% of the multi-call participants completed 2 calls, another 12% completed 3 calls, 6% had four calls, and about 7% had five calls.

Table 6. Participation in Quitline services among tobacco users

Service requested by tobacco users	N	%
Questions or materials only	390	5.9
Counseling (1-Call or Multi-Call program)	6,269	94.1
Total tobacco users	6,658	100.0
Counseling enrollment type		
1-Call Program	1,189	19.0
Multi-Call Program	5,080	81.0
Total enrolled in counseling	6,269	100.0
Number of counseling calls completed by Multi-call participants		
No calls	30	0.6
One call	2,493	49.1
Two calls	1,273	25.1
Three calls	609	12.0
Four or more calls	324	6.4
Five or more calls	351	6.9
Total enrolled in multi-call program	5,080	100.0

Duration of contact with the Quitline

Registration is completed by a trained Registration Specialist. After registration callers may be transferred directly to a Quit Coach to begin counseling, or they may make a callback appointment for a later time. Whether transferred directly or scheduled, the first contact with a Quit Coach is the Assessment Call. This call is typically about 25 minutes in length, and includes asking about the caller's current tobacco use and quitting history. This information is used by the coach to help the caller shape a personal quitting plan, including setting a quit date and making decisions about using stop-smoking medications to assist with quitting. Subsequent calls are typically shorter than the assessment call, and are intended to last about 15-18 minutes, although their content and schedule may vary depending on the needs and progress of the caller.

The Quitline registration process takes about 9 minutes to complete, on average (see Table 7). Tobacco users in the 1-Call program receive about 22 minutes of counseling time, on average. Those in the multi-call program receive about 45 total minutes of counseling time, on average, across all calls that they participate in.

Table 7. Average duration of contact with Quitline, by program component

	N	Average total minutes per person	Standard Error Mean
Length of registration (in minutes)	5,241	9.3	.05
1-Call participants: Duration of counseling time (in minutes)	191	22.1	1.08
Multi-Call participants: Total duration of counseling time across all calls completed (in minutes)	5,050	44.9	0.50

No targets are set regarding the number of counseling calls completed. However, the PHS Clinical Guidelines for treating tobacco dependence recommend interventions of four or more sessions that are 10 minutes or more in length as the most effective intervention (in a clinical setting) to produce long term abstinence[18]. Multi-Call participants, on average, receive this recommended *duration* of counseling (more than 40 minutes), but most do not receive the recommended number of sessions (four or more). We recommend that the DPH and the vendor continue to explore ways to reach callers and encourage them to complete additional counseling contacts.

NRT Benefit

Participation in the NRT benefit

The PHS Clinical Practice Guidelines recommends that a combination of counseling plus pharmacotherapy is more effective than either treatment alone.[19] The Quitline provides free NRT patches, gum or lozenges to callers who participate in the Multi-Call program (subject to medical screening). The Quitline vendor's monthly reports present the number of NRT shipments per month. PDA has processed the same QEE data to present the number of unique callers who receive NRT, and the amount of NRT each caller receives. A large majority of multi-call participants, 88%, received NRT from the Quitline (see Table 8). This represents 67% of all tobacco users registered with the Quitline in FY10 (including those enrolled in the multi-call and one-call programs and those who register but do not enroll in any counseling program, data not shown).

[18,19] Fiore MC, Jain CR, Baker TB, et al. (May 2008). *Treating Tobacco Use and Dependence: 2008 Update. Clinical Practice Guideline.* Rockville, MD: U.S. Department of Health and Human Services. Public Health Service

Table 8: Percent of multi-call participants receiving NRT

	Tobacco Users enrolled in counseling		All tobacco users	
Received NRT	**N**	**%**	**N**	**%**
Yes	4,482	88.2	4,482	67.3
No	598	11.8	2,177	32.7
Total	5,080	100.0	6659	100.0

Enforcement of NRT Eligibility Requirements

In order to distribute Quitline resources among the greatest number of people and to those with the greatest need, the distribution of free NRT is limited. Callers may receive NRT only one time in a 12-month period. In addition, the amount of NRT differs according to callers' health insurance status: uninsured and Medicaid callers may receive up to 8 weeks of NRT supply free of charge, provided in two shipments. Continued participation in the program is required in order to receive the second shipment. Callers with commercial insurance are eligible for a free 2-week supply.

An examination of the number of weeks of NRT sent by callers' insurance type suggests that the eligibility criteria are consistently enforced (see Table 9; green shaded cells indicate eligibility matches the amount received). Over the course of a year, only a handful of callers (n=18, > 1%) received a supply in excess of the above-mentioned eligibility guidelines. However, we note that a sizeable proportion of Uninsured and Medicaid callers receive only the first of two available shipments (yellow shaded cell). This suggests that some callers may not be reached for, or may choose not to continue with, the additional counseling appointment that is required in order to receive the second shipment.

