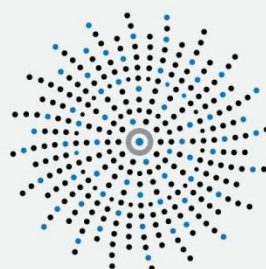


UTILIZATION AND REACH OF
SIX PROVINCIAL SMOKERS' HELPLINES
JANUARY 2007 TO DECEMBER 2009

Prepared for Health Canada



PROPEL
CENTRE FOR
POPULATION
HEALTH IMPACT™

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March 2010

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ACKNOWLEDGEMENTS

Propel Centre for Population Health Impact wishes to acknowledge the support of Health Canada and the Newfoundland and Labrador, Nova Scotia, Prince Edward Island, New Brunswick, Manitoba and Saskatchewan Smokers' Helplines.

Suggested citation

Propel Centre for Population Health Impact (2010). *Utilization and Reach of Six Provincial Smokers' Helplines, January 2007 to December 2009*. Waterloo, Ontario: Propel Centre for Population Health Impact, University of Waterloo.

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Report funded by

Health Canada, Ottawa, Ontario

Production of this report has been made possible through a financial contribution from Health Canada. The views expressed herein do not necessarily represent the views of Health Canada.

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GLOSSARY OF TERMS

Cessation calls are calls in which any cessation related service (e.g. advice, counselling, information or materials to assist with cessation) is offered to smokers, friends or family, health professionals or community organizations.

Fax Referral refers to a formal referral to the quitline by a health professional. The health professional discusses cessation with the smoker and obtains permission to send a referral form to the quitline. The quitline then makes the first call.

Heaviness of Smoking Index is a measure of level of addiction to nicotine that is calculated using the number of cigarettes smoked per day and the time elapsed from waking to first cigarette (Chabrol, Niezborala, Chastan, & de Leon, 2005; Heatherton, Kozlowski, Frecker, Rickert, & Robinson, 1989).

New callers are those calling for themselves for help to quit smoking or stay quit, who had their first call to the quitline during a specific reporting period (calendar year).

Non-cessation calls include administrative calls, wrong numbers, hang-ups, prank calls, media calls, and other non-cessation related calls.

Proactive counselling refers to outgoing counselling calls offered to callers that are normally scheduled around critical points in their quit process, for example around their planned quit date.

Reach is the proportion of the target population that receives evidence based treatment from the quitline (North American Quitline Consortium, 2009e). In this report treatment reach is defined as the proportion of the target population (smokers) who had at least one call with a quitline counsellor.

Utilization refers to call volume, type of calls and number of callers contacting the quitline.

EXECUTIVE SUMMARY

This report provides baseline data on quitline utilization and reach, demographic characteristics and tobacco use of smokers using the quitline, and response to promotion strategies for Saskatchewan, Manitoba, Nova Scotia, New Brunswick, Prince Edward Island and Newfoundland and Labrador from 2007 to 2009. The report is presented in partial fulfillment of the requirements of Contribution Agreement # 6549-15-2007/7680016.

Utilization and reach of these six Canadian quitlines is low with less than 1% of provincial smokers calling the quitline in any given year, with the exception of Newfoundland and Labrador. However, this is in line with many US quitlines.

Reasons for the low reach and utilization are related to the level of promotion, particularly media and advertising campaigns that raise smokers' awareness of quitlines and motivate them to call for help with quitting or staying quit. When asked how they heard about the quitline, media is the least frequently mentioned promotion strategy. The power of media to drive calls to the quitline has been reported in the literature and has been demonstrated in Canadian provinces; phone contacts increased considerably during the media campaign months. Health professional fax referrals are another promotional strategy that is working very well in Newfoundland and Labrador, and moderately well in New Brunswick. In the other provinces direct phone contact (which relies on media and advertising promotions) remains the primary way of accessing quitline services.

The majority of quitline callers are smokers who are ready to quit or remain quit. Both the number of calls for cessation services and the number of current smokers accepting and receiving proactive follow-up counselling calls increased between 2007 and 2009. Smokers using these six quitlines are older than Canadian smokers, and are more likely to be female, despite the fact more Canadian men smoke than women. This is not uncommon in health promotion and disease prevention but it may indicate a need to tailor promotional campaigns to attract a greater proportion of male smokers. Older smokers also experience more health problems which could be prompting them to call the quitline.

Those with low and moderate levels of addiction make up the greatest proportion of smokers receiving quitline services. Heavily addicted smokers, which make up about 20% of quitline clients, tend to be more successful when nicotine replacement therapy (NRT) is used along with quitline counselling compared with quitline counselling alone (An et al., 2006). Quitline counsellors may recommend NRT as part of their evidence based counselling protocols; however one of the barriers to NRT use is the cost, which may discourage many smokers from following through on quitline recommendations.

A comparison of Canadian quitline reach, services and caller characteristics with quitlines in other developed countries reveals many similarities as well as some important differences. It is important to keep in mind the different eligibility criteria and methods used to calculate quitline reach and utilization. First, reach of Canadian and international quitlines falls within a narrow range (0.2% to 6.3%) with the majority of quitlines reaching under 2% of their population of smokers. Higher reach is obtained when free or subsidized NRT is provided by the quitline as is

the case for New Zealand and some US States. At this point in time Canadian quitlines recommend, but do not provide NRT. Second, quitting at a younger age results in better long term health status and reduced social costs. Canadian quitlines attract mainly older smokers (over age 45 years) whereas the majority of smokers calling international quitlines are age 25 to 44 years. Although Canadian quitlines appear to be on par with international quitlines in a number of areas, they could benefit from looking at promotion strategies that increase reach overall and in particular strategies that might increase reach to younger smokers.

Quitlines in these six provinces are providing evidence based cessation treatment to smokers ready to quit or stay quit, but utilization and reach is low. High reach and effective treatments are both required to reduce the prevalence of tobacco use in the population. Additional promotion of these quitlines is required to improve their effectiveness and efficiency.

1.0 INTRODUCTION

Smokers' Helplines (SHLs) are free, smoking cessation services delivered by telephone that provide evidence based support to callers who would like information, support, or advice on quitting smoking, staying quit, or helping others to quit. Helplines offer counselling, as well as self-help materials and referrals to local cessation services. Telephone based smoking cessation counselling is effective (Stead, Perera, & Lancaster, 2007; Fiore et al., 2008) and is recommended by the Institute of Medicine as a key element in comprehensive cessation strategies. Helplines have been adopted in every Canadian province and territory, and American state, as well as many European countries.

This report examines utilization and reach of Canadian quitlines, characteristics of smokers using the quitline, and response to promotional strategies.

The North American Quitline Consortium (NAQC) has proposed a framework for measuring quitline utilization and reach (North American Quitline Consortium, 2009e). The choice of how utilization and reach are calculated depends largely on whether the point of interest is "the promotion of quitlines, the workload involved in operating quitlines or the ultimate impact of quitlines on tobacco use" (2009e, p.3).

In this report, utilization is measured by call volume, type of call and number of callers. Call volume is the total number of answered incoming calls and outgoing calls (including cessation calls, administrative, wrong numbers, hang ups, or left a message). The number of callers refers to those seeking help for themselves to quit or stay quit. Reporting the characteristics of callers helps our understanding of who calls quitlines. Both can be used to estimate quitline workload and assess the success of promotional strategies.

Reach refers to treatment reach – the proportion of the target population which receives evidence based treatment from the quitline (North American Quitline Consortium, 2009e). In this report, treatment reach is defined as the proportion of smokers who receive at least one contact with a counsellor. This is a measure of the potential impact of quitlines on the prevalence of tobacco use in the population.

1.1 Report Objectives

This project examines the reach and utilization of quitline services, and the response to promotional strategies in six provincial SHLs: Manitoba, New Brunswick, Newfoundland and Labrador, Nova Scotia, Prince Edward Island, and Saskatchewan, for the calendar years 2007 to 2009. The report is in partial fulfillment of the requirements of Contribution Agreement between Health Canada and the Propel Centre for Population Health Impact and presents data from 2007 to 2009.

The objective of the project is to provide provincial and federal governments who fund quitlines, as well as quitline operators, with data on the utilization and reach of quitlines during 2007 to 2009. This information may be used as baseline data to assess future promotional campaigns,

including the proposed toll-free quitline number on cigarette packages. Currently SHLs are promoted through a variety of means including referral, mass media and other advertising.

The specific objectives of the project are to:

1. Report on the reach and utilization of the Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba and Saskatchewan quitlines during the 2007, 2008 and 2009 calendar years.
2. Report on the demographic characteristics and tobacco use behaviour of people calling the quitline in 2007, 2008 and 2009.
3. Report on responses to major types of promotion strategies in Newfoundland and Labrador, Prince Edward Island, Nova Scotia, New Brunswick, Manitoba and Saskatchewan quitlines during the 2007, 2008 and 2009 calendar years.
4. Compare provincial quitline utilization and reach with other international quitlines.

1.2 Background

1.2.1 Manitoba, New Brunswick, Nova Scotia, Prince Edward Island and Saskatchewan

SHL services for Manitoba, New Brunswick, Nova Scotia, Prince Edward Island and Saskatchewan are provided in both French and English by the Canadian Cancer Society call centre in Hamilton, Ontario which also provides helpline service for Ontario. Funding is provided by provincial governments, Health Canada and the Canadian Cancer Society.

Quit Specialists at the SHL Hamilton call centre provide smokers with information, self-help materials, referrals to local cessation resources, reactive evidence based motivational counselling and proactive follow-up counselling calls. Information and materials are also available to health care professionals, family and friends, community agencies and others who are supporting a smoker in their quit efforts.

The New Brunswick, Nova Scotia and Prince Edward Island SHLs began operation in 2002. The Manitoba and Saskatchewan services started in 2003. All five provinces have fax referral programs in place since November 2005, as a strategy to increase reach to potential clients. Health professionals advise their patients who smoke to quit and ask them if they wish to be referred to the helpline. Those interested sign a referral form, giving the health professional consent to send their name and phone number to SHL. Once the referral form is received, the quitline contacts the person and offers them evidence based treatments.

1.2.2 Newfoundland and Labrador

The Newfoundland and Labrador SHL is a toll-free telephone service that provides client-centered counselling support for smoking cessation efforts in English. The service was launched in 2000 by the Newfoundland and Labrador Lung Association and is funded in part by Health

Canada, The Newfoundland and Labrador Lung Association and the provincial government of Newfoundland and Labrador.

Quit Counsellors (trained social workers, nurses, respiratory therapists and other health professionals) provide information, advice, and support to people who smoke and wish to quit. Information is also available for those who want to help a smoker quit and for health professionals. Counselling (both reactive and proactive) is client directed and based on what the NL SHL describes as a strengths and solution-focused approach. A range of other services are also offered including: group counselling, E-Counselling, online chat forums, community-based referrals, and mailed self-help materials.

In February 2004, the Newfoundland and Labrador Smokers' Helpline piloted the first fax referral program in Canada. CARE (Community Action & Referral Effort) initially targeted physicians, but has been expanded to include nurses, pharmacists, school counsellors and psychologists, social workers, hospitals, respiratory therapists, dieticians, dentists, dental hygienists, dental assistants, and the provincial Seniors Resource Centre. The program has also been modified to allow employers to refer employees as part of the "Work To Be Smoke Free" Project.

1.3 Data Sources and Methods

This report covers the periods of January 1 to December 31, 2007; January 1 to December 31, 2008, and January 1 to December 31, 2009. Quitlines collect data on call volume, call types and method of first contact through the telephony system. Caller characteristics, tobacco-related behaviours and how callers heard about the quitline are collected through a series of questions asked of clients at the time of the first call (e.g. intake call) by quitline staff. After this information was entered into SHL software programs the data were sent to the Propel Centre for Population Health Impact, located at the University of Waterloo, for analysis and reporting.

Smoking prevalence data for each province which is used for the calculation of reach came from the Canadian Tobacco Use Monitoring Survey (CTUMS) 2007, Annual (Health Canada, 2008), CTUMS 2008, Cycle 1 (Health Canada, 2009), and CTUMS 2009, Cycle 1 (Health Canada, 2010).

To determine responses to major promotional campaigns that occurred between January 2007 and December 2009 Propel classified how smokers heard about the quitline (asked of all smokers at the time of their initial call) into the three major promotional strategies – media, other advertising and referrals. In addition, trends in call and caller volume per month since 2002 were examined in relation to media promotions, quitline service changes, smoking related legislation and other environmental factors that could influence quitline utilization.

