Y O R K
Health Economics
C O N S O R T I U M

NICE

Cost-Effectiveness of Interventions for Smoking Cessation

Final Report

November 2021: NICE guidelines PH10 (February 2008) and PH14 (July 2008) have been updated and replaced by NG209.
The recommendations labelled [2008] or [2008, amended 2021] in the updated guideline were based on these evidence reviews.
See www.nice.org.uk/guidance/NG209 for all the current recommendations and evidence reviews.

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C O N S O R T I U M

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1. INTRODUCTION AND METHODS

The National Institute for Health and Clinical Excellence (NICE) has commissioned a series of Rapid Reviews and the development of an economic model for the evaluation of smoking cessation treatments. This information will be used to identify and facilitate the optimal provision of smoking cessation services to all smokers. It is intended that the Rapid Reviews will provide some of the data required for the construction of the economic model.

The aim of this study was to determine the cost-effectiveness of smoking cessation interventions delivered in the workplace, by the NHS and by the mass media.

A hypothetical cohort of 1,000 smokers was modelled in six-monthly cycles over their lifetime. In every cycle smokers can either quit (i.e. become 'former smokers'), remain smokers or die. Former smokers can either relapse (i.e. become smokers), remain former smokers or die.

Each six-month cycle, smokers and former smokers have a chance of five distinct co-morbidities:

- Lung cancer;
- Coronary heart disease (CHD);
- Chronic obstructive pulmonary disease (COPD);
- Myocardial infarction (MI);
- Stroke.

The likelihood of any given individual in the cohort developing one or more of these disease changes with each cycle as their age changes and the probability of being a smoker, former smoker or non-smoker changes.

Each co-morbidity has an associated cost and utility (these were based on published data and full details will be provided in the final report). Each cycle, the number of people with each co-morbidity was multiplied by the associated cost and utility. Where someone had more than one co-morbidity, the lowest utility was applied. This enabled the total cost and QALYs of each intervention to be compared with 'no intervention' and the incremental cost-effectiveness (ICER) to be calculated.

2. RESULTS AND CONCLUSIONS

Table 1 provides a summary of the main results, where all interventions are compared with 'no intervention'. All interventions lead to a reduction in the number of smokers, fewer co-morbidities and more QALYs compared with 'no intervention'. All interventions apart from 'BA plus self help material plus NRT' result in lower costs than 'no intervention'.

'BA plus self help material plus NRT' has a high cessation rate; here, the intervention is more costly than 'do nothing' (ICER = £984).

Table 1: Summary results

Compared to 'no intervention'	Effectiveness	Duration of intervention	Inc. cost	Inc. QALY	ICER
'BA'	3%	Three minutes of a GPs time.	-£12	0.01	Dominant
'BA plus self-help material'	4%	Four minutes of a GPs time; self-help material.	-£26	0.02	Dominant
'BA plus self help material plus NRT'	6%	Seven minutes of a GPs time; self-help material; NRT.	£36	0.04	£984
'BA plus self-help material plus NRT plus specialist clinic'	15%	Four minutes of a GPs time; self-help material; NRT; clinic costs.	-£115	0.12	Dominant
'LIC and bupropion'	24%	8 weeks of bupropion; self-help material; 5-10min scripted call.	-£312	0.19	Dominant
'MIC and bupropion'	31%	8 weeks of bupropion; self-help material, five calls with smoking specialist.	-£414	0.26	Dominant
'NP-GC'	21%	NRT for five weeks, five group visits.	-£196	0.17	Dominant
'NP-IC'	16%	NRT for five weeks, five clinic visits.	-£156	0.12	Dominant
'NP-NC'	12%	NRT for five weeks.	-£134	0.09	Dominant
'NP-PC'	24%	NRT for five weeks, five pharmacist consultations.	-£132	0.20	Dominant
'NP-PCBP'	35%	NRT for five weeks, five pharmacist, consultations, five behavioural clinic visits.	-£222	0.30	Dominant

3. MAIN FINDINGS AND CONCLUSIONS

Our model shows that all the interventions studied are cost-effective when compared with 'no intervention' or 'BA'. Interventions that have a low cost and a low cessation rate dominate 'no intervention'. Interventions with a higher cost and high cessation rate dominate 'no intervention'. The cost per QALY of each of the interventions was low, when compared to 'no intervention. This supports the position as shown in other papers.

In terms of net costs (additional costs less cost savings from lower NHS treatment costs), the 'MIC and bupropion' intervention is the cheapest and the most effective intervention and therefore assuming that the interventions are mutually exclusive it dominates all the other interventions.

Note that this analysis was carried out before varenicline was appraised by NICE. Note also that bupropion is not often prescribed in the UK, in large part apparently because of its potential side effects.

Acknowledgements

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Section 1: Introduction

1.1 BACKGROUND

The National Institute for Health and Clinical Excellence (NICE) has commissioned a series of Rapid Reviews and the development of an economic model for the evaluation of smoking cessation treatments. These will be used to identify and facilitate the optimal provision of smoking cessation services to all smokers. It is intended that the Rapid Reviews will provide some of the key data needed for the construction of the economic model.

Smoking is linked to many health related problems including an increased risk of cancer, heart disease, digestive problems, dementia, stomach/duodenal ulcer, impotence and infertility. It is also linked with complications of pregnancy and low birth weight, osteoporosis, cataracts, age-related muscle degeneration, peridontitis, lower survival rates after surgery, delayed wound healing and postoperative respiratory complications [1]. Approximately 80% to 90% of chronic obstructive pulmonary disease (COPD) is caused by smoking [2]. There is also a 50% chance that a smoker will be dead before the age of 65 [1]. It is estimated that, between 1998 and 2002, smoking led to an estimated annual average of 86,500 deaths, with 62% of these among men [3].

Smoking not only affects the smoker but also those around them [4]. In the short term, passive smoking can exacerbate respiratory symptoms and trigger asthma attacks [4]. In the longer term it can increase the risk of lung cancer, respiratory illness, heart disease and stroke [4].

The economic consequences of smoking to the National Health Service (NHS) are estimated to be £1.5 billion each year. This is as a result of treating the diseases caused by smoking [5].

The NHS provides services to assist smokers who wish to quit. The services on offer include the provision of counselling and support to smokers who want to quit and the provision of stop smoking aids such as nicotine replacement therapy (NRT) and bupropion [6]. Additional assistance is provided for pregnant women smokers. This assistance includes liaising with primary care workers to ensure appropriate referrals are made, providing intervention at an early stage, and providing appropriate training for midwives [7].