Table 9: Total weeks of NRT distributed by insurance status for multi-call enrollees

Multi-call participants:	**FY 11**					
Amount of NRT provided by insurance type	**No NRT**	**2 Weeks**	**4 Weeks**	**8 Weeks**	**10+ Weeks**	**Total**
Uninsured and Medicaid callers (eligible for up to 8 weeks)	9.9%	0.0%	61.3%	28.7%	0.2%	100.0%
Commercially insured callers (eligible for 2 weeks)	16.7%	82.6%	0.7%	0.1%	0.0%	100.0%

Web Coach

The Quitline vendor is contracted to provide all registered tobacco users who request an intervention or materials with access, by website link and a password, to the Web Coach online cessation support service. The Web Coach program provides information about tobacco use and quitting, a format to communicate with Quit coaches, "gadgets" to track tobacco use, urges, progress, and financial savings, and provides access to an online community made up of current and former tobacco users and quit coaches to give support and guidance through blogs, discussion boards and community groups. Web Coach is available 24 hours a day, and provides another way to obtain information and support.

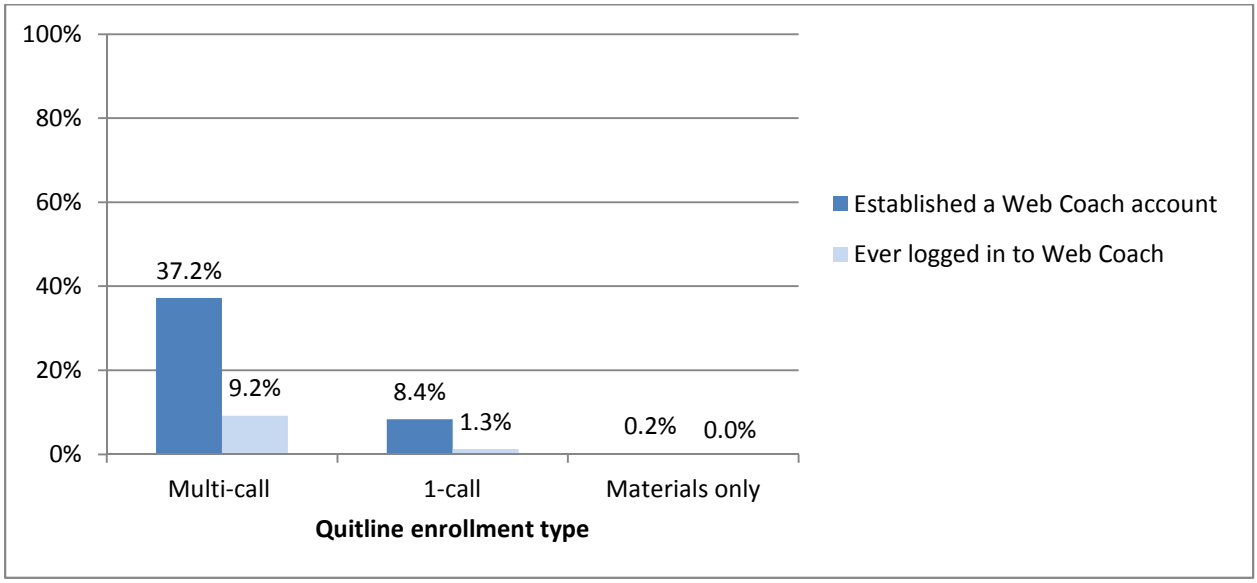
Limitations

Due to a dataset limitation, the Web Coach use presented in this report may be underestimated. The Quitline vendor provides PDA with two pieces of information regarding use of the Web Coach program. These include whether or not the participant has a Web Coach account, and how many times they have logged into the account. Updated Web Coach data are provided to PDA for any month in which a participant registers with the Quitline, receives a counseling call, or is closed out with an attempt letter. Therefore, the transfer of Web Coach data to PDA ends with a participants' last contact with the Quitline. If callers continue to use Web Coach even after they have stopped participating in phone counseling, no record of the continued Web Coach use would be provided to PDA. Therefore the Web Coach use presented here may be underestimated.

Web Coach Utilization

Quitline experience data indicate that Web Coach is not widely used among Connecticut registrants. Figure 3 depicts the percentage of all registered tobacco users each quarter who used the link and password provided to establish a Web Coach account, and the percentage of registrants who log into the service at least once. About 46% of callers establish a web coach account; the majority of those who do are enrolled in the multi-call program. However, few callers who set up a Web Coach account return to use it; only about 11% of registered callers logged in to use Web Coach. Nearly all callers who return to log in are multi-call participants. The limited use of Web Coach among Connecticut Quitline callers may be related to the high proportion of callers with lower income levels, who may be less likely to have high-speed internet access at home.

