Settings, Characteristics, and Processes for Successful and Effective Quitline Referral: A Literature Review

Lynzi Armstrong
MA (Hons)

This literature review was prepared for
The Quit Group, New Zealand

August 2008

Table of Contents

Table of Contents 1
Introduction 2
Methodology 2
  Literature searching 2
  Search terms 3
Referral Settings 4
  General Practitioner surgeries 4
  Dental offices 4
  Accident and emergency 5
  Paediatric services 5
Referral Types 6
  Self-referral 6
  Cold calling 6
  Referral by proxy 6
  Proactive and reactive 7
  Fax 8
  Proactive vs. reactive 10
Attitudinal and Motivational Factors 12
  Other factors 13
Specific Groups 13
  Pregnant smokers 14
  Young people 14
  Gender 15
  Ethnic origin 15
Potential Strategies 16
  Providing a package 16
  Partnering 17
Summary 18
Discussion 18
References 21
Appendix 1: Databases and websites searched 23
  Databases 23
  Websites 23

Introduction

This literature review was commissioned by The Quit Group and is intended to provide an insight into the range of settings known to generate referrals to quitline services worldwide, the characteristics of referral programmes, and the success rates of these programmes in making referrals to a quitline.

Quitline services now exist in all states and provinces of the USA, Canada, Australia, the majority of European countries and of course, New Zealand, in addition to other parts of the world. The growth of telephone quitlines around the world has been influenced by the results of a wealth of research on quitlines (Anderson C and Zhu SH 2007). Research indicates that quitlines are a valuable resource for smokers who would like to quit (Zhu SH et al 2006a), however, they are often under-utilised (Van Deusen A et al 2007). Nevertheless, research suggests that there is in fact high demand for these services (Van Deusen A et al 2007). Therefore, research regarding the value of a range of strategies to generate more referrals is important.

This review assesses a number of potential options to generate higher rates of referral to New Zealand's Quitline, drawing from the results of recent international studies.

Methodology

In order to explore the literature effectively, the following aims were identified by The Quit Group as important to address through the review:

1. To describe the range of settings that have referred people to quitline services, and how effective these referrals have been
2. To describe the characteristics of referral processes and programmes, and how referral rates differ in different settings
3. To describe the rate of uptake of the quitline service according to referral setting
4. To describe the effectiveness of quitline services for clients referred, and the factors that account for this.

Literature searching

Addressing these research aims relied on the identification of relevant literature from around the world. A number of strategies were employed to ensure a broad range of sources were obtained. The reviewer was committed to collecting literature that reflected

a range of experiences around the world. There is some bias towards studies carried out in North America; however, this merely reflects the wealth of relevant research that has been carried out there.

The search strategies used included:

- A catalogue search of books available at Victoria University Library, University of Otago Library, and the Wellington Medical School Library
- A catalogue search of materials held at the Ministry of Health Library and Information Centre
- A search of relevant websites, for instance, other quitlines around the world
- Database searches of journal articles (for example, using The Cochrane Library, PubMed and Sage)
- Internet searches for other relevant material such as conference papers and reviews.

Following an initial search of available literature between 20 December 2007 and 20 January 2008, full text articles were reviewed and any relevant articles cited were followed up to ensure a comprehensive review of the available literature had been undertaken.

Search terms

For the purpose of effective searching, precise terms were defined prior to commencing the search. These search terms were intended to ensure a broad range of studies could be identified that were directly relevant to addressing the research aims. Search terms were trunctuated and combined with AND/OR to ensure all relevant sources could be accessed.

The terms used were:

- Effect
- Refer
- Smoke
- Quitline
- Cessation
- Proactive
- Tobacco
- Nicotine
- Reactive
- Brief intervention

- Helpline
- Telephone counselling

Referral Settings

A number of settings have been identified in research, and explored as sites for referral of smokers to quitline services. The settings identified in the course of this review are all health-centred (e.g. general practitioner surgeries, accident and emergency departments), and it is thought that the efficacy of quitline treatment can be enhanced significantly when healthcare professionals refer patients (Helgason A et al 2004). Indeed, it has been noted that smokers can be very receptive to referral by a healthcare professional since their advice is generally trusted and smokers may be more motivated to quit if this is linked to a specific health problem (Schnoll R et al 2006). These settings are outlined briefly below and, are discussed in detail in the remainder of this review.

General Practitioner surgeries

In recent years, the value of working with general practitioners (GPs) to refer patients for telephone counselling has been explored (Bentz C et al 2006, Boldemann C et al 2006, Schnoll R et al 2006). It has been argued that the GP surgery is an effective site for referral since patients trust the advice of physicians and are often motivated in this setting, since quitting may link to the alleviation of a number of illnesses and tobacco users are likely to come into contact with GPs on an annual basis (Schnoll R et al 2006).

Dental offices

Dental practices have also been identified as an attractive setting for delivering smoking cessation activities and referral to quitlines (Gordon J et al 2006, Ebbert J et al 2007, Gordon J et al 2007). Previous research findings suggest that there is demand among patients for smoking cessation advice in dental settings, despite apparent low levels of awareness of this demand amongst dental practitioners (Ebbert J et al 2007). Therefore, dental practices may be a potentially valuable setting for referral to quitline programmes, and it has also been suggested that this may decrease the burden on dentists to provide cessation support themselves (Ebbert J et al 2007).

