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## Implementation Guide

### Calculating Quit Rates, 2015 Update

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#### CHECKLIST FOR CALCULATING THE STANDARD NAQC QUIT RATES

This document presents all recommendations necessary to calculate the standard NAQC quit rates; suggestions for consideration are presented as optional.

##### 1. Obtain Consent for Follow-up

- Obtain **consent** to participate in the follow-up survey; solicit consent early on, such as at the close of intake or registration.
- Strive for a consent rate of at least 85%.

##### 2. Who to Include in the Standard NAQC Quit Rates

- The standard NAQC quit rates include participants who **received phone counseling** of any amount *or* who were **sent medications** or medication vouchers from any source.
- Exclude participants who **did not consent**.
- Exclude participants who are **quit for >30 days at enrollment**.  
Use MDS intake item SI5a-e, which can be found in Section 4.4
- Exclude participants who use **ENDS but no conventional tobacco** products at intake.

##### 3. Conduct Follow-up

- Conduct follow-up **seven months** after quitline enrollment.
- Ideally, conduct follow-up on an **ongoing rolling basis**, with a **random sample** of participants when quitline enrollment is large enough.

If a rolling follow-up is not feasible, use multiple cohorts or time-limited sampling as a viable second choice. See Section 5.2 for more information on these sampling strategies.

- Collect **30-day point prevalence abstinence** for conventional tobacco.

Use MDS follow-up item SF2 and SF4a-e (“No” to SF2 indicates 30-day abstinence). For a list of the survey items and what to do if there is a discrepancy between SF2 and SF4, see Section 4.4.

Note that tobacco use is defined as the use of any of the following products: cigarettes, cigars, pipes, or other smoked or smokeless tobacco.

- Measure 30-day point prevalence for **ENDS use** following the recommendations of the MDS Workgroup on ENDS.
- Strive to obtain at least **400 completed surveys** from those receiving phone counseling or medications. Assuming a survey response rate of 50%, this amounts to approximately **800 sampled** enrollees. Strive to achieve a response rate of 50% to 70%. Calculate the **response rate** as shown below.

$$\frac{\text{total \# of survey respondents}}{\text{total \# of people sampled}}$$

Do not exclude sampled individuals from the denominator due to death, non-contact, numbers not in service, or any other reason.

- Select and test a combination of survey strategies appropriate to unique resources and needs, and adjust strategies as necessary in order to obtain a follow-up response rate of 50% or greater. See Section 5. If the minimum response rate is not met, utilize advance letters and incentives and consider using a mixed-mode survey.
- When an ongoing rolling survey producing n=400 completes and a 50% response rate is not feasible due to resource constraints, conduct a periodic follow-up study of n=400 completes and a 50% response rate at least once every three years.

#### 4. Calculate the Standard NAQC Quit Rates

- Address **missing data**; assume those missing the 30-day point prevalence (conventional tobacco) item are not quit. Estimate missing ENDS use based on those quit from conventional tobacco at follow-up, but with complete ENDS data.

See Section 6.2 for more information about how to handle missing data.

- Calculate the 30-day point prevalence quit rate **for conventional tobacco** using the **responder rate**; calculate as shown below.

$$\frac{\text{\# of survey responders abstinent from conventional tobacco}}{\text{total \# of follow-up survey respondents}}$$

- Calculate the 30-day point prevalence quit rate for **conventional tobacco plus ENDS** using the **responder rate**; calculate as shown below.

$$\frac{\text{\# of survey responders abstinent from conventional tobacco and ENDS}}{\text{total \# of follow-up survey respondents}}$$

#### 5. Report the Standard NAQC Quit Rates

- Report a **95% confidence interval** along with the estimated quit rate.
- Report the **response rate and consent rate** alongside the responder quit rate.
- Report **participant factors**, such as demographic and clinical characteristics, as well as intervention utilization and other program characteristics alongside your quit rates.

Use caution when comparing your quit rate to those of other quitlines. Consider the similarity of the quitline programs in terms of participants and program characteristics.

- Optional: Compare survey responders to the remaining participants from the same time period on a variety of intake and utilization variables to assess potential bias.*
- Optional: When it is important to understand the unique contribution of one or more participant characteristics on quit rates, consider conducting a logistic regression model.*

## **6. Optional: Calculate Supplemental Quit Rates**

Consider calculating supplemental quit rates to meet your quitline's unique information needs.