Figure 3. Percent of participants who utilize Web Coach by enrollment type



Summary

In FY 2011, the Connecticut Quitline experienced a substantial increase in both the number of callers and reach among tobacco users statewide, as compared to FY 2010. In addition to media promotions, the Quitline vendor's outbound recruitment efforts contribute to the increase. Fax referrals contribute a small but steady number of enrollments, and are an area for potential growth. The vendor's attempts to contact and enroll fax referrals result in an acceptable enrollment rate. Efforts by DPH and funded community grants to strengthen the fax referral network, in terms of the number of agencies who refer, the number of referrals made per agency, and the quality of the referrals (i.e., tobacco users are ready to quit and interested in the Quitline) could contribute to increased enrollment levels.
The Quitline is successfully reaching important groups of tobacco users, including some with high tobacco use prevalence and those who may not have access to other kinds of cessation treatment. These groups include tobacco users who have less than a high school education, are uninsured, or participate in Medicaid. Conversely, men and younger tobacco users are underrepresented among Quitline callers, and may benefit from additional promotion or outreach efforts.

Most callers do not take full advantage of the Quitline services available to them. This occurs for two reasons. First, some callers who enroll in counseling opt for the 1-Call program rather than the multi-call program. Many callers in this group do receive what can be defined as an "intensive intervention," since the 1-Call program lasts, on average, about 22 minutes. Still these callers may benefit from the additional contacts and NRT offered by the multi-call program. Second, of those who do enroll in the multi-call program, only about half go on to complete two or more calls. Participants in the multi-call program complete a substantial duration of counseling, about 45 minutes on average. However, since many do not take part in the post-quit date calls they are missing the additional support contacts that may help to prevent relapse or help re-start a quit attempt if a lapse has occurred. Since there is a demonstrated dose-response relationship between the amount of Quitline counseling and outcomes, it is important that the Quitline encourage callers to complete a greater amount of counseling.

The majority of multi-call program participants receive NRT. This should contribute to good caller outcomes, since the combination of counseling plus NRT gives tobacco users the best chance for success. The NRT eligibility guidelines, based on health insurance status, are consistently enforced, ensuring that resources are allocated to callers who have the greatest need. However, few Medicaid callers, only about 29%, receive the full 8-week supply for which they are eligible. This is likely due to callers dropping out before receiving the second or third counseling call. We recommend that DPH and the Quitline vendor review the contact protocols and consider ways to encourage all participants, and Medicaid callers especially, to follow through with the entire counseling program. This may be done through communicating, during the first call, that people who completing more calls are more successful, and that the Quitline has an expectation that callers will complete the full program. In addition, DPH and the vendor should review the attempt protocol and if needed modify the number of times or times of day that attempts are made to reach participants.

Finally, the online Web Coach program is available to all callers who supply an email address. This resource is available 24/7/365, and is another way to obtain ongoing support to quit tobacco. However, use of the Web Coach program is low among Connecticut callers. This may be a function of socioeconomic status and lack of high-speed internet access, as the Connecticut Quitline has a high proportion of callers eligible for Medicaid. We suggest that the Quitline consider promoting the use of Web Coach in voice messages left for callers and in the final attempt letter that is sent to callers who cannot be reached.

Section 2. Assessment of the Current Quitline Outcome Evaluation

EQ 5. To what extent does the current outcome evaluation plan follow accepted guidelines for data collection and reporting?

The Connecticut DPH contracts with Alere Wellbeing to conduct follow-up surveys with Quitline callers. The surveys collect information about callers' current tobacco use, use of stop-smoking medications, and satisfaction with Quitline services. On an annual basis, Alere reports results from the follow-up survey data, creating quit rates and providing other analyses of interest to the DPH. PDA is contracted to provide an independent review and assessment of Alere's follow-up survey processes, confirm the accuracy of reports provided, and assess the extent to which data are reported in the most useful way and that all standards of reporting quitline data are met.

The use of standard outcome measurement lays the groundwork for comparison of outcomes across quitlines and development of benchmarks for quitline effectiveness. Standard outcome measurements also assist funders in comparing and selecting quitline vendors and in managing their services. The North American Quitline Consortium (NAQC) produced an issue paper[20] providing guidance on measuring quit rates in a standardized way, and a recommended Minimal Data Set (MDS)[21] with standard intake and follow-up survey items.

In this section we summarize the comparison of three evaluation components to NAQC-recommended standards: 1) the follow-up survey instrument, 2) the survey methodology, and 3) the calculations and reporting format used to present quit rates. We provide recommendations for changes that would best align Connecticut's evaluation with NAQC standards, and facilitate comparison of Connecticut's evaluation results with results from other state quitlines.

Data sources

Alere provided PDA with copies of the Connecticut Quitline follow-up survey instrument and data file for the purposes of this evaluation. The follow-up survey data file includes records for a sample of 1,350 tobacco users who enrolled in the Quitline between May 1, 2009 and February 28, 2010. In addition, DPH provided PDA with a copy of Alere's most recent evaluation report[22].

Follow-up survey instrument

PDA compared the CT follow-up survey to the version of the NAQC minimal data set updated December 2009. We find that the instrument corresponds very closely to the MDS with only very minor differences in language, with two exceptions.