Accident and emergency

As detailed above, primary care settings have in recent years become an important site for delivering smoking cessation interventions and referring to quitlines. However, research has also been carried out into the value of referral to quitlines, generated in the accident and emergency department (Klinkhammer M et al 2005, Bernstein S et al 2006, Schiebel N and Ebbert J 2007). Research suggests that smoking prevalence rates amongst those admitted to accident and emergency are in fact higher than the wider population (Bernstein S et al 2006), and smokers in this group are likely to have a heavier habit and/or more acute addiction[1] (Bernstein S et al 2006). Therefore, the emergency department has been identified as a potentially important site for referral to smoking cessation services. It is important to note that the studies discussed in detail later in this review originated in the USA where uninsured patients might attend the emergency department for routine medical care.

However, there may still be some value in considering these options in New Zealand, and in other countries. Some groups of people may make less use of primary care services than others and, perhaps, an intervention in the emergency department may be the only time they have the opportunity to be referred to a quitline (Bernstein S et al 2006). In New Zealand this may be of particular relevance since, as a result of the cost of healthcare, citizens from lower socio-economic groups may have a tendency to seek help from accident and emergency when, in fact, the medical problem may be more suitably treated at a general practice surgery.

Paediatric services

Paediatric services have been identified as another site for providing smoking cessation advice, and referrals to quitlines. It has been argued that child hospitalisation provides a unique opportunity to influence parental smoking behaviour (Winickoff J et al 2003a), and could be an effective way of reaching smokers who otherwise may be unlikely to access smoking cessation services (Winickoff J et al 2003b). Indeed, previous research has highlighted that intervention directed at caregivers is extremely important for reducing exposure of children to tobacco smoke and preventing diseases that are linked to second-hand smoke exposure (Bernstein S et al 2006).

[1] Patients with a more 'acute addiction' will have a greater dependency on nicotine and suffer more intense/frequent withdrawal symptoms on a quit attempt.

Referral Types

Referral programmes to smoking cessation quitlines have many different characteristics that can influence the number of referrals generated, and the effectiveness[2] of these referrals. The characteristics of referral programmes identified from the literature search are detailed in this section and effectiveness of these programmes for generating referrals is discussed.

Self-referral

It is important to note that, unsurprisingly, a further important source of referral to quitlines for smoking cessation advice is the self-referral, where individuals contact the quitline on their own initiative. Self-referral may be inspired by any number of things, but research suggests that self-referrals are often generated by advertising campaigns (Anderson C and Zhu SH 2007) or by sporadic events such as a national quit smoking day (Owen L and Youdan B 2005). Contacting a quitline may also link to implementation of government regulations such as tobacco tax increases, or cigarette pack warnings. The value of promoting the quitline message should not be underestimated since research has indicated that quitline promotion (be it only in short sharp bursts) can significantly increase call volume to quitlines (Miller C et al 2003).

Cold calling

Cold calling is not, as yet, a strategy used to generate referrals to quitlines and other smoking cessation services. However, this method was recently explored in a pilot study to assess smokers' willingness to accept a transfer to a quitline further to completing a tobacco use survey (Van Deusen A et al 2007). The survey consisted of questions on smoking status, exposure to second hand smoke, opinions about tobacco control policies, and health status. On completion of the survey respondents were given the option of an immediate transfer to the quitline or taking the quitline number to call at a later time (Van Deusen A et al 2007).

Referral by proxy

As with cold calling, this strategy for referral has only recently been explored. This involves targeting non-smokers to contact quitlines on behalf of friends and family that are current smokers. The first major study into this referral method involved screening callers to the California Smokers' Helpline from 1992 to 2005 (Zhu SH et al 2006b). On

[2] Effectiveness is discussed in the review in the context of both quit attempts and changes to smoking behaviour.

contacting the quitline non-smoking proxies were offered materials to be passed on to smokers and were encouraged to approach the smoker about making contact with the quitline themselves. The results indicated that non-smoking proxies made up seven percent of all helpline callers (Zhu SH et al 2006b). Therefore, although further research into these issues will be important, generating referrals through non-smoking proxies is an interesting strategy worth considering further.

Proactive and reactive

Firstly, it is important to note that referral programmes may either be reactive[3] or proactive[4] or a combination of the two. Reactive programmes rely on the tobacco user to initiate the first contact with a quitline. On the other hand, proactive quitlines make the first contact or are responsible for subsequent contacts (Borland R and Segan C 2006). Programmes can have some overlap in adopting proactive and reactive strategies to generate referrals since, in some circumstances, only the first call will be initiated by the quitline or vice versa depending on the client's needs. A resource developed by 'Centers for Disease Control and Prevention' noted that:

> *Proactive quitlines may provide some form of immediate "reactive" assistance when a tobacco user first calls, but they also provide more comprehensive services through outbound ("proactive") calls. The outbound service, which often entails multiple follow-up sessions, is typically scheduled by agreement with the smoker.*
>
> (Centers for Disease Control and Prevention, 2004, p2)

Proactive referral programmes have grown increasingly popular and research has shown that proactive strategies can increase rates of abstinence[5] in comparison with reactive strategies (Zhu SH et al 2006a). However, in one study although the number of fax referrals exceeded the number of telephone self-referrals in the research period, telephone self-referrals resulted in greater likelihood of enrolment (77%) than fax-referred patients (44%). However, the researchers attributed this to the higher levels of motivation that might be assumed amongst tobacco users that self-refer (Wadland W et al 2007). Therefore, it can be argued that proactive strategies are likely to generate more referrals of tobacco users across the board with varying levels of motivation.

[3] A purely reactive quitline would require smokers' themselves to initiate contact.
[4] A purely proactive quitline would initiate the first and subsequent contacts with the smoker.
[5] In this study rates of abstinence were measured at one, three, six, and 12 months.

