



Opportunities for Smoking Cessation Therapy in BC

A Report Prepared for the Clean Air Coalition of B.C.

September 2010

CleanAir
COALITION OF B.C.

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Executive Summary

This Report was prepared for the Clean Air Coalition of B.C. (which is made up of the Heart and Stroke Foundation of BC & Yukon and the BC Lung Association) to move British Columbia forward in its campaign to “Imagine! A Smoke-Free BC”.

Canada and British Columbia have experienced tremendous success in reducing the number of persons who smoke and who are exposed to second hand tobacco smoke. However, despite this progress a significant number of Canadians continue to smoke – more than 550,000 in British Columbia.

The effects are terrible: loss of life, ill health, heavy costs to the health system and to the economy as a whole. Fortunately, much can be done to significantly reduce the number of people who smoke. The Ministries of Health Services and Healthy Living and Sport are well aware of this cost and of the potential for preventive activity. A committee established by these Ministries and including representatives of the British Columbia Medical Association and other organizations found that “Smoking cessation advice and help to quit” ranked number one - far ahead of its competitors - and recommended it as one of two new priorities for the province.

This report proposes program initiatives in four areas: physician counselling for smoking cessation; drug therapy programs funded through PharmaCare; free Nicotine Replacement Therapy for low income people who smoke; and, enhancement of the QuitNow Services Program. There is powerful evidence, summarized in this report, that these smoking cessation therapies are effective from both a human and a cost benefit perspective.

The estimated annual cost of the program proposals is:

Physician Counselling	\$16.70	million
Drug Therapy	\$2.05	million
Nicotine Replacement Therapy	\$13.80	million
QuitNow Services Enhancement	\$5.30	million
TOTAL	\$37.85	million

To fund these proposals, the Clean Air Coalition of B.C. proposes a one cent per cigarette tax which would yield approximately \$38 million in revenue annually. It is proposed that these funds and other anticipated tobacco related revenue from the HST on tobacco products and funds coming from settlement of tobacco industry suits be placed either in a dedicated smoking prevention and smoking cessation fund, or allocated annually to the Ministries of Health Services and Healthy Living and Sport to support future program enhancements.

Introduction: The Need for Smoking Cessation Therapy Programs

Over the last decade Canada and British Columbia have made great strides in reducing the prevalence of tobacco use. In Canada, the number of people aged 15 and over who smoke declined from 6.1 million (1998) to 4.9 million (2008) or 20 per cent. But despite this progress, a substantial number of Canadians continue to smoke. The 2009 Canadian Tobacco Use Monitoring Survey (Wave 1) found that 17 percent of Canadians and 15 percent of British Columbians aged 15 and older smoke.¹ This translates into more than 550,000 British Columbians who are placing themselves at risk. British Columbians who smoke include, for example, 29 per cent of Aboriginals/First Nations² and 8.5 per cent of pregnant women³.

The effects of continued tobacco use are tragic and preventable. Every year more than 6000 British Columbians die from smoking related illness. Approximately 500 low birth weight infants a year result from smoking by pregnant mothers.⁴ Low birth weight infants can suffer from a number of lifelong disabilities that are both tragic and costly to the health care system. Many other chronic conditions are caused or exacerbated by smoking including a number of cancers, lung and respiratory diseases, stroke, and diabetes.

Prevention programs have, in effect, reduced the number of people who smoke to a hard core. If we are going to further reduce the number of people who smoke and avoid another generation of smokers, we need to turn our attention to those who continue to smoke.⁵

¹ See http://www.hc-sc.gc.ca/hc-ps/tobac-tabac/research-recherche/stat/_ctums-esutc_prevalence/prevalence-eng.php#wave1_09

² BC Stats, Tobacco Attitudes and Behaviours Survey Report, 2008 Final Report, p. 14, Table 4.

³ Ban Al-Sahab, Masarat Saqib, Gabriel Hauser, and Hala Tamin, "Prevalence of smoking during pregnancy and associated risk factors among Canadian women: a national survey," *BMC Pregnancy and Childbirth* 2010: 10:24, <http://www.biomedcentral.com/1471-2393/10/24>

⁴ A study using 1999 data estimated that 500 low birth weight infants in that year (out of 42,000 births) could be attributed to smoking. Bridge, J. and Turpin, W, "The Cost of Smoking In British Columbia and the Economics of Tobacco Control", prepared for Health Canada," February 2004 cited in Dr. Jim Rae, Dr. Har Singh, Douglas Thornton, MA, *Economic Benefits of Smoking Cessation Aids: A British Columbia Perspective*, Prepared for the Heart and Stroke Foundation of BC & Yukon, March 2010.

⁵ Andrew Hazlewood, Assistant Deputy Minister, Population and Public Health, Ministry of Healthy Living and Sport, Interview, June 29, 2010.

Smoking Cessation Programs Reduce the Number of People Who Smoke

British Columbians who smoke do want to quit and they are trying to quit. A 2008 survey⁶ found that in the past 12 months 48 percent of people who smoke or 263,850 reported that they made an unsuccessful attempt to quit. The survey also found that 67 percent or 355,084 plan to quit in the next 12 months.

Those who continue to smoke need strong support and programming in order to quit. Many of these people are vulnerable, including persons with mental illness, with addictions, the homeless, isolated and at risk youth, and lower income people.⁷ Aboriginals who smoke may face special difficulties in accessing services if they live in remote reserves. Cultural factors respecting tobacco use in the aboriginal community may also present unique challenges.

It is not surprising then that, without assistance, the number of people who quit smoking and remain tobacco free after one year is very small – ranging from 5 to 18 per cent, most often at the lower or middle of this range. The 2008 BC Stats survey found that of the 263,850 who attempted to quit, 66 percent or 174,552 did so without assistance. Only 22 percent of those who smoke were aware of the BC Lung Association's QuitNow Services Program.

Fortunately, there is clear evidence from an extensive literature (clinical control trials and other studies) that smoking cessation therapies and programs can really help those who want to quit. For example:

- **Varenicline and Bupropion:** Jorenby et al found a 23 per cent decline in smokers after 1 year with **varenicline** therapy and 14.6 per cent with **bupropion** compared to 10.3 per cent for those receiving a placebo.
- **Counselling and Drug Therapy:** Gonzales et al found similar rates of quitting with **brief counselling and drug therapy**. (22 per cent varenicline; 16 per cent bupropion).
- **Clinical Counselling:** U.S. Department of Health and Human Services analysis of 43 studies found that one session of **clinical counselling** reduced smoking by 12.4 per cent and 8 sessions by 24.7 per cent.
- **High Risk Groups:** A study of low income **pregnant women who smoke** found counselling reduced the smoking rate by 9.4 per cent compared to 3.8 percent for the usual care group (Dornelas et al).⁸

⁶ BC Stats, *op cit*.

⁷ Benita Cohen, Annette Schultz, Bob Walsh, Leslie Anne Fuga, “Repositioning Tobacco as a Social Justice Issue.”

⁸ For references to these studies see Rae, Singh, Thornton, *op. cit*. A recent English study has also shown that interventions by General Practitioner physicians and nicotine replacement therapy are highly effective preventive

- **Nicotine Replacement Therapy:** 27 studies reviewed by the U.S. Department of Health and Human Services showed that nicotine patch more than doubled the long term abstinence (compared to placebo) to a rate of 17.7 percent.⁹

The Business Case for Smoking Cessation Programs

Smoking cessation programs can provide clear and significant benefits for the health of individuals, for public health more broadly, and for the health care system in terms of reduced costs and/or reduced use of health care programs.

A recent study for the Heart and Stroke Foundation of BC & Yukon and the BC Lung Association found that the cost per Quality Life Year gained was very low for a range of smoking cessation therapies, varying from \$200 to \$250 for drug therapy with varenicline to \$2000 to \$2500 for Nicotine Replacement Therapy. This is far below the level of \$50,000 per Quality Life Year which is considered a positive value in health care interventions.¹⁰

On the other hand, the economic costs of smoking are, in fact, enormous. According to a 2007 study, tobacco use is responsible for \$3 billion per year in health care costs or a total of \$11 billion annually when factors such as lost productivity and increased insurance costs are included. A more recent Saskatchewan study (2009) found the cost of treating smoking related disease in that province to be \$167.6 million.¹¹ Given a Saskatchewan population of approximately 1 million, this translates into a national health care cost of \$5.7 billion or a cost of \$752 million for British Columbia.

Perhaps the clearest way to sum up the cost saving issue is the statement by an Alberta Health Services employee that “each quit results in an estimated \$45,000 in health care cost savings, and that is just health care costs.”¹²

initiatives from a cost and effectiveness perspective. Of 14 interventions rated, GP interventions ranked 4th and NRT 8th. Report for Health England by Matrix Insight, “Prioritising investments in preventive health,” September 2009, http://www.matrixknowledge.com/insight/wp-content/uploads/2009/10/HE_final_report1.pdf

⁹ *Treating Tobacco Use and Dependence*, June 2000.