There is evidence that smoking cessation services work. For example, the *Statistics on NHS Stop Smoking Services in England, April 2004 to March 2005* reported that around 56% of those who had set a quit date during April 2004 to March 2005 had quit for at least 4 weeks. The Rapid Review on NHS stop smoking services found a number of papers which assessed the English smoking cessation services. Godfrey *et al.* 2005 [8] investigated the cost-effectiveness of 58 English specialist smoking cessation services using a postal survey in 2001. Godfrey was able to show that the mean 12-month quit rate, after adjustment for

background cessation, was 12%. The total average service cost for the 58 services was £254,400, or £123 per person setting a quit date.

Stapleton 2001 [9] carried out an economic analysis to determine the cost-effectiveness of the NHS stop smoking services for the period from April 2000 to March 2001. The analysis was based on the 126,800 smokers who made a quit attempt while attending cessation services, 48% of whom were abstinent at four weeks. The cost of the NHS smoking cessation service was £21.4m, including the start-up and monitoring costs. Excluding these costs (start-up and monitoring) the cost per patient treated was £169. The cost was raised to £209 when five to six weeks of medication (NRT/bupropion) was included. The author show that at 12-months there was a net improvement in cessation of 17% where it was assumed that between 60% and 65% (author's assumption) of the four-week successes will have relapsed by month 12.

1.2 AIMS OF THE STUDY

The aim of the study is to determine the cost-effectiveness of smoking cessation interventions delivered:

- In the workplace;
- By the NHS;

The model is described in the next section (Section 2), Section 3 details the results of the analysis, and Section 4 provides a discussion of the findings and limitations.

Section 2: Methods

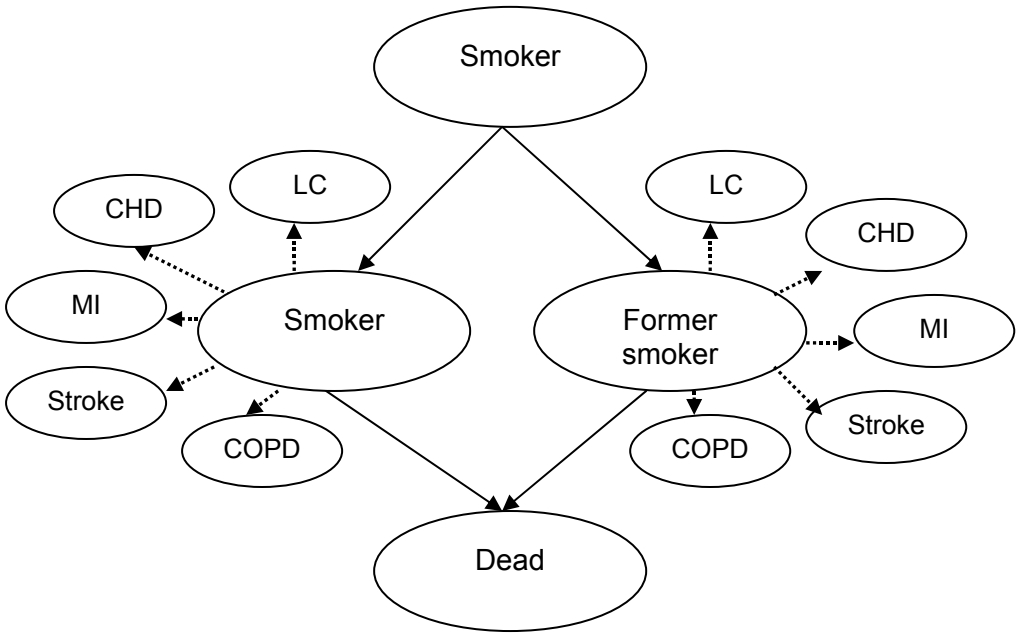
2.1 INTRODUCTION

A cohort simulation model was designed to estimate the costs and quality-adjusted life years (QALYs) associated with smoking cessation. The model has been designed to compare different smoking cessation interventions to determine their incremental cost-effectiveness. The interventions that were investigated are:

- 'No intervention';
- 'Brief advice' (BA);
- 'BA plus self-help material';
- 'BA plus self help material plus NRT';
- 'BA plus self-help material plus NRT plus specialist clinic';
- 'Counsellor and bupropion';
- Bupropion plus less intensive counselling (LIC);
- Bupropion plus more intensive counselling (MIC);
- Nicotine patch;
- Nicotine patch plus group counselling;
- Nicotine patch plus individual counselling;
- Nicotine patch plus pharmacist consultation;
- Nicotine patch plus pharmacist consultation plus behavioural program.

A hypothetical cohort of 1,000 smokers was modelled in six-monthly cycles over their lifetime. In each cycle, smokers could either quit (become former smokers), remain smokers or die; and former smokers could either relapse (become smokers), remain former smokers or die (see Figure 2.1). Lack of data on former smokers did not allow a split into 'recent' and 'long-term' quitters. For example, data would be required on the relative risk of having each co-morbidity by smoking status with former smokers split into recent and long-term quitters.

Figure 2.1: Movement between health states (note that a smoker can have more than one co-morbidity)



Each cycle, smokers and former smokers have a chance of five co-morbidities included:

- Lung cancer;
- Coronary heart disease (CHD);
- COPD;
- Myocardial infarction (MI);
- Stroke.

To calculate the number of people, in each cycle, with each co-morbidity the number of smokers/former smokers was multiplied by smoking status related prevalence. For example, to calculate the number of smokers with lung cancer.

- The number of smokers in each cycle was multiplied by the prevalence of smoking related lung cancer.

The prevalence according to smoking status was multiplied by the number of smokers/former smokers to calculate the number of people with each co-morbidity in each cycle. Prevalence was assumed to be dependent on age and gender only in the model. Section 2.3.3 provides an explanation of how smoking dependent prevalence was calculated.

The likelihood of any given individual in the cohort developing one or more of these disease changes with each cycle as their age changes and the probability of being a smoker, former smoker or non-smoker changes.

Each co-morbidity has an associated cost and utility. To enable the total costs and utilities of the interventions to be compared with 'no intervention' the number of people with each co-morbidity was multiplied by the associated cost/utility of that co-morbidity, each cycle. This resulted in a total cost/utility for each co-morbidity. To calculate an overall total cost/utility, these were summed together.

2.2 STUDY POPULATION

The model was undertaken using a 'population cohort' approach. The cohort was representative of all adults (i.e. age 16+) in the general population. That is, they are not representative of all adult smokers. It would, in theory, be possible to weight the cohort for other socio-demographic characteristics, but data would be required for all other parameters by these values (i.e. rates of complications, co-morbidities, smoking status, etc). The cost and QALY outcomes for each combination of age and gender were estimated (i.e. a 16 year old man, a 16 year old woman, a 17 year old man, a 17 year old woman, etc.). Weights were then applied to each of these groups, to ensure that the cohort was representative of the whole population. Population weights were derived from population estimates provided by the Office for National Statistics [10], see Appendix A. The costs and QALY outcomes for each age-gender group were then multiplied by these weights to provide total outcomes that were representative of the chosen population.