The correlation between the characteristics of referral programmes (i.e. the precise referral method and characteristics of the referrer etc) and rates of referral to quitlines will now be discussed.

Fax

A common characteristic of proactive referral strategies[6] is the fax referral, where a professional (often a medical practitioner), refers a patient to the quitline by faxing through contact details. The quitline then initiates the first contact with the tobacco user.

The findings of another study (Gordon J et al 2007) support the general contention that a proactive fax referral strategy in dental practices may be an effective means of generating more referrals to quitlines. This study involved a randomised controlled trial to evaluate the relative efficacy of two dental office-based interventions in comparison with usual care. Patients in one group were offered a combination of dental practitioner advice to quit based on the 3As[7] of the US Clinical Practice Guidelines plus proactive telephone counselling. Patients assigned to the other group were provided with a dental practitioner-delivered intervention based on the 5As[8] of the US Clinical Practice Guidelines. The reason for designing the two conditions in this way was to explore what method was most effective for helping smokers' to quit. For instance, it can be inferred that the first condition is less intensive on the referrer's part but more intensive at the follow-up stage from the point of view of the quitline. Conversely, the second condition is more intensive on the part of the referrer with no subsequent quitline support. The study therefore explored which of these situations was more effective for helping smokers to quit.

Thirty-five percent (205) of patients in the 3As group gave permission for referral to the quitline and the quitline was able to contact 143 (70%) of the participants who had agreed to the referral. Of those contacted by the quitline, 91% subsequently went on to receive counselling[9] from the quitline for smoking cessation (Gordon J et al 2007). The high rate of those that agreed to be contacted and completed counselling, again, suggests that a proactive fax referral system in a dental office may be an effective site

[6] Proactive referral strategy refers to a method by which smokers' are directly connected with a quitline via another professional as opposed to being advised to contact the quitline themselves.
[7] Patients in this group were (1) asked about tobacco use, (2) advised to quit, and, (3) assessed re readiness to quit. Patients were asked to indicate whether they would consider making a quit attempt in the next month and those that were keen were given detailed information about the quitline and encouraged to complete a referral form (Gordon JS et al 2007).
[8] The 5As consists of (1) asking patients about their tobacco use at every visit, (2) advising smokers' to quit, (3) assessing readiness to quit, (4) assisting patients interested in making a quit attempt by setting a quit date, discussing pharmacotherapy options and providing material, and, (5) arranging for follow-up by mail or telephone for patients who set a quit date (Gordon JS et al 2007).
[9] The term 'counselling' was used in this study to refer to the telephone support provided by the quitline.

to generate more calls to quitlines. This study also showed that such a programme may result in a high rate of registrations with the New Zealand Quitline service. The researchers found that for participants who received quitline services, self-reported abstinence was 9.1% (N=13) at three months. The quit rate of participants in the 3As condition that were not referred to the quitline was six percent (N=21, non significant) at the same point in time (Gordon J et al 2007).

A recent study evaluated the feasibility of referring tobacco users to quitlines using the fax referral system (Ebbert J et al 2007). Eight dental practices were randomly assigned to provide either (1) brief smoking cessation counselling or (2) brief counselling in addition to referral to a quitline, to patients attending for routine treatment. Patients were initially screened for their smoking status via a questionnaire distributed by receptionists. Then, in the course of the consultation with the dental hygienist, every person identified as a smoker received brief counselling from the dental hygienist in the form of a clear and strong message to quit smoking. Participants randomised to the quitline group were offered an intervention in the form of fax referral of their details to a quitline. Eighty-two patients were enrolled in total (60 in the quitline group and 22 in the brief intervention group). Patients in the quitline group were contacted by the quitline within 48 hours of receiving the fax. Due to various methodological issues, precise differences in tobacco use characteristics between the two groups could not be identified. In the tobacco-use quitline group, 47% of participants completed the initial tobacco use consultation with the quitline (no information was given about the remaining 53%). This indicates that the fax to quitline model is an effective proactive strategy to generate more referrals to quitlines (Ebbert J et al 2007).

Further evidence of a dose response relationship[10] was identified in Ebbert et al's study (2007). The Fisher Exact test was used to compare self-reported seven-day point prevalence abstinence rates within the quitline intervention group to assess whether abstinence rates varied according to the number of completed telephone counselling sessions. It seems that at three months – abstinence rates were higher for those with more sessions compared with those with fewer sessions ($p = .02$); and at six months – abstinence rates were higher for those with more sessions compared with those with fewer sessions ($p = .01$). Rates of abstinence were therefore found to be higher in this group amongst smokers that received more counselling sessions. Lowest abstinence rates were observed amongst those that completed only the initial assessment, and higher rates of abstinence were observed amongst those patients that completed the

[10] In this review the term 'dose response' refers to the contention that the number of counselling sessions completed has been found to correlate to rates of abstinence.

initial assessment, and two or more follow-up sessions (Ebbert J et al 2007). This echoes the results of earlier research that found a dose-response relation between duration of telephone counselling and long-term quit rate (Zhu SH et al 1996, Stead L et al 2008).

Proactive vs. reactive

Given that referral programmes can be proactive or reactive in the strategies used to generate referrals to quitlines, it is not surprising that there has been some debate regarding the effectiveness of a proactive or reactive approach. Research suggests that proactive protocols are most effective in generating referrals (Stead L et al 2008, Zhu SH et al 2006a).