2.0 UTILIZATION

2.1 Call Volume

Call volume is the total number of calls to the quitline and is a measure of overall quitline utilization. It is made up of two major types of calls:

1. Cessation calls - those in which any cessation related service (e.g. advice, counselling, information or materials to assist with cessation) is offered to smokers, friends or family, health professionals or community organizations.

Cessation calls can be:

- direct calls coming into the quitline from people seeking help
 - the first call made by the quitline to smokers referred by health professionals
 - proactive calls which are calls made by the quitline to eligible¹ smokers at critical points in the quit process (e.g. quit date).
2. Non-cessation calls - which include administrative calls, wrong numbers, hang-ups, prank calls, media calls, and other non-cessation related calls.

Both cessation and non-cessation calls are important indicators of quitline workload since they require a response from the quitline. An increase in non-cessation calls can reduce the efficiency of quitlines by tying up the phone lines and/or counsellors who could otherwise provide cessation advice and counselling.

Call volume of the six quitlines has increased since 2007. Between 2007 and 2009 the number of cessation calls increased by 21.8% without a corresponding increase in non-cessation calls. At the same time, the number of non-cessation calls has declined (see Figure 1). As can be seen in Figure 2, this pattern of increasing efficiency has occurred in all six quitlines.

¹ All callers in NL are eligible for proactive calls while in other provinces, only those in contemplation, preparation and actions stages of change are eligible. Pregnant and breast feeding women also receive proactive calls.

Figure 1: Call volume by year and type of call

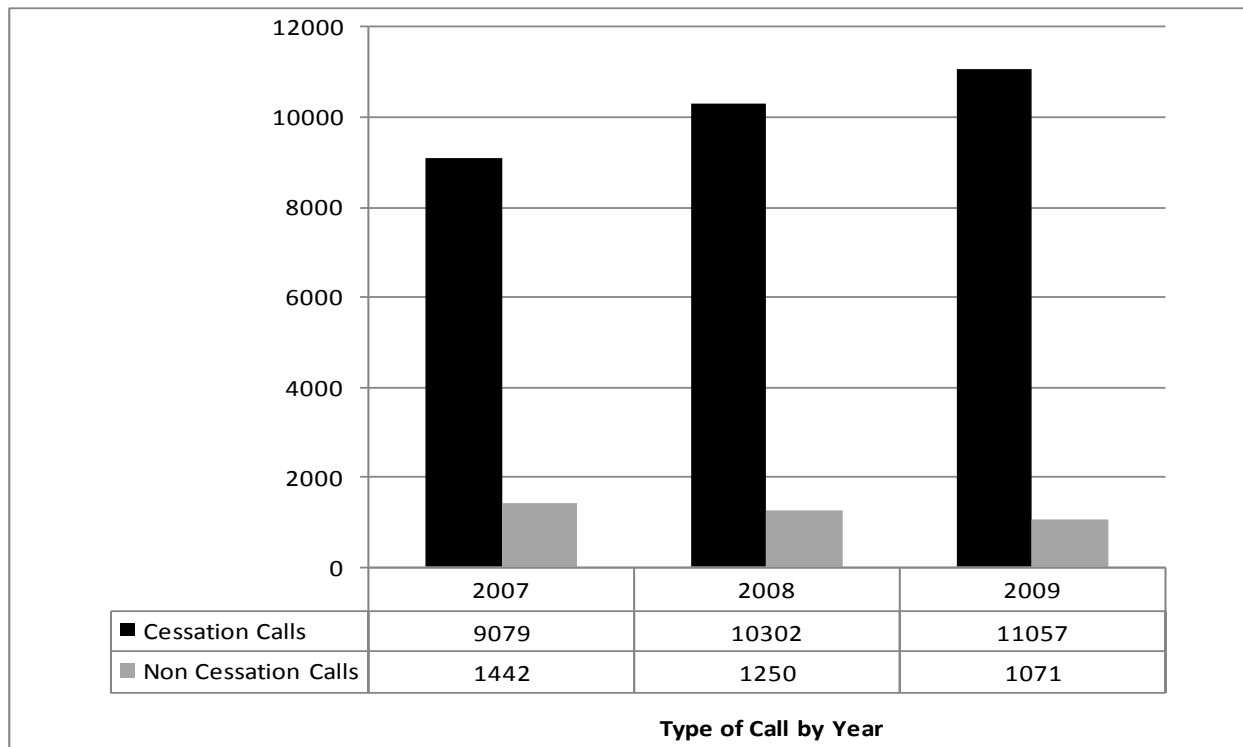
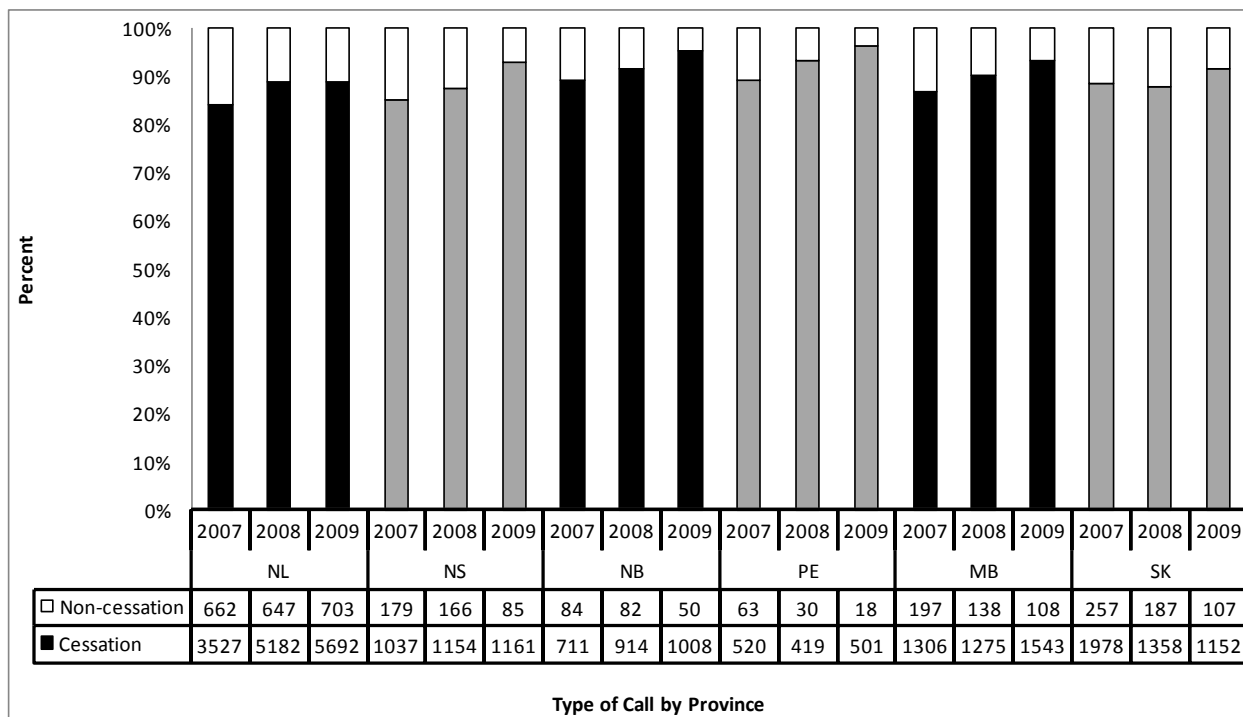


Figure 2: Provincial Call Volume by year and type of call



2.2 Proactive Counselling

Research studies have shown that in addition to an initial counselling call, proactive calls improve quit rates and increase the effectiveness of quitline services (Centre for Behavioural Research and Program Evaluation, 2009). Proactive counselling is offered to all callers in Newfoundland and Labrador and those in contemplation, preparation and early action stages of change in other provinces.

Much of the increase in the total number of cessation calls for the six provinces from 2007 to 2009 can be attributed to an increase of 78% in the number of evidence-based proactive counselling calls made to SHL clients.

Table 1 describes the number of smokers accepting and receiving proactive service for all provinces combined. Not all those who initially accept proactive service actually receive the additional counselling. Some cannot be contacted and others change their minds. The percentage of smokers who accepted proactive counselling has increased from 79% in 2007 to 84% in 2009. Of those initially agreeing to proactive counselling, the percentage who were successfully contacted and received the service has also increased from only 51.8% in 2007 to 76.2% in 2009. These smokers are also receiving more proactive calls on average, an increase from of 2.3 proactive calls in 2007 to 2.9 proactive calls on average per person in 2009.

Both the increased proportion receiving proactive counselling and the slight increase in the number of proactive counselling calls per person suggests Canadian quitlines are having more success in contacting these smokers. If the trend continues, it bodes well for increased overall effectiveness of the quitlines (Centre for Behavioural Research and Program Evaluation, 2009).

Table 1: Smokers Participating in Proactive Service by Year

Year (number of smokers asked ¹)	Agreed to Service % (n)	If Agreed, Received Service % (n)	Average Number of Proactive Calls
2007 (3348)	78.7% (2635)	51.8% (1365)	2.3
2008 (2634)	85.7% (2258)	76.7% (1732)	2.7
2009 (2745)	84.3% (2313)	76.2% (1763)	2.9

¹ Some smokers are not eligible for the service or do not remain on the phone long enough to be asked to participate.

2.3 Summary of 2009 Utilization

Figure 3 summarizes the number and types of calls for the quitlines in 2009, and the number of unique callers served for each type of call. Although most callers served during a year are new callers, a small percentage are callers who first called in the past year and are continuing to receive service (continuing callers).

Figure 3: Call Volume and Type of Calls, 2009

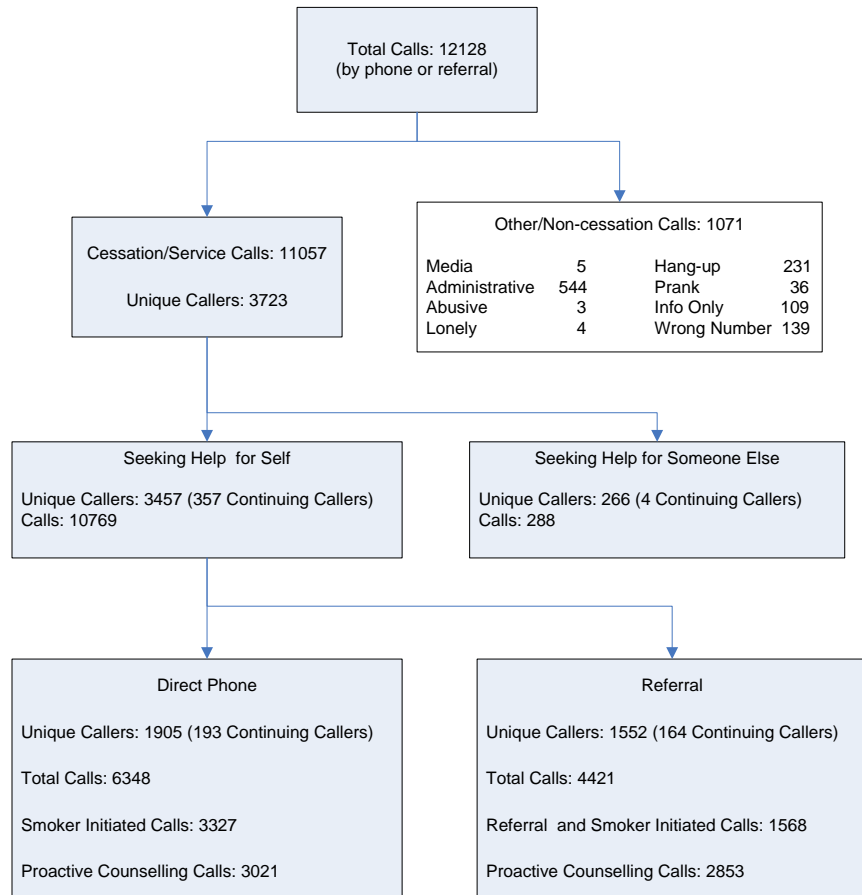
Total call volume is a measure of the workload associated with the operation of a quitline.

Most calls are from callers asking for cessation services but some callers have called by mistake or for other purposes.

The majority of calls are with callers calling for themselves seeking help to quit or stay quit. Some callers are seeking help for someone else such as a client, family or friend.