2.3 DATA

2.3.1 Literature Search

Electronic databases (Medline and PubMed), the Worldwide Web and references listed in identified articles were searched for relevant studies. Where there were any gaps, the Centre for Reviews and Dissemination (CRD) carried out further searches (the details of which are provided in Appendix B). Data were required for the following areas:

- Mortality, by age gender and smoking status;
- Prevalence of each co-morbidity, by age gender and smoking status;
- Utilities, for each co-morbidity;
- Costs, for each co-morbidity;
- The annual cessation and cost of each intervention modelled.

2.3.2 Mortality

The mortality rates from Doll *et al.* 1994 [11] were adjusted to reflect the general population mortality rates[1]. To adjust the mortality to reflect that found in the general population (see Appendix C [13]) the mortality per 1,000 men, by age band, was taken from the Doll study

[1] Although a more recent paper has been produced in 2004 [12], which follows the doctors until 2001, the 1994 paper has been used because it provided annual mortality by smoking habits at age of death, the 2004 paper does not provide figures for those over 85 and for former smokers under 45 years. Table 2.1 provides a comparison of the mortality rates as provided in both papers.

(see Table 2.1) and used to calculate the odds ratio for smokers versus formers smokers (A) and smokers versus non-smokers (B). The Actuary Life Tables [13] provide the 'real' mortality for each age (C).

The prevalence of smoking for each age and gender (D) was taken from the Health Survey for England [14], see Table 2.4, below.

The above information was used to calculate the actual mortality rates for smokers (E), former smokers (F) and non-smokers (G), by ensuring that the following equation was satisfied:

$$(E \times D1) + (F \times D2) + (G \times D3) = C$$

Where E:F = the odds ratio, A; E:G = B

This calculation is best illustrated using an example. Taking a 44 year old and substituting the prevalence of smoking and the actual mortality rate into the equation gives:

$$(E \times 0.26) + (F \times 0.21) + (G \times 0.53) = 0.002144$$

Further substituting the odds ratios reduces the equation to:

$$(E \times 0.26) + (E \times 0.21 \times 0.7143) + (E \times 0.53 \times 0.571) = 0.002144$$

This allows the equation to be solved as follows, to give an accurate estimate of the mortality for a 44 year old smoker, former smoker and non-smoker:

$$(E) = \frac{0.002144}{(0.26 + (0.21 \times 0.71423) + (0.53 \times 0.571))}$$

$$(E) = 0.0030$$

$$(F) = 0.002\,1$$

$$(G) = 0.0017$$

This process was repeated for all ages.

Table 2.1: Mortality by age, per 1,000

Age at death	Doll 1994			Doll 2004				
	Current smoker	Former	Non-smoker	Current smoker	Former smoker, by age stopped			Non-smoker
					35-44	45-54	55-64	
35-44	2.8	2	1.60	2.7	-	-	-	1.6
45-54	8.1	4.9	4.00	8.5	5.4	-	-	3.8
55-64	20.3	13.4	9.50	21.4	9.0	16.4	-	8.4
65-74	47	31.6	23.70	50.7	22.7	31.7	36.4	18.6
75-84	106	77.3	67.40	112.2	53.1	39.1	78.9	51.7
85+	218.7	179.7	168.60	-	-	-	-	-

2.3.3 Calculation of the Prevalence by Smoking Status of Each Co-morbidity

The literature was searched for information concerning the prevalence, by age, of each co-morbidity in the general population (regardless of smoking status) (A), the relative risk of each co-morbidity by smoking status (smokers versus formers smokers (B) and smokers versus non-smokers (C)) and the prevalence of smoking (D). This can be used to calculate the prevalence of each co-morbidity for a current smoker (E), former smokers (F) and non-smokers (G), by ensuring that the following equation was satisfied:

$$(E \times D1) + (F \times D2) + (G \times D3) = A$$

Where E:F = the odds ratio, B; G:F = the odds ratio C.

This can be illustrated using the example of a 60-year-old person with lung cancer. The prevalence of lung cancer is provided in Table 2.2 (Forman *et al.* 2003 [15]), the relative risk of lung cancer is shown in Table 2.3 (Peto *et al.* 2000 [16]) and the prevalence of smoking is shown in Table 2.4 (Health Survey for England [14]).

Table 2.2: Prevalence of lung cancer

Age	Prevalence
0-44	0.00%
45-64	***0.15%***
65+	0.80%
All ages	0.14%

Table 2.3: Relative risk of lung cancer by smoking status

	Smoker	Former	Non
RR	1	0.44	0.03

Table 2.4: The prevalence of smoking for men (for women)*

Age	Current cigarette smoker (D1)	Ex-regular cigarette smoker (D2)	Never regularly smoked cigarettes (D3)
16-24	0.25 (0.29)	0.05 (0.07)	0.69 (0.64)
25-34	0.37 (0.28)	0.14 (0.16)	0.49 (0.56)
35-44	0.26 (0.27)	0.21 (0.18)	0.53 (0.55)
45-54	0.25 (0.25)	0.30 (0.24)	0.44 (0.51)
55-64	**0.19** (0.20)	**0.44** (0.30)	**0.36** (0.50)
65-74	0.10 (0.13)	0.56 (0.29)	0.34 (0.57)
75+	0.07 (0.09)	0.61(0.34)	0.32 (0.57)
All ages	**0.24 (0.23)**	**0.29 (0.22)**	**0.47 (0.56)**

* The figures in brackets indicate the female prevalence figures

- Substituting the prevalence of smoking and the actual prevalence rate:

$$(E \times 0.19) + (F \times 0.44) + (G \times 0.36) = 0.15\,\%$$

- Substituting the odds ratios:

$$(E \times 0.19) + (E \times 0.44 \times 0.44) + (E \times 0.36 \times 0.03) = 0.15\%$$

$$(E) = \frac{0.15\%}{(0.19 + (0.44 \times 0.44) + (0.36 \times 0.03))}$$

$$(E) = 0.0038$$

$$(F) = 0.0017$$

$$(G) = 0.0001$$

This process was repeated for each age and gender for all co-morbidities. The prevalence of each co-morbidity, the relative risk by smoking status and resulting prevalence by age, gender and smoking status are shown in Appendices D to H.

2.3.4 Utility Weights

Each co-morbidity has an associated utility. Each cycle the number of people with each co-morbidity was multiplied by the associated utility and adjusted for the time-period spent in the health state. Where someone had more than one co-morbidity, the lowest utility was applied (an assumption used to overcome concerns of double counting in multiplicative or additive assumptions). This enabled the total QALYs of the interventions to be compared to 'no intervention'.