¹⁰ Rae, Singh and Thornton, *op. cit.* The Executive Summary of this Report is contained in Appendix 1.

¹¹ Rae, Singh and Thornton, *op.cit.*

¹² Bhenaz Somji, Alberta Health Services, on “What will it take to beat smoking?” Heart and Stroke Foundation of Ontario, <http://www.youtube.com/watch?v=dTKov-WIG94> See also, “The STOP (Smoking Treatment for Ontario Patients) Study, Fourth Interim Progress Report to the Ministry of Health Promotion,” January 31, 2007.

Programs to reduce the number of people who smoke can also be a major support for business in British Columbia. A recent report sponsored by the BC Healthy Living Alliance focused on the business case for tobacco-free workplaces¹³. The report found that one employee who smokes can cost a business more than \$3300 per year through absenteeism, lower productivity, higher accident rates, longer disability claims and other factors. The total provincial cost of employing workers who smoke was found to be \$661 million per annum.

Despite the powerful evidence of the effectiveness and need for smoking cessation therapy programs, some may argue that people who smoke should themselves pay for Nicotine Replacement Therapy (NRT) or smoking cessation prescription drugs. After all, they are the people who will save money each day by not buying tobacco products.

There are at least three severe weaknesses in this argument. First, a large portion of people who smoke are low income. For low income people, the upfront cost of purchasing nicotine patches or prescription drugs is large. Cigarettes, on the other hand, can be purchased in small quantities and sometimes be purchased for lower cost on the contraband market. Second, few people who smoke are able to stop smoking all at once and shift their expenditures from tobacco to drugs/therapy. Many will require a transition period, a gradual reduction of tobacco use, or a period of quitting, relapse and quitting again. Third, quitting is not, for most people who smoke, primarily an economic decision. Tobacco is a highly addictive drug that has become a part of their physical and social life. Especially for lower income people or people with mental health problems or other addictions, the cost of NRT or smoking cessation drugs can be a psychological deterrent. For these reasons, the cost of NRT and drug therapy represent a significant barrier for many people who would like to quit smoking.

Accordingly, this report proposes financial support for NRT and drug therapy that will assist, at least in the first instance, lower income people who smoke, who will often also have other addictions or health problems.

¹³ B.C. Healthy Living Alliance, *The Business Case for Tobacco Free Workplaces in British Columbia*.

Program Initiatives for British Columbia

The Clean Air Coalition of B.C. proposes the program initiatives set out in this report to help British Columbians who smoke to quit smoking.

British Columbia has led Canada in achieving the lowest rates of smoking in the country¹⁴. However, other provinces have moved beyond B.C. in helping people to quit. The province of Quebec covers Nicotine Replacement Therapy (patch and gum, on physician prescription) and bupropion and varenicline. All three are covered once a year for up to 12 weeks for each patient. Quebec also has 150 quit centres around the province staffed by public health nurses and other health professionals.¹⁵

Since 2005, Ontario has been conducting a major study involving free distribution of NRT to thousands of Ontarians who smoke. In more recent phases of the study access has also been provided to bupropion and varenicline.¹⁶

Both Quebec and Ontario pay for physician counselling to assist patients to stop smoking.

British Columbia can take a leadership role in Canada by adopting the proposals presented in this report.

Physician Counselling for Smoking Cessation

An analysis of 43 studies of clinical counselling undertaken by the U.S. Department of Health and Human Services (DHHS) in 2008 found that clinical counselling significantly increased success in quitting. One session of clinical counselling produced an abstinence rate of 12 percent while eight or more sessions resulted in a rate of 25 percent. Another review by DHHS in the same year of General Practitioner counselling found the average abstinence increased from 8 percent for self-help to 10 percent with GP counselling.¹⁷

¹⁴ But, it must be noted that B.C. has the third largest number of persons who smoke and, accordingly carries a high burden in terms of human and health care cost.

¹⁵ Rejean Lamontagne, Interviews and e-mails.

¹⁶ Dr. Peter Selby, interviews and e-mails.

¹⁷ Rae and associates, op. cit.

The U.S. Agency for Health Research and Quality of the Department of Health and Human Services strongly recommends that physicians assist their patients to stop smoking. The Agency asks why should “a busy clinical team consider making the treatment of tobacco use a priority?” The answer is:

The evidence is compelling: (1) clinicians can make a difference with even a minimal (less than 3 minutes) intervention (2) a relation exists between the intensity of intervention and tobacco cessation outcome (3) even when patients are not willing to make a quit attempt at this time, clinician-delivered brief interventions enhance motivation and increase the likelihood of future quit attempts (4) tobacco users are being primed to consider quitting by a wide range of societal and environmental factors (e.g., public health messages, policy changes, cessation marketing messages, family members) (5) there is growing evidence that smokers who receive clinician advice and assistance with quitting report greater satisfaction with their health care than those who do not (6) tobacco use interventions are highly cost effective, and (7) tobacco use has a high case fatality rate (up to 50% of long-term smokers will die of a smoking-caused disease).¹⁸

In 2007, the British Columbia Ministries of Health Services and Healthy Living and Sport established a Clinical Prevention Policy Review Committee. The Committee included representatives of the British Columbia Medical Association (BCMA), the Department of Family Medicine, the B.C. College of Family Physicians, the Society for Clinical Preventive Care, the B.C. Centre for Disease Control (BCCDC) and the B.C. Cancer Agency (BCCA). A key purpose of the Committee was to recommend provincial policy and funding for “effective clinical prevention that would be consistent with and support primary care renewal and broader system reform”.

The Committee found that “Smoking cessation advice and help to quit” ranked number 1 out of a range of preventive initiatives with a point ranking of 20,372. The next highest preventive initiative ranked 12,489. Based on these findings, the Committee recommended “smoking cessation advice and help to quit” as one of two new priorities for the province.¹⁹

In June 2010, the British Columbia Medical Association issued its own report on the implementation of the Clinical Prevention Policy Committee Report. The BCMA report

¹⁸ Agency for Health Research and Quality, Supported Clinical Practice Guidelines Chapter 3 Clinical Interventions for Tobacco Use and Dependence. <http://www.ncibi.nlm.nih.gov/bookshelf/br.fcgi?book=hsahcpr&part=A28251>

¹⁹ *The Report of the Clinical Prevention Policy Review Committee, “A Lifetime of Prevention,”* December 2009. http://www.hls.gov.bc.ca/publications/year/2009/CPPR_Lifetime_of_Prevention_Report.pdf

supported the “Lifetime Prevention Schedule” and called for the Ministry of Health Services to work closely with them and to “recognize the GP as the primary clinician responsible for the delivery of clinical prevention services offered under the lifetime prevention plan where appropriate”.²⁰

Given this powerful evidence, the Clean Air Coalition of B.C. recommends that the Medical Services Plan (MSP) work with the British Columbia Medical Association to support physician smoking cessation counselling. The proposals offered in this report are intended to assist these discussions.

Proposed Program, Target Group and Estimated Cost for Physician Counselling

A long standing provision of the Medical Services Plan (MSP) Payment Schedule for physicians is that behavioural or lifestyle counselling is not covered. Accordingly, physicians cannot bill for counselling their patients about smoking cessation or offering them guidance and support. Physicians may and undoubtedly are speaking to their patients about smoking and advising them about quitting during office visits dealing with acute or chronic conditions.

Smoking cessation is included as part of a new Guideline on primary prevention of cardiovascular disease by the Guidelines and Protocol Advisory Committee. Smoking cessation is also included in the prevention fee administered through the General Practice Service Committee, devoted to cardiovascular risk assessment. The fee is limited to 30 patients per physician per calendar year.²¹

Given the strong evidence of the effectiveness of physician counselling for smoking cessation, the Clean Air Coalition of B.C. recommends that the Government of British Columbia either consider amending its policy on counselling by funding smoking cessation interventions by General Practitioners or, as proposed by the BCMA respecting Clinical Prevention Services, that the Province fund smoking cessation physician counselling through three joint government-BCMA committees.²²

²⁰ British Columbia Medical Association, *Partners in Prevention: Implementing a Lifetime Prevention Plan, A Policy Paper by BC's Physicians*, June 2010.

²¹ The Report of the Clinical Prevention Policy Review Committee, “A Lifetime of Prevention,” December 2009.

²² BCMA, Partners in Prevention. The three government-BCMA committees are: General Practice Services Committee, the Specialist Services Committee, and the Shared Care and Scope of Practices Committee.

There are two elements or components of the Clean Air Coalition of B.C.'s proposal. First, it is proposed that MSP fund four brief follow up sessions of General Practitioner smoking cessation counselling per year. If four brief sessions were provided to approximately half of the people who attempt to quit each year in British Columbia the cost of this element of the program would be approximately \$13.4 million.