Those seeking help for themselves can contact the quitline either directly by phone on their own, or can be referred by a health professional. Those who are referred receive an initial referral call from the quitline.

The first call may result in a number of additional counselling calls, both scheduled proactive and smoker initiated calls.



3.0 CHARACTERISTICS OF SMOKERS USING QUITLINES

The following demographic² characteristics and tobacco behaviours describe smokers seeking cessation help for themselves, who called the quitline for the first time during the period from 2007-2009.

3.1 Demographics

There have been few changes in the demographic characteristics of Canadian quitline users during the three years. The proportion of callers who mentioned they have Aboriginal ethnic origins has increased from 3% in 2007 to 8% in 2009. The percentage of new clients who were pregnant or breast feeding remains small at about 2%, and the proportion being counselled in English remains high (98%).

More women than men continue to use the quitlines although more Canadian men smoke than women (see Table 2). Approximately 60% of callers are female and 40% are male. This pattern holds true in each age group.

Almost 50% of smokers using the quitlines are aged 45 to 64 years old, compared with approximately 35% of Canadian smokers. This is not surprising since it is about this age when health problems due to smoking begin to arise. Concerns about health are one the major reasons smokers give for wanting to quit (Centre for Behavioural Research and Program Evaluation, 2009).

Table 2: Gender and Age of Smokers

Characteristic	2007		2008		2009	
	SHL Callers % (n)	Canadian Smokers ¹	SHL Callers % (n)	Canadian Smokers ²	SHL Callers % (n)	Canadian Smokers ³
Gender						
Male	41.1% (1629)	52.3%	40.7% (1222)	55.0%	40.9% (1267)	54.0%
Female	58.9% (2338)	47.7%	59.3% (1783)	45.0%	59.1% (1828)	46.0%
Age (years)						
25-44	32.8% (1007)	39.1%	32.1% (787)	41.5%	34.5% (879)	41.0%
45-64	47.9% (1472)	37.9%	50.0% (1226)	32.5%	48.4% (1234)	36.4%

¹ Health Canada, 2008a

² Health Canada, 2009

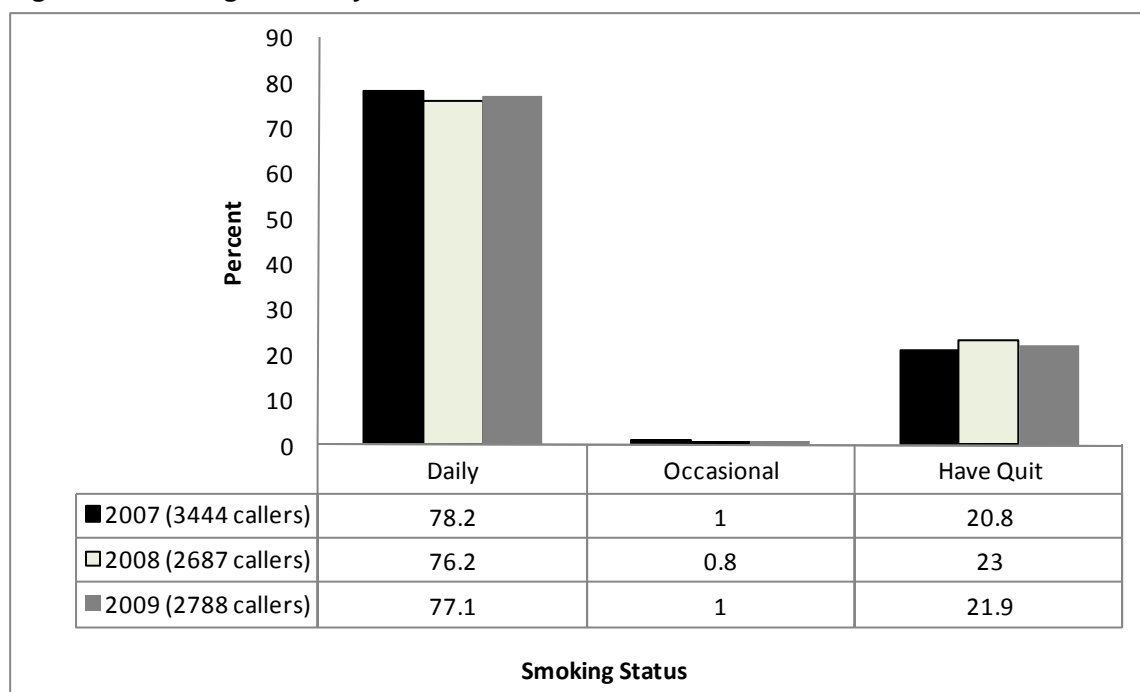
³ Health Canada, 2010

² There was sufficient missing data on education and ethnic status to preclude reporting.

3.2 Tobacco Use

Quitlines serve both current smokers (those who smoke daily or occasionally) and those who have quit and are seeking support to stay quit. Slightly more than three quarters of quitline clients were current smokers (almost all of those were daily smokers) and the remaining had quit and were seeking help to stay quit (see Figure 4). Figures 5 to 7 describe tobacco use of current smokers. The number of callers for each year varies in the three figures due to differing missing data.

Figure 4: Smoking Status by Year



3.3 Amount Smoked and Level of Addiction

The amount of cigarettes smoked when the smoker first calls the quitline has not changed much over the past three years, with about 40% smoking 11 to 20 cigarettes per day (see Figure 5). Another 30% smoked less than 11 cigarettes per day. Canadians, on average, consume 14.9 cigarettes per day (Reid & Hammond, 2009).

Figure 6 shows that the largest proportion of current smokers using the quitlines had a medium level of addiction on the Heaviness of Smoking Index at intake. Almost one out of five smokers using the quitline has a score of “High” and is heavily addicted to tobacco. These smokers find it more difficult to quit and can benefit from proactive counselling and nicotine replacement therapy.

Figure 5: Cigarettes per Day among Daily and Occasional Smokers by Year

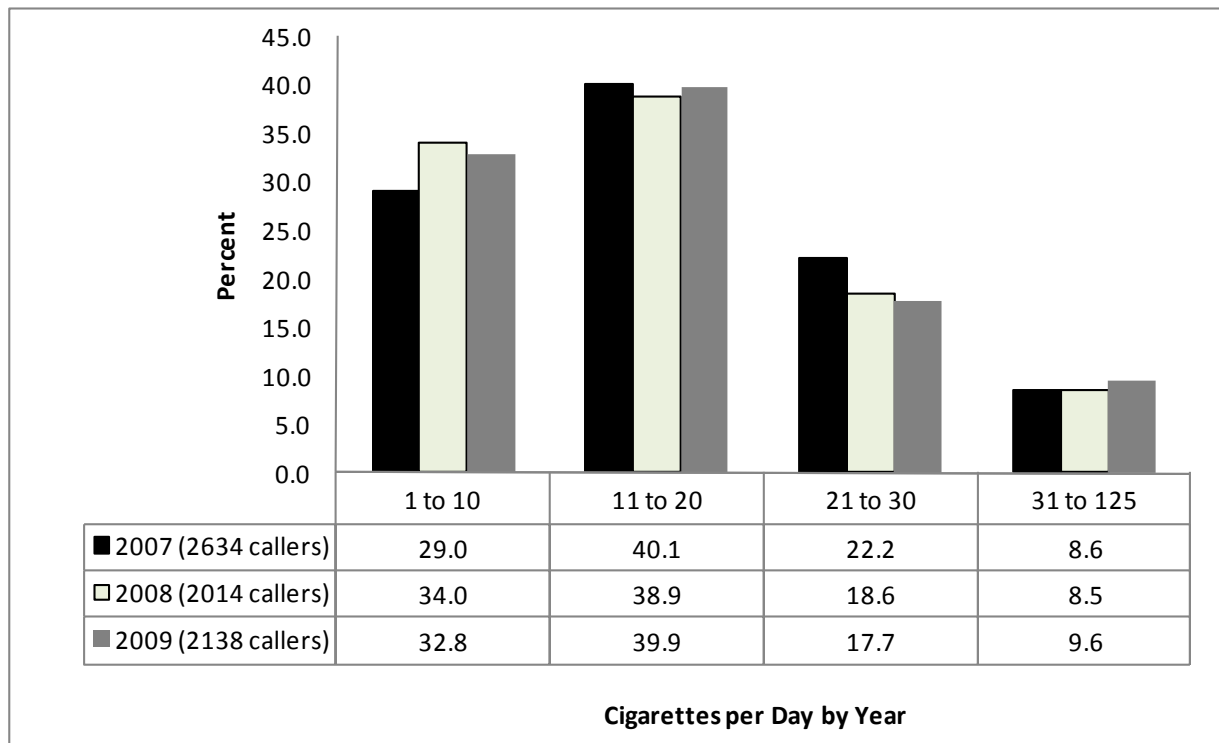
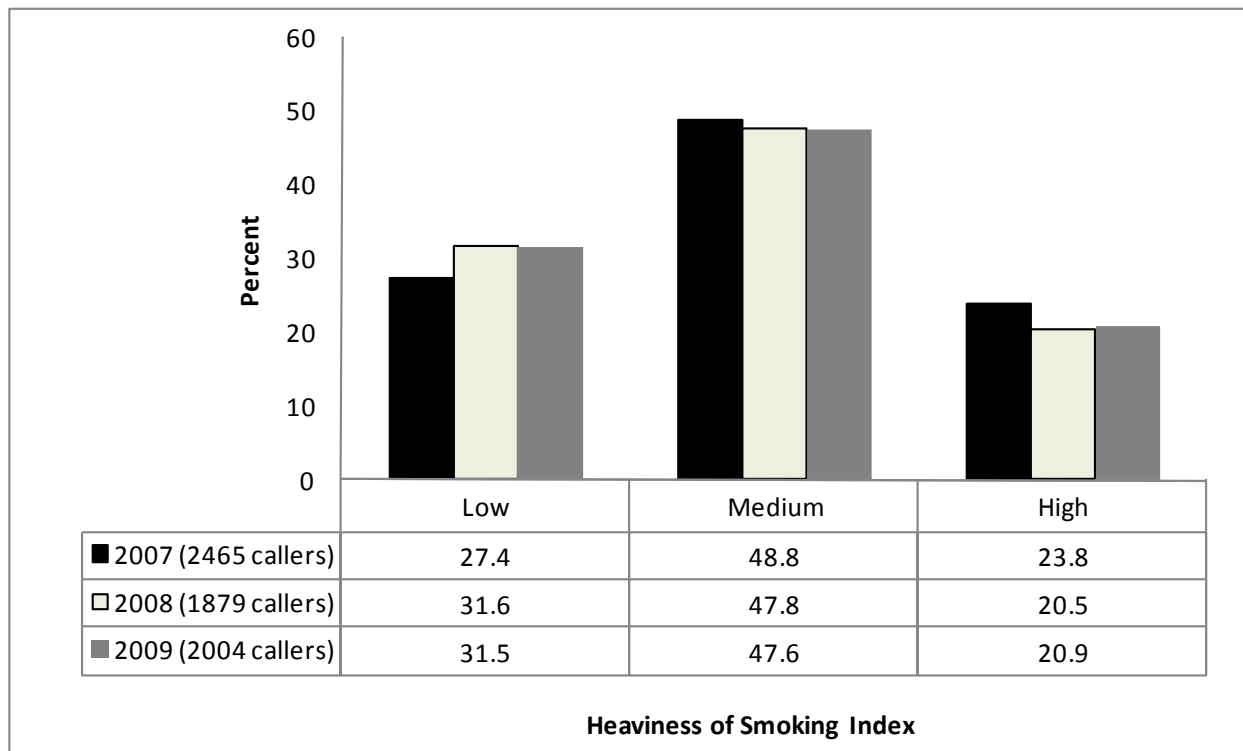
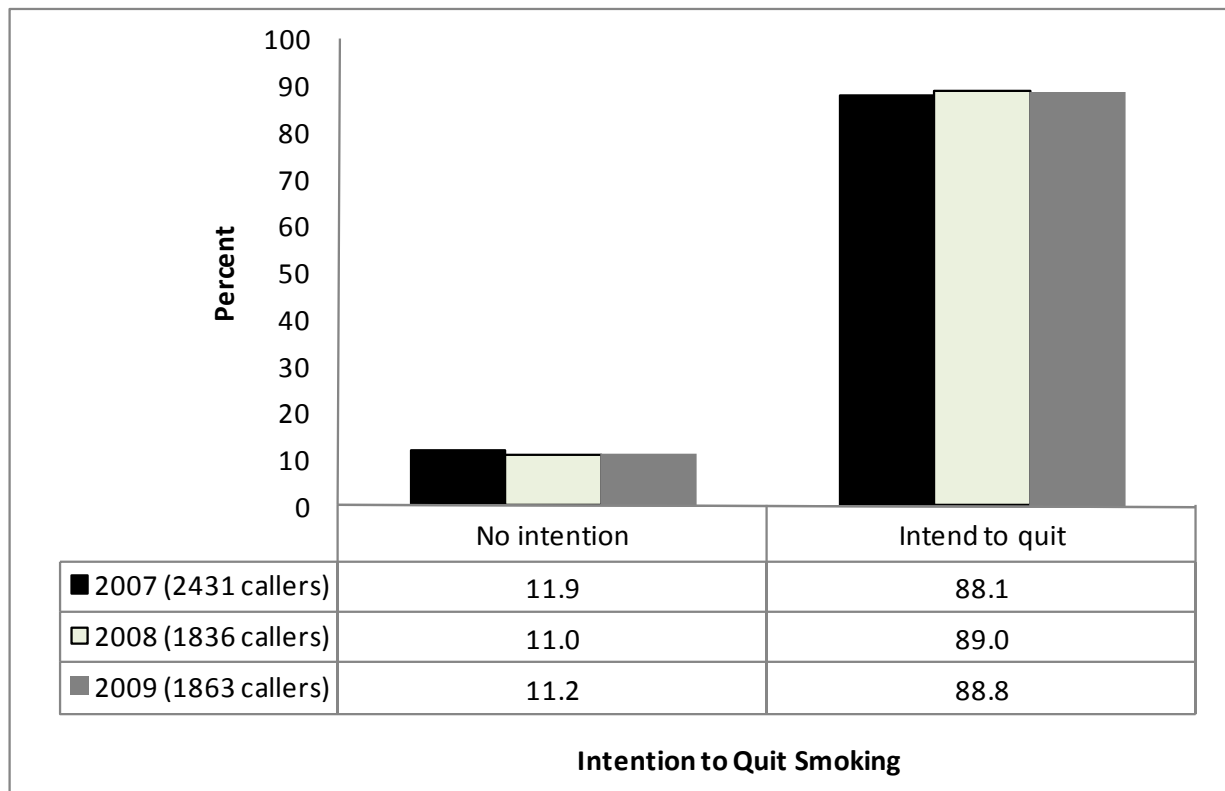