Tengs and Wallace carried out a review to report studies that included original quality of life (QoL) weights with the aim of compiling a list of QoL weights for 1,000 disease areas [17]. By searching the authors' own database (Health Priority Database), Medline, articles cited by others and the National Health Service Economic Evaluation Database, the literature search identified 1,100 potential studies of which 243 contained relevant information and

only 154 reported original data. Averages were calculated of the relevant utility scores provided by Tengs and Wallace were used for lung cancer, CHD, MI and stroke.

Six utility values were provided for lung cancer covering the following areas, an average of which was calculated:

- Small cell lung cancer with one cycle course of radiation;
- Small cell lung cancer with one cycle course of CAV chemotherapy;
- Small cell lung cancer with one cycle course of VP-16/cisplatin;
- Small cell lung cancer after disease progression;
- Small cell lung cancer that is in complete remission;
- Small cell lung cancer in partial remission of treatment.

The authors identified 28 papers with QoL weights for stroke. The weights included stroke patients who were in the following health states:

- Minor stroke:
  - With or without cognitive deficit;
  - First year after stroke;
  - Left with residual cerebral arteriovenous malformations after treatment.
- Moderate stoke:
  - With or without cognitive deficit;
  - Residual deficit in patients with prior myocardial infarction;
  - Language deficit;
  - Motor deficit.
- Acute requiring hospitalisation;
- Major stroke:
  - With or without the ability to speak;
  - First year after stroke;
  - Left with residual cerebral arteriovenous malformations after treatment;
  - Severe residual deficit in patients with prior myocardial infarction;
  - With or without cognitive deficit;
  - Language deficit;
  - Motor deficit.

The study only identified one paper for CHD (utility = 0.8) and 83 for post-MIs. The MI papers covered a range of patients included:

- General MIs;
- MI treated with streptokinase or recombinant tissue plasminogen activator, no dyspnea at rest/ on mild exertion or on strenuous exertion;
- MI patients unable to care for themselves;
- Acute MI;
- MI patients who did not experience a stroke or refraction;
- MI patients where rehabilitation had been provided.

Rutten-van Molken *et al.* 2006 [18] carried out a study to assess the association between country of recruitment and COPD utility. Data were taken from a subset of 1,235 patients from 13 countries that completed an EQ-5D questionnaire at the baseline of the 'Understanding the Potential Long-Term Implementation on Function with Tiotropim' (UPLIFT) trial. The UPLIFT trial was a four-year randomised, double-blind, placebo-controlled, parallel group trial designed to determine whether dopropium reduces the rate of decline of FEV over time. 6,000 COPD patients were included in the trial and the EQ-5D utility score was 0.76 at baseline. The EQ-5D scores were split into six groups based on the severity of COPD (moderate, severe and very severe) and whether patients were in the UK or the US. The model used an average of the UK scores for all severities of COPD.

Tillmann and Silcock [19] assessed the difference in health status between current and former smokers (who have not smoked for five years or more). To elicit their health status a questionnaire was sent to smokers and former smokers with nine general medical practices in Aberdeen, Scotland. The questions comprised SF-36, EuroQol, nine condition-specific questions selected from the MRC Questionnaire on Respiratory Symptoms and a range of socioeconomic questions. 1,500 questionnaires were sent out to former smokers and a further 1,494 were sent to smokers. Of the responders 778 former smokers and 887 smokers had valid responses to the questionnaires. The results show that the mean EuroQol score was 0.75 for smokers and 0.78 for former smokers.

The resulting utility scores used in the model are shown in Table 2.5. Whilst Tengs and Wallace provide utility scores for different severity levels of the co-morbidities in order for this to be reflected in the model we would need to know how many of the smokers, former smokers and non-smokers are in each of these states at any given time. This use of an average score negates this problem.

Table 2.5: Utility scores

Co-morbidity	Utility	Source
Lung cancer	0.58	[17]
Stroke	0.48	[17]
CHD	0.80	[17]
MI	0.80	[17]
COPD	0.73	[18]
No co-morbidities	0.75 current smoker 0.78 former smoker	[19]

2.3.5 Cost Data

Each co-morbidity has an associated cost. To enable the total costs of the interventions to be compared with 'no intervention' the number of people with each co-morbidity was multiplied by the associated cost of that co-morbidity, each cycle. This resulted in a total cost for each co-morbidity, to calculate an overall total cost these were summed together. The annual costs of each co-morbidity as used in the model are shown in Table 2.6.

Table 2.6: Annual cost of each co-morbidity (2006 £)

Disease	Average annual cost	Source
Lung cancer	£5,501	[20]
Stroke	£2,061	[14; 21; 22]
CHD	£1,063	[14; 22; 23]
MI	£2,175	[24-26]
COPD	£926	[27]

All costs have been inflated to January UK 2006 £ prices, using the following website:

- http://www.statistics.gov.uk/statbase/tsdataset.asp?vlnk=229&More=.

The *Health Care Needs Assessment* provides information on the evidence on the costs and cost-effectiveness and the optimum configuration of services for a number of disease areas, including lung cancer [20]. The authors of the lung cancer chapter acknowledge the fact that there is uncertainty surrounding the cost of palliative and terminal care but estimate it to be around £2,000 to £7,100 per person (1998 UK sterling). The average of these two figures was used in the model, £4,550 (£5,501 at current prices). It is unclear whether the reported figure takes account of gender differences in the number of people with lung cancer when calculating the cost.

The National Audit Office (NAO) [21] estimated that the direct cost of stroke was 2.8 billion each year (price year appears to be 2005). The total cost per person was calculated by dividing the total cost by the number of people with stroke in the UK, giving an estimated annual 2006 cost of £2,061[14; 22]. It has been assumed that the definition of stroke was the same in both data sources. A similar approach was used for the cost of CHD with the annual cost provided by the British Heart Foundation [23]. The costs of stroke and CHD are shown in Table 2.7.

Table 2.7: Annual cost of stroke and CHD (2006 £)

	Stroke	CHD
Total cost per year	2,867,200,000	3,809,320,747
Total population (men)	29,668,033	29,668,033
Total population (woman)	30,864,468	30,864,468
Percent with stroke / CHD (men)	2.4%	7%
Percent with stoke / CHD (women)	2.2%	5%
Average cost per person	**£2,061**	**£1,063**

The cost of MI has two components: the cost of an event and the ongoing yearly cost. The cost of an event was taken from reference costs with the ongoing costs based on monthly general practitioner (GP) visits, a follow-up cardiology visit every three months and cholesterol lowing drugs [24-26].