A second proposed program component is that MSP fund 2 intense counselling sessions in addition to the 4 brief sessions. These could be for patients who require intense assistance to quit smoking and who have co-morbid or other conditions that make smoking cessation a critical health care need. Modelled in part on the Ontario Government's physician payment schedule arrangement and rate, the cost of this program component is estimated at approximately \$3.3 million. These proposals, their target populations and their costs are described in more detail in Appendix 2.

Physicians providing smoking cessation counselling to their patients would also have two other tools at their disposal if the proposals related to drug therapy and Nicotine Replacement Therapy made later in this report are implemented. It is recommended that physicians make their patients aware of the BC Lung Association's QuitNow Services where appropriate and refer their patients to QuitNow Services. Physicians could also advise their patients that they may be eligible for access to free NRT through QuitNow Services (see "Nicotine Replacement Therapy – Gum and Patch" below.)

These cost estimates and program design features should be subject to assessment, discussion and negotiation between the Medical Services Commission and the British Columbia Medical Association.

Drug Therapy Programs Funded by PharmaCare

The review prepared for the Heart and Stroke Foundation of BC & Yukon and the BC Lung Association by Dr. Jim Rae and associates cited earlier in this report found that varenicline (Champix) and bupropion (Zyban) are highly effective tools for people wishing to quit. Varenicline was found to produce 1 year quit rates of 23 percent; bupropion, quit rates of 15 to 16 percent.

The Clean Air Coalition of B.C. has worked with Pfizer Canada to estimate the number of British Columbians who might benefit from using these two drugs and the potential cost to Pharmacare. Pfizer's costing model and assumptions are attached as Appendix 3.

This model incorporates information from a BC Stats 2008 survey of British Columbians who smoke, their quit rates, income levels and other related factors. As well, the proportion of varenicline and bupropion users is based on Quebec's experience, modified to adjust for the fact that Nicotine Replacement Therapy is also insured in Quebec.

Necessarily, some assumptions in the model are subject to change or may require further modification for British Columbia. PharmaCare may want to run other assumptions through the model.

Based on estimates and assumptions by Pfizer Canada and the Clean Air Coalition of B.C., approximately 70,000 people who smoke could be prescribed varenicline or bupropion in the first year of coverage. Of these, 17,000 would receive full or partial coverage by PharmaCare in the first year, declining to approximately 16,000 by year three. The estimated cost to PharmaCare in year one would be \$2.05 million; year two, \$1.96 million, and year three, \$1.90 million.²³

Nicotine Replacement Therapy: Gum and Patch

As noted above, nicotine replacement therapy significantly increases the rate of smoking cessation. An Ontario study involving free nicotine replacement produced quit rates two to four times the typical quitting rates.²⁴ And a study in New York State of a free nicotine replacement therapy program achieved quit rates of 21 to 35 percent compared to 12 percent for those who did not receive nicotine replacement therapy.²⁵ Guidelines by the U.S. Department of Health and Human Services and by the Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-Informed Tobacco Treatment recommend nicotine replacement therapy as an effective means of smoking cessation.

The effectiveness of nicotine patches and gum has also been recognized by many employers in British Columbia. Until recently, many B.C. public sector employers provided coverage for nicotine patches and gum for their employees. However, as of 2009, nicotine patches and gum

²³ These cost estimates may be somewhat high given the proposed number of patients to receive physician counseling services per the proposal earlier in this report.

²⁴ Centre for Addiction and Mental Health, "STOP Study helps Ontario smokers go 'weedless' – Nicotine Replacement Therapy Dramatically Improves Quit Rate"

²⁵ Rae, Singh, and Thornton, *op. cit.*

no longer required a physician's prescription. As a result, the patches and gum lost their tax exempt status (see Appendix 4). The effect of this change is that many employees who had coverage for NRT no longer do so.²⁶

In any case, even if the entire public sector in B.C. were covered, plus a small part of the private sector, the proportion of the population covered would have been less than 25 percent.²⁷

Low income is prevalent in the smoking population of British Columbia. A 2008 survey of people who smoke by BC Stats found that 11 percent had household annual incomes of less than \$15,000 while another 17 percent had incomes of \$15,000 to \$30,000. In that year Statistics Canada's Low Income Cut-Off for a family of 3 ranged from \$18,000 in rural areas to \$28,000 in the largest urban areas.

The loss of employees' coverage for NRT, the small percentage of the population who were covered and will be covered in the future, and the high prevalence of low income among people who smoke combined with the effectiveness of NRT as an aid to smoking cessation make the introduction of a British Columbia NRT program a priority.

A proposed program targeted at low income British Columbians could be administered by the BC Lung Association's QuitNow Services Program. Modelled on a program already in place in the city of Hamilton, Ontario, QuitNow Services could ask those who seek access to NRT whether they can afford to purchase it themselves. In addition, program applicants would be asked if they had coverage for NRT through their employer or some other source. A negative response to these two questions would enable the person to have free access to NRT as described in Appendix 4. While some people may be dishonest in their responses, the number of such applicants is likely to be small enough to outweigh the cost of a more burdensome administrative income assessment process.

The annual cost for the NRT is estimated at \$13.8 million (see Appendix 4). The cost of delivering the program through QuitNow Services is described in the next section of this Report.

²⁶ Provincial Government employees continue to be covered at the present time.

²⁷ The B.C. Public Sector (federal, municipal/local and B.C. governments, Health Authorities (hospitals and ambulatory health care) and the education sector) in 2009 made up 473,100 employees. Five percent of all other sectors is 89,300 for a total of 562,400 employees who, at most might have been covered for NRT. This constitutes about 25% of the total of 2,259,400 for all sectors. See British Columbia Employment by Detailed Industry, Annual Averages, BC Stats, <http://www.bcstats.gov.bc.ca/data/dd/handout/naicsann.pdf>

QuitNow Services Enhancement

It is proposed that access to NRT be provided through QuitNow Services. In order for people who smoke to know about the Nicotine Replacement Therapy Program, funds would be required for advertising. It is proposed that QuitNow Services be provided with \$3.5 million in the first year for this purpose.

People who smoke who became aware of the program would then contact QuitNow Services. QuitNow Services would request information respecting their need for NRT and their ability to pay. If determined to be eligible for the program, the client would be provided with a voucher (electronically or by mail) that could be redeemed at their local pharmacy. In rare cases where the client did not have access to a pharmacy, QuitNow Services could provide the NRT directly to the client.

In addition, QuitNow Services would refer clients to their family physician, advising them that support from their doctor will help them to achieve their goal of quitting. The Government of Quebec found that for their NRT program, physician counselling was an important factor in preventing relapse by quitters.²⁸

As noted in Appendix 4, it is estimated that 17 percent of people who smoke or approximately 93,500 people would be eligible for the program. QuitNow Services presently serves its clients through person to person telephone calls and on-line through the Internet. The cost for registering clients by telephone or on-line is approximately \$37.50/client.

Processing applicants for access to NRT would involve less interaction than the full registration process. Cost-effective integrated voice recognition software could also be used as was the case for Ontario's STOP study program. Accordingly, it is estimated that the cost for NRT clients would be approximately \$15/client.

At \$15/client for 93,500 clients, the required funding for QuitNow Services is \$1.4 million.

It is recommended that 10 percent of the 93,500 applicants for NRT be registered for the QuitNow Services program in order to receive the more intense services involved in registration.

²⁸ Rejean Lamontagne.

The cost for registration for 9,350 clients at \$37.50 (average of person to person and online registration cost) is \$350,000. Costs for additional person to person counselling needs to be considered.

Further efficiencies in processing NRT clients would enable QuitNow Services to increase the number of clients moved to full registration service.

The total cost for the QuitNow Services administration of NRT, then, is \$1.8 million plus \$3.5 million for advertising for a total of \$5.3 million.

Proposed Revenue Source for Smoking Cessation Therapies

Revenue Sources

The Clean Air Coalition of B.C. would like to suggest a source of revenue for the program proposals presented in this report.

This revenue source is what we call the “One Cent Solution”. This proposal involves the province placing an additional tax on cigarettes of one cent per cigarette, raising the cost of cigarettes by \$2 per carton. This would generate approximately \$38 million annually²⁹. The program proposals made in this report can be fully funded from these revenues.

A source of revenue for future program expansion is the money expected to be received from the Provincial Government’s health care cost recovery suit against cigarette manufacturers. In addition, the application of the HST to tobacco products will produce additional revenue for the province that could and should be used, at least in part, for smoking cessation therapy.

²⁹ This estimate is based on tobacco tax revenue of \$692 million received in 2008/09. At a tax rate of \$35.80 per carton this equates to the sale of approximately 3.8 billion cigarettes. At tax of one cent per cigarette would then yield approximately \$38 million. See 2010 British Columbia Financial and Economic Review, p. 72.
<http://www.fin.gov.bc.ca/tbs/F&Ereview10.pdf>

Allocation of Funds for Tobacco Prevention and Treatment

The Clean Air Coalition of B.C. also wishes to offer suggestions respecting the allocation or placement of funding for tobacco use prevention and smoking cessation therapy programs.