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[20] North American Quitline Consortium (2009). *Measuring Quit Rates. Quality Improvement Initiative* (L. An, MD, A. Betzner, PhD, M.L. Luxenberg, PhD, J. Rainey, BA, T. Capesius, MPH, & E. Subialka, BA). Phoenix, AZ.

[21] North American Quitline Consortium (2009). *MDS Follow-up Questions.* Retrieved September 30, 2011 from: http://www.naquitline.org/?page=technical

22 *Connecticut Tobacco QuitLine 7-Month and 13-Month Evaluation Report Year 5.* Evaluation Services Division, Clinical and Behavioral Sciences, Free & Clear, Inc. Submitted to the Connecticut Department of Public Health, November 30, 2010.

The first non-standard item is *readiness to quit*. The CT version is a single question asking about intent to quit all types of tobacco (see Table 10). The MDS asks about intent to quit separately for each type of tobacco. Respondents are only presented with the intent questions corresponding to the specific tobacco types they have reported currently using. In addition, the MDS questions are in a Yes/No response format, while the CT version is not.

Table 10. Comparison of CT and MDS survey items: Intention to Quit

CT Follow-up Survey	NAQC Minimal Data Set
Which of these statements best describes your intentions regarding your tobacco use at this time? Would you say you are… ☐ Planning to quit in the next 30 days ☐ Planning to quit in the next 6 months ☐ Planning to quit sometime in the future but not in the next 6 months ☐ Not planning to quit or cut down ☐ Not planning to quit but planning to cut down ☐ You have Quit ☐ Other ☐ REFUSED ☐ DON'T KNOW	Do you intend to quit using cigarettes within the next 30 days? Do you intend to quit using cigars, cigarillos, or little cigars within the next 30 days? Do you intend to quit using a pipe within the next 30 days? Do you intend to quit using chewing tobacco, snuff, or dip within the next 30 days? Do you intend to quit using [NAME OF OTHER TOBACCO PRODUCT] within the next 30 days? *RESPONSE OPTIONS FOR ALL ITEMS ABOVE:* ☐ Yes ☐ No ☐ Don't know ☐ Refused ☐ Not asked

The second non-standard item is more problematic, since it is the primary outcome measure and forms the basis for the quit rate. The CT survey asks the question, "When did you last use tobacco or smoke a cigarette, even a puff of pinch?" The intent is that the respondent will provide either a date or the duration of time since the last use. Responses are then coded by the interviewer into the categories shown in Table 11 below. The MDS asks "Have you smoked any cigarettes or used other tobacco, even a puff or pinch, in the last 30 days? The expectation is that the respondent will reply with "yes" or "no."

The advantage to the CT version is that multiple abstinence measures (7-day abstinence, 30-day abstinence, and continuous abstinence) can be derived from a single survey question. The disadvantage is that although the two survey items collect similar information, the differences in wording may engage respondents in different cognitive processes, resulting in non-equivalent reports of abstinence. We do not know the extent to which the two survey items would produce non-equivalent responses, nor do we know whether the CT version of the question would produce a more liberal or more conservative estimate of the rate of abstinence than the MDS survey item.

The follow-up data set reviewed for this report was collected by Alere between November 30, 2009 and October 18, 2010. The target date for full implementation of the NAQC MDS (July 2010) falls near the end of this data collection period. Therefore, we recommend that going forward, these two items be modified to exactly match the MDS, or that the vendor provide evidence that the two questions produce equivalent responses. Unless and until this occurs, we recommend that caution be used when directly comparing Connecticut caller outcomes to those of quitlines which measure abstinence differently. If such comparisons are made, the differences in data collection should be noted.

Table 11. Comparison of CT and MDS survey items used to calculate 30-day point prevalence abstinence

CT Follow-up Survey	NAQC Minimal Data Set
When did you last use tobacco or smoke a cigarette, even a puff or pinch? ☐ Within the last 24 hours (1) ☐ More than 24 hours ago, but less than 7 day (2) ☐ 7 days but less than 1month (3) ☐ 1 month or more but less than 3 months (4) ☐ 3 months or more but less than 6 (5) ☐ 6 months or more but less than 9 months (6) ☐ 9 months or more but less than 12 months (7) ☐ 12 months or longer (8) ☐ REFUSED (98) ☐ DON'T KNOW (99) IF RESPONSE =1,2,3: CODE AS "NOT ABSTINENT" IF RESPONSE = 4,5,6,7,8, CODE AS "ABSTINENT" IF RESPONSE = 98,99: CODE AS MISSING	Have you smoked any cigarettes or used other tobacco, even a puff or pinch, in the last 30 days? (DO NOT READ) ☐ Yes ☐ No ☐ Don't know ☐ Refused ☐ Not asked

Survey methodology

PDA reviewed Alere's survey methodology as described in their most recent evaluation report submitted to the Connecticut Department of Public Health. The NAQC recommendations for conducting follow-up and calculating quit rates are summarized in an implementation checklist and quit rate calculation worksheet.[23] PDA utilized these tools to assess Alere's methodology. We find that Alere adheres to nearly all of the recommended survey practices, including sampling procedures, the timing of the survey, and the calculation and reporting of a response rate (see Table 12).