The annual cost of COPD was taken from Appendix D of the *Chronic Obstructive Pulmonary Disease: National Clinical Guideline on Management of Chronic Obstructive Pulmonary*

Disease in Adults in Primary and Secondary Care 2004 publication in Thorax [27]. This cost includes GP visits, medication, oxygen, inpatient stay and emergency admission. It is unclear whether the reported figure takes account of gender differences in the number of people with COPD when calculating the cost.

2.4 INTERVENTIONS

The data required for each of the interventions investigated were:

- The annual cost of the intervention (to the provider; in the case of the workplace model, this will be the employer);
- The length of time the intervention was applied;
- The proportion of people smoking (where 100% smoked before the intervention) at:
  - 6 months;
  - 12 months;
  - 24 months;
  - 60 months.

The data in the model were derived from the effectiveness Rapid Reviews, where possible, and from studies identified by NICE.

It has been assumed that after one-year the quit rate is the same as the background cessation rate.

McGhan & Smith (1996) provide six month quit rates and assume that the relapse rates between months six and twelve was 21% (i.e. of the quitters at six months, 21% were assumed to begin smoking again by the end of the first year). To make all the interventions comparable it has assumed that all interventions have a relapse rate of 21% between months six and twelve months.

2.4.1 Workplace

Javitz *et al.* 2004 [28], identified in the workplace cost-effectiveness Rapid Review, assessed the return on investment from an employer's perspective of four different smoking cessation programmes. The four programmes used (see Table 2.8) were two different bupropion regimes crossed with two different counselling approaches.

Table 2.8: Smoking cessation programmes used in the Javitz study

	Bupropion 150 mg	**Bupropion 300 mg**
Less intensive counselling 'LIC and bupropion'	150 mg Bup + less intensive counselling	300 mg Bup + less intensive counselling
More intensive counselling 'MIC and bupropion'	150 mg Bup + more intensive counselling	300 mg Bup + more intensive counselling

'LIC and bupropion' involves:

- Eight weeks of 150 mg bupropion;

- Personalised material;
- 5-10min scripted call after the quit date, from smoking cessation specialist (this was assumed to be a nurse);
- Access to 24hr automated free helpline.

'MIC and bupropion' involves:

- Eight weeks of 150 mg bupropion;
- Self help material and support for family and friends;
- In-depth phone assessment & counselling;
- Four brief pre-scheduled follow-up calls (assumed to be provided by a nurse);
- Access to free helpline for up to one year

See Table 2.9 for further details. The BNF recommends that 150 mg of bupropion is used and as such the 300 mg interventions described by Javitz have not been included in the analysis. The costs of these interventions are likely to be an underestimate due to a lack of information regarding the cost of providing a helpline and support for family and friends these have been excluded from the analysis.

Table 2.9: One-year cessation and costs

Intervention	1-year cessation	Total costs per employee	Source of costs
'LIC and bupropion' 150 mg Bup + less intensive counselling	23.6%	£80.21	[25; 29]
'MIC and bupropion' 150 mg Bup + more intensive counselling	31.4%	£120.21	[25; 29]

The above information can be used to run three scenarios for each of the 150mg bupropion interventions, see Tables 2.10 and 2.11 and Figures 2.2 and 2.3.

Table 2.10: 'LIC and bupropion'

'LIC and bupropion' (24%)	'No intervention'	Quit rate = background after one year
Costs	0	£80.21
Proportion of smokers:		
At 6 months	99%	70%
At 12 months	98%	76%
At 24 months	96%	75%
At 60 months	90%	70%

Figure 2.2: 'LIC and bupropion'

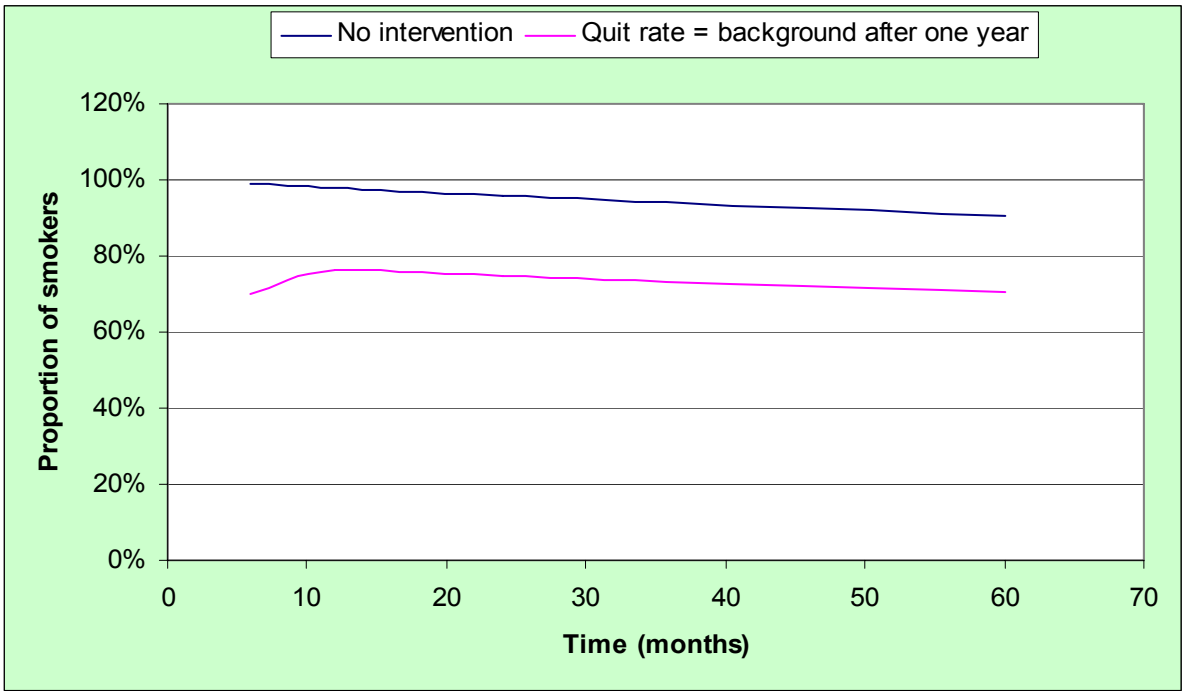
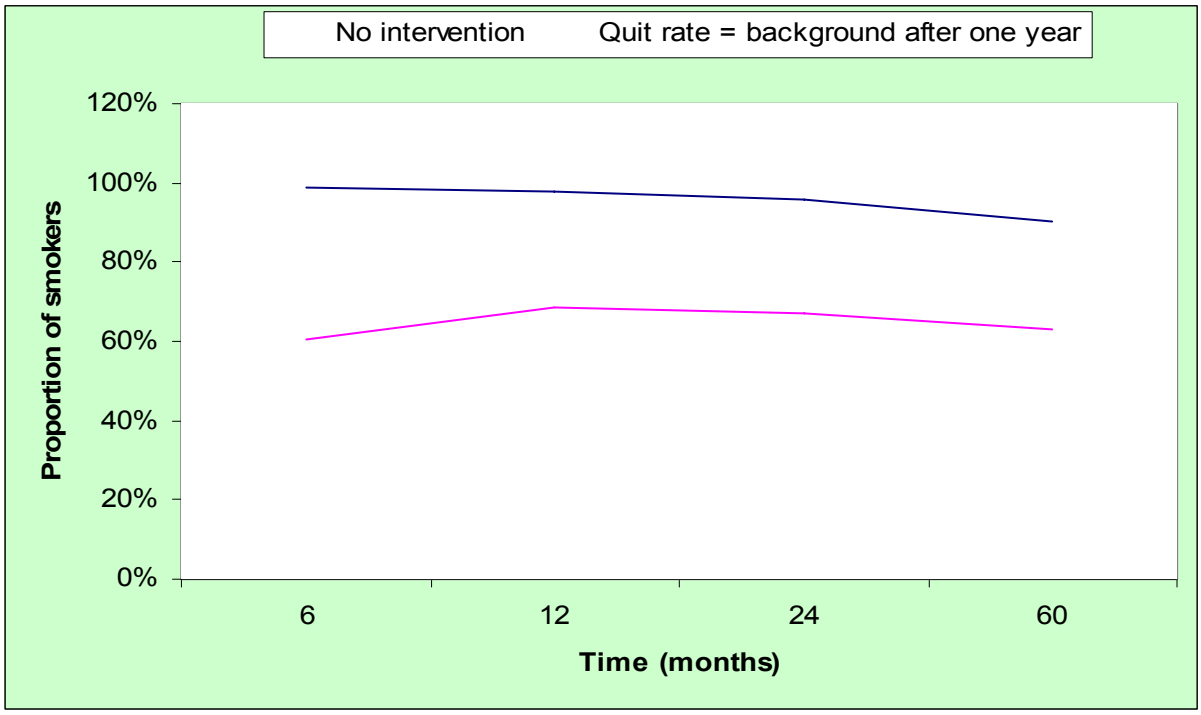