One option is that these funds could be provided to the Ministry of Health Services and the Ministry of Healthy Living and Sport in an annual allocation to particular program areas such as the Medical Services Plan.

A second option that the Clean Air Coalition of B.C. wishes to recommend to the Provincial Government for consideration is the creation of a designated, multi-year Smoking Cessation Fund. Allocations could be made to various Ministries' programs from this fund. In addition, revenues from the court settlements with tobacco companies could be deposited in this Fund.

Conclusion and Recommendations

The terrible human and economic costs of smoking on British Columbia and Canada are clear. Fortunately, it is also clear that much can be done to help British Columbians to stop smoking. The evidence is compelling. The Clinical Prevention Policy Review Committee established by the Ministries of Health Services and Healthy Living and Sport recommended "Smoking cessation advice and help to quit" as one of two priorities for the province.

The Clean Air Coalition of B.C. recommends that the Government of British Columbia take the following steps that will help British Columbians achieve the goals of "Imagine! A Smoke-Free BC".

Recommendations

1. Physician Counselling

That the Medical Services Plan fund 4 brief follow up sessions of General Practitioner smoking cessation counselling per year for approximately 105,000 British Columbians who smoke. And, in addition, MSP fund 2 intense sessions for a smaller subset of approximately 50,000 persons who smoke.

2. Drug Therapy

That PharmaCare provide coverage, subject to PharmaCare Plan rules for varenicline (Champix) and bupropion (Zyban) to assist patients to quit smoking.

3. Nicotine Replacement Therapy

That the Government of British Columbia fund the BC Lung Association's QuitNow Services to provide nicotine replacement therapy (nicotine patch and gum) to low income British Columbians who are attempting to quit smoking.

4. QuitNow Services Enhancement

That the Government of British Columbia provide enhanced funding to QuitNow Services to administer the free nicotine replacement therapy program and to further support British Columbians who are striving to quit smoking.

5. Revenue for the Smoking Cessation Initiatives

That the Government of British Columbia institute the "one cent solution", a one cent per cigarette tax increase to provide funding for the initiatives recommended in this report.

6. Revenue Placement

That the Government of British Columbia consider creating a designated, multi-year Smoking Cessation Fund in which revenue from the one cent per cigarette tax, from the HST on tobacco products, and from the court settlement of the health care cost recovery suit could be placed. Alternately, the revenues could be allocated to the Ministries of Health Services and Healthy Living and Sport on an annual basis.

Cost and Revenue Estimates

Physician Counselling	\$16.70	million
Drug Therapy	\$2.05	million
Nicotine Replacement Therapy	\$13.80	million
QuitNow Services Enhancement	\$5.30	million
TOTAL	\$37.85	million

Revenue – "One Cent Solution"	\$38.00	million
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Appendix 1

Economic Benefits of Smoking Cessation Aids: A British Columbia Perspective

Prepared for the Heart & Stroke Foundation of BC & Yukon by:
Dr. Jim Rae • Dr. Har Singh • Douglas Thornton, MA
March 2010

EXECUTIVE SUMMARY

This study reviews research findings on the costs and benefits of smoking cessation therapies in North America and other jurisdictions. It then adapts the findings¹ to the British Columbia (BC) cost structure and population of smokers to identify the most cost-effective smoking cessation therapies (SCT). The paper also examines whether government financial support makes economic sense for any of the therapies and subgroups of smokers including youth, pregnant women, Aboriginals, employees, pre- and post-operative patients, persons with mental illness and the elderly.

Most developed nations have made remarkable progress reducing the incidence of smoking. This has been achieved through aggressive policies – including indoor smoking bans, anti-smoking campaigns and high taxation rates for tobacco products – and through the availability of effective SCT such as telephone counselling services and pharmaceuticals. In Canada, the number of smokers aged 15 and older decreased from 6.1 million in 1998 to 4.9 million in 2008, a 20% reduction. The 4.9 million remaining smokers represent only about 18% of the nation's population 15 years and older.

BC has already made impressive progress in reducing tobacco use. greatest progress in reducing tobacco use^[LS1] (agree with comment). The percentage of the BC population 15 years and older who continue to smoke is approximately 16%, the second lowest in North America after Utah. This public health achievement is reflected in BC's first place ranking in the Progress Board's health outcomes survey, a combined measure of life expectancy at birth, infant mortality, cancer mortality, cardiovascular mortality and potential years of life lost.²

Smoking remains the largest preventable cause of premature morbidity and mortality in Canada and BC, however, causing more than 37,000 and 6,000 annual deaths respectively. It is a risk factor for heart disease, stroke, cancer, several respiratory diseases, low birth weight and its attendant long-term health risks. Smoking is also a reliable predictor of poverty.

The economic burden of tobacco use in Canada is estimated to be approximately \$3 billion per year in direct health care costs and \$11 billion in indirect costs, including lost productivity, insurance and property damage. It is further estimated that only 18% of these costs are offset through tobacco tax revenues.³

For those addicted to tobacco, however, quitting smoking is difficult. The percentage of quitting smokers who remain smoke-free after a year ranges from 5% to 18%^[VR2]. This rate of quitting occurred despite almost half of smokers knowing about Nicotine

¹ Within the noted limitation of available data.

² http://bcprogressboard.com/benchmarking_reps.html

³ Rhymes, Janet, "Genuine Progress Index (GPI) Atlantic, qtd. in Kyle, Anne, "Tobacco Use in Saskatchewan costs economy \$1.1 billion: study", *Regina Leader-Post*, October 27, 2009

Replacement Therapy (49%), physician counselling (14%), Bupropion (13%) and resources such as QuitNow.ca (9%).⁴ [VR3](No Varenline data; the study precedes significant use of Varenline in the province; need exact wording form Doug T)[VR4](%).⁵[LS5][SA6]

Herein lies the conundrum for policy makers, public health advocates and for those who develop SCT approaches. The public benefits from smoking cessation far outweigh the direct and indirect health costs associated with smoking. Some SCT approaches – and combination of approaches- are more efficacious than others. Many tobacco users who quit successfully do so independently of available SCT, however, this group of successful quitters is relatively small. To continue with aggressive, successful and cost-effective smoking cessation public policy initiatives, therefore, two questions need to be answered:

1. Which are the most cost-effective SCT available?
2. Which subgroups of smokers are most likely to quit successfully if the most effective SCT options are made available to them?

This research paper attempts to answer both of these questions, providing the public health advocate and policy maker with sufficient evidence to refine current SCT models and to develop sound public policy options. The authors conducted a literature review of research findings on the efficacy and cost-effectiveness of selected therapies - including various counseling approaches and the seven first-line drug therapies found to increase long-term smoking abstinence rates in the Clinical Practice Guideline by the US Department of Health and Human Services (2009). Over 1,800 studies were drawn from selected health research databases⁶ and examined for relevant information. Of these, 125 studies were selected for review in greater detail. The studies reviewed generally employed standard health research measures of effectiveness - quit rates, life-years saved (LYS) and quality adjusted life-years (QALY) gained, a measure that takes into account years affected by illness and adjusts their value in comparison to years of good health.

Evaluation of the relative merits of therapies required detailed information on the cost of the therapies, cost avoidance of future health care burden, and in some cases potential productivity and economic losses. The studies examined were conducted in various international jurisdictions and reported results in different currencies and time periods. To compare the value findings of the various studies, therefore, the authors standardized cost-benefit information from the studies into common 2008 US dollars US dollars [LS7] using traditional economic methodology.

Smoking cessation therapies and programs are ranked using cost-effectiveness information and assigned a value..⁷ Below is a table of the rankings:

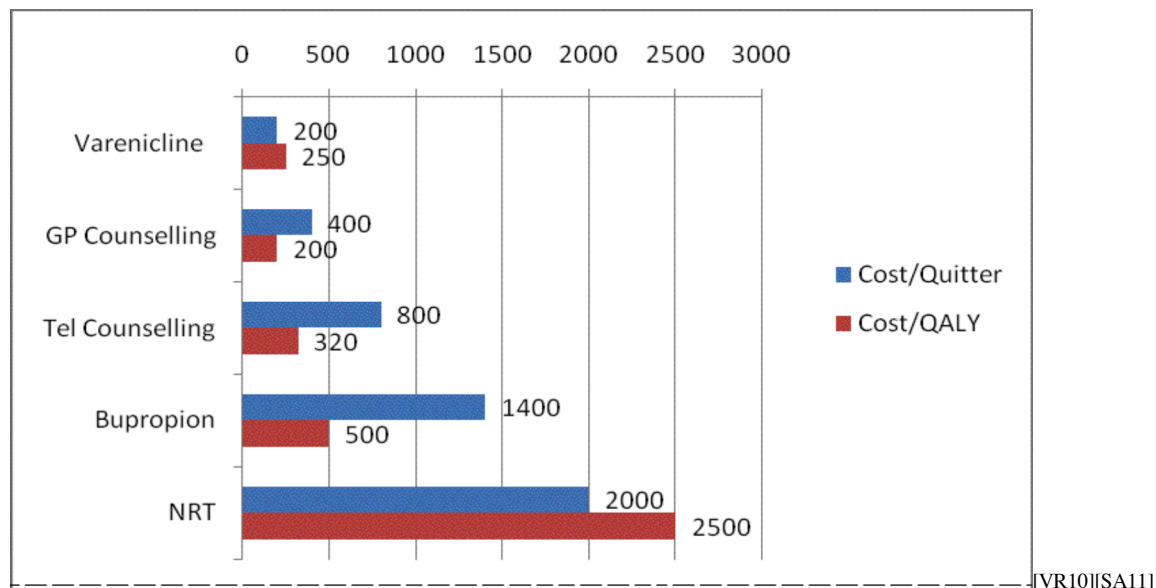
⁴ <http://www.bcstat.gov.ca/data/ssa/reports/tobacco/smoke07060707.pdf>