One component of survey methodology falls short of the recommendations: the survey response rate was lower than desired. At 34.7%, the response rate falls short of the recommended 50% target rate, although Alere reports that higher response rates were achieved for Connecticut follow-up in previous years. Several factors may contribute to the decline, including a documented decline in response to telephone surveys in general throughout the U.S., specific characteristics of the Connecticut Quitline population which may make them more difficult to reach, as well as the survey methodology applied to this study. Alere reports that cases were closed after "11 attempt days (with multiple attempts per day, every other day)" which represents a reasonable effort to contact participants. Strategies to increase the response rate, such as mailed recruitment contacts or monetary incentives, would require additional resources.

[23] NAQC (2009). *NAQC-Recommended Quality Standard: Measuring Quit Rates – Implementation Guide.* Retrieved September 30, 2011, from: http://www.naquitline.org/resource/resmgr/issue_papers/implementation_guide_-_quit.pdf

Table 12. Compliance with NAQC-recommended survey methodology

Select all callers.	✓
Exclude prank calls, hangups, wrong numbers, proxy caller, non-tobacco users	✓
Exclude all those who did not consent to follow-up.	✓
Exclude all those who did not receive treatment.	✓
De-duplicate list. Make sure each individual is calling only once.	✓
Select a sample for follow-up survey (or survey exhaustively if numbers are low).	✓
Identify number of responders to the survey.	✓
Obtain a response rate.	✓
Strive to have at least 50% complete the survey.	✗

Quit rate calculations and reporting format

The quit rates and other follow-up data are reported by Alere along with extensive contextual information as recommended by NAQC, as shown in Table 13 below. The report provides a description of the Quitline services, the follow-up sample, survey respondents, response rate, demographic characteristics of callers included in the quit rate and an examination of differences between responders and non-responders.

In addition, the report provides state-specific information about tobacco use and local tobacco control efforts. This year's evaluation was tailored to meet the stated information needs of the Connecticut DPH, which were to compare program outcomes and satisfaction by callers' health insurance and NRT status. Alere drew a random sample of callers stratified primarily by health insurance and secondarily by NRT benefit status, and conducted additional analyses to compare outcomes for these caller groups. We see this as an indication that the report is not a standard "off the shelf" product, but one that is customized to meet the needs and requests of the Connecticut DPH.

Table 13. Compliance with NAQC recommendations for quit rate calculations and reporting format

Report a 30-day point prevalence abstinence rate (responder rate), calculated at 7 months after intake/registration/first contact. Divide the number replying "no" to the question "Have you smoked any cigarettes or used other tobacco, even a puff or pinch, in the last 30 days?" by the total number of respondents.	✗
Confidence intervals	✗
Consent rate and description of population asked to provide consent	✗
Total N in the follow-up sample	✓
Total n of respondents	✓
Response rate	✓
Average and range of time to follow-up	✓
Who conducted the evaluation (e.g., internal or external to the quitline)	✓
Description of the program (type of protocol, number of calls planned and actual, duration, medications provided)	✓
Eligibility criteria for the program	✓
Demographics of callers for each program or group of programs included in the quit-rate calculation (gender, age, ethnicity, race, insurance status)	✓

Tobacco use characteristics of callers for each program or group of programs included in the quit-rate calculation (frequency of use, cigarettes per day, time to first cigarette, readiness to quit)	✓

As shown in Table 14 above, three recommended reporting conventions were not present in the report.

1) As described in the previous section, the question used to assess 30-day abstinence at follow-up does not match the wording of the MDS-recommended question.

2) The quit rates are presented without 95% confidence intervals. In order to conserve resources, NAQC recommends using a random sample of callers in a quitline evaluation, and this was done in the CT evaluation. While evaluations based on a sample of callers result in abstinence rates that are only an *estimate* of all those that call the quitline, a confidence interval produces an estimate of the true quit rate within some calculated range, even if the quit rate can't be narrowed down to a single figure. A confidence interval presents a range within which we can be sure to a certain degree of certainty (e.g. 95% sure) that the "true" quit rate falls somewhere within that range. We recommend that future reports present quit rates along with 95% confidence intervals, along with as the number of subjects included in the rate, as in the example below.

Caller outcomes at 7-month follow-up

	Responder rate	95% confidence interval
Abstinent for the past 30-days	28.0%	24.1 – 32.2

N=468 survey respondents who enrolled in the Quitline between May 1, 2009 and February 28, 2010

3) The report does not provide the consent rate or description of the consent process that is used at the time of intake. The NAQC recommendations suggest that quitlines should seek callers' consent to participate in the evaluation, although it does not specify which populations of callers should be asked for consent, or exactly when or how consent should be sought. These decisions are left to individual quitlines. NAQC does recommend that quitlines strive for a consent rate of at least 85% of those callers who are asked, and that quitlines describe the consent process, population, and consent rate when reporting quit rates. This is done to facilitate generalization of evaluation results to a larger population of callers. While PDA's review of the Connecticut Quitline experience extract shows that participant consent is sought during the registration process, no information about this is included in the report. We recommend that future reports present information about participant consent.