Table 2.11: 'MIC and bupropion'

'MIC and bupropion' (31%)	'No intervention'	Quit rate = background after one year
Costs	0	£120.21
Proportion of smokers:		
At 6 months	99%	60%
At 12 months	98%	69%
At 24 months	96%	67%
At 60 months	90%	63%

Figure 2.3: 'MIC and bupropion'



2.4.2 NHS and Workplace

Parrott *et al.* 1998 [5] described the one-year cessation rates and cost per smoker associated with the following interventions:

- 'BA':
  - Three minutes of a GPs time.
- 'BA plus self-help material':
  - Four minutes of a GPs time;
  - Self-help material.
- 'BA plus self help material plus NRT':
  - Seven minutes of a GPs time;
  - Self-help material;
  - NRT (60.48 units).
- 'BA plus self-help material plus NRT plus specialist clinic':
  - Four minutes of a GPs time;
  - Self-help material;
  - NRT (60.48 units);
  - Clinic costs (include the cost of a nurse specialist, room costs and running costs).

Information regarding the cost components of the intervention was provided by Parrott. This was used to calculate the costs of the interventions using the BNF and Curtis and Netten [25; 29]. A sensitivity analysis was run where the costs of the intervention, to the employer, were assumed to be zero and it was assumed that employers might not incur the cost of

treatment. This is a conservative assumption as the employer might instead allow staff time off to recompense them for using their own time, which would have an associated cost.

There is an issue of the generalisability of the interventions identified within the Parrott study. Whilst the interventions identified are not specifically delivered within the workplace there is no information to suggest that the interventions described in the Parrott paper could not be provided within the workplace.

The impact that these assumptions have on the proportion smoking at different time points are shown in the following Tables and Figures.

Table 2.12: 'BA'

'BA', annual cessation 3%	'No intervention'	Quit rate = background after one year
Costs	0	£7.14
Proportion of smokers:		
At 6 months	99%	96%
At 12 months	98%	97%
At 24 months	96%	95%
At 60 months	90%	89%

Figure 2.4: 'BA'

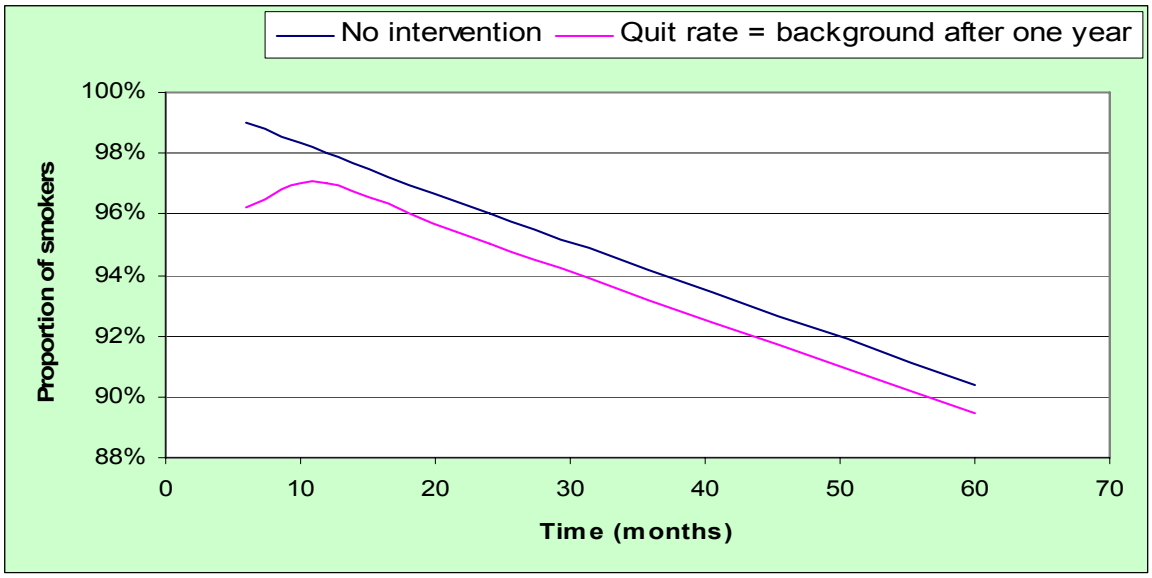


Table 2.13: 'BA plus self-help material'

'BA plus self-help material', annual cessation 4%	'No intervention'	Quit rate = background after one year
Costs	0	10.67
Proportion of smokers:		
At 6 months	99%	95%
At 12 months	98%	96%
At 24 months	96%	94%
At 60 months	90%	89%