- Strive to obtain at least **75 completed surveys** for your supplemental quit rate.*
- Consider calculating a supplemental NAQC quit rate for demographic, clinical, and utilization subgroups that are important to your quitline, using cross-tabulations and appropriate statistical tests. See Section 7.2.*
- Consider calculating a supplemental NAQC quit rate that includes those who receive services via other technologies (web, text, IVR, etc).*

*Tailor the definition of minimal, evidence-based service for different technologies to mirror the quality of "active engagement" that is found in the definition of minimal, evidence-based service for telephone counseling. See Section 7.2.*

- Consider reporting additional measures of success in quitting, including additional outcome measures such as 24-hour quit attempts, prolonged abstinence, relapse, etc. See Section 7.3 for more details.*

## **7. Other Considerations**

- Monitor intake fields** for high levels of missing data and abrupt changes in distribution.
- Use a **researcher or evaluator** who has experience in quitline evaluation, is entirely separate from and independent of the counseling staff, is transparent in reporting and has demonstrated an ability to achieve adequate response rates on follow-up evaluation surveys.

## COMPARISON OF KEY RECOMMENDATIONS AND SUGGESTIONS: 2009 & 2015

Please note, suggestions are indicated as “*optional*” in italics.

No change	New/Modified
<i>Who to include in the standard NAQC quit rates</i>	
Include tobacco users who register for services, consent to follow-up, and have not been quit at intake / registration for > 30 days.	Exclude exclusive ENDS users at intake.
	The <b>standard NAQC quit rates</b> include those receiving any telephone counseling and/or those who were sent (FDA-approved tobacco cessation medications or medication vouchers). This service combination was not specified in 2009.
Only include those who received <b>minimal, evidence-based service</b> . For those receiving <u>telephone counseling</u> this is defined as receiving any amount of counseling services beyond intake or registration.	<b>Minimal, evidence-based service</b> for the standard NAQC quit rates also includes those who were sent medications or medication vouchers from any source (web, text, IVR, smartphone app etc.).
<i>Defining abstinence</i>	
Conduct <b>follow-up</b> 7 months after enrollment.	
Measure and report <b>30-day point prevalence</b> abstinence for conventional tobacco products: cigarettes, cigars, pipes, and other smoked or smokeless tobacco.	Continue to measure and report 30-day point prevalence abstinence from <b>conventional tobacco</b> , but also measure and report 30-day point prevalence abstinence for <b>conventional tobacco plus ENDS</b> use at follow-up, where ENDS is defined as “an e-cigarette or other ‘vaping’ product’ by the MDS Workgroup on ENDS.
Use MDS intake items to identify those <b>quit from conventional tobacco for more than 30 days</b> at enrollment; exclude from the quit rate (in 2014, the MDS items are SI5a-e).	
Use MDS follow-up items to measure <b>30-day point prevalence</b> for conventional tobacco (in 2014, the items are SF2 and SF4ae).	Measure 30-day point prevalence from conventional tobacco as in 2009. Also, use MDS Workgroup on ENDS item to measure <b>30-day point prevalence for ENDS</b> at follow-up.
Do not conduct <b>biochemical validation</b> of tobacco use.	

### *Conducting follow-up*

Obtain <b>consent</b> to participate in follow-up; gain consent at intake/registration. Consider consulting Human Subjects Research or IRB.	Strive to achieve a <b>consent rate of 85%</b> or greater (a target rate was not specified in 2009).
Conduct follow-up on an <b>ongoing rolling basis</b> with a <b>random sample</b> of registered callers, if enrollment is large enough.	Consider <b>weighting</b> the quit rate if necessary due to sampling strategy and share weighting strategy in comments on the NAQC Annual Survey of Quitlines.
If a rolling follow-up is not feasible, consider using multiple cohorts or time-limited sampling as a second choice.	
Strive to obtain <b>400 completed follow-up surveys</b> .	
Report the <b>response rate and consent rate</b> with the quit rate.	
	<i>Optional: Conduct a response bias analysis.</i>
Select a <b>combination of survey strategies</b> appropriate to available resources to achieve a 50% or greater response rate.	Telephone is not explicitly recommended as the <b>survey mode</b> in 2015. The recommended <b>response rate range is 50%-70%</b> (in 2009 the recommendation was 50% or more). Select and test strategies, and adjust as needed to achieve a response rate of 50% or greater.
<i>Optional: If the minimum response rate is not met, consider using a <b>mixed-mode survey</b>.</i>	
	<b>Monitor intake data</b> for high levels of missing data and abrupt changes in distribution.
	<i>Optional: Prioritize collection of <b>multiple ways to contact participants</b> at intake. This was mentioned but not suggested in the 2009 paper.</i>
Use an <b>experienced researcher/evaluator</b> who is independent of counseling staff. Select based on transparency of methods and reporting and ability to achieve desired response rate.	
	When an ongoing rolling survey of n=400 completes and a 50% response rate is not feasible due to resource constraints, conduct a periodic follow-up study of n=400 completes and a 50% response rate at least once every three years.
<i>Calculating and reporting a quit rate</i>	
Use a <b>responder rate (RR)</b> .	
	Assume those <b>missing</b> 30-day point prevalence (conventional tobacco) at follow-up are not quit. Report how missing minimal service data is reported in the comments field of the NAQC Annual Survey of Quitlines.