In 2003, a study (Winickoff J et al 2003a) was carried out to explore the feasibility of engaging patients in smoking cessation interventions at the time of the hospitalisation of their child for a respiratory illness. The primary aim of the study was to assess the potential to enrol parental smokers in a cessation programme at the time of a child's visit to the primary care clinic. The intervention consisted of a programme named 'The Stop Tobacco Outreach Programme' and included an initial 20 minute face-to-face counselling session in the hospital, specialised written materials, one week of free Nicotine Replacement Therapy (gum or patch), two follow-up telephone counselling calls from the hospital, a note faxed to the patients primary care physician and, referral to the Massachusetts Smoker's Quitline. Referral to the Quitline was made following the two follow-up calls from the hospital and consisted of verbal encouragement to contact the quitline for ongoing support. This reactive strategy resulted in seven percent of the 71 patients who took part in the study contacting the Quitline (Winickoff J et al 2003a).

A follow up study (Winickoff J et al 2003b) was carried out later in 2003 and investigated the feasibility of initiating a smoking cessation intervention with parents at the time of visit to a paediatric outpatient clinic. Proactive quitline referral was offered as part of 'The Stop Tobacco Outreach Programme' that was previously used along with fax referral to the Quitline (Winickoff J et al 2003a). The use of a proactive referral strategy led to a six-fold increase in patients going on to receive advice and support from the Quitline. It is also important to note that as an incidental outcome of the study, the programme reached smokers that had not accessed smoking cessation programmes previously. Fewer than one in five of those enrolled had participated in a cessation programme in the past and fewer than one in three had used NRT, despite the group averaging >14 years of smoking (Winickoff J et al 2003b).

In another study (Pine D et al 2006), eight primary care physicians in a community-based clinic were recruited to refer smokers who expressed a readiness to quit to a quitline. The purpose of the study was to explore the response of smokers to quitline referral, and to inform the development of a referral strategy that could be effective in the community-based practice setting (Pine D et al 2006). The referral method involved briefly describing the quitline to the patient and providing an information brochure. Patients were then asked to complete a survey about their response to the referral one month after. A total of 142 patients participated in the study, and 39 patients completed the survey. The 39 patients who completed the survey were classified into the readiness-to-quit stages: 15 were classified as contemplation[11], 16 as preparation[12] and eight in the action stage[13]. Three smokers contacted the quitline and received counselling services. One of these smokers was in the contemplation stage, and the other two were in the preparation/action stage. The remaining smokers that did not contact the quitline reported not being ready to quit and/or did not believe they needed any assistance with quitting. The researchers state that the low response rate to the survey and the low uptake of quitline services amongst patients may indicate that a referral intervention in a community-based practice may not increase cessation services for smokers (Pine D et al 2006). The reviewer suggests that this study highlights a weakness in the use of a reactive strategy to refer patients to quitlines.

A larger scale study (Bentz C et al 2006) was carried out between October 2002 and October 2003 involving 19 clinics which served a population of 103,597 patients (Bentz C et al 2006). The study evaluated the feasibility of connecting GP surgeries to quitline services. Two interventions were devised: (1) fax referral to a quitline (a proactive strategy), and (2) provision of a brochure with information on the state quitline (a reactive strategy). Smoking status was obtained for 91% of all participants and of these, a total of 15,662 current tobacco users were identified, representing a smoking prevalence rate of 15%. A total of 1,838 referrals were made amongst smokers who accepted a fax referral or a brochure. A total of 745 referrals (4.8%) were received by the quitline, and of these 496 (67%) were referred via fax. Providers were encouraged to use fax referral for patients keen to quit in the next 30 days. The quitline was able to contact 292 (59%) of people who were fax-referred, and 263 (90%) of those contacted accepted a one-off intervention with a quitline advisor. Of the 1,342 smokers given a quitline brochure, 249 (19%) contacted the quitline and of these, 233 people (94%) accepted a one-off advice and support session (Bentz C et al 2006). A relatively smaller proportion of smokers (19%) were connected with the quitline using the brochure

[11] Thinking about the potential benefits of quitting.
[12] Preparing to quit – i.e. thinking about a quit date.
[13] Actively trying to quit – i.e. has NRT to use, has committed to a quit date.

referral strategy, compared with the proactive fax referral strategy. This suggests that a reactive referral strategy is more fruitful when the tobacco users are highly motivated to quit. The high number of those accepting an intervention suggests a high level of motivation among smokers in this study. The high proportion of referrals that were fax-referred, and the uptake of counselling amongst those in this group points towards the effectiveness of proactive referral (to generate a higher rate of referrals) over the brochure method (a reactive method).

Thus, the literature reviewed strongly suggests that there is more to be gained utilising proactive referral strategies to generate higher rates of referral amongst tobacco users.

Attitudinal and Motivational Factors

Research explored in the course of this review indicates that various attitudinal and motivational factors play a role in both being referred to a quitline, and accepting the referral.

A study carried out in an accident and emergency department (Bernstein S et al 2006) hypothesised that a number of barriers need to be negotiated in this setting to facilitate the development of successful referral programmes. The researchers speculate that in this setting there may be a tendency amongst staff to believe the emergency department is an inappropriate site to initiate smoking cessation interventions because it is not traditionally thought of as a preventative service. This would be an important consideration if New Zealand's Quitline was to pursue referral programmes from accident and emergency departments around New Zealand. Furthermore, it was argued by the authors that there might be a lack of training amongst staff into these issues, and that the process of referring might be viewed as an administrative burden (Bernstein S et al 2006).

Further variations have been noted among those responsible for referring patients. In one study (Schnoll R et al 2006), self-confidence in counselling was identified as a major factor. In another study (Boldemann C et al 2006), 25% of GP respondents who made use of the quitline, were also more likely to provide self-help material to patients, offer follow ups at the clinic, refer to other cessation experts, and discuss a quit date and pharmacotherapy options (Boldemann C et al 2006).

