7 Evaluating a Quitline

Overview

The evaluation of a quitline has three main functions: (1) it provides information that can help improve services; (2) it creates an accountability mechanism for the contractor; and (3) it provides information to the contracting agency on the quantity, quality, and value of services provided. Evaluation can include a needs assessment, permitting the program to adjust its activities to the needs of the field. It can include process evaluation, providing an account of program activities to let the funding agency or others outside the project understand what is being done. Evaluation can also include an analysis of effectiveness, providing outcome data that help justify the existence of the quitline and inform the field about the effectiveness of certain interventions.

Adding evaluation to a quitline's required activities naturally increases the workload, but a significant part of the evaluation can be accomplished while the quitline is providing services, if the program keeps careful records along the way. For example, most quitlines send self-help materials to callers. To receive these materials, callers must provide their mailing addresses, which include ZIP codes. ZIP codes can be a good proxy measure for household income, since socioeconomic profiles are available for each ZIP code. Thus, within the task of recording data to provide good service lies an opportunity to measure how well the program is doing with respect to reaching a socioeconomically diverse population.

The content and intensity of evaluation activities are dictated by the goals of the quitline, which may differ from one state to another. The following list of general content questions can help shape the evaluation activities of most quitlines. Appendix F contains a more detailed matrix that can be used when designing an evaluation plan.

- What is the purpose of the quitline?
- What populations is the quitline intended to serve?

- What types and quantities of service does the quitline provide?
- What are the effects of quitline services?
- How satisfied are quitline callers with the services provided?
- How much does the quitline contribute to the larger program of tobacco control?

In addition to examining these content questions, this chapter discusses logistical issues that must be addressed, such as the timing of evaluations and who will conduct them.

Elements Shaping the Evaluation Plan

Purpose of the Quitline

Variables selected for evaluating a quitline's services should be linked to the purpose of the quitline.

The purpose of a quitline is usually established by the funding agency when it issues its request for proposals (RFP). Quitlines may be created to augment health provider advice, to target specific groups such as pregnant smokers, to act as frontline sources of quick stop-smoking advice and to triage callers back to their health plans or to local programs, or to provide comprehensive cessation services to anyone who requests them. Whatever the focus, variables selected for evaluating a quitline's services should be linked to the purpose of the quitline.

Most existing statewide quitlines are established to provide a variety of services for a diverse group of callers, ranging from mailed self-help information to proactive counseling. Underlying this general purpose, there are usually subobjectives that can be stated in measurable terms, preferably with predetermined benchmarks to compare performance over time (for example, the percentage of tobacco users of ethnic minority backgrounds served by the quitline). These subobjectives should be established at an early stage in the project.

Often, statewide quitlines are used in conjunction with anti-smoking media campaigns, with the assumption that the two activities will support each other. In this case, the evaluation must consider how and to what extent the quitline supports the goals of the media campaign (for example, by helping to address geographic disparities in tobacco use and access to effective treatment).

Evaluation data also may indicate a need to modify the quitline's objectives. For example, a quitline that is specifically designed to serve teenage smokers and that targets this age group through its promotional efforts may find that it is receiving many more calls from adults than from teens. The contracting agency would need this information to make an informed decision about whether to modify the original goals of the project. (See Appendix F: *Proposed Minimal Data Set for Evaluation* for guidance.)

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Target Populations

The most basic evaluation of a quitline simply describes its users. This includes demographic information such as age, gender, and ethnicity. A basic evaluation may also assess other relevant information such as level of tobacco use, quitting history, intention to quit, exposure to secondhand smoke, and restrictions on smoking at home. Because information about these variables is useful for clinical intervention as well as for evaluation purposes, it should be collected when tobacco users first call the quitline, as part of the intake process.

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It is useful to compare the tobacco users who call the quitline with those in the state's general population. This gives a sense of how well the quitline and its promotional campaign are doing in reaching the target populations. For example, if 20% of a state's tobacco users are Latino, then a quitline receiving 20% or more of its calls from members of the Latino community is doing well in this regard. However, if the percentage of calls from a target population is lower than its proportion among the state's tobacco users, then a more targeted promotional strategy may be needed. Information such as this is crucial for making informed decisions about how best to reach out to the state's priority populations. With that in mind, it also is beneficial to ask callers, at their first call, how they heard about the quitline.

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For a new quitline, a comparison of its data with data from other quitlines of a similar nature can be informative. For example, if a quitline with a specific goal of reaching geriatric smokers determines that a much smaller percentage of this population than anticipated has called the quitline, it would be useful to compare its data with data from other quitlines that also target older smokers. Using data gathered from a number of states should help to develop a realistic estimate of the percentage of older smokers who will use a quitline or to identify specific promotional strategies that have been successful in reaching this population.