Figure 6: Heaviness of Smoking among Daily and Occasional Smokers by Year

3.5 Readiness to Quit

Almost all smokers, when initially in contact with the quitline, indicated that they intended to quit smoking within 30 days (See Figure 7). This was true whether they first contacted the quitline directly by phone or were contacted as a result of a fax referral. This pattern is the same for all three years.

Figure 7: Readiness to Quit among Daily and Occasional Smokers by Year



4.0 REACH

Reach is a measure of the potential impact of quitlines on the prevalence of tobacco use in the population. Treatment reach is defined by North American Quitline Consortium (NAQC) as the proportion of tobacco users in the population who receive evidence based treatment from a quitline (North American Quitline Consortium, 2009e). It is a conservative measure of reach and will always be lower than other measures of utilization. Currently it is difficult for quitlines to report treatment reach as defined by NAQC because there is no consensus on what constitutes “evidence based counselling”.

In this report evidence based treatment is defined as the proportion of smokers seeking help for self to quit and having at least one contact with a quitline counsellor. Table 3 reports reach by province for 2007 to 2009. Newfoundland and Labrador have the highest reach (1.4%); other provinces reached between 0.2% and 0.7% of all provincial smokers in 2009. Newfoundland and Labrador have a strong community presence and health professional referral network which may be the reason reach is higher than in the other provinces. In general, reach has remained fairly stable for all provinces over the last three years.

Table 3: Treatment Reach as the Percent of Provincial Smokers¹

Province	2007	2008	2009
NL	1.3	1.4	1.4
NS	0.2	0.2	0.2
NB	0.2	0.2	0.2
PE	0.8	0.5	0.7
MB	0.3	0.2	0.2
SK	0.4	0.2	0.2

¹ Health Canada, 2008a; Health Canada, 2009; Health Canada, 2010.

Canadian quitline reach is comparable to that of US quitlines. The 2009 NAQC Annual Survey reports utilization reach, defined as the proportion of smokers calling the quitline for themselves, for 40 US quitlines. Reach ranges from 0.1 % to 5.2%, with half the quitlines reaching 0.7% or fewer smokers. Only four US quitlines reach 3% or more of state smokers(North American Quitline Consortium, 2009c).

5.0 PROMOTION

The effectiveness of promotion strategies can be examined in three ways, by:

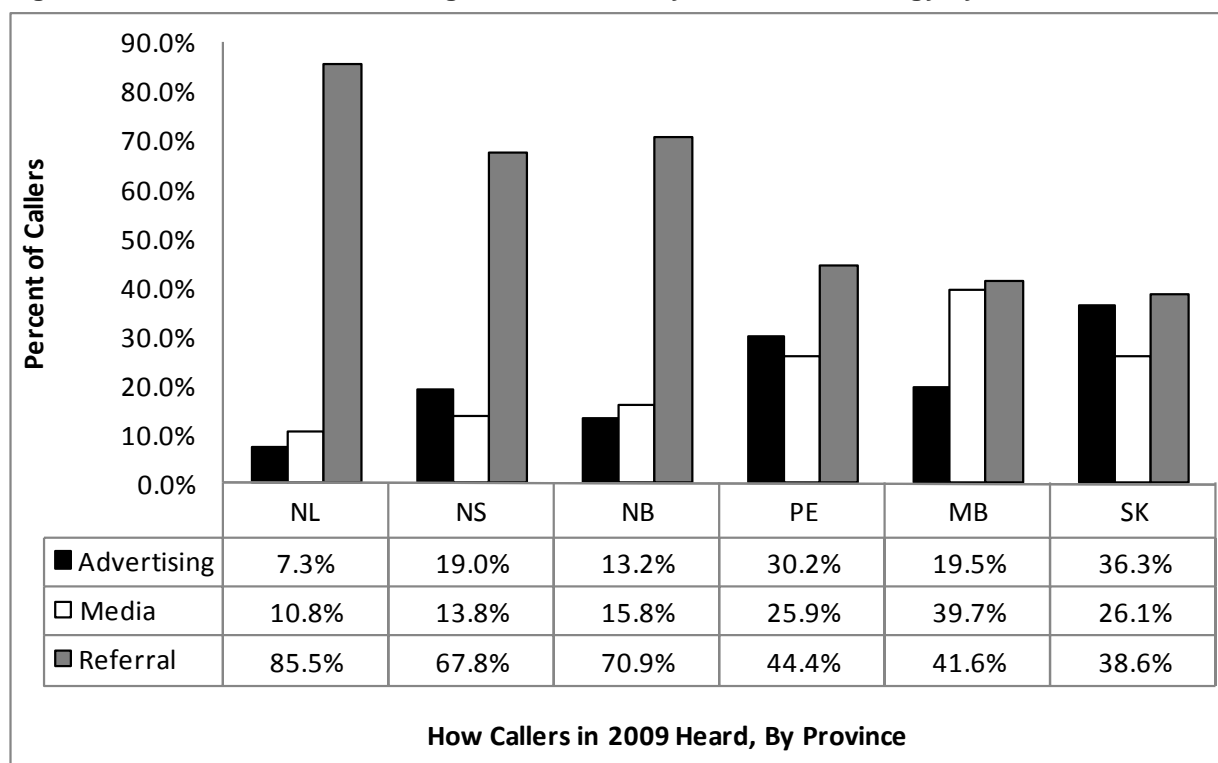
1. Asking smokers how they heard about the quitline when they complete their first call;
2. Comparing the proportion of smokers who first call directly by phone with the proportion who were fax referred by health professionals; and
3. Graphing promotions and total call and caller volume over time.

These provide different views of quitline promotion.

5.1 How Callers Heard About the Quitline

Figure 8 shows the proportion of smokers who heard about the quitline through different promotion strategies (advertising, mass media and referrals). The referral category includes those who heard about the quitline from a health care professional, either formally through a fax referral or informally, and through other sources of referral such as family and friends. Smokers may indicate more than one source of hearing about the quitline. While these data provide an overall picture of promotion effectiveness, it does not allow rank ordering of promotion sources from most to least influential.

The 2009 data show the importance of referrals as a promotion strategy, particularly in the Atlantic provinces, as was the case in 2007 and 2008. In Manitoba, referrals and media were similar (41.6% and 39.7% respectively) whereas in Saskatchewan, referrals (38.6%) and advertising (36.3%) were nearly equal as ways smokers heard about the quitlines.

Figure 8: Percent of Callers Hearing about Quitline by Promotion Strategy by Province, 2009

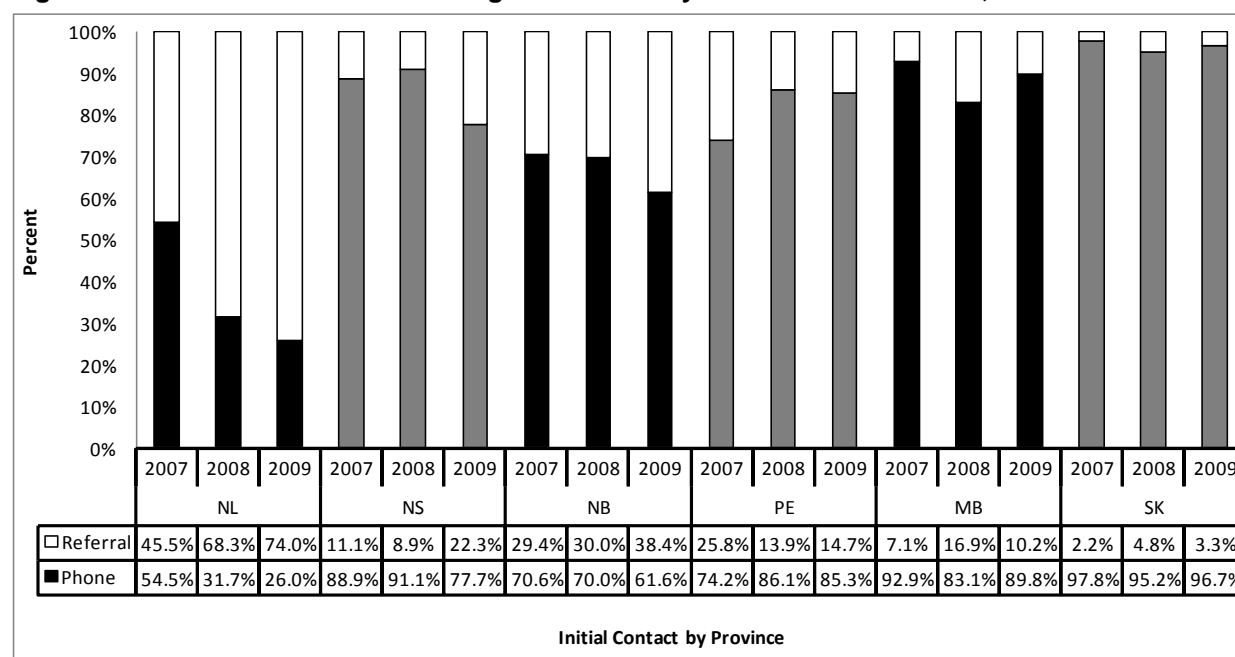
5.2 Contact by Direct Phone or Health Professional Fax Referral

Smokers can first contact these Canadian quitlines either directly by phone on their own or through a formal fax referral made by a health professional on their behalf.

Direct phone contacts are made by smokers who self-refer to the quitline for help with quitting or staying quit or by those looking to support someone else to quit. These contacts usually reflect promotional strategies (such as media and advertising) that increase awareness of the quitline and motivation to call.

A fax referral indicates the participation of community health professionals and is promoted through quitline outreach activities that make it easy for health professionals to refer their patients who smoke. Although data on the number of individual health professionals referring smokers are not available, increases in fax referrals suggests improved adoption of the 2008 Tobacco Treatment Clinical Practice Guidelines (Fiore et al., 2008) which recommend all health professionals “ask, advise, assist, and arrange follow-up” for patients using tobacco. Quitlines provide an accessible and effective referral service for health professionals.