⁵ <http://www.bcstat.gov.ca/data/ssa/reports/tobacco/smoke07060707.pdf>

⁶ These included MEDLINE (PubMed), EMBASE, Cochrane Review Library, CINHAHL, PsycINFO, Dovepress and the US Centre for Disease Control (CDC) Tobacco Information and Prevention database.

⁷ The authors adjusted the costs of therapies to the BC cost structure relative the costs in US, the dominant source of other studies. When the value rankings are adjusted to the BC situation, however, the cost benefit and value rank of therapies also changes.

Chart 1 – Cost Effectiveness of Smoking Cessation Therapies Therapies^[LS9]



[VR12]

[VR10][SA11]

The study findings also highlight the extremely favourable health care and societal cost-effectiveness of SCT programs generally and for certain sub-groups of smokers specifically. While research findings confirmed that self-help strategies alone are ineffective, the studies⁸ showed that Varenicline, General Practitioner (GP) counselling and telephone counselling are the most attractive therapy options ranking first, second and third in terms of benefit/cost ratio, followed by Bupropion and Nicotine Replacement Therapy (NRT) respectively. It is worth noting that a cost per QALY gained under US\$50,000 is generally considered positive value in health care intervention. Cessation programs including the lowest-ranked NRT consistently achieve results far below this dollar amount^[SA13]. (combined therapies results included in appendices; show that double therapies incremental benefit is not cost effective)

In addition to ranking the value of various SCT, the authors looked at a number of studies that targeted specific subgroups of smokers, i.e., youth, pregnant women, pre- and post-operative patients, etc., to determine which of these subgroups benefited the most from certain SCT interventions. The following table provides this information, ranking SCT programs for pregnant women and employees as providing the highest value for public or personal expenditures with up to a tenfold return on the cost of therapy. Next were targeted programs for youth, pre- & post- surgical patients, First Nations, the elderly and psychiatric patients.

Table 1 – Types of Smokers for Whom SCT is Highly Cost-effective^{9 10}^[LS14]

⁸ Based on international data dominated by US studies and the US cost structure

⁹ The results of most studies reviewed here likely understate the societal cost of smoking and the corresponding benefits of cessation, since the value of smoker and family's time in treatment of illnesses and disability are typically not recognized. Despite the decade-old recommendation of the Panel on Cost-Effectiveness in Health and Medicine, patients' time is rarely included in costing or cost-effectiveness analyses. Studies of cancer treatment, smoking cessation, and diabetes self-management show that it can be a large part of an intervention's costs, sometimes larger than direct medical costs.

Special Group	Cost/QALY or B/C Ratio	Value Rank
Pregnant Women	B/C ratio 3 to 10 or higher	1
Workplace SC programs	B/C ratio 8.75 for employer; B/C overall \$16.9 -\$34:\$1	2
Youth	\$450/DALY ^{[VR15][VR16]}	3
Pre- & post-operatives	\$2,500 – 3,000	4
First Nations	Higher Quit rates for Aboriginal men, cost/ quitter and per/QALY lower	5
Psychiatric/ Addiction	\$6,200/Quitter \$5,200/QALY	6
Elderly	\$2,000/Quitter	7

Recommendations^[SA17]

Based on findings that demonstrate the overwhelming evidence of dramatically improved health, economy-wide and personal benefits attributable to smoking cessation, the authors recommend the following:

1. The Province extend coverage under MSP and Pharmacare for GP counselling and drug therapies for pregnant smokers, pre- and post-operative patients, methadone treatment patients, psychiatric patients, and young daily smokers.^[VR18] methadone treatment patients, psychiatric patients^[LS19]
2. Employer and employer organizations should include smoking cessation therapies coverage under employer extended health plans and consider partnership with provincial Quitlines for proactive telephone counselling of employees.
3. The federal and provincial governments provide additional resources to establish proactive Quitline counselling^[NR20] targeting pregnant smokers, young daily smokers and Aboriginal smokers.^[VR21]
4. The federal government provide dedicated resources to enhance coverage of smoking cessation therapies under First Nations Health. under First Nations Health^[LS22] (agree with the comment)
5. First Nations leadership consider substantial taxation on tobacco products sold on reserve to raise revenue for anti-tobacco education and counselling and to discourage smoking among Aboriginal populations;
6. Undertake research into the costs and benefits of various SCT policy options using BC demographics, smoking rates and cost structure to ensure the most efficient use of current and future resources.

¹⁰ The results of most studies reviewed here likely understate the societal cost of smoking and the corresponding benefits of cessation, since the value of smoker and family's time in treatment of illnesses and disability are typically not recognized. Despite the decade-old recommendation of the Panel on Cost-Effectiveness in Health and Medicine, patients' time is rarely included in costing or cost-effectiveness analyses. Studies of cancer treatment, smoking cessation, and diabetes self-management show that it can be a large part of an intervention's costs, sometimes larger than direct medical costs.

Appendix 2

Method for Estimating Cost of Physician Counselling for Smoking Cessation

The following proposals respecting the target population for smoking cessation therapy interventions by physicians and the costing are intended as starting points for analysis and assessment by the Ministry of Health Services. The Ministry would need to discuss these proposals with the British Columbia Medical Association to receive their input, advice and recommendations. The Clean Air Coalition of B.C. has not consulted with the BCMA in preparing this analysis.

BACKGROUND INFORMATION

British Columbians Who Smoke and Those Who Attempt to Quit

British Columbians Who Smoke	550,000
Those attempting to quit in the last 12 months (48% ³⁰)	264,000
Number who smoke visiting a General Practitioner in a year ³¹	440,000
Number of Quit Attempters visiting a General Practitioners in a year	211,000

Recommended Interventions for People Who Smoke

The Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment (CAN-ADAPTT) has prepared Guidelines for smoking cessation therapy drawing on a number of other guidelines. They recommend:

- “Every tobacco user should be offered at least a minimal intervention; however more intensive interventions of four or more sessions are more effective.”

U.S. Guidelines advise that a minimal intervention lasting less than 3 minutes increases tobacco abstinence rates and that four or more sessions are particularly effective.³²

³⁰ BC Stats, *Tobacco Attitudes and Behaviours Survey Report, 2008 Final Report*, April 2009.

³¹ Approximately 80 % of the B.C. population visits a General Practitioner physician in a year. MSP Information Resource Manual: Fee-For-Service Payment Statistics, 2008-09, Health System Planning Division, Ministry of Health Services.

³² CANADAPTT, *Dynamic Guidelines for Tobacco Control Version 2*, August 2008.

The U.S. Department of Health and Human Services Guidelines³³ also recommend an intense program for any persons addicted to smoking who can commit to such a rigorous program. Because of “evidence of a strong dose-response relation, the intensity of the program should be: *Session length*: longer than 10 minutes. *Number of sessions*: 4 or more sessions. *Total contact time*: longer than 30 minutes.”

PROPOSED TARGET POPULATION AND COSTING

In light of the above information the following target population and costing are proposed.

Target Population

If all people who smoke who visit a General Practitioner in year were offered one minimal intervention of less than three minutes, the target population would be:

440,000.

If four additional sessions were to be provided, the focus for these sessions could be those who have attempted or are attempting to quit. The number of these persons visiting a General Practitioner would be:

211,000.

Costing

We believe that most General Practitioners already have at least an initial discussion with their patients who smoke. Accordingly, we assume that the cost for these visits is covered by the current MSP budget. In addition, each General Practitioner is allowed to provide smoking cessation counselling to up to 30 patients per year as a part of cardiovascular risk assessment.

While some discussion may also be occurring at subsequent visits for patients’ current acute or chronic conditions (exclusive of cardiovascular risk patients), follow up visits, strictly for behavioural or lifestyle counselling respecting tobacco use (or other lifestyle behaviours), are not currently permitted under the Medical Services Plan Payment Schedule.