In one study (Gordon J et al 2007), it was found that participants that reported being ready to quit (OR=1.12, 95% CI=1.02 to 1.03, p<.05), and reported being ready to quit in the next 30 days (OR=2.62, 95% CI=1.48 to 4.65, p<.001) on the basis of a contemplation ladder, were more likely to accept and receive telephone counselling. (Gordon J et al 2007). This study suggests that readiness to quit amongst smokers is correlated to motivation to take up quitline services.

Other factors

A recent study (Helgason A et al 2004) assessed the effectiveness of the Swedish Quitline and factors related to abstinence from smoking 12 months after abstinence. A total of 694 smokers calling a reactive quitline (no contact initiated by the advisors), and 900 smokers calling a proactive quitline (four or five contacts initiated by the advisors after the first call), were sent a survey to complete 12 months after first contact with the quitline. The postal survey assessed current abstinence, stages of change theory, and other factors related to rates of abstinence. The results suggested that support from family and friends is positively related to higher abstinence rates; and depressive mood, stress, and being exposed to second-hand smoke (indicating that a person has been in the company of a person who was smoking) were all factors shown to reduce the likelihood of abstinence after the first call to the quitline (Helgason A et al 2004). In the same study, women were found to be more receptive to proactive interventions than men. For clients in the proactive quitline group, 34% of women reported being abstinent at the 12-month point compared with 27% of men (Helgason A et al 2004).

Specific Groups

As would be expected, referral strategies can be more or less effective for specific groups of people. It has been argued that it could be beneficial to provide specialised telephone counselling to specific groups, for instance to cater for different languages, young people, chewing tobacco users, smokers that are pregnant, and smokers experiencing a mental health condition; whilst also maintaining sensitivity to diversity within these groups (Anderson C and Zhu SH 2007).

Strategies to generate more referrals amongst specific groups of smokers outlined in the literature are described below.

Pregnant smokers

The National Partnership to Help Pregnant Smokers Quit has highlighted that pregnant smokers are a segmented population[14] and are difficult to reach directly (Rohweder et al 2007). It has been noted that collaboration with pregnancy outreach programmes is particularly important in order to generate higher rates of referrals amongst pregnant smokers and new mothers (Greaves L et al 2005). It has also been argued that in order to generate more referrals amongst this group it is important to tailor for each individual woman, focusing on both the health of the woman *and* the health of the foetus (Greaves L et al 2005). Therefore, efforts to increase referrals amongst this group should specifically target these women and be sensitive to their particular needs.

A study carried out by Bottorff et al (2000) explored stories of postpartum women that attempted to quit smoking in pregnancy. They found that while motivation to quit smoking may be high in pregnancy, the motivation to stay quit after the baby is born may be reduced as women long to return to 'normality' as it was before their pregnancy (Bottorff J et al 2000). This suggests that the most critical time for cessation support may not in fact be before or during pregnancy, but after the child is born.

Young people

Recent research has suggested that targeting young people in advertising campaigns is an effective means of generating more referrals (Cummins S et al 2007). The study involved comparing California Smokers Helpline intake interview records between 1992 and 2006 with population data to assess the use of the quitline amongst young adults aged between 18 and 24. During the entire period of the research, young adult callers were consistently more likely to report that they had heard of the quitline through media sources (Cummins S et al 2007).

Furthermore, research has indicated that referrals generated in light of a mass media campaign can lead to successful quit attempts (Miller C et al 2003). The study, carried out in Australia in 2003 found that at the 12-month follow-up point, 80% of callers had made a quit attempt; and 29% reported having quit smoking (point prevalence), with 14% having quit for six months or longer and six percent for 12 months. Positive changes in smoking behaviour such as changing where and when a cigarette was smoked, or reduction of consumption were identified at the 3-week point (Miller C et al 2003).

[14] A population with different needs – not a homogenous group.

Unfortunately no information was found in this review regarding referral of young people to quitlines from specific settings such as medical centres. More research is required to determine whether or not proactive referral in specific settings would generate higher rates of referral amongst young people. However given that it has been found that mass media campaigns can generate high rates of referral amongst younger people (Cummins S et al 2007), and referrals (although not specific to young people) generated in mass media campaigns can lead to successful quit attempts, continued media advertising may be important also to recruit young tobacco users in particular.

Gender

One of the articles reviewed (Schnoll R et al 2006) outlined results suggesting variation in rates of referral according to the gender of the referrer. This study focused on exploring the use of smoking cessation advice and treatment options amongst primary care physicians in the USA. A total of 2,000 U.S. physicians specialising in internal medicine or family or general practice were randomly sampled from the American Medical Association Masterfile. Of those contacted that met the eligibility criteria (working in practice more than 20 hours per week, working in a primary care speciality, and currently working), 1,120 surveys were completed and returned. One of the findings of this research was that female physicians were 46% more likely to report providing referral always, or often, than male physicians (Schnoll R et al 2006). Unfortunately gender was not the key focus of this study and no further detail is given around this finding. Nevertheless, the finding suggests that female physicians are more likely to refer than males, although more research on the factor of gender would be useful, to verify whether this is a trend.