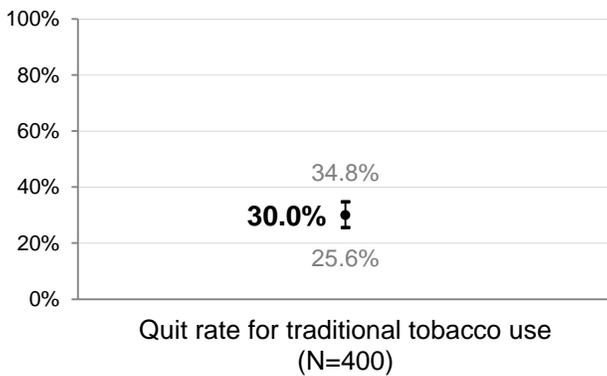
	Include those missing the 30-day point prevalence item for ENDS in both standard NAQC quit rates. To calculate the numerator for the standard NAQC quit rate for tobacco plus ENDS, examine all those who quit conventional tobacco and answered the ENDS item at intake. For this group, calculate the proportion who quit ENDS. Then apply this proportion to all those who quit conventional tobacco (both those with complete and missing ENDS data).
Include <b>95% confidence interval</b> with all quit rates.	
<b>Report quit rates with basic information</b> about participant demographic and clinical characteristics; program services available; and level of program use.	
<i>Calculating, reporting and using supplemental quit rates for internal purposes</i>	
	<i>Optional: Consider calculating supplemental quit rates for <b>demographic and clinical sub-groups</b> of interest.</i>
	<i>Optional: Consider calculating separate supplemental quit rates for <b>individual services and service combinations</b> for internal program management as necessary. In 2009, the suggestion focused on varieties of telephone service (e.g., one-call and four-call).</i>
	<i>Optional: If a supplemental quit rate for non-telephone technologies is calculated, tailor <b>the definition of minimal, evidence-based service for different technologies to mirror the quality of “active engagement”</b> that is found in the definition of minimal, evidence-based service for telephone counseling.</i>
	<i>Optional: Based on your quitline’s specific management and information needs, consider collecting and reporting a supplemental quit rate using <b>additional measures of quit success</b>.</i>
<b>Use caution when comparing</b> your quit rates to another quitline; consider participant and program differences.	
When it is important to understand the unique contribution of two or more factors on quit rates, <b>consider logistic regression</b> modeling.	

## RECOMMENDATIONS FOR REPORTING QUIT RATES ON NAQC ANNUAL SURVEY

In addition to reporting quit rates with a 95% confidence interval, consent rate, and response rate, we also recommend including a description of key participant demographic, tobacco use, and program use characteristics. This will likely be done in narrative format in the body of a report or publication. For illustrative purposes an abbreviated example is provided below next to the standard NAQC quit rates.

### Standard NAQC Quit Rate for Conventional Tobacco Use

Measures abstinence from conventional tobacco for participants who received telephone counseling and/or were sent medication.



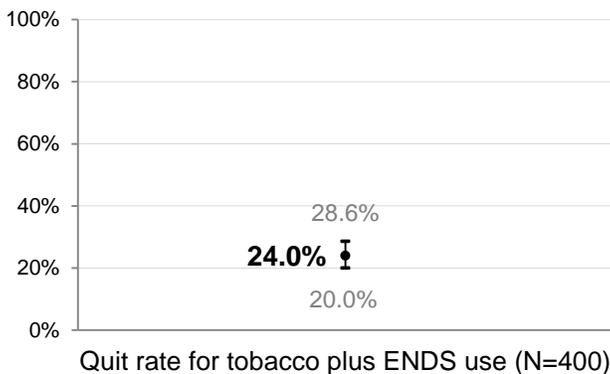
Consent Rate = 80%; Response Rate = 50%

Contextual information on participants and services received may include, but should not be limited to a description similar to the following:

Over one-half of participants (55%) were female. About 20% had less than a high school education. One-half of participants smoked at least a pack a day and 68% smoked their first cigarette within five minutes of waking. On average, participants receive two counseling sessions lasting a total of 18 minutes. About 80% of participants were sent NRT.