One option would be for MSP to amend this rule and cover 4 brief follow up sessions for smoking cessation therapy. If 4 visits at an average fee of \$32³⁴ were provided for 211,000 patients the cost would be:

³³ U.S. Department of Health and Human Services, *Clinical Practice Guidelines: Treating Tobacco Use and Dependence*, June 2000. “There is a strong dose-response relation between the intensity of tobacco dependence counselling and its effectiveness. Treatments involving person-to-person contact (via individual, group, or proactive telephone counseling) are consistently effective, and their effectiveness increases with treatment intensity (e.g., minutes of contact).”

³⁴ \$32 is the average of the standard visit fees for patients aged 2-49, 50-59 and 60-69 years of age.

$\$32 \times 4 \times 211,000 = \27 million

Even if every General Practitioner in the province were to provide such counselling this would be more than 42 additional patients per physician. Given the fact that up to 30 patients per year are eligible for smoking cessation counselling respecting cardiovascular problems; given the fact that many patients lack access to a family physician³⁵; and, given the workload demands on family physicians, it is proposed that half this number be provided with counselling, bringing the total per physician closer to 20. The cost would then be:

$\$32 \times 4 \times 105,000 = \13.4 million

In addition to these brief General Practitioner visits, special more intense sessions could be provided, per the recommendation of the U.S. Department of Health and Social Services noted above. For British Columbia, an appropriate target group for intensive programming could be patients who require intense assistance to quit smoking and who are at special risk without such counselling because of co-morbid or other conditions. These conditions might include pregnancy, addictions, mental illness, diabetes and other chronic conditions.

Given the proposal above to fund 4 brief sessions, we propose that rather than 4 intense sessions per the U.S. Guidelines that British Columbia follow Ontario's Payment Schedule provisions and fund 2 sessions in a 12 month period. If we use Ontario's fee level for these sessions of $\$33.45$ ³⁶; and, if we assume that approximately half of the patients require these additional services, the cost for these two intense sessions would be:

$\$33.45 \times 2 \times 50,000 = \3.3 million

Total Estimated Cost

The total estimated cost for physician smoking cessation counselling support would be:

Brief follow up Visits	\$13.4 million
Intense counselling Visits	<u>\$ 3.3 million</u>
Total Cost	\$16.7 million

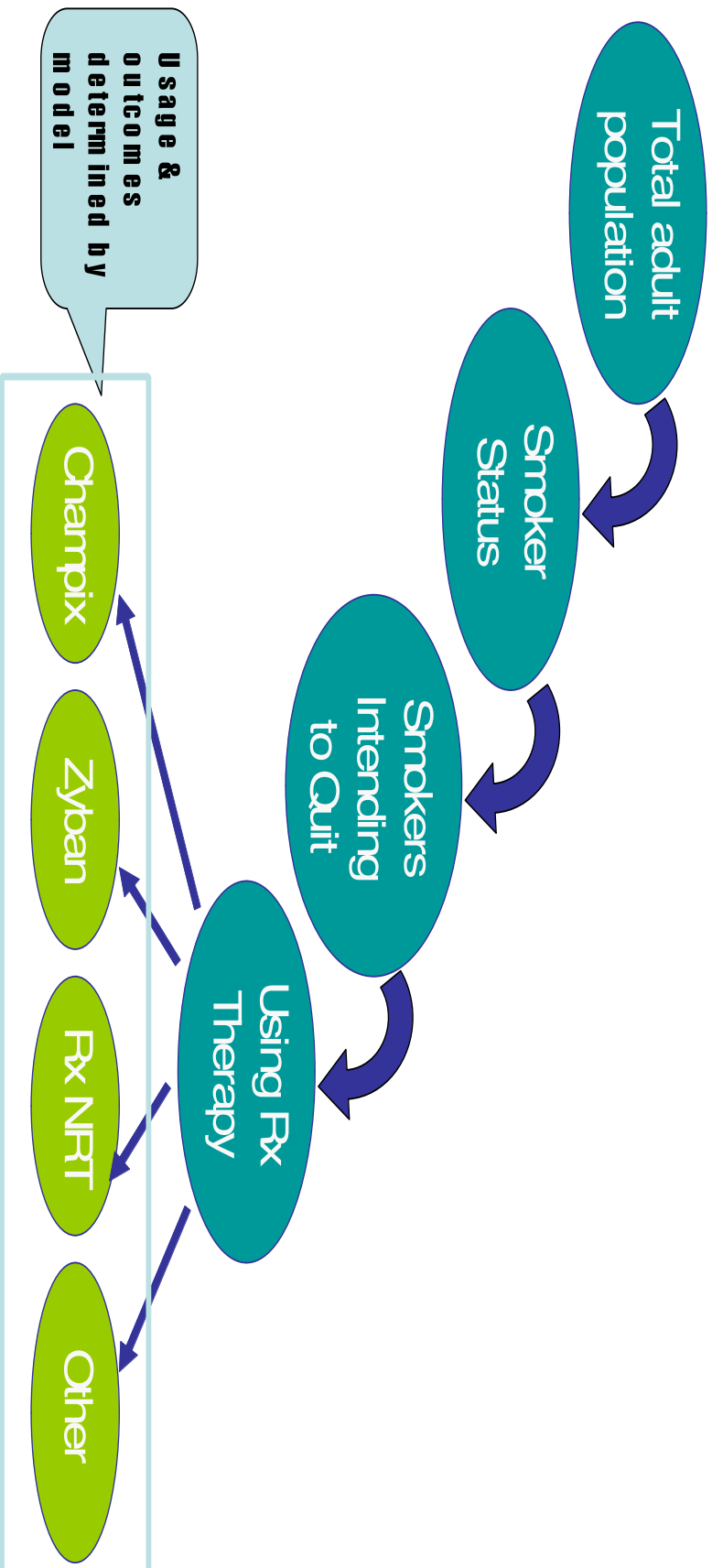
³⁵ See, Tiffany Crawford, "B.C. pledges improved access to family doctors by 2015," *Vancouver Sun*, June 24, 2010. <http://www.timescolonist.com/health/pledges+improved+access+family+doctors+2015/3196327/story.html#ixzz0rsXGciyn>

³⁶ This compares to \$56 under MSP's Payment Schedule for Counseling. However, these Counseling sessions are to be 20 minutes or more in length. The smoking cessation sessions would be closer to 10 minutes. The MSP fee for cardiovascular risk assessment is \$100, but smoking status is only one of a number of factors covered under this procedure.

Appendix 3 Method for Estimating the Population Cost of Drug Therapy

Drug	Year 1		Year 2		Year 3		Total	
	# of Users	Expenditures	# of Users	Expenditures	# of Users	Expenditures	# of Users	Expenditures
Champix	15,919	\$1,945,998	15,288	\$1,868,844	14,802	\$1,809,436	46,010	\$5,624,279
Zyban	1,231	\$99,700	1,183	\$95,747	1,145	\$92,704	3,559	\$288,151
Total	17,151	\$2,045,699	16,471	\$1,964,592	15,947	\$1,902,140	49,569	\$5,912,430

***The numbers above reflect the current assumptions.



Estimation of the proportion of smokers using either Champix or Zyban in QC under the assumption that NRT are no longer covered

	SCT Users in QC (2009)	Champix User Shares in QC (2009)	Zyban User Shares in QC (2009)	NRT User Shares in QC (2009)	% of would-be-NRT users taking either Champix or Zyban in QC under the assumption that NRT are no longer covered	# of would-be-NRT users taking either Champix or Zyban in QC (under the assumption that NRT are no longer covered)	QC Shares between Champix and Zyban (Champix)	QC Shares between Champix and Zyban (Zyban)	Projected # of SCT Users in QC (under assumption that NRT are no longer covered)	Projected # of Champix Users in QC under the assumption that NRT are no longer covered	Projected # of Zyban Users under BC Pharmascare	# making a quit attempt within the RAMQ (QC) population	Projected # of SCT users in QC under the assumption that NRT are no longer covered
Total (#)	88,068	29,150	2,255	56,663	50%	28,332	92.8%	7.2%		55,447	4,289	226,234	59,737
Total (%)	100.0%	33.1%	2.6%	64.3%									26.4%

KEY ASSUMPTION

BC

	Average Treatment Duration (days)	# of Pills/Patches	Drug Cost	Wholesale Markup	Inventory Allowance	# of Disp.	Disp. Fee	Disp. Cost	Total Treatment Cost	Co-paymt	Total Cost to AHW
	[A]	[B]	[C]=[A] x[B]	[D]=7%* [C]	[E] = \$0* [F]	[F]	[G]	[H] = [F] *\$8.60	[I] = [C]+[D]+ [E]+[H]	[J] =30%* [I]	[K]=[I]-[J]
Champix	\$1.6852	44.2	\$143.92	\$10.07	\$0.00	2.4	\$8.60	\$20.64	\$174.63	\$52.39	\$122.24
Zyban	\$0.9192	53.3	\$95.23	\$6.67	\$0.00	1.6	\$8.60	\$13.76	\$115.66	\$34.70	\$80.96