Figure 2.5: 'BA plus self-help material'

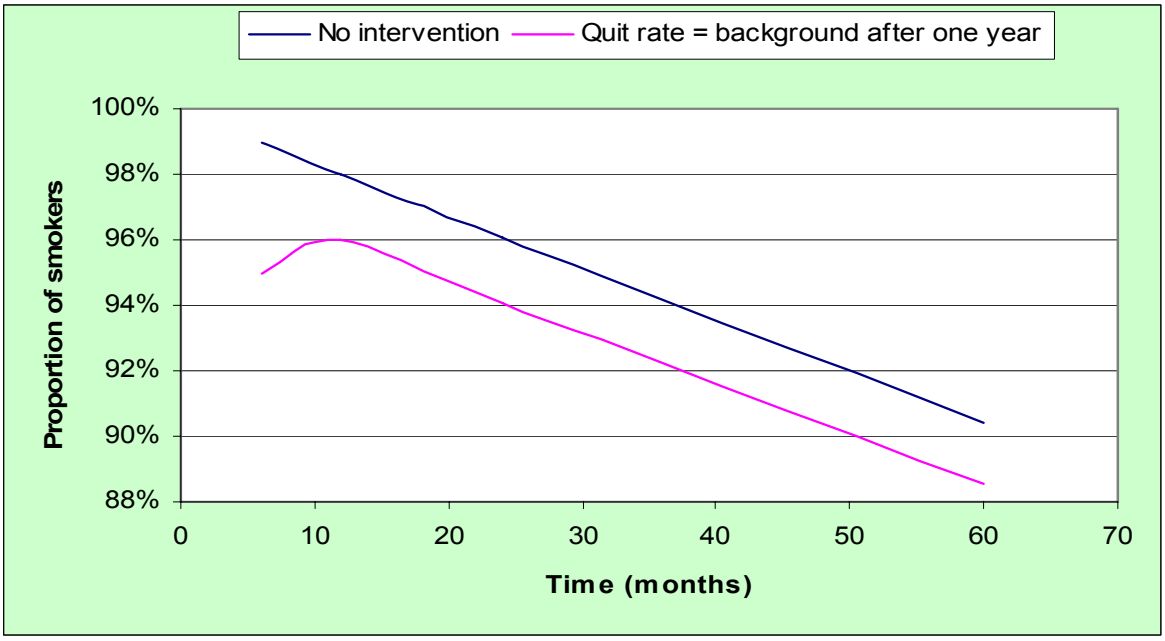


Table 2.14: 'BA plus self help material plus NRT'

Advice plus self-help material plus advice for NRT, annual cessation 6%	'No intervention'	Quit rate = background after one year
Costs	0	£111.10
Proportion of smokers:		
At 6 months	99%	92%
At 12 months	98%	94%
At 24 months	96%	92%
At 60 months	90%	87%

Figure 2.6: 'BA plus self help material plus NRT'

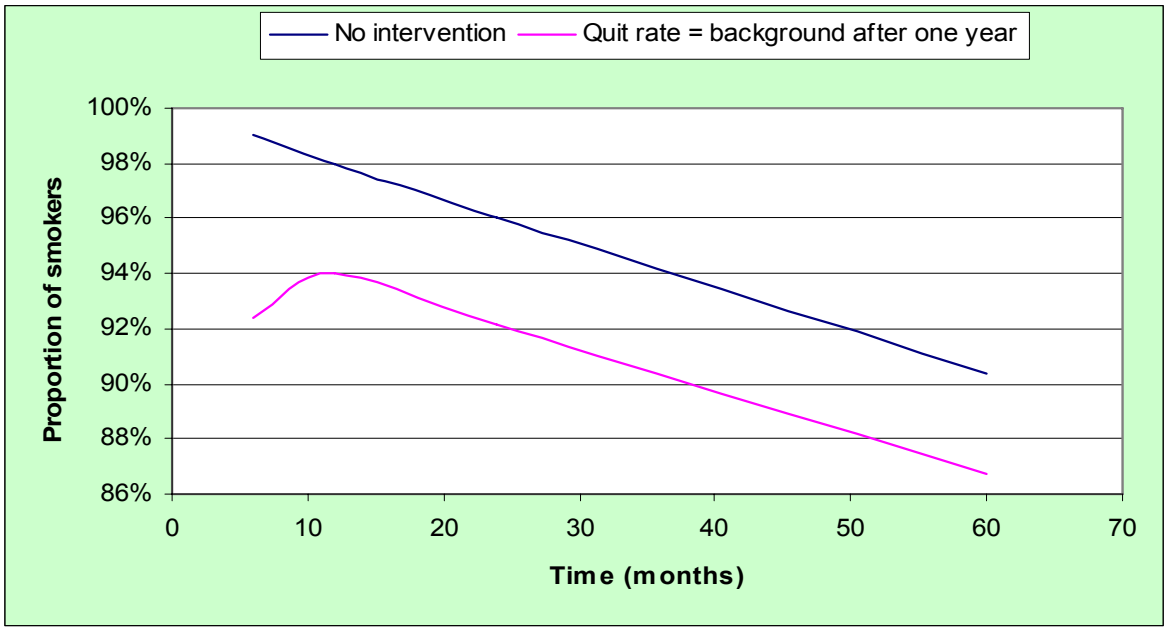
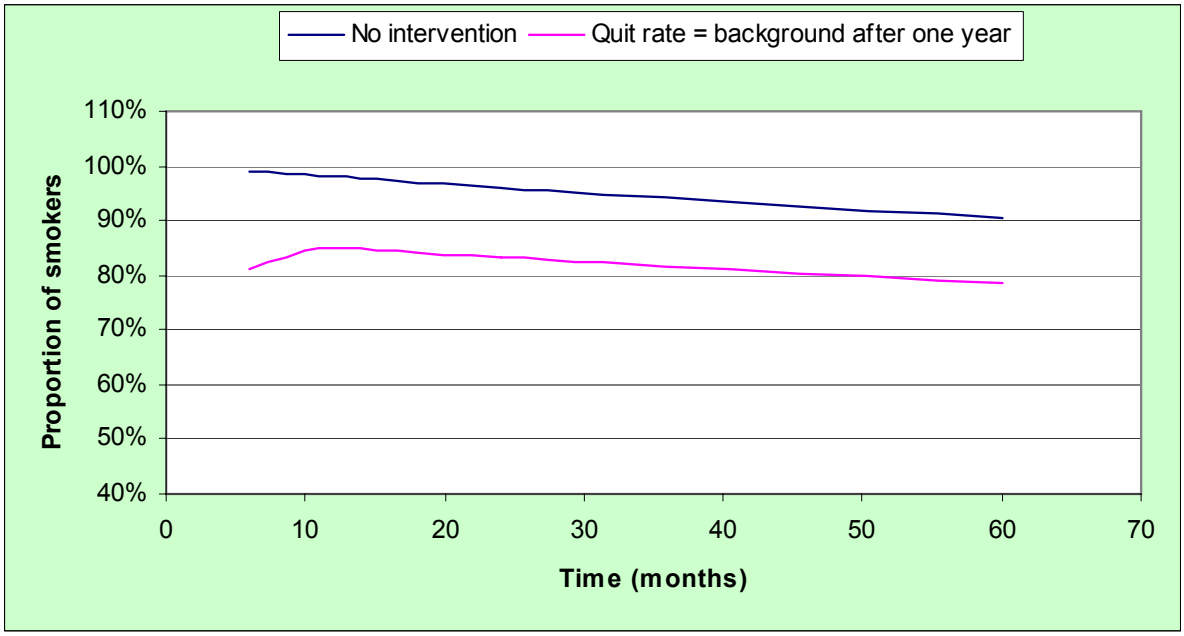