Ethnic origin

A study carried out into the characteristics of non-smokers (referred to as 'proxies') calling a quitline (California Smokers' Helpline) on behalf of smokers found significant variations by ethnic origin (Zhu SH et al 2006b). The research involved recording proxies' age, sex, and ethnicity from August 1992 until October 2004. The data were then analysed to determine percentages of total proxy calls for each of seven language/ethnic groups. Odds ratios were calculated to compare these groups, and the reference group was people identified as 'English-speaking white'. The proportion of non-smokers calling for smokers differed significantly between ethnic groups, with the largest proportion by far (35%) being 'Asian-speaking Asians'. The variation by ethnic group also remained consistent throughout the 13-year period in which the study took place. Odds ratios indicated that 'English-speaking blacks' were 0.3% less likely to call as proxies, 'English-speaking American Indians' 0.5% less likely, 'English-speaking

Hispanics' 2.0% more likely, 'Spanish-speaking Hispanics' 2.1% more likely, 'English-speaking Asians' 2.2% more likely and, 'Asian-speaking Asians' 10.8% more likely. The authors hypothesised that this may reflect the cultural, close-knit, family-orientated background of this group, and the odds ratios seem to support this theory. Furthermore, the overwhelming majority of non-smoking proxies were female, and the authors note that this may be a reflection of the high proportion of non-smoking females amongst the Asian-speaking Asian group. The lowest proxy call rate was among American Indians (Zhu SH et al 2006b).

If monitoring information from New Zealand's Quitline suggested a group of proxies were significantly more likely to seek information and support for a loved one that smoked, an effective referral strategy may be to target proxies within these groups, particularly if that group is traditionally known to be characterised by collectivist values as per the Zhu et al (2006) study described above. Targeting non-smoking proxies, in part, may be an effective strategy to help smokers quit because research has shown that a supportive infrastructure from family and friends is related to higher overall abstinence rates (Helgason A et al 2004).

Potential Strategies

Providing a package

The results of two studies highlight the value and effectiveness of referral to quitline as part of a wider cessation package (Winickoff J et al 2003b, Ebbert J et al 2007). Consisting of a combination of fax referral to the quitline, advice on pharmacotherapy options, setting a quit date, and the option of additional face-to-face counselling and follow-up. This is a comprehensive package since NRT assists with physical withdrawal symptoms, setting a quit date means smokers must put an effort into preparing for their quit attempt, and follow-up ensures ongoing support past the quit date. Linking with partner organisations to provide quitline referral as part of a package of interventions may be an effective means of assisting smokers to quit successfully. This links to evidence from a number of other studies that found the intensity of the programme offered to tobacco users by the quitline has an impact on abstinence, with significant benefits identified for those receiving more intensive counselling (Stead L et al 2008).

Partnering

Partnering with other organisations is an effective strategy to generate more referrals to the quitline. The authors of a handbook providing guidance on the operational running and evaluation of quitlines (Centres for Disease Control and Prevention 2004) suggest that partnerships can be formed with other organisations and individuals by participating in events sponsored by community-based organisations and delivering presentations on behalf of the quitline at worksites, schools or healthcare facilities. The authors hypothesised that promotion and formal links with organisations and settings is effective in promoting quitline services, and widening access to groups not as likely to contact the quitline on their own initiative in response to, for example, an advertising campaign (Centres for Disease Control and Prevention 2004). The authors of the handbook advocate forming partnerships with other organisations and individuals to influence the development of a steady flow of referrals and to integrate the quitline into a comprehensive tobacco control programme (Centres for Disease Control and Prevention 2004).

The case study below illustrates an example of an integrated tobacco cessation package co-ordinated by a quitline in partnership with health care professionals.

CASE STUDY

Quitworks Massachusetts

QuitWorks is a unique smoking cessation service launched in 2002 by the Massachusetts Department of Public Health, in collaboration with major health plans. The service is operated by the Try-To-STOP TOBACCO resource centre (the quitline) in Boston. The QuitWorks service is universally endorsed for use by any provider with any patient, regardless of their circumstances and insurance status.

On implementation in 2002, the QuitWorks service was introduced to over 4,000 physician practices. However, in 2003 hospitals in Massachusetts increasingly reported a need for the program in this setting. In response to this demand, a partner service, QuitWorks for hospitals, was launched. This served to create an ongoing cycle of effective smoking cessation interventions from admission to discharge or outpatient visit. Over one third of Massachusetts hospitals have adopted the QuitWorks program or are currently doing so.

QuitWorks experienced an important development in 2004 when funding was awarded to adapt the service for community health centers serving cultural and linguistic minorities. By the spring of 2005, 11 community health centers had adopted the QuitWorks service, and had integrated the program into their systems and routine patient care.

QuitWorks is a highly adaptable programme and can be adapted for both office and home-based programs.

Patients enrolled in the QuitWorks service are contacted by the quitline and offered multi-sessional proactive counselling, internet counselling and referral to a community based programme. There is a feedback loop to ensure physicians are provided with feedback on the outcome of referrals to the service. The quitline that runs QuitWorks, TryToStop, also provides excellent online resources for use by smokers, health professionals and proxies interesting in helping a smoker quit.

Source: Quoted from QuitWorks website, accessed 15/01/2007

The case study above offers a best practice example of linking with primary care health service providers and voluntary organisations to provide an integrated smoking cessation offer. This could be a very effective means of generating higher rates of referrals to the Quitline in New Zealand.

Summary

To summarise, a number of referral settings have been identified and the characteristics that might serve to influence rates of referral have been discussed. Research indicates that proactive referral strategies yield higher success rates in terms of quit attempts and behavioural changes (such as smoking fewer cigarettes, or having a smoke free home and/or car) amongst smokers. However, the effectiveness of referrals is influenced by external factors such as the extent of support from friends and family. Even if a strategy is generally known to be effective, success can never be guaranteed – a range of factors determine quitting success. An effective strategy to generate more referrals and help smokers quit could be to provide a package of smoking cessation interventions, with the quitline as the central operator, in partnership with other providers (i.e. primary health care professionals) throughout New Zealand at a local and national level.