Sources

Brogan Pharmastat - Canada - Private Sector Adherence Data - May 2009

Strength	Form	Manufacturer Name	Package	Unit of Measure *	Province/State	Source	List Price	% Increase	Effective Date	End Date
150MG	ORAL SUSTAINED-RELEASE TABLET	BIOVAIL PHARMACEUTICALS CANADA, DIVISION OF BIOVAIL CORPORATION	60 TAB	TAB	BRITISH COLUMBIA	WHOLESALE	0.9192	0	04/03/2009	
5MG	ORAL TABLET	PFIZER CANADA INC.	25 TAB	TAB	BRITISH COLUMBIA	WHOLESALE	1.6852	0.03/17/2007		
5MG	ORAL TABLET	PFIZER CANADA INC.	56 TAB	TAB	BRITISH COLUMBIA	WHOLESALE	1.685	0.03/17/2007		
1MG	ORAL TABLET	PFIZER CANADA INC.	28 TAB	TAB	BRITISH COLUMBIA	WHOLESALE	1.685	0.03/17/2007		
5MG & 1MG	KIT	PFIZER CANADA INC.	25 TAB IN STARTER PACK (11X0.5MG TAB)	14X1.0MG TAB	BRITISH COLUMBIA	WHOLESALE	1.6852		0.03/17/2007	
5MG & 1MG	KIT	PFIZER CANADA INC.	25 TAB IN STARTER PACK (11X0.5MG TAB)	14X1.0MG TAB	BRITISH COLUMBIA	WHOLESALE	1.6852		0.03/17/2007	
5MG & 1MG	KIT	PFIZER CANADA INC.	25 TAB IN STARTER PACK (11X0.5MG TAB)	14X1.0MG TAB	BRITISH COLUMBIA	WHOLESALE	1.6852		0.03/17/2007	
5MG & 1MG	KIT	PFIZER CANADA INC.	25 TAB IN STARTER PACK (11X0.5MG TAB)	14X1.0MG TAB	BRITISH COLUMBIA	WHOLESALE	1.6852		0.03/17/2007	

Estimation of the potential number of Champix and Zyban users insured by BC Pharmacare as their primary insurer - YEAR 1

Family Income	BC Population (age 15+)	% with BC Pharmacare as		Smoking prevalence (%)	Current BC Pharmacare Smokers (#)	Have reached BC Pharmacare deductible (%)	Have reached BC Pharmacare deductible (#)	Making at least one quit attempt over a year	Quit Attempters (#)	Using an Rx at least once over a year (if reimbursed)	Smoking Cessation (SCT) Users (#)
		(A)	(B)								
Less than \$15K	228,302	100%	26.5%	60,500	100%	60,500	48.5%	29,343	26.4%	7,748	
\$15K-\$30K	387,967	100%	24.1%	93,500	15%	14,025	48.5%	6,802	26.4%	1,796	
More than \$30K	3,043,124	100%	13.0%	396,000	15%	59,400	48.5%	28,809	26.4%	7,607	
Total	3,659,393	100%	15.0%	550,000	24%	133,925	48.5%	64,954	26.4%	17,151	

(B), (E) and (I): Assumptions that can be changed as needed in the model

(C.) and (G): <http://www.bcstats.gov.bc.ca/data/reports/tobacco/tabs2008.pdf>

(D) and (E): Assumptions proposed by Garry Curtis in email dated June 17th, 2010

(I): RAMIQ (QC) data were used as proxy. See Tab "Key Assumption" for more details on calculations

Projected number of Champix and Zyban users under the BC Pharmacare program - YEAR 1

Family Income	Smoking Cessation Treatment (SCT) Users (#)	Champix Shares (SCT users)	Zyban Shares (SCT users)
Total (%)	100.0%	92.8%	7.2%
Total (#)	17,151	15,919	1,231

Estimation of the potential number of Champix and Zyban users insured by BC Pharmacare as their primary insurer - YEAR 2

Family Income	BC Pharmacare Smokers (#) at Year 1	Projected Quitters (16.4%)	Former Smokers (C)	Projected Relapsers Among Former Smokers (6.6%)	BC Pharmacare Smokers (#) at beginning of Year 2	Have reached BC Pharmacare deductible (%)	Have reached BC Pharmacare deductible (#)	Making at least one quit attempt over a year	Quit Attempters (#)	Using an Rx at least once over a year (if reimbursed)	Smoking Cessation (SCT) Users (#)
	(A)	(B)=16.4%(A)	(C)	(D)	(E)=(A)-(B)+(D)	(F)	(G)=(E)*(F)	(H)	(I)=(G)*(H)	(J)	(K)=(I)*(J)
Less than \$15K	60,500	9,922		7,523	58,101	100%	58,101	48.5%	28,179	26.4%	7,441
\$15K-\$30K	93,500	15,334		11,627	89,793	15%	13,469	48.5%	6,532	26.4%	1,725
More than \$30K	396,000	64,944		49,244	380,300	15%	57,045	48.5%	27,667	26.4%	7,305
Total	550,000	90,200	1,036,271	68,394	528,194	24%	128,615	48.5%	62,378	26.4%	16,471

(E) and (I): Assumptions that can be changed as needed in the model

(C) and (H): <http://www.bccstats.gov.bc.ca/datalabs/reports/tobacco/tabs2008.pdf>

(D): Pfizer data on file. Estimate used for the submission to CDR in 2007. Adapted from Weter et al (2004).

Projected number of Champix and Zyban users under the BC Pharmacare program - YEAR 2

Family Income	Smoking Cessation Treatment (SCT) Users (#)	Champix Shares (SCT users)	Zyban Shares (SCT users)
Total (%)	100.0%	92.8%	7.2%
Total (#)	16,471	15,288	1,183

Estimation of the potential number of Champix and Zyban users insured by BC Pharmacare as their primary insurer - YEAR 3

Family Income	BC Pharmacare Smokers (#) at beginning of Year 2	Projected Quitters (16.4%)	Former Smokers (C.)	Projected Relapsers Among Former Smokers (6.6%)	BC Pharmacare Smokers (#) at beginning of Year 3	Have reached BC Pharmacare deductible (%) (F)	Have reached BC Pharmacare deductible (#) (G)=(E.)*(F)	Making at least one quit attempt over a year (H)	Quit Attempters (#) (I)=(G)*(H)	Using an Rx at least once over a year (if reimbursed) (J)	Smoking Cessation (SCT) Users (#) (K)=(I)*(J)
Less than \$15K	58,101	9,529		7,682	56,254	100%	56,254	48.5%	27,283	26.4%	7,204
\$15K-\$30K	89,793	14,726		11,872	86,939	15%	13,041	48.5%	6,325	26.4%	1,670
More than \$30K	380,300	62,369		50,280	368,210	15%	55,232	48.5%	26,787	26.4%	7,073
Total	528,194	86,624	1,058,077	69,833	511,403	24%	124,527	48.5%	60,395	26.4%	15,947

(E.) and (I): Assumptions that can be changed as needed in the model

(D): Pizer data on file. Estimate used for the submission to CDR in 2007. Adapted from Weter et al (2004).

(C.): Rx Users - Year 21D7+Rx Users - Year 21C7-Rx Users - Year 21E7

(H): <http://www.bccstats.gov.bc.ca/data/sa/reports/tobacco/tabs2008.pdf>

Projected number of Champix and Zyban users under the BC Pharmacare program - YEAR 3

Family Income	Smoking Cessation Treatment (SCT) Users (#)	Champix Shares (SCT users)	Zyban Shares (SCT users)
Total (%)	100.0%	92.8%	7.2%
Total (#)	15,947	14,802	1,145

1. Assumption tested: % with BC Pharmacare as primary insurer

Baseline hypothesis: **100%**
Sensitivity analysis: **77.7%**.....Rationale: (17,000 + 507,700) / 675,300

Estimated number of Champix and Zyban users and the associated expenditures for BC Pharmacare in the first 3 years of the program

Drug	Year 1		Year 2		Year 3		Total
	# of Users	Expenditures	# of Users	Expenditures	# of Users	Expenditures	
Champix	12,369	\$1,512,041	11,879	\$1,452,092	11,501	\$1,405,932	35,750
Zyban	957	\$77,467	919	\$74,396	890	\$72,031	2,766
Total	13,326	\$1,589,508	12,798	\$1,526,488	12,391	\$1,477,962	38,515

2. Assumption tested: Proportion who will have reached the BC Pharmacare deductible at SCT initiation (and thus be eligible for SCT coverage by BC Pharmacare)

Baseline hypothesis: **Less than \$15K (100%), \$15K-30K (15%), more than \$30K (15%)**
Sensitivity analysis: **Less than \$16K (100%), \$15K-30K (50%), more than \$30K (25%)**

Estimated number of Champix and Zyban users and the associated expenditures for BC Pharmacare in the first 3 years of the program