Summary

The recommended methodology and practices to collect and report tobacco quitline quit rates are extensive and specific. PDA finds that Alere adheres to nearly all of the recommendations, and in addition presents analyses that are specific to the needs and interested of the Connecticut Department of Public Health.

The most significant divergence from the recommended practice is the structure of the survey instrument. Two items are not fully compatible with the MDS, the "readiness to quit" and "30-day

abstinence" items. These two items measure tobacco use behaviors that are critical to describing Quitline effectiveness, and we recommend that going forward these items be modified to exactly match the MDS, or that the vendor provide evidence that the two questions produce equivalent responses. If comparisons are made between Connecticut's caller outcomes and those of other state quitline callers, we recommend that key differences in data collection or survey methodology be noted.

We recommend three additional changes to the outcome data collection and reporting processes, although these issues are seen as less critical to the quality of the quit rate reports. First, we recommend that DPH and Alere review the resources allocated to follow-up evaluation as well as the specific follow-up survey practices and consider affordable strategies to boost response rates. The survey response rate, at 34.7%, was lower than desired, although a reasonable attempt was made to reach respondents. Higher response rates can be achieved, but this often requires additional resources.

The quit rates and other follow-up data are reported by Alere along with extensive contextual information which facilitates accurate interpretation and appropriate comparisons to other Quitline results. We recommend these changes in order to strengthen the comparability of evaluation results even further: present quit rates with 95% confidence intervals, and present the participant consent process and consent rate that was achieved for the sample.

Section 3. Quality assurance

EQ 6. To what extent do the Quitline vendor's procedures and protocols ensure the quality of Quitline services?

In this section we summarize data from a series of interviews PDA conducted with Alere staff during a site visit in August, 2011. The interviews had two main purposes: 1) to gain a thorough understanding of the Quitline services provided to the state of Connecticut, along with the data collection systems and processes, in order to strengthen PDA's evaluation of this program; 2) to assess the vendor's staffing levels and quality assurance protocols and make any recommendations for improvement.

During the site visit, PDA interviewed four Alere staff members and observed Quitline intake specialists and Quit Coaches during live calls. The titles of interviewees and the content areas of the interviews are as follows:

- **Senior Client Services Manager:** Tour of facilities, hours of operation, registration, fax referral process, community referrals, reporting.
- **VP, Service Delivery**: System capability& functioning, staffing levels, training & supervision, disaster recovery and contingency.
- **Senior Manager – Call Quality**: Quality assurance and staff monitoring.
- **Associate Director of Clinical Development and Support**: Counseling protocol, quality assurance, service delivery, NRT delivery.

In this section we summarize the interview content to describe the vendor's staffing levels, quality assurance protocols, NRT protocol, and tailored counseling strategies.

Hours and Staffing Levels

Alere provides quitline and web-based cessation services for a large number of state and commercial clients. In terms of volume, the Connecticut contract likely ranks as a small- to mid- sized contract for this vendor. In that regard, it may be more pertinent to ask whether Connecticut callers are assured the same priority as callers from larger states rather than asking whether Alere's staffing levels are adequate to meet Connecticut's need. To explore both of these questions, in the next section we describe hours of operation and staffing levels and procedures that affect the ability to meet caller demand in Connecticut.

Beginning in 2011, the Connecticut Quitline offers registration 24 hours a day. The availability of counseling was recently expanded (in July 2011) by one hour; under the new schedule counselors are available from 7:00 a.m. through 3:00 a.m. eastern time. During the four hours when counseling is not offered, calls are answered live by a Registration Specialist, who documents the best time for a Quit Coach to make a return call.

Alere does not maintain a team of coaches assigned to handle Connecticut callers exclusively. Registration Specialists and Quit Coaches are trained to handle calls from any of the vendor's existing

contracts. Inbound calls are handled in the order they come in, and are not prioritized according to contract. Alere forecasts call volume company-wide by the half hour based on seasonality, historical calling patterns, and any current promotions among the states or commercial clients they serve. Registration specialists and Quit Coaches are staffed by computer scheduler to meet projected inbound call volume levels and to handle scheduled outbound calls.

Although calls are not prioritized according to their corresponding state contract, Alere does have the ability to identify calls from one contract in order to provide special handling (e.g., should a state experience a sudden funding cut necessitating a change in services, those callers can be routed to receive a special message).

Outbound calls are scheduled for a 3-hour "best time to call" window as indicated by participants. The system loads up scheduled outbound calls daily. Outbound calls are auto-dialed; the dial rate is adjustable based on expected volume and available staff.

Remote agent program

Alere's sole call center is located in Seattle, WA. Since 2006, Registration Specialists and Quit Coaches have the option to work remotely from home, although they must apply for and be approved for this privilege. Per HIPAA requirements, employees must provide a private space to make calls, and have the ability to lock access to workstations, and must sign a remote work agreement that is renewed annually. Alere does home visits to most but not all home-based workers to verify that requirements are met. The performance of remote workers is monitored in the same way that call center workers are.