Table 2.15: 'BA plus self-help material plus NRT plus specialist clinic'

'BA plus self-help material plus NRT plus specialist clinic', annual cessation 15%	'No intervention'	Quit rate = background after one year
Costs	0	£122.96
Proportion of smokers:		
At 6 months	99%	81%
At 12 months	98%	85%
At 24 months	96%	83%
At 60 months	90%	78%

Figure 2.7: 'BA plus self-help material plus NRT plus specialist clinic'



2.4.3 Pharmacist-Based Interventions

McGhan & Smith (1996) identified several interventions using pharmacy-based methods to aid smoking cessation [30]. For the purposes of this analysis, the following interventions have been included:

- 'Nicotine patch and weekly group counselling' (NP-GC);
  - NRT for five weeks (35 patches at £1.30)
  - Five group visits (£19.46 each)
- 'Nicotine patch and weekly individual counselling' (NP-IC);
  - NRT for five weeks (35 patches at £1.30)
  - Five clinic visits (£10.00 each)
- 'Nicotine patch and no counselling' (NP-NC);
  - NRT for five weeks (35 patches at £1.30)
- 'Nicotine patch and pharmacist consultation (NP-PC);
  - NRT for five weeks (35 patches at £1.30)
  - Five pharmacists consultations (£47.00 each)
- 'Nicotine patch, pharmacist consultation and comprehensive behavioural program (NP-PCBP);
  - NRT for five weeks (35 patches at £1.30)
  - Five pharmacists consultations (£47.00 each)
  - Five behavioural clinic visits (£19.46 each).

Table 2.16, below, details the costs and effectiveness parameters for each of the interventions. Quit rates were estimated for each of the interventions below (stated to be ≥6 months). Relapse between months six and twelve, was assumed to be 21% (i.e. of the quitters at six months, 21% were assumed to begin smoking again by the end of the first year). Subsequent quitting was assumed to be equal to the background cessation rate.

Table 2.16: One-year cessation and costs (McGhan)

Intervention	≥6-month cessation	Total costs per employee	Source of costs
NP-GC	26%	£142.78	[25; 29]
NP-IC	20%	£95.50	[25; 29]
NP-NC	15%	£45.50	[25; 29]
NP-PC	31%	£280.50	[25; 29]
NP-PCBP	44%	£377.78	[25; 29]

The impact these assumptions have on the proportion of smokers at different time points are shown in the following Tables and Figures.

Table 2.17: 'NP-GC'

	No intervention	Quit rate = background after one year
Annual cost per patient	0	£142.78
Proportion of smokers:		
At 6 months	99%	74%
At 12 months	98%	79%
At 24 months	96%	78%
At 60 months	90%	73%

Figure 2.8: 'NP-GC'

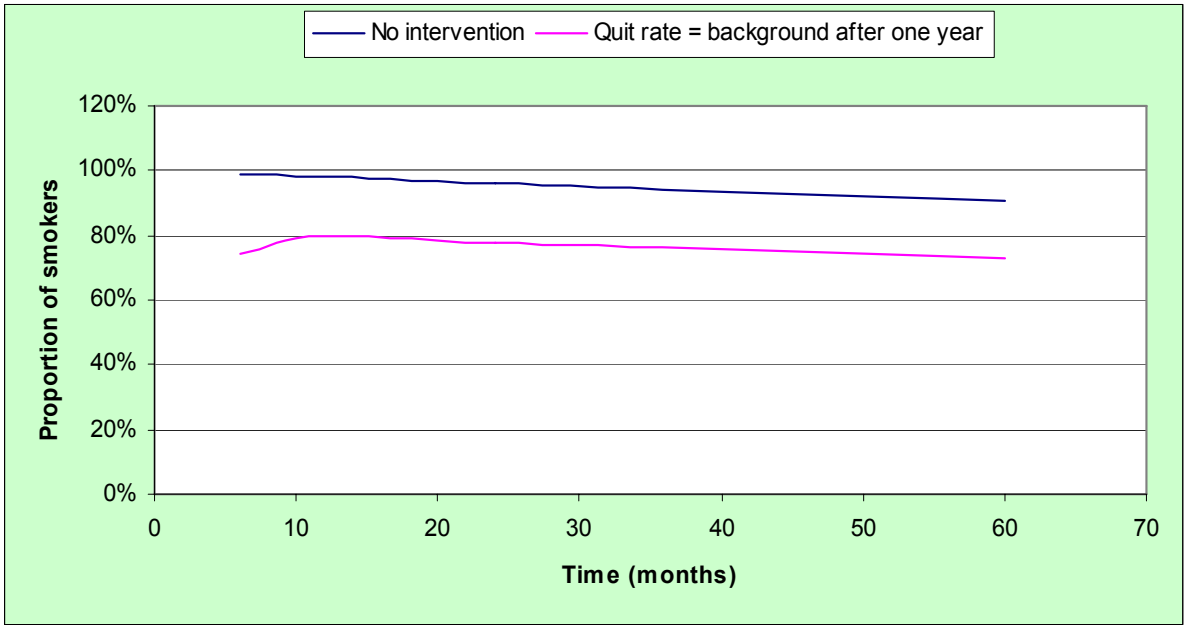


Table 2.18: 'NP-IC': intervention quit rate 16%, background quit rate 2%

	No intervention	Quit rate = background after one year
Annual cost per patient	0	£95.50
Proportion of smokers:		
At 6 months	99%	80%
At 12 months	98%	84%
At 24 months	96%	83%
At 60 months	90%	78%

Figure 2.9: 'NP-IC'