Drug	Year 1		Year 2		Year 3		Total
	# of Users	Expenditures	# of Users	Expenditures	# of Users	Expenditures	
Champix	24,516	\$2,996,917	23,544	\$2,878,097	22,796	\$2,786,606	70,857
Zyban	1,897	\$153,542	1,821	\$147,455	1,763	\$142,767	5,481
Total	26,413	\$3,150,460	25,366	\$3,025,552	24,559	\$2,929,373	76,338

Baseline hypothesis: **Less than \$15K (100%), \$15K-30K (15%), more than \$30K (15%)**
Sensitivity analysis: **Less than \$16K (100%), \$15K-30K (100%), more than \$30K (100%)**

Estimated number of Champix and Zyban users and the associated expenditures for BC Pharmacare in the first 3 years of the program

Drug	Year 1		Year 2		Year 3		Total
	# of Users	Expenditures	# of Users	Expenditures	# of Users	Expenditures	
Champix	65,377	\$7,991,780	62,785	\$7,674,926	60,789	\$7,430,948	188,952
Zyban	5,057	\$409,446	4,857	\$393,213	4,703	\$380,713	14,617
Total	70,435	\$8,401,226	67,642	\$8,068,139	65,492	\$7,811,661	203,569

3. Assumption tested: Proportion of would-have-been-NRT users who will use either Champix or Zyban because NRT are not covered

Baseline hypothesis: **50%**
Sensitivity analysis: **0%**

Estimated number of Champix and Zyban users and the associated expenditures for BC Pharmacare in the first 3 years of the program

Drug	Year 1		Year 2		Year 3		Total
	# of Users	Expenditures	# of Users	Expenditures	# of Users	Expenditures	
Champix	8,369	\$1,023,061	8,037	\$982,499	7,782	\$951,267	24,188
Zyban	647	\$52,415	622	\$50,337	602	\$48,737	1,871
Total	9,017	\$1,075,476	8,659	\$1,032,836	8,384	\$1,000,003	26,060

Sensitivity analysis: **100%**

Estimated number of Champix and Zyban users and the associated expenditures for BC Pharmacare in the first 3 years of the program

Drug	Year 1		Year 2		Year 3		Total
	# of Users	Expenditures	# of Users	Expenditures	# of Users	Expenditures	
Champix	23,489	\$2,868,936	22,539	\$2,755,190	21,822	\$2,667,605	67,831
Zyban	1,816	\$146,985	1,744	\$141,158	1,888	\$136,671	5,247
Total	25,285	\$3,015,921	24,283	\$2,896,348	23,511	\$2,804,276	73,078

Insurance Coverage by Source based on Smoking Prevalence

Province	Private	Public	No Coverage	Total Estimated Lives
Newfoundland	17,600	2,100	56,900	76,600
PEI	5,400	100	15,200	20,700
Nova Scotia	39,900	1,800	99,900	141,600
New Brunswick	28,100	1,500	83,600	113,200
Quebec	701,900	463,100	-	1,165,000
Ontario	574,900	24,900	1,368,700	1,968,500
Manitoba	32,300	16,200	127,000	175,500
Saskatchewan	17,200	16,100	108,800	142,100
Alberta	134,400	13,000	366,600	514,000
British Columbia	150,600	17,000	507,700	675,300
Territories	1,700	8,100	6,700	16,500
Canada	1,704,000	563,900	2,741,100	5,009,000

Appendix 4

Method for Estimating the Population Eligible for QuitNow Services Nicotine Replacement Therapy

Number Who Smoke and Those Attempting to Quit in British Columbia

Total number who smoke: 550,000

Number Who Smoke Covered for NRT Through Their Employers

The Clean Air Coalition of B.C.'s objective is to provide coverage for people who smoke who cannot afford to purchase NRT. For this reason, employees who have coverage for NRT through their employers would not be eligible for the proposed program. However, Pacific Blue Cross advised the Clean Air Coalition of B.C. that, as of April 2010, employers are not generally covering NRT³⁷. Last year, nicotine patches and gum became non-prescription items. As a result, these items are no longer tax exempt benefits. Pacific Blue Cross believes that for all but a very few employers, this will mean that NRT is no longer covered.

Consequently, the number of people who smoke who will have coverage for NRT through their employers, once employers make decisions respecting whether to cover NRT, or not, is expected to be very small. In addition, by asking people who smoke about their ability to pay, QuitNow Services could exclude covered employees from its program (see below.)

Low Income People Who Smoke

BC Stats 2008 survey³⁸ of British Columbians who smoke found that 11 percent had household incomes below \$15,000 and another 17 percent had incomes of \$15,000 to \$30,000. Statistics Canada's Low Income Cut-off for 2008 for a family of 3 ranged from \$18,000 in rural areas to \$28,000 in the largest urban areas³⁹. If we estimate that one third of people who smoke with incomes of \$15,000 to \$30,000 are below the LICO, then approximately 17 percent of British Columbians who smoke may be considered low income.⁴⁰

³⁷ Telephone conversation with Brenda Dixon, Pacific Blue Cross Account Manager, June 11, 2010.

³⁸ BC Stats Report, Tobacco Attitudes and Behaviours Survey Report, 2008 Final Report, April 2009.

³⁹ Statistics Canada, Income Research Paper Series, Research Paper, *Low Income Cut-offs for 2008 and low income measures for 2007*.

⁴⁰ It is proposed that the cost estimate be based on 17 percent of all smokers rather than 17 percent of smokers attempting to quit. This may overestimate the cost somewhat. However, it is hoped and expected that access to free NRT would increase the number of smokers who attempt to quit. Note that these estimates are based on 426,140 smokers, the number surveyed who responded to the BC Stats Survey questions respecting their income level. It is assumed that the same income distribution applies to all smokers.

Support for Nicotine Replacement Therapy is not provided to Income Assistance clients through the Ministry of Housing and Social Development.⁴¹

Costing of NRT Therapy Program

The City of Hamilton provides free counselling by public health nurses and free access to Nicotine Replacement Therapy (patch or gum) to low income residents of Hamilton. Program participants are simply asked if they can afford to purchase NRT themselves. A “no” response is taken as indicating that the client is low income. The BC program could take a similar approach. Almost all of the clients of the Hamilton program choose nicotine patch. The patch is provided for 8 weeks.

If B.C. were to provide nicotine patch for 8 weeks to 17 percent of the province’s 550,000 people who smoke the cost would be:

$$\$36.99^{42} \times 4 \text{ (weeks)} \times (0.17 \times 550,000) = \$13.8 \text{ million}$$

⁴¹ Robert Bruce, Executive Director, Employment and Income Assistance Branch, Ministry of Housing and Social Development.

⁴² \$36.99 is the price of 2 weeks’ supply of patch sold through London Drugs in Victoria. This is lower than prices at another pharmacy. However, a large provincial program may be able to purchase patches in volume at a lower cost.

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Persons/Organizations Consulted/Interviewed

Tiiu Ambus, Program Coordinator, Ministry of Health Promotion, Government of Ontario

Jack Boomer, Director, Clean Air Coalition of B.C.

Robert Bruce, Executive Director, Employment and Income Assistance Branch, Ministry of Housing and Social Development

Mark Collison, Director of Advocacy, Heart and Stroke Foundation of BC & Yukon

Brenda Dixon, Pacific Blue Cross Account Manager

Roberta Ferrence, Director, Ontario Tobacco Research Unit

Andrew Hazlewood, Assistant Deputy Minister, Population and Public Health, Ministry of Healthy Living and Sport

Catherine Kidd, Executive Director, Disability Management & Safety, Vancouver Coastal Health Authority

Michael Kimmis, Rehabilitation Programs, BC Teachers' Federation.

Dr. Dean Dr. Kolodziejczyk, British Columbia Medical Services Plan, Ministry of Health Services

Rejean Lamontagne, Service de lutte contre le tabagisme, Ministère de la Santé et des Services sociaux, Quebec

Eric Lun, Executive Director, Drug Intelligence, PharmaCare and Elaine Chong, Director, Decision Support, Drug Intelligence, PharmaCare

Jean Manktelow, Manager HR Data & Benefits Management, Vancouver Island Health Authority

Scott McDonald, Chief Executive Officer and President, BC Lung Association

Jennifer Mitton, Public Health Nurse, Tobacco Control Program, Hamilton Public Health Services

Pfizer Canada, Lyne Simoneau, Manager Patient Access and Vincent Raymond, Manager Health Economics and Outcomes Research

Marcel Qualizza, Director Health Promotion and Safety, Workplace Health and Safety, Public Service Agency, Government of British Columbia

Dr. Peter Selby, Director, Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-informed Tobacco Treatment and Clinical Director, Addictions Program and Head of the Nicotine Dependence Clinic at the Centre for Addiction and Mental Health, Ontario

Darlene Therrien, Executive Director, Policy Outcomes, Evaluation and Research, PharmaCare, Ministry of Health Services

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