Alere reports a high degree of employee satisfaction with the remote agent option, and describes several advantages of the program:

- less need for physical office space
- ease of delivering services across time zones
- staff can be loaded more heavily during peak calling times because employees who do not commute are more willing to work split shifts
- service can easily be maintained during weather events
- facilitates hiring local employees outside of Washington (which some state quitline clients require).

Conversely, there is a risk of isolation among employees, and it can be more difficult to form and maintain a company culture. Alere reports the use of team meetings and events to counter these challenges.

Quality Assurance protocols

Quality assurance is monitored and achieved through a combination of staff qualification and training, system controls, monitoring and supervision of staff, data review, and trouble-shooting teams. Each of these strategies is described below.

Staff Qualifications and training

All call center staff are required to be tobacco-free for at least two years, but are not required to be former tobacco users. **Registration Specialists** are not required to have a college degree, but one is preferred; previous call center customer service experience is desired. **Quit Coaches** are required to have a bachelor's degree in a related field such as psychology. A master's degree is encouraged for those who seek supervisor or manager positions.

Training may occur at the Seattle call center, or Alere may send training teams to locations in other states. Registration Specialists receive two full-time weeks of training in the classroom, followed by one week of supervised practice with debriefing after each call. Quit Coaches are trained on nicotine and nicotine dependence, handling crises, cessation medications, coaching with special populations, clinical topics, proven quitting strategies, and working with difficult callers. Training consists of three full-time weeks in the classroom followed by three weeks of supervised practice coaching.

Alere offers additional certification for Quit Coaches, which may be attained by completing a required number of interventions, additional training, and meeting expectations for productivity and quality. All coaches much reach the first level of certification within the first year of employment. Attaining higher certification levels may qualify employees for additional pay or benefits and opportunities for leadership.

System controls

System controls are embedded into the Alere call system and contribute to quality assurance in several ways. One is the delivery of state-specific content. The call system provides operators with visual and audio cues to access state-specific information. The most important of these is the particular benefit that each caller is eligible to receive. When a new caller contacts the quitline, the registration specialist confirms the caller's state of residence, employer, and other information which may affect eligibility for services. Based on this information, the system displays the qualifying benefit; this description remains visible during the entire call. Specific to Connecticut, the system will indicate that a multiple-call counseling program is available, and that the caller may receive free NRT. The system will indicate the appropriate NRT amount (a 2-week or 8-week supply) based on the caller's health insurance status. Connecticut requires some unique data elements to be collected during registration, such as a list of chronic health conditions, household income levels, and sexual orientation. These items are inserted into the standard intake process in places and manners that will appear natural and seamless to callers. The unique Connecticut questions about chronic conditions are collected along with other clinical items, while the questions about income and sexual orientation are placed with the standard demographic section. Connecticut callers are also asked about their participation in certain community-based cessation programs funded by the DOH. Since the community-based programs provide state-funded NRT, callers who report participation in these programs are not eligible to receive NRT from the Quitline. Controlling for this eligibility requirement is handled by the system.

Supervision and performance monitoring

Quit Coaches and Registration Specialists are organized into teams, and each team is overseen by a supervisor. Supervisors monitor the performance of each staff person (those working in the Seattle call center and those working remotely) once every two weeks. For each employee, the supervisor reviews a sample of recorded calls and assesses the quality using a monitoring tool. The rating tool is structured to match the key elements of the counseling process, including content, sequence, accuracy of information provided, use of effective counseling strategies, and tailoring delivery to meet the needs of

the caller. On an ongoing basis, calibration meetings are held in which all supervisors review and rate the same recorded call to ensure that all supervisors rate employee performance in the same way.

For registration specialists, key monitoring items include whether the caller was enrolled in the correct benefit program, and the accuracy of data entry. The call system captures screen activity and keystrokes in sync with the voice recordings, which allows supervisors to assess the accuracy of data entry for critical fields.

Data review

Alere reviews existing data to monitor the quality of services provided, and recommends improvements as appropriate. Data review includes performance reports (which assess callback times, live answer rates, speed of voicemail response, etc.) and caller feedback such as satisfaction levels.

Trouble shooting teams

Alere maintains a group of specialists who are trained to handle advanced questions, complaints, and other situations that are out of the ordinary. The team handles such issues as errors in NRT shipment, or advanced questions about eligibility. Quit coaches and registration specialists are trained to transfer callers to this team as needed.