Discussion

This review has attempted to provide an overview of the range of settings that have been used to generate referrals to quitlines, the characteristics of successful referral programmes, and the effectiveness of these for helping tobacco users quit.

The research available shows that proactive and/or reactive strategies can be adopted to generate referrals to quitline services via GP offices, dental offices, accident and

emergency departments or paediatric services. Findings suggest that proactive strategies are most effective in generating referrals than more reactive strategies (Zhu SH et al 2006a, Stead L et al 2008). In the settings of GP offices, dental offices, accident and emergency and paediatric services, the fax-to-quitline method has been shown to be effective and efficient (Ebbert J et al 2007, Gordon J et al 2007, Winickoff J et al 2003b, Borland R and Segan C 2006). It seems that a fax-to-quitline referral system nicely complements the group of smokers who are highly motivated to quit and self-refer.

When referral strategies are designed, and consideration is given to the potential of that method to help smokers quit, research suggests that it is important to consider the factors that might influence the method used (Helgason A et al 2004). Research has shown that factors impacting on the success or otherwise of quit attempts include the extent of family and peer support, readiness to quit, stress, and exposure to second-hand smoke (Helgason A et al 2004). Therefore, it would seem that successful referral programmes should be individually tailored to take account of individual lifestyles. For instance, for some people, being called by a quitline at a particular time may conversely lead to stress if their lifestyle is changeable (i.e. if a person has a particularly demanding job that requires them to be 'on call', or they are responsible for children of different ages, for example). Therefore, one of the most important factors in the design of programmes should be that they are person-centred to allow for this flexibility. However, more intensive programmes (in terms of the number of counselling sessions) should be encouraged since findings suggest multi-sessional programmes yield higher success rates (Stead L et al 2008, Zhu SH et al 1996).

Further promotion of quitlines through all healthcare systems[15] could lead to both an increase in quitline utilisation and also contribute to an overall health promotion message, amplifying the impact the quitline would have had working alone (Anderson C and Zhu SH 2007). Therefore, efforts should be channelled into establishing formal links with healthcare professionals and services, and encouraging the development of formal referral processes (Borland R and Segan C 2006). Thus, it may be of value to look towards linking the quitline service into an integrated smoking cessation offer (for instance a package consisting of free NRT, availability of internet counselling, face-to-face support, telephone support, and follow-up from relevant health professional) that can be tailored to suit individual needs. Research has indicated that the more comprehensive a quitline is, the more likely it is that health professionals will refer their

[15] This refers to accident and emergency departments, paediatric services, dental offices, in addition to GP surgeries.

clients to it (Borland R and Segan C 2006). Therefore, it might be advisable to actively promote the quitline to potential partners to raise awareness of what is offered.

However, efforts should not only be centred on linking with primary healthcare services, and the quitline should also consider expanding partnering efforts to include accident and emergency and acute medical services. This could help to widen the reach of the quitline to people that do not make considerable use of primary care services and/or lack the motivation or ability to respond to advertising campaigns. Unfortunately, no information was identified in this review on the possible difference in referral rates between healthcare professionals and non-healthcare professionals and more information on this would be very useful. However, partnering should also extend beyond healthcare settings, working also with community-based services to widen the net even further and spread the quitline message at a community level. This promotion of the quitline at the community level may also influence more non-smoking proxies to contact the quitline, and support friends and family lacking motivation to quit (Zhu SH et al 2006b).

Partnering closely with other professionals as part of a smoking cessation partnership might also help generate increased rates of referral since research has shown factors such as gender of the referrer, confidence in counselling patients, and involvement in other smoking cessation activities can influence the likelihood of referral to cessation services (Boldemann C et al 2006, Schnoll R et al 2006). Thus, it can be hypothesised that close partnering may help to overcome some of the barriers identified in the review. Specifically, close partnering in healthcare settings may increase the likelihood that male practitioners will refer patients to the quitline, may increase practitioner confidence in general to refer people, and partnering around other cessation activities might increase motivation to refer to the quitline.

To conclude, the key messages that have emerged from this review support the use of proactive referral strategies, linking formally with health services, and targeting smokers at a national and community level.

References

Anderson CM and Zhu SH (2007). Tobacco quitlines: looking back and looking ahead. *Tobacco Control*, 16(Suppl 1):i81-6.

Bentz CJ, Bayley B, Bonin KE et al (2006). The feasibility of connecting physician offices to a state-level tobacco quit line. *American Journal of Preventive Medicine*, 30(1):31-7.

Bernstein SL, Bourdreax ED, Cydulka RK et al (2006). Tobacco control interventions in the emergency department: A joint statement of emergency medicine organizations. *Annals of Emergency Medicine*, 48(4):417-26.

Boldemann C, Gilljam H, Lund KE et al (2006). Smoking cessation in general practice: The effects of a quitline. *Nicotine & Tobacco Research*, 8(6):785-90.

Borland R and Segan CJ (2006). The potential of quitlines to increase smoking cessation. *Drug and Alcohol Review*, 25(1):73-8.

Bottorff JL, Johnson JL, Irwin LG et al (2000). Narratives of smoking relapse: The stories of postpartum women. *Research in Nursing & Health*, 23(2):126-34.

Centers for Disease Control and Prevention (2004). *Telephone Quitlines: A Resource for Development, Implementation and Evaluation*. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Office on Smoking and Health.