### Standard NAQC Quit Rate for Tobacco plus ENDS Use

Calculated for conventional tobacco users and/or ENDS users who received telephone counseling and/or who were sent medication.



Consent Rate = 80%; Response Rate = 50%

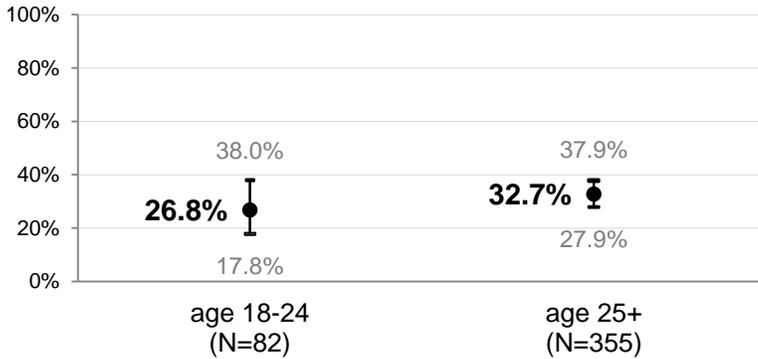
Contextual information on participants and services received may include, but should not be limited to a description similar to the following:

Over one-half of participants (55%) were female. About 20% had less than a high school education. One-half of participants smoked at least a pack a day and 68% smoked their first cigarette within five minutes of waking. On average, participants receive two counseling sessions lasting a total of 18 minutes. About 80% of participants were sent NRT.

## SUPPLEMENTAL QUIT RATES FOR OTHER GROUPS OF INTEREST

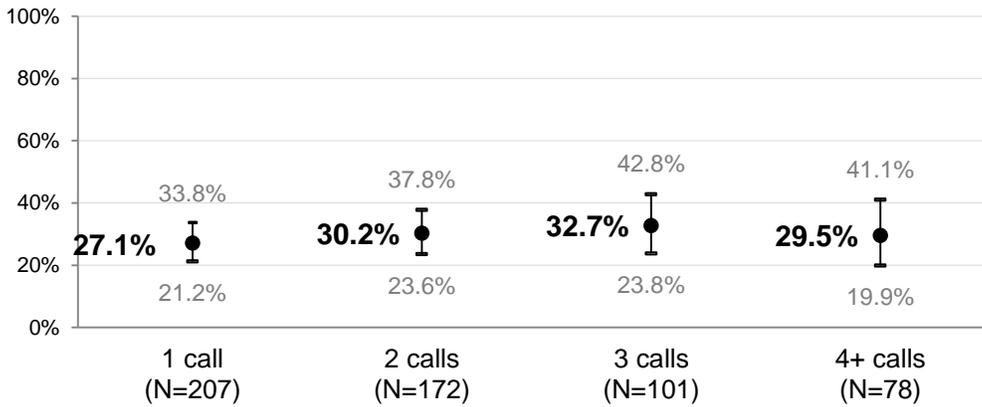
The following are *examples* of supplemental quit rates. Your program may have interest in calculating quit rates for different subgroups.

**Demographic characteristic - Age**



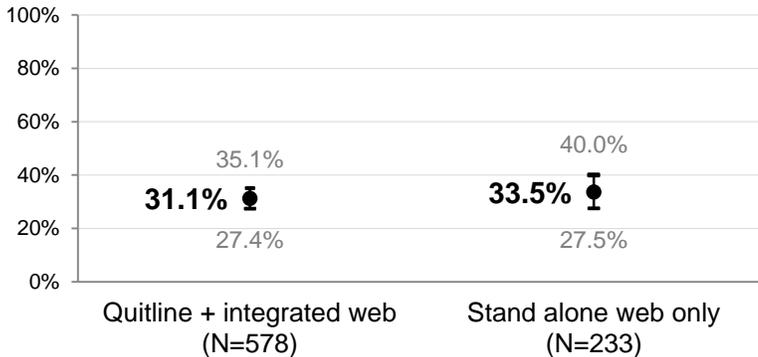
Consent Rate = 77%; Response Rate = 50%

**Program use characteristic – Number of counseling calls**



Consent Rate = 85%; Response Rate = 51%

**Service use characteristic – Program type**



Consent Rate = 81%; Response Rate = 42%