Types and Quantities of Services Provided

After determining basic information about callers, the next step is to conduct a process evaluation of services provided, the intensity of each service, and the percentage of callers receiving each service. It is important to start the process evaluation by defining terms. For example, what constitutes a call to the quitline? Does a hang-up count as a call? Should each access to a taped message be counted as a separate caller? What counts as counseling? Should callers who ask specific questions about cessation but do not identify themselves be counted as having received counseling? Is there a minimum length of time before a conversation can be counted as counseling? How many sessions constitute a multiple counseling protocol? All such terms need to be carefully defined.

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Established quitlines generally offer a range of services and let the callers decide what services they prefer. Monitoring the use of various quitline services provides important information for making decisions concerning service delivery. For example, counseling is the most labor-intensive activity of all quitline services, so the percentage of callers opting for this service can significantly affect the cost of the quitline operation. Furthermore, the proportion of smokers opting for and receiving a particular service can vary widely from one quitline to another. The New York and Wisconsin quitlines offer callers the options of speaking with a trained counselor, leaving their name and address to receive a packet of self-help materials in the mail, or listening to taped messages. In New York, roughly a third of callers opt for each of these three services. In Wisconsin, on the other hand, more than 75% of callers opt for counseling in addition to receiving the mailed packet (McAfee 2002).

In addition to documenting service utilization, an evaluation also can examine factors that influence a caller's choice of service. Few first-time callers to a quitline, especially those responding to a media campaign, have a clear idea of what services are provided or what it means to receive counseling by telephone. As a result, their service preference may be affected by the way the quitline presents its menu of services. Other factors, such as the working hours of counselors and the intensity of counseling, may also influence callers' choice of services.

An improved understanding of the factors affecting callers' choice of services (based on the evaluation results) can help the contracting agency and its provider to manage the quitline's workload (for example, by controlling the total number of callers going into counseling or by improving its ability to recruit smokers into more intensive

treatment). Effective workload management aids in maintaining high service quality and efficient utilization of resources, especially during unexpected fluctuations in call volume.

Outcome data help to justify the program's efforts and to inform the field about whether certain interventions are actually working.

Effects of Service

One of the most important steps in evaluating quitlines is to determine how many callers actually quit using tobacco and to what extent, if any, this can be attributed to the quitline's services. Outcome data help to justify the program's efforts and to inform the field about whether certain interventions are actually working.

Again, defining terms is important, especially defining what counts as a "quit." Multiple measures have been used in the scientific literature; they range from having quit for at least 1 day (at a certain point of follow-up) to having quit for at least 12 months (Velicer et al. 1992, Hughes et al. 2003). The Society for Research on Nicotine and Tobacco recently published a consensus paper on measuring quitting success in intervention trials (Hughes et al. 2003) that recommends continuous nonsmoking at 6 or 12 months as the main outcome measure for clinical interventions, with other periods of abstinence as secondary measures (e.g., being abstinent for 7 or 30 days at 6- or 12-month follow-up).

Absolute quit rates will differ significantly, depending on which measure is used to define a successful quit. Quitlines using stricter definitions, such as 12-month continuous abstinence, may appear to have lower absolute quit rates than those with less stringent definitions, such as 7-day point prevalence (the percentage of participants who have been abstinent for 7 days at follow-up). Published studies from across the field are often inconsistent with each other in their definitions of quitting, but it is important that each state be consistent at least within its own documents. Once the measure of a successful quit is chosen, the simplest approach is to calculate the percentage of quitline callers who have quit smoking by a particular point in time (for example, 6 months after their initial call). This provides a general idea of how successful callers are in quitting.

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The limitation of using such a simple approach for outcomes evaluation is that it cannot in itself determine what proportion of the quitting is attributable to the quitline's assistance and what proportion would have occurred without it. To identify the proportion of the quit rate that is attributable to the quitline's services would require a randomized controlled study, but denying services to members of a control group for evaluation purposes is, of course, undesirable in a service setting.

In certain service settings, a method has been developed to separate the quitline's counseling effects from the overall quit rates without denying services to a group of callers (Zhu et al. 2002). However, most quitlines can obtain only a simple quit rate without a comparison control group. In these cases, there are specific issues that the evaluation report should address to clarify readers' understanding of the reported quit rates (see box below).