NRT Protocols

Quit Coaches receive training on all seven medications recommended by the Public Health Service Guidelines on tobacco cessation (nicotine patch, gum, lozenge, nasal spray and inhaler; Zyban/Wellbutrin/bupropion; and Chantix/varenlicine). While Coaches can provide information on all types of medication, the decision about which medication to select is largely caller-driven, although Quit Coaches will override a callers' preference for medication in cases where it is seen to be an inappropriate choice. Many callers state up front that they know which medication they prefer. In Alere's experience, however, callers have a range of knowledge and in some cases misconceptions about medications. The quit coach begins by identifying any preference caller has, and then determines if the preference is right for them based on available information, and provides additional information as indicated. Coaches can give information about how to ask physicians about prescription cessation medications. Alere reports that for most callers, coverage is the main determinant; they will choose what is free or low-cost. Quit coaches do not limit the medication discussion to the specific types covered by the state contract. However, because of the caller-driven nature of the decision process, it is likely that in most cases the discussion will be limited to the free medications provided by the state.

Connecticut provides insured callers with a 2-week NRT "starter kit." The Quit Coach is trained to recommend that callers obtain and use an 8-week course of NRT. Callers are instructed to first try insurance benefits for over-the-counter medications such as NRT. However, coaches are also trained to discuss with callers that the cost of NRT is less than the cost of cigarettes.

Once a selection is made, the Quit Coach screens for precaution exclusions. If a health condition or pregnancy precludes the disbursement of NRT, the Quitline may use a medical override for direct mail order NRT with a note from a physician. When the Quitline disburses NRT, they also mail a "medication letter" along with next steps for callers. Use instructions are provided written at appropriate health literacy levels. The need for and use of medication is reassessed at each subsequent call. Quit coaches may offer corrective advice or recommend an adjusted dosage as needed.

Tailored Counseling Protocols

Alere provides a specific youth cessation program and cessation program for pregnant women. These programs are delivered by dedicated and specially trained teams of Quit Coaches. Alere does not employ different counseling protocols for other demographic groups. However, Coaches are trained to utilize different communication styles and counseling content for certain demographic groups; for example, with Native American tobacco users Coaches may include information about sacred use of tobacco.

There is a specific protocol for spit tobacco users, which includes specific NRT dosing recommendations. However, there are no special programs for callers who use different amounts of tobacco, or for those who use other types of tobacco, including the many emerging products such as orbs or strips, or for the e-cigarette. The reason for this is that all counseling protocols developed by Alere are evidence-based. The original protocol was developed in the 1980's, based on results from a randomized control trial of four different cessation treatments. Alere has modified the protocol since, based on emerging published evidence. The protocol is designed to raise callers' confidence and self-efficacy by teaching them how to quit and by working with them to make a personal quitting plan. Alere finds these strategies to be effective with all caller groups, and will not alter or adapt their counseling protocol (i.e., for heavy smokers or for users of new tobacco products) unless and until there is published evidence to support such adaptations.

Summary

The hours and days of operation and staffing levels are sufficient to meet the needs of tobacco users in Connecticut. All calls are handled in the order they are received, and have the same priority, regardless of the state or location in which the calls originate. Extensive forecasting is done to determine the staffing levels necessary to meet anticipated demand. If an increase in staffing needs is projected (e.g., due to a tobacco tax increase), Alere knows the time it will take to ramp up the number of available staff and can put the process in motion in advance. The remote agent program likely increases the availability of quit coaches in the Eastern Time zone and during peak calling times, and should be considered an advantage

The qualifications and initial training provided to employees appears to be sufficient to ensure quality delivery of services. The ongoing training offered through the certification program provides an opportunity for employees to gain skills and demonstrate improvement over time.

Alere has multiple processes in place to assess and ensure quality delivery of Quitline services, including employee training, system controls, performance monitoring, data review, and troubleshooting teams. These quality assurance processes are complimentary and designed to work together. For example, a problem identified by call monitoring may be addressed through additional training, or a potential problem identified through data review may be further explored through call monitoring. Through training employees are prepared to provide many different services, yet the system will control and guide the employee to deliver the correct service for each caller. PDA's observation of the intake and counseling processes in action lead us to conclude that the quality assurance protocols are consistently implemented, and are both thorough and effective.

There are several strengths of the vendor's NRT protocol. Quit Coach training on cessation medications is extensive and includes the full range of approved medication types. The protocol as described includes discussion about medication options, instruction for use are provided both verbally and via mail, and the need for and use of medication is reassessed at each subsequent call. Quit coaches may offer corrective advice or recommend an adjusted dosage as needed.

The caller-driven decision process used to select cessation medications has both benefits and drawbacks. By nature it is tailored to the desires of the caller, which likely results in a short and focused conversation. However, since callers have a wide range of knowledge (and possibly misinformation) about medications, many callers may never hear about the full range of options available to them. This will likely result in greater use of free products provided by the DOH, and in some cases callers will not learn about or consider other options that may be appropriate for them. We recommend DOH review the medication decision process with Alere and consider whether greater emphasis should be placed on informing callers about all medication options, including prescription medications.

The current counseling protocol was developed based on proven tobacco cessation treatments. Although counseling is tailored to the needs of individual callers, there are no group-specific protocols with the exception of youth, pregnant women and spit tobacco users. Unless outcome evaluations indicate that some caller groups have poorer outcomes as compared to others, the need for specific protocols is not indicated.