In all provinces included in this report except Newfoundland and Labrador, self-referral directly by phone was the predominate method of contacting the quitline from 2007 to 2009 (see Figure 9). Fax referrals have been the primary form of contact in Newfoundland and Labrador for several years, with the exception of 2007 when a mass media campaign greatly increased the proportion of callers contacting the quitline directly by phone.

Figure 9: Percent of Callers Contacting the Quitline by Phone or Fax Referral, 2007-2009

5.3 Promotions and Call Volume in Context

Promotions such as mass media campaigns can increase call volume and the number of callers during and immediately after a campaign (Carroll & Rock, 2003; Farrelly, Hussin, & Bauer, 2007; C. L. Miller, Wakefield, & Roberts, 2003). Other factors that can also influence quitline caller and call volumes include professional referral programs (Bentz et al., 2006; Willett et al., 2009), smoke-free legislation (Chan, Wong, Fong, Leung, & Mak, 2009; Wilson, Thompson, Grigg, & Afzal, 2005), news worthy events and service availability. These factors have been mapped against total call volume and number of new callers by month from November 2002 until December 2009 for each provincial quitline (see Appendix A).

Examining call volume and the number of new caller peaks and troughs over time, it can be seen that after the quitlines were launched the number of callers and call volume rose rapidly.

After the initial peak, Canadian quitline call and caller volume tended to settle into a seasonal pattern with peaks in the winter and troughs in the summer months. Peaks in January have been observed in other quitlines (Delnevo, Foulds, Vohrback, & Kazimir, 2006) and have been attributed to New Year's resolutions and inclement weather. In Canada, these peaks are further reinforced by the placement of National Non-smoking Week in mid-January each year, with associated media attention. In addition, mass media campaigns are often scheduled around this peak.

As the quitlines mature, the seasonal pattern in call and caller volume tends to level off with smaller winter peaks each subsequent year, unless there are changes in promotions or other factors that affects call and/or caller volume to counter balance this trend. Quitlines with a small number of callers and lower call volumes appear to be more sensitive to many of these changes.

5.3.1 Mass Media Promotions

Promotions expected to have major influences on quitline call and caller volume patterns are time-limited mass media campaigns that target smokers in the age groups that are eligible for quitline service (usually adults). Although some of the provinces have ongoing quitline advertisements in print media throughout the year, these would contribute to a consistent level of awareness and would not have observable call and caller volume pattern fluctuations.

A number of Canadian mass media campaigns have been scheduled to correspond with the seasonal volume peak and National Non-Smoking Week, making it difficult to separate the effects on call and new caller volumes. Pronounced winter peaks in call and caller volume can be seen for Manitoba in 2006 during the "Quit Now Manitoba" and smaller peaks in 2007 during the Manitoba "Quit Now Manitoba" and "Dangers of Second Hand Smoke" campaigns. During this period the Manitoba Tobacco Reduction Alliance (MANTRA) also sent letters to 1500 physicians and dentists. In 2007, Saskatchewan's mass media campaign "Quit Now Saskatchewan", and Newfoundland and Labrador's "It's Your Call" and "Be Free Smoke Free" campaigns also resulted in large winter peaks in call volume and callers. These tended to be provincial campaigns, suggesting that messages customized to local targets are effective. However, in all of these provinces, the call and caller volume dropped off rapidly after the campaigns.

From mid-2008 to mid-2009 the Nova Scotia call and caller volumes are more level than for the comparable period in preceding years. During 2008 mass media campaigns were run during the summer trough months, while in 2009 only Halifax received radio promotions just before and during the usual winter peak period.

5.3.2 Contextual Factors

Promotions often occur in the context of the seasonal patterns and other changes that can affect call and caller volume, such as changes in quitline services, new legislation and other changes in the general environment of tobacco control.

Service Changes

Increased hours of operation can result in a rapid increase in call and caller volume as seen for Newfoundland and Labrador SHL in 2003. Smaller increases in hours of operation are less noticeable and do not appear to result in significantly higher utilization in subsequent years.

Provincial coordinators were responsible for promoting the quitline and slight drops in call volume and new callers are seen in Nova Scotia (April to December 2005) and new callers only in New Brunswick (April to December 2006) when they did not have coordinators.

The introduction of formal systems for referral to the quitlines by health care professionals is often accompanied by increases in call and caller volume (139% for Newfoundland and Labrador CARE program in the first year of operation in 2004; 41% for Prince Edward Island in 2006; 36% for New Brunswick in 2006).

Newfoundland and Labrador's high reach seems to be sustained through the introduction of fax referral to new professional groups (CARE program). However, there is some indication that after the initial peak the impact of a new CARE program levels off over time, as suggested by the drops in caller volume in 2005 about a year and a half after the program for physicians was initiated and in 2007 about the same time after the program for nurses began.

The launching of the Maritime Online services, with the accompanying media campaign and shift to a common 1-800 number parallels small peaks in call and caller volume in each province.

Legislation

Some of the new provincial tobacco control legislation has come into effect during the normal winter peak or during mass media campaigns, which makes it difficult to determine the effect of legislation on utilization. However in provinces with smaller call and caller volumes, changes in their utilization pattern can be seen for legislation that came into effect in off-peak periods (small peaks in Prince Edward Island in 2003 and 2005; a noticeable peak in New Brunswick in 2004; and a smaller trough in Manitoba in 2005).

Other Environmental Factors

The smoking-related deaths of high profile individuals may also affect quitline call and caller volumes. Shortly after Heather Crowe's death and World No Tobacco Day in May 2006, there was an unusual summer peak in call and caller volumes for the Saskatchewan Smoker's Helpline that was equal to the 2006 winter peak. A less noticeable peak in quitline caller volumes could also be seen in May - June of 2006 for Manitoba, Nova Scotia, Prince Edward Island and New Brunswick.

Research studies examining tobacco cessation treatment can affect quitline utilization if they directly affect recruitment of callers to a quitline as part of the study protocol or indirectly by increasing awareness of the quitline for a relatively large portion of the target population, as was the case for a randomized control study conducted from February to April in 2005 (McDonald et al., 2006). During the course of this study, the volume of new phone callers to the quitline (186 callers) was three times that observed for the same period in the preceding (64 callers) and subsequent year (64 callers). However, other research studies that involved smaller proportions of the province's smokers (Nova Scotia, May and June 2005; New Brunswick, April 2007) had little effect on call and caller volume.

5.4 Summary on Promotion

The different methods of looking at promotion (how heard about quitline, phone versus fax referral, graphing promotions and utilization) provide different perspectives that, in combination, provide a number of insights.

Contact by direct phone remains the primary access to quitlines in all provinces except Newfoundland and Labrador. This reflects smokers' self-referral and requires designing and executing promotional strategies that will motivate smokers and drive calls to the quitline. The increase in callers in Newfoundland and Labrador as a result of the 2007 mass media campaign, in Saskatchewan during the 2007 campaign, and to a lesser extent in Manitoba in 2007,

illustrates the effectiveness of media promotion. Investment in promotion has been low over the past few years which is reflected in utilization and reach, and low recall of media as a source of hearing about the quitlines.

Although referrals are among the most frequently mentioned source of hearing about the quitline in all provinces, fax referrals account for less than 30% (and as low as 2%) of smokers contacting the quitline (with the exception of NL). This suggests that either health professionals are discussing but not actively referring patients to the quitline or that others such as community agencies, workplaces and perhaps also friends and family members are recommending the quitline to smokers. In either case, this presents an opportunity for quitlines to increase utilization and reach through more active outreach activities and by engaging a wide range of referral sources. Newfoundland and Labrador, which has a high fax referral rate, also has the highest reach among these quitlines. Barriers to sustaining fax referral will need to be identified and addressed before this can succeed.

Balancing promotion strategies to ensure high reach and steady utilization that matches quitline capacity is critical to quitline efficiency. Unusually large peaks in caller volume such as these challenge a quitline's capacity to respond, often requiring changes in staffing and/or service level (North American Quitline Consortium, 2008). One strategy used by some quitlines to effectively match staffing levels with demand is to only air promotions during certain periods or in certain locations (North American Quitline Consortium, 2009d).

There are no specific guidelines on the best mix of promotion strategies (advertising, mass media, and referrals) but all three can improve utilization and reach. Sharing lessons about effective promotional strategies and adequate investment in media and advertising are required to bring the other provinces up to the reach reported by other North American quitlines.

6.0 INTERNATIONAL COMPARISONS

As an effective intervention to assist tobacco users with their quit attempt (Fiore et al., 2008), quitlines have been implemented in many countries. A literature search was conducted to examine the characteristics, utilization and reach of quitlines from other countries. This provides an opportunity to see where Canadian quitlines sit relative to other countries, keeping in mind the many factors that affect quitline reach and utilization. It is important to note that quitlines have different eligibility criteria, offer different types of services, and operate in different contexts. For example, some US quitlines only serve the uninsured; some quitlines provide only reactive counselling, others offer proactive follow up calls only to those ready to quit in 30 days; and some quitlines may offer free nicotine replacement therapy (NRT). These differences may be related to available funding or the mandate of organizations offering quitlines. Nevertheless, these differences can affect quitline utilization and reach, as well as the effectiveness of the service (Fiore et al., 2008).

The search strategy included an initial broad search for published literature on quitline services and usage, both through academic databases (PubMed, Web of Science, and Scopus), and Google Scholar and internet searches. Similarly, targeted searches for specific quitlines, e.g. Australian quitline or Florida quitline, were also employed using academic databases and Google internet searches. Service information from quitline websites was also examined for pertinent data.

The search found relevant literature on quitlines in the United States, the United Kingdom, Italy, Hong Kong, Australia, and New Zealand. The quitline characteristics, caller characteristics and promotion, utilization and reach of the quitlines are summarized in Appendix B and discussed below.

6.1 Quitline Characteristics

Characteristics of interest were the various services offered by the quitlines including whether NRT is provided, the languages these services are provided in, and the hours of counselling provided by the quitlines per week. In Canada, the 10 provincial quitlines do not all provide the same service; for example, the operating hours of quitlines vary with Alberta and British Columbia's quitlines open 24 hours a day, 7 days a week (168 hours) and Newfoundland and Labrador's quitline usually operating 56 hours a week (North American Quitline Consortium). Additionally, Newfoundland and Labrador is the only Canadian quitline that does not routinely offer services in French. Despite these differences, similarities exist among all provinces. All provinces offer proactive follow up calls and no provinces routinely offer free or subsidized NRT to quitline callers planning to quit (North American Quitline Consortium, 2009b).

Unlike the Canadian quitlines, over half of American quitlines provide free or subsidized NRT to their callers (Cummins, Bailey, Campbell, Koon-Kirby, & Zhu, 2007) and the New Zealand quitline provides subsidized NRT (Li & Grigg, 2007). The distribution of free or subsidized NRT by quitlines can increase call volume (Deprey et al., 2009; Swartz Woods & Haskins, 2007; Tinkelman, Wilson, Willett, & Sweeney, 2007) and may explain why the reach of the New Zealand and American quitlines are higher than the reach for Canadian quitlines. Similar to Canadian quitlines, the United Kingdom's quitline QUIT, the Italian quitline, and the Hong

Kong quitline do not provide subsidized NRT to their callers (Abdullah, Lam, Chan, & Hedley, 2004; Gilbert, Sutton, & Sutherland, 2005; Pizzi et al., 2009).

Proactive follow up calls are also common among quitlines and can increase the effectiveness of quitlines (Fiore et al., 2008). All Canadian quitlines offer this service, as do the American quitlines, the United Kingdom's quitline QUIT, and the Australian quitline (Cummins et al., 2007; Gilbert et al., 2005; North American Quitline Consortium, 2009a; Scollo & Winstanley, 2008; Stillman, Miller, Mahony, & Taylor, n.d.).

Quitline services are often offered in more than one language, reflecting the needs of the population. For example, in Canada, where the two official languages are English and French, quitline services are offered in both languages, while in the United States, where English and Spanish are common, services are frequently offered in these languages, among others (Cummins et al., 2007).

6.2 Caller Characteristics: Gender, Age, and Cigarette Consumption

In Canada, as in the United States, the United Kingdom, Australia, and New Zealand, more than half of callers to quitlines are female (Deprey et al., 2009; Gilbert et al., 2005; Harwell et al., 2007; C. L. Miller et al., 2003; New York State Smokers' Quitline, 2007; Ortiz et al., 2008; Prout et al., 2002; The Quit Group, 2009; The Quit Group, 2009). In Hong Kong, less than one quarter of quitline callers are female (22.1% (Abdullah et al., 2004), a reflection of the low smoking prevalence rate (4%) among females (Chan et al., 2009). This low smoking rate among women means that although only 22.1% of quitline callers in Hong Kong are women they are still over-represented in quitline callers, just as they are in Canada (Centre for Behavioural Research and Program Evaluation, 2009).