Reporting Quit Rates

Quit rates can vary dramatically depending on how they are calculated. When there is no randomized control group for comparison, an evaluation report must clearly address certain issues so that the results can be interpreted correctly. Specifically, the report should

- Provide a complete account of how callers contacting the quitline were selected for the evaluation sample, since the quit rate can change dramatically depending on who was excluded.
- Describe any baseline caller characteristics in the evaluation sample that may predict quitting success or failure, such as the number of cigarettes smoked and intention to quit.
- Provide a long-term continuous abstinence rate for a random sample of all participants who agreed to receive counseling, calculated by dividing the number of participants who report that they have not used tobacco for a stated length of time (e.g., 6 or 12 months) by the number of participants who were reached for follow-up.
- Specify the contact rate for the evaluation sample, because loss to follow-up can also affect the quit rate.
- Provide an additional analysis assuming that those lost to follow-up were still using tobacco (i.e., the number of participants who report that they have not used tobacco for a stated length of time divided by the number of participants who were selected for the evaluation sample) regardless of whether they were successfully followed up.

Failure to address these issues when there is no control group will greatly hamper readers' ability to interpret reported quit rates in a meaningful way.

Caller Satisfaction

Another important outcome is caller satisfaction. Data on how satisfied callers were with the service they received can become part of the public record and often weigh heavily in policy and funding decisions. In addition, regular monitoring of user satisfaction yields information that can be used to improve services, thus increasing the satisfaction of future users.

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A simple method for obtaining satisfaction data is to directly survey a random sample of smokers receiving each of the quitline services (self-help materials, taped messages, personal counseling, and so on). The surveys can include open-ended questions that are designed to elicit more detailed opinions, such as: "What was your experience when you first called the quitline?" "Were the materials useful?" "Was your counselor a good listener?" "Was he or she knowledgeable about how to quit smoking?" "Is there anything else the quitline should be doing?"

Another way of monitoring caller satisfaction is to study callers' complaints about the quitline. While not all complaints are legitimate (for example, a smoker may complain that his counselor did not call him, when in fact the counselor did call, but the smoker failed to keep the appointment), some callers will have a less than satisfactory experience. Because not all dissatisfied callers lodge complaints, paying careful attention to every complaint that is received can help prevent the spread of dissatisfaction stemming from hidden problems in the program.

The Quitline's Contribution to the Tobacco Control Program

It is important to assess the quitline's contribution to the overall effort to reduce tobacco use in the general population.

So far, the discussion of evaluation has focused on the quitline's role in providing clinical services. However, a statewide quitline is usually a key part of a larger tobacco control program, so it is important to assess the quitline's contribution to the overall effort to reduce tobacco use in the general population. It is very difficult to quantify precisely the contribution of one particular element of a larger tobacco control program because these programs intentionally mix elements to produce synergy (Fishbein et al. 2000). However, there are several considerations that will help in evaluating the population impact of a quitline.

The total *direct* effect of a quitline on the tobacco-using population is the product of the number of callers and the efficacy of the service.

The first of these concerns the direct impact of the quitline. The total direct effect of a quitline on the tobacco-using population is the product of the number of callers and the efficacy of the service. If a quitline maintained its effectiveness regardless of the number of calls, then the effect of the quitline on the population would be in direct proportion to the percentage of smokers calling.

Most state quitlines currently reach 1% to 5% of their states' total tobacco-using population in any given year. The fact that their reach is not wider than this is generally due to funding constraints that require quitlines to restrict services, promotion, or both. Increasing the funding would increase the percentage of smokers reached, which would in turn increase the total direct impact of the quitline. But without an increase in funding, any substantial increase in the call volume requires efforts to balance the effectiveness of the service with the capacity of the quitline to handle the increased volume. To increase the capacity of the quitline to handle more calls without incurring extra cost, the intensity of treatment for each smoker may need to be reduced, which may lead to lower effectiveness per caller. Even so, a lower-efficacy intervention protocol handling a greater number of callers can be more cost-effective than a higher-efficacy protocol handling fewer callers. Careful evaluation is needed to help locate the balancing point that would allow the quitline to achieve the maximum direct impact with a given amount of funding.

A second issue to consider when assessing the population impact of a quitline is that a quitline's actual reach may be greater than the number of tobacco users who call. Many more smokers will hear the media promotion than will call the quitline. In one controlled study, only about a third of all smokers who knew about the quitline actually called (Ossip-Klein et al. 1991). However, the overall quit attempt rate among the group that knew about the quitline was greater than among the group that did not know about the service, suggesting that awareness of the quitline had some impact even on the smokers who did not call. More studies testing such indirect quitline effects are needed.