Cummins SE, Hebert KK and Anderson CM et al (2007). Reaching young adult smokers through quitlines. *American Journal of Public Health,* 97(8):1402-5.

Ebbert JO, Carr AB, Patten CA et al (2007). Tobacco use quitline enrollment through dental practices: A pilot study. *Journal of the American Dental Association*, 138(5):595-601.

Gordon JS, Lichtenstein E, Severson HH et al (2006). Tobacco cessation in dental settings: Research findings and future directions. *Drug and Alcohol Review*, 25(1):27-37.

Gordon JS, Andrews JA, Crews KM et al (2007). The 5A's vs 3A's plus proactive quitline referral in private practice dental offices: Preliminary results. *Tobacco Control*, 16(4):285-8.

Greaves L, Horne T, Poole N et al (2005). *Quit Smoking Telephone Couselling Protocol for Pregnant and Postpartum Women*. Unpublished report for the *British Columbian Centre of Excellence for Women's Health.* http://www.hc-sc.gc.ca/hl-vs/pubs/tobac-tabac/protocol/index-eng.php

Helgason AR, Tomson T, Lund KE et al (2004). Factors related to abstinence in a telephone helpline for smoking cessation. *European Journal of Public Health*, 14(3):306-10.

Klinkhammer MD, Patten CA, Sadosty AT (2005). Motivation for stopping tobacco use among emergency department patients. *Academic Emergency Medicine*, 12(6):568-71.

Miller CL, Wakefield M, Roberts L (2003). Uptake and effectiveness of the Australian telephone Quitline service in the context of a mass media campaign. *Tobacco Control*, 12(Suppl 2):ii53-8.

Owen L and Youdan B (2006). 22 years on: The impact and relevance of UK No Smoking Day. *Tobacco Control*, 15(1):19-25.

QuitWorks (2007). *The QuitWorks Story*. Accessed from http://www.quitworks.org/welcome/index.php 1 February 2008, 2 January 2008.

Rohweder C, DiBiase L, Schell D (2007). Pregnancy and Post-partum Quitline Toolkit. Chapel Hill, NC: The National Partnership to Help Pregnant Smokers Quit.

Schiebel NEE and Ebbert JO (2007). Quitline referral vs. self-help manual for tobacco use cessation in the Emergency Department: A feasibility study. *BMC Emergency Medicine*, 14(7):15.

Schnoll RA, Rukstalis M, Wileyto EP et al (2006). Smoking cessation treatment by primary care physicians: An update and call for training. *American Journal of Preventive Medicine*, 31(3):233-9.

Stead LF, Perera R, Lancaster T (2008). Telephone counselling for smoking cessation. *Cochrane Database of Systematic Reviews.* John Wiley and Sons, Ltd: The Cochrane Library, 1.

Van Deusen AM, Hyland A, Abrams SA et al (2007). Smokers' acceptance of "cold calls" offering quitline services. *Tobacco Control*, 16(Suppl 1):i30-2.

Wadland WC, Holtrop JS, Weismantel D et al (2007). Practice-based referrals to a tobacco cessation quit line: Assessing the impact of comparative feedback vs general reminders. *Annals of Family Medicine*, 5(2):135-42.

Winickoff JP, Buckley VJ, Palfrey JS et al (2003a). Intervention with parental smokers in an outpatient pediatric clinic using counseling and nicotine replacement. *Pediatrics*, 112(5):1127-33.

Winickoff JP, Hillis, VJ, Palfrey JS et al (2003b). A smoking cessation intervention for parents of children who are hospitalized for respiratory illness: The stop tobacco outreach programme. *Pediatrics*, 111(1):140-5.

Zhu SH, Stretch V, Balabanis M et al (1996). Telephone counselling for smoking cessation: Effects of single-session and multiple-session interventions. *Journal of Consulting and Clinical Psychology*, 64(1):202-11.

Zhu SH, Anderson CM, Tedeschi CJ et al (2006a). Evidence of real-world effectiveness of a telephone quitline for smokers. In: Isaacs SL and Knickman JR (eds), *Tobacco Control Policy.* USA: Jossey-Bass.

Zhu SH, Nguyen QB, Cummins S et al (2006b). Non-smokers seeking help for smokers: A preliminary study. *Tobacco Control*, 15(2):107-13.

Appendix 1: Databases and websites searched

Databases

Sage
Pubmed
Psychinfo
Victoria University of Wellington Journal Finder
Health & Society Database
Health Reference Centre
The Cochrane Library

Websites

The University of Otago catalogue
http://otago.lconz.ac.nz/cgibin/Pwebrecon.cgi?DB=local&PAGE=hbSearch

Victoria University of Wellington catalogue
http://victoria.lconz.ac.nz/cgibin/Pwebrecon.cgi?DB=local&PAGE=hbSearch

Waikato District Health Board catalogue
http://www.waikatodhb.govt.nz/Library/Catalogue.asp

Google
http://www.google.co.nz/

Quitworks
http://www.quitworks.org/welcome/index.php

The National Partnership to Help Pregnant Smokers Quit
http://www.helppregnantsmokersquit.org

Ministry of Health Online Catalogue
http://www.moh.govt.nz/notebook/nbbooks.nsf?OpenDatabase

North American Quitline Consortium
http://www.naquitline.org/

Centers for Disease Control and Prevention
http://www.cdc.gov/tobacco/

Department of Health, I Quit
http://www.iquitonline.com/flash4page.html

National Australian Tobacco Campaign
http://www.quitnow.info.au/

Quitline Iowa
http://www.quitlineiowa.org/

Quit for Life, Health Canada
www.quitforlife.com