The callers to Canadian quitlines tend to be older than callers to other quitlines; almost half of callers to the six Canadian quitlines are aged between 45 and 64 years, while at least half of callers to the United Kingdom's quitline QUIT and to the New Zealand quitline are aged 25 to 44 years (Gilbert et al., 2005; Wilson et al., 2005) and 76.5% of callers to the Hong Kong quitline were aged 25 to 49 years (Abdullah et al., 2004). In the United Kingdom, New Zealand, and Hong Kong, younger smokers appear to be overrepresented among quitline callers (Abdullah et al., 2004; Gilbert et al., 2005; The Quit Group, 2008), while in Canada older smokers are overrepresented (Centre for Behavioural Research and Program Evaluation, 2009).

The daily cigarette consumption of callers to the Canadian quitlines is comparable to the daily consumption of callers to the United Kingdom's quitline QUIT and the Australian quitline. Callers to the six Canadian quitlines tend to smoke between 11 and 20 cigarettes per day (40.1% in 2007, 38.9% in 2008, and 39.9% in 2009), with an additional 20% smoking between 21 and 30 cigarettes per day. The mean daily cigarette consumption of smokers calling the United Kingdom's quitline QUIT and smokers calling the Australian quitline is 22 cigarettes (Gilbert et al., 2005; C. L. Miller et al., 2003).

6.3 Quitline Promotions, Utilization and Reach

The New Zealand and Australian quitline telephone numbers are publicized on every tobacco product health warning within their respective countries (Li & Grigg, 2009; C. L. Miller, Hill,

Quester, & Hiller, 2009), while quitlines in Canada are not currently promoted on the tobacco health warnings in Canada. The Netherlands also promotes the quitline telephone number on tobacco products (M. Willemsen, personal communication, November 1, 2009). Health Canada, the provinces and the territories are researching the feasibility of the proposed pan-Canadian toll-free quitline numbers appearing on tobacco packaging, although no decision has been made on this initiative.

In comparing reach, it is important to note the different definitions used to define reach. Overall, Canadian quitlines reached about the same proportion of smokers as at least half the US states, but less than the New Zealand quitline. In 2009, the six Canadian quitlines provided at least one counseling call to 0.2% to 1.4% of the smoking population, depending on the province, while the percentage of smokers in each state in the United States who called the quitline ranged from less than 0.2% to 5.2% with a mean reach of 1.28% for 40 American quitlines (North American Quitline Consortium, 2009c). The percentage of adult smokers who registered with the quitline in New Zealand ranged from 4.0% to 6.3%, depending on the region (The Quit Group, 2008).

It is also important to look at other factors that may affect reach, for example, the provision of free NRT. Over half of American quitlines offer free or subsidized NRT (Cummins et al., 2007) and the New Zealand quitline offers subsidized NRT (Li & Grigg, 2007), while none of the Canadian quitlines routinely do so (North American Quitline Consortium, 2009b). This is an important distinction since research suggests offering free or subsidized NRT increases the reach of quitlines (Campbell, Lee, Haugland, Helgerson, & Harwell, 2008; Deprey et al., 2009; Swartz Woods & Haskins, 2007; Swartz, Cowan, Klayman, Welton, & Leonard, 2005; Tinkelman et al., 2007).

Additionally, the way in which reach is calculated should also be considered when comparing the reach of different quitlines. The quitline reach presented in Appendix B for Canada, the United States, and New Zealand is calculated differently for each of the countries; this may limit the usefulness of comparing reach across these quitlines.

6.4 Summary on International Comparisons

Canadian quitlines have similarities and differences when compared with international quitlines (including the United States). Canadian quitlines have lower reach than countries that offer free or discounted NRT. The Canadian quitlines, similar to quitlines in the United States, Australia, and the United Kingdom, offer proactive calls to quitline clients and offer services in languages suitable to the target population. The callers to the quitlines are also similar; over half of callers are female, and callers have a similar level of cigarette consumption. However, callers to the Canadian quitlines tend to be older than callers to other quitlines. Further research comparing Canadian, American, and European quitlines is expected as Propel is currently working on publications examining caller characteristic and reach with colleagues in these regions.

7.0 OBSERVATIONS / THINGS FOR QUITLINES TO THINK ABOUT

Quitlines have been recognized as effective tobacco treatment interventions that are central to integrated cessation strategies (Fiore et al., 2008). This report shows that the six provincial quitlines are being used by smokers who are ready to quit and that appropriate evidence based treatment is being provided.

Smokers using these six quitlines are older than Canadian smokers, and more likely to be female, despite the fact more Canadian men smoke than women. This is similar to other international quitlines but it does mean tailored promotional campaigns may be required to attract a greater proportion of male smokers. Older smokers also experience more health problems which could be prompting them to call the quitline.

- Canadian quitlines may wish to consult with international quitlines to identify strategies for attracting smokers age 25 to 44.

Heavily addicted smokers, which make up about 20% of quitline clients, tend to be more successful when nicotine replacement therapy (NRT) is used along with quitline counselling and follow-up calls (Fiore et al., 2008). NRT is recommended by quitline specialists as part of their evidence based counselling protocols, but not provided by Canadian quitlines. One of the barriers to NRT use is the cost which may discourage many smokers from following through on quitline recommendations.

- Canadian quitlines may wish to examine how to increase the appropriate use of NRT.

The relatively low reach and utilization of quitlines may be related to the low level of promotion, particularly media and advertising campaigns that raise smokers' awareness of quitlines and motivate them to call for help with quitting or staying quit. When asked how they heard about the quitline, media is the least frequently mentioned promotion strategy. The power of media to drive calls to the quitline has been reported in the literature and has been demonstrated in a number of Canadian quitlines (e.g. NL, MB, SK) when phone contact increased considerably during the campaign months.

Health professional referrals are another promotional strategy that is working very well in Newfoundland and Labrador, and moderately well in New Brunswick. In the other provinces direct phone contact (which relies on media and advertising promotions) remains the primary way of accessing quitline services. Thus there is opportunity for increasing reach by greater involvement of health professionals. Such a strategy requires the cooperation of professional organizations as well as outreach by the quitlines.

While the reach of these six Canadian quitlines is in line with that of many of the US quitlines, concerted efforts at improving reach are needed if quitlines are to significantly reduce the number of smokers in this country.

- Balanced promotional strategies are necessary to increase reach.

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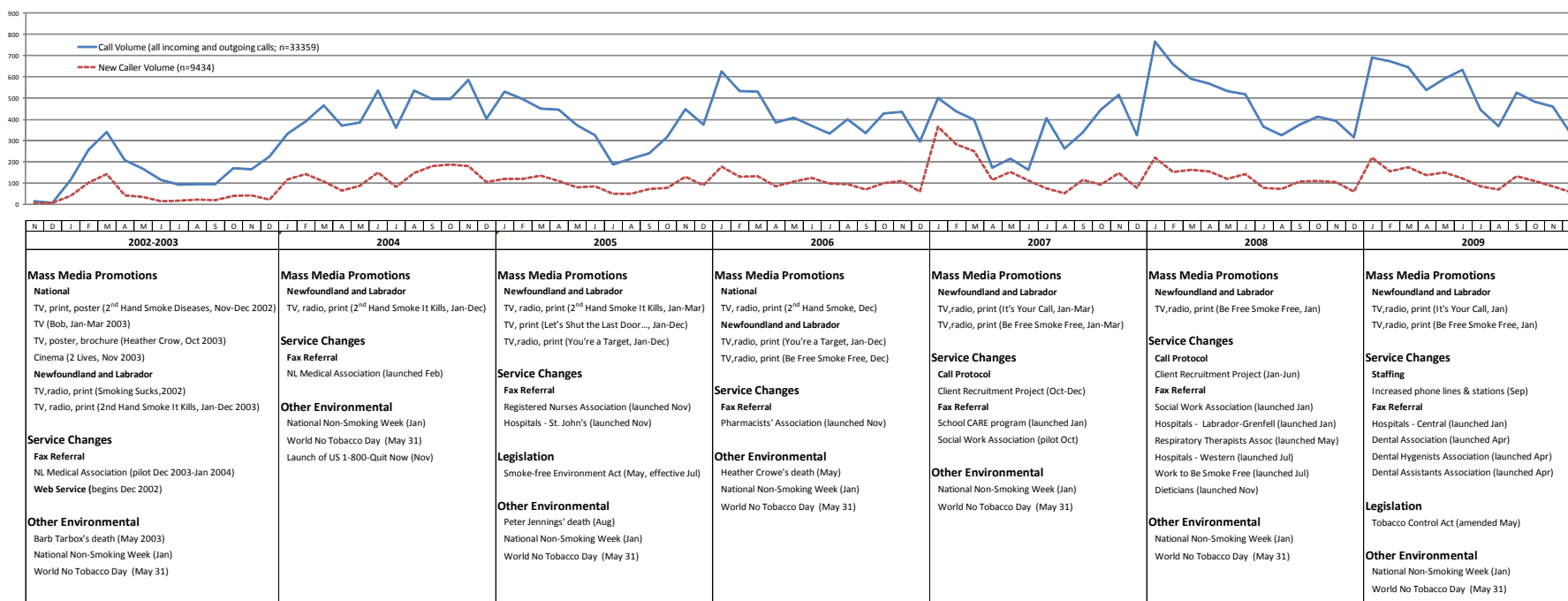
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APPENDIX A: FACTORS AFFECTING UTILIZATION BY PROVINCE

Summary of Factors Affecting Newfoundland and Labrador Smokers' Helpline Utilization

- The number of new callers in Newfoundland and Labrador demonstrated a large short-term response to the “It’s Your Call” and “Be Free Smoke Free” mass media campaigns in 2007, which because of their scheduling reinforced the seasonal peak.
- Quitline call volume and number of callers appear to be relatively insensitive to legislative changes.
- Much of the growth in the quitline utilization over the years appears to be associated with the growth of the CARE fax referral program.
- There is some indication that after the initial peak, the impact of a fax referral program levels off as suggested by the drops in the caller volume in 2005 about a year and a half after the physicians program was initiated and in 2007 about the same amount of time after the nurses program began.

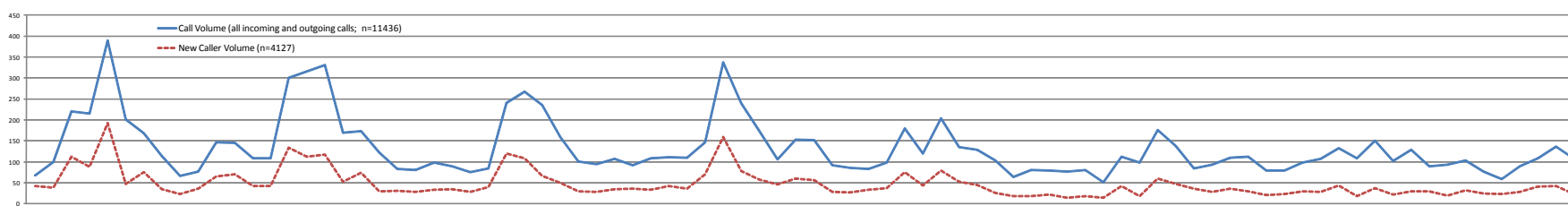
Figure A1: Newfoundland and Labrador Smokers' Helpline Call and Caller Volume by Month, November 2002 to December 2009



Summary of Factors Affecting Nova Scotia Smokers' Helpline Utilization

- Nova Scotia utilization appears to exhibit small short-term responses to media campaigns and legislative changes which often occurred together.
- As the quitline has matured, the number of new callers has levelled off and a seasonal pattern is less evident, particularly after 2008.
- Off-peak media campaigns may be contributing to this levelling.