A third issue to consider is the potential synergy between state quitlines and other elements of comprehensive programs. The hope in any comprehensive approach is that the combined effect will be greater than the sum of the effects of individual program components. One version of the synergy hypothesis is that the availability of a quitline increases the effect of an anti-tobacco media campaign on the prevalence of tobacco use. That is, if the monies spent on the quitline were instead used to expand the media campaign, the total effect on prevalence would be smaller. Although no study has tested this hypothesis, it is noteworthy that the states with the sharpest reductions in tobacco consumption (California, Massachusetts, Arizona, and Oregon) have all invested in comprehensive tobacco control programs, including both quitlines and aggressive media campaigns (Farrelly 2003).

Logistical Issues

Timing

The timing of an evaluation activity should be determined by its purpose and the kinds of information that are to be collected. As mentioned earlier, evaluation can start as early as the first contact with callers, when they provide information about themselves in order to receive services. In addition to basic demographic information, other examples of data to collect at baseline include daily (or weekly) tobacco consumption and how soon after waking one smokes, both of which are dependence measures. It is usually a good idea to obtain as much information as possible at initial contact, as long as it does not interfere with service delivery. This is particularly important for variables that change over time (for example, callers' confidence in their ability to quit smoking), so that baseline information is available for later comparison.

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It is probably best to conduct a simple assessment of user satisfaction soon after service is delivered. But when conducting a formal evaluation of quit rates, it is important to ensure that participants do not confuse evaluation calls with counseling calls. Toward this end, it is helpful to plan for a "break" of at least a month between the last call in the counseling protocol and the first call in the evaluation protocol. To obtain accurate information on relapses, repeated quit attempts, changes in social environment, and so on, repeated evaluation calls may be needed.

Whereas data gathered by an impartial evaluation team after service is complete are crucial to the quitline evaluation effort, many questions can be answered by simply describing the quitline population and its utilization of services, as described earlier. Much data can be collected while service is being delivered. For this reason, the importance of careful data management cannot be overstated. States should define what they want to know from the evaluation early on, and should work with their independent evaluator (if they have one) and the quitline management staff to ensure that the database is set up early in the process and that it includes all of the variables that will be needed for evaluation, facilitating future analysis.

The importance of careful data management cannot be overstated.

Although evaluation is best started early and continued throughout the program, it is neither cost-efficient nor necessary to evaluate every participant. Most state quitlines serve thousands of callers. In these cases, it is necessary to evaluate only a random sample of participants. Only if a quitline were serving a very small number of callers would evaluation of all participants be indicated.

Evaluation Staff Selection

Valuable evaluation work can be done in-house, but it is important that the evaluation staff be distinct from the intervention staff.

There is a general belief that only people outside the project can be impartial evaluators. Some state funding agencies prefer to have evaluations conducted or at least overseen by people who are not part of the quitline staff. However, valuable evaluation work can also be done in-house. Intervention researchers (and medical researchers) routinely evaluate the effects of treatments they have designed, and there are ethics guidelines to govern this scientific conduct. However, if a quitline contractor is evaluating its own intervention, it is important that the evaluation staff at least be distinct from the intervention staff. The reason is that even if the intervention staff can be objective during evaluations, the program participants may be biased to give socially desirable answers if the person evaluating their quitting success is also the person who delivered the service.

A benefit of conducting follow-up evaluation calls in-house, especially those aimed at improving quitline services, is that the evaluation staff can work closely with the intervention staff to identify important issues and to design questionnaires that will address those issues immediately. Evaluation is not just a passive process of accounting for what has happened but also an active research process that helps a quitline to be continuously innovative, identifying new strategies to help smokers and expanding its service to new areas.

Recommendations

- Make evaluation an integral component of quitline operations, as it helps both to keep the program accountable and to improve service.
- Build evaluation into the program from the beginning, by articulating the goals and subgoals of the quitline, identifying benchmarks, and deciding on the essential data to be gathered.
- Require quitline staff to keep careful records and, in so doing, to accomplish a significant portion of the evaluation.
- In evaluating a quitline, examine how well it is reaching its target populations, types and quantities of services provided, effects of the service, caller satisfaction, and its contribution to the broader tobacco control program.

- When reporting results, provide a detailed description of the process of choosing the sample of participants to be evaluated, the contact rate for follow-up, the long-term continuous abstinence rate for those who were reached for follow-up, and an additional analysis assuming that all those lost to follow-up were still using tobacco.
- Specify whether those who could not be followed up were excluded from the analysis.
- Be consistent when using definitions and measures for quitting behavior.