Figure A2: Nova Scotia Smokers' Helpline Call and Caller Volume by Month, November 2002 to December 2009

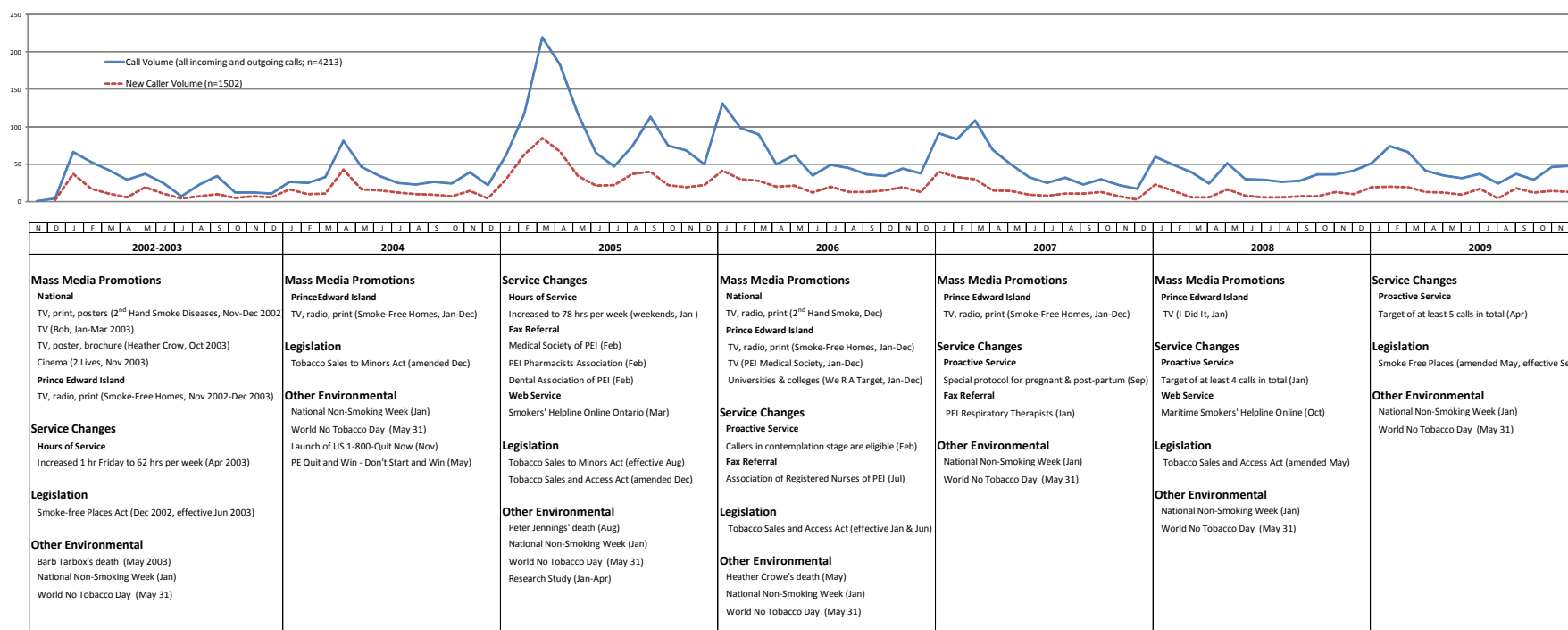


2002-2003												2004												2005												2006												2007												2008												2009													
N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Mass Media Promotions National TV, print, poster (2 nd Hand Smoke Diseases, Nov-Dec 2002) TV (Bob, Jan-Mar 2003) TV, poster, brochure (Heather Crow, Oct 2003) Cinema (2 Lives, Nov 2003) Nova Scotia TV, print, cinema (Great Reasons to Smoke, 2002-Dec 2003) TV, print (Smoke Free Around Me, Dec 2003) Service Changes Hours of Service Increased 1 hr Friday to 62 hrs per week (Apr 2003) Legislation Smoke-free Places Act (May 2002, effective Jan 2003) Other Environmental Barb Tarbox's death (May 2003) National Non-Smoking Week (Jan) World No Tobacco Day (May 31)												Mass Media Promotions Nova Scotia TV, print, cinema (Great Reasons to Smoke, Jan-Dec) TV, print (Smoke Free Around Me, Jan-Dec) Other Environmental National Non-Smoking Week (Jan) World No Tobacco Day (May 31) Launch of US 1-800-Quit Now (Nov)												Mass Media Promotions Nova Scotia TV, print, cinema (Great Reasons to Smoke, Jan-Mar) TV, print (Smoke Free Around Me, Jan-Mar-May, Sep-Nov) Service Changes Hours of Service Increased to 78 hrs per week (weekends, Jan) Fax Referral Doctors Nova Scotia (launched Nov) Pharmacy Association (launched Nov) Web Service Smokers' Helpline Online Ontario (Mar) Legislation Smoke-free Places Act (amended Nov) Other Environmental Peter Jennings' death (Aug) National Non-Smoking Week (Jan) World No Tobacco Day (May 31) Research Study (Cape Breton, May-Jun)												Mass Media Promotions National TV, radio, print (2 nd Hand Smoke, Dec) Nova Scotia TV, print (Smoke Free Around Me, Jan-Dec) Service Changes Proactive Service Callers in contemplation stage are eligible (Feb) Fax Referral Dental Association (launched Jun) Legislation Smoke-free Places Act (effective Dec) Tobacco Access Act (amended Nov) Tobacco Regulations (amended Nov) Other Environmental Heather Crowe's death (May) National Non-Smoking Week (Jan) World No Tobacco Day (May 31)												Mass Media Promotions Nova Scotia TV, print (Smoke Free Around Me, Jan-Dec) TV (I Did It, Jan-Mar, Dec) Radio (Apr, Jun, Aug, Dec) Community print (e.g. Parent Child, The Coast, Dec) Posters, phone (Workers at Work, Jan-Apr) Service Changes Staffing Period without a SHL Coordinator (Apr-Dec) Proactive Service Special protocol for pregnant & post-partum (Sep) Fax Referral College of Registered Nurses (launched Apr) Legislation Tobacco Access Act (amended, effective Apr) Tobacco Regulations (amended, effective Sep) Smoke-free Places Act (amended Dec) Other Environmental National Non-Smoking Week (Jan) World No Tobacco Day (May 31)												Mass Media Promotions Nova Scotia Radio (Jan, Mar) TV (I Did It, Jan-Dec) Community print (Jun-Aug) Posters, phone (Workers at Work, Oct-Dec) Internet (Kijiji ads, Nov 2008) Radio (Halifax only, Dec) Service Changes Proactive Service Target of at least 4 calls in total (Jan) Web Service Maritime Smokers' Helpline Online (Oct) Legislation Smoke-free Places Act (amended, effective Apr) Other Environmental National Non-Smoking Week (Jan) World No Tobacco Day (May 31)												Mass Media Promotions Nova Scotia Posters, phone (Workers at Work, Jan-Dec) Radio (Halifax only, Jan) TV (I Did It, Jan) Service Changes Proactive Service Target of at least 5 calls in total (Apr) Fax Referral Hospitals (Ottawa Model IVR, launched Jul) Other Environmental National Non-Smoking Week (Jan) World No Tobacco Day (May 31)													

Summary of Factors Affecting Prince Edward Island Smokers' Helpline Utilization

- As a small province, with a small call volume and low number of new callers, quitline utilization in Prince Edward Island is particularly sensitive to environmental factors such as research studies and changes in legislation.
- After a large spike in 2005 and subsequent seasonal spikes in 2006 and 2007, call volume and the number of new callers declined and then levelled off in 2008.

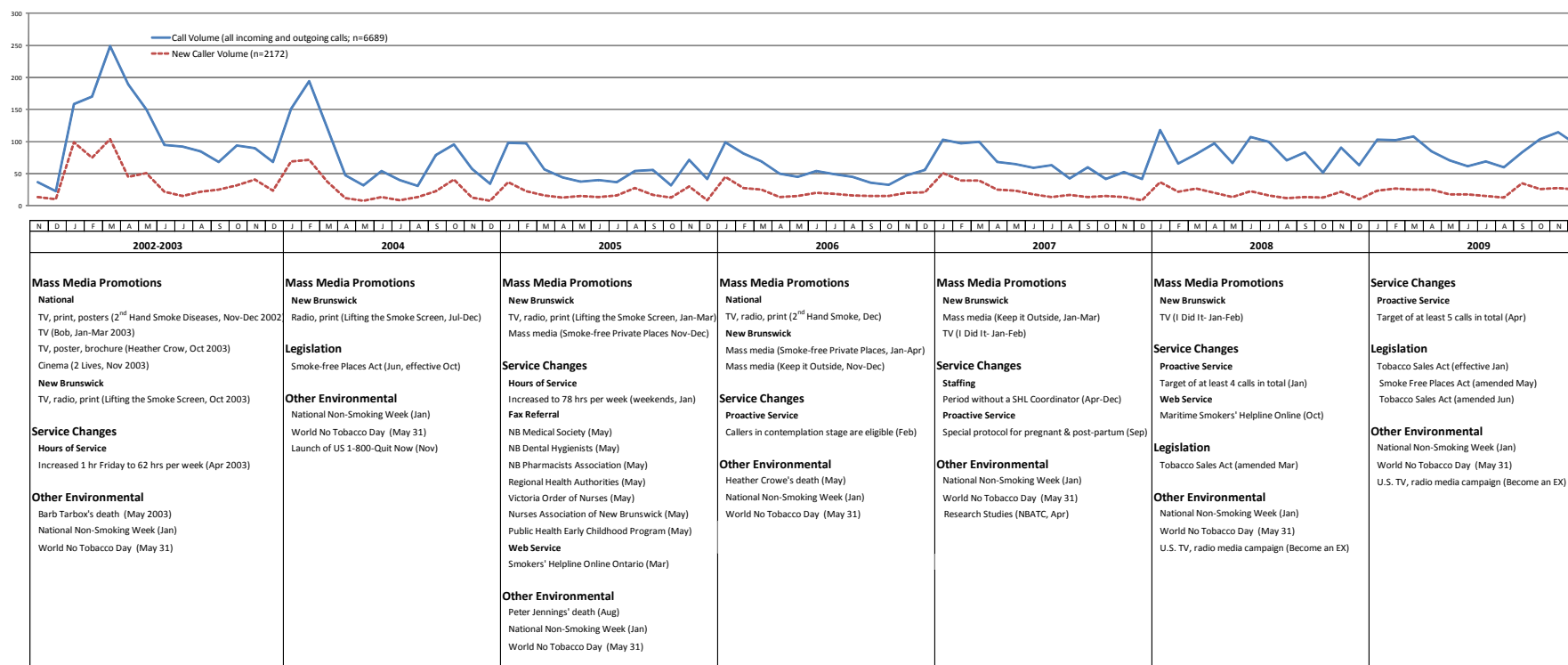
Figure A3: Prince Edward Island Smokers' Helpline Call and Caller Volume by Month, November 2002 to December 2009



Summary of Factors Affecting New Brunswick Smokers' Helpline Utilization

- There was a rapid growth in the utilization in New Brunswick during the first year of operation.
- After the initial growth, a seasonal pattern dominated until 2008. In 2008 and 2009 call volume was characterized by a highly variable pattern of peaks and troughs, but the number of new callers was steadier without much variation.
- In Oct 2004, there was a noticeable peak in call and caller volume when the Smoke Free Spaces Act came into effect.

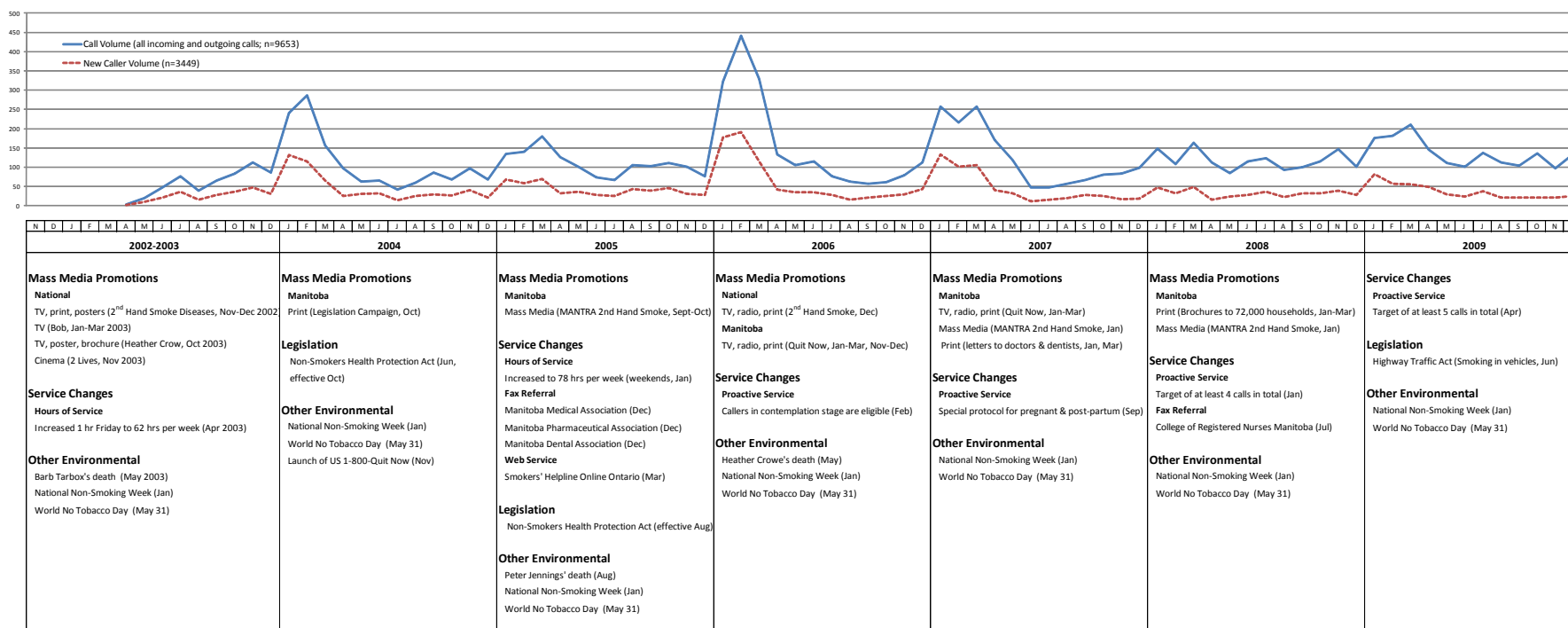
Figure A4: New Brunswick Smokers' Helpline Call and Caller Volume by Month, November 2002 to December 2009



Summary of Factors Affecting Manitoba Smokers' Helpline Utilization

- Utilization of the Manitoba Smokers' Helpline generally exhibited the typical seasonal pattern with new callers being less volatile after 2008 than call volume.
- Utilization appears to be relatively insensitive to changes in legislation.
- There is some indication that utilization increased temporarily during mass media campaigns, especially during the Quit Now Manitoba campaigns in 2006 and 2007, which were run in conjunction with National Non-Smoking Week in January.

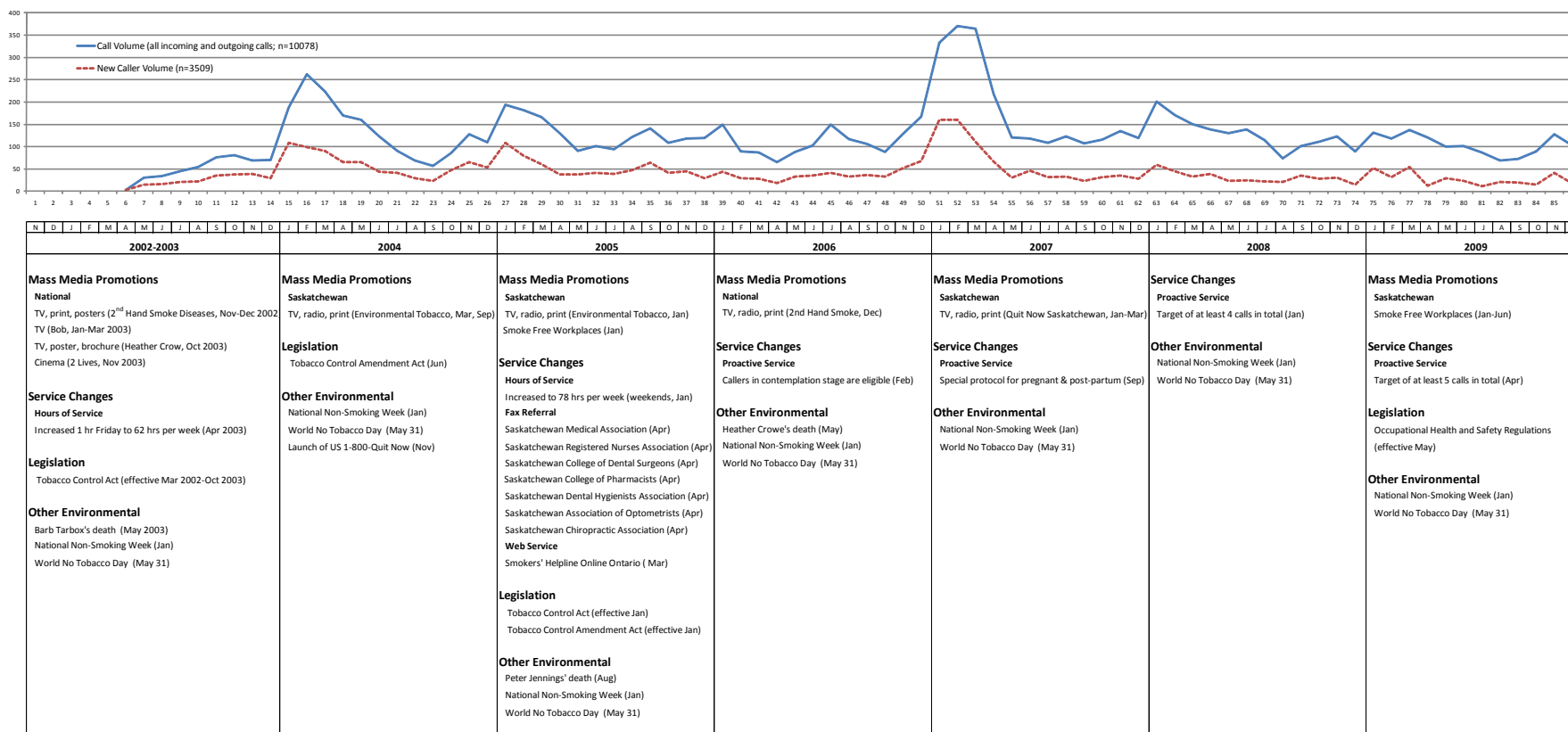
Figure A5: Manitoba Smokers' Helpline Call and Caller Volume by Month, November 2002 to December 2009



Summary of Factors Affecting Saskatchewan Smokers' Helpline Utilization

- Saskatchewan's utilization tended to have a typical seasonal pattern of winter highs and summer lows with one exception. Shortly after Heather Crowe's death in 2006, there was an unusual summer peak in call and caller volumes.
- The seasonal peaks and troughs became less pronounced with time until 2007 when there was a very large seasonal spike during the Quit Now Saskatchewan mass media campaign, run at same time as National Non-Smoking week. Shortly afterward this campaign, utilization returned to the previous pattern.
- With relatively few mass media campaigns, Saskatchewan utilization may be particularly sensitive to media campaigns and other environmental factors that received media attention.

Figure A6: Saskatchewan Smokers' Helpline Call and Caller Volume by Month, November 2002 to December 2009



APPENDIX B: INTERNATIONAL COMPARISONS

Table B1: Quitline Characteristics

Country	Quitline Characteristics			
	NRT provision	Languages	Services Offered	Counseling Hours
Canada	No NRT routinely provided ¹ .	<ul style="list-style-type: none"> English and French in all provinces except Newfoundland and Labrador² Translation services available for other languages. 	<ul style="list-style-type: none"> Information, self-help materials, referral to local cessation services³ Reactive and proactive calls Online web service Information to non-smokers⁴ 	56 -168 hours a week (168 hours =24/7), depending on the quitline ⁵ .
United States (2004-2005)	55.8% offer free or reduced price NRT ⁶ .	<ul style="list-style-type: none"> English and Spanish are most common. Other languages offered include: Korean, Chinese (Mandarin and Cantonese), and services for the hearing impaired.⁶ 	<ul style="list-style-type: none"> 98.1% of state quitlines offered mailed self-help materials All offered reactive and proactive counseling calls⁶ 	48-168 hours a week (168 hours =24/7), depending on the state ⁵ .
UK (QUIT) ⁷	No NRT provided.	English, Bengali, Gujarti, Hindi, Punjabi, Urdu, Turkish, and Kurdish.	<ul style="list-style-type: none"> Information, referral to other services Reactive and proactive calls Online web service 	Not available
Italy ⁸	No NRT provided.	Italian.	<ul style="list-style-type: none"> Information, self-help materials, referrals to other services Reactive counseling calls Information on second-hand smoke and legislation to the general public 	Monday to Friday from 10am to 4pm
Australia	Not available	<ul style="list-style-type: none"> English. Additional languages services in some states.⁹⁻¹¹ 	<ul style="list-style-type: none"> Information, self-help materials Proactive follow up calls Online web service^{12, 13} 	Not available
New Zealand	Subsidized NRT provided ¹⁴ .	Not available	<ul style="list-style-type: none"> Information Online web service txt2quit service (mobile phone service)¹⁵ 	Not available
Hong Kong ¹⁶	No NRT provided.	English and Chinese.	<ul style="list-style-type: none"> Cessation information One session of stage matched counseling 	38 hours a week (Monday to Friday from 2pm to 8pm and Saturday from 10am to 6pm)

Table B2: Caller Characteristics

Country	Caller Characteristics			
	Gender: % Female	Age	Education: % completed high school or less	Daily Cigarette Consumption
Canada	2007: 58.9% 2008: 59.3% 2009: 59.1%	2007: <ul style="list-style-type: none"> • 25-44 years: 32.8% • 45-64 years: 47.9% 2008: <ul style="list-style-type: none"> • 25-44 years: 32.1% • 45-64 years: 50.0% 2009: <ul style="list-style-type: none"> • 25-44 years: 34.5% • 45-64 years: 48.4% 	Caller education is collected at the time of the call, but there was sufficient missing data to preclude reporting.	For 2007,2008, and 2009: <ul style="list-style-type: none"> • 1-10: 29%, 34%, and 32.8% • 11-20: 40.1%, 38.9%, and 39.9% • 21-30: 22.2%, 18.6%, and 17.7% • 31-125: 8.6%, 8.5%, and 9.6%
United States ^a	Over half ¹⁷⁻²⁸ , ranging from 51.9% in Puerto Rico ²⁴ to 66.6% in Oregon ¹⁹	For select states (25-44 years and 45-64 years): <ul style="list-style-type: none"> • California: 56.3% and 23.7%²⁸ • Florida: 44.0% and 29.3%²⁰ • Maine: 43.0% and 40.2%²⁹ • Puerto Rico: 45.1% and 44.8%²⁴ 	Approximately half ^{19, 20, 22, 23, 25-28} , ranging from 47.5% in Massachusetts ²⁵ to 60.2% in Maine ²⁶ .	New York: <ul style="list-style-type: none"> • 1-9: 8% • 10-19: 35% • 20-29: 39% • 30+: 22%²³
UK (QUIT) ⁷	2000: 62.1%	<ul style="list-style-type: none"> • 25-49 years: 62.9% • 50+ years: 24.1% 	Not available	Daily mean of 21.9
Italy ⁸	2000-2008: 45.7%	Mean age: 42 years	Not available	Not available
Australia	Over 50% ^{30, 31}	Not available	Ranging from 54-58% ^{30, 31} .	Daily mean of 22 ³¹
New Zealand	Over 50% ^{32, 33}	<ul style="list-style-type: none"> • 25-44 years: 50% • 45-64 years: 25%³⁴ 	Not available	Not available
Hong Kong ¹⁶	22.1%	20-49 years: 76.5%	89.3%	<ul style="list-style-type: none"> • 1-10: 23.5% • 11-20: 49.5% • 21-30: 16.1% • 31+: 10.9%

^a Data for individual states for varying years.

Table B3: Promotion, Utilization, and Reach

Country	Promotions, Utilization, and Reach		
	Quitline Telephone Number on Cigarette Packages	Fax Referral Program	Reach
Canada	No	Yes	2007-2008: the percentage of tobacco users who received one counseling call ranged from 0.2% to 1.4%, depending on the province
United States	No	Yes, in 43 states ⁴	2004-05: the percentage of smokers who called the quitline ranged from 0.01% to 4.28%, depending on the state. ⁶
New Zealand	Yes ³⁷	Not available	2006: the percentage of adult smokers who registered with the quitline ranged from 4.0-6.3%, depending on the region ³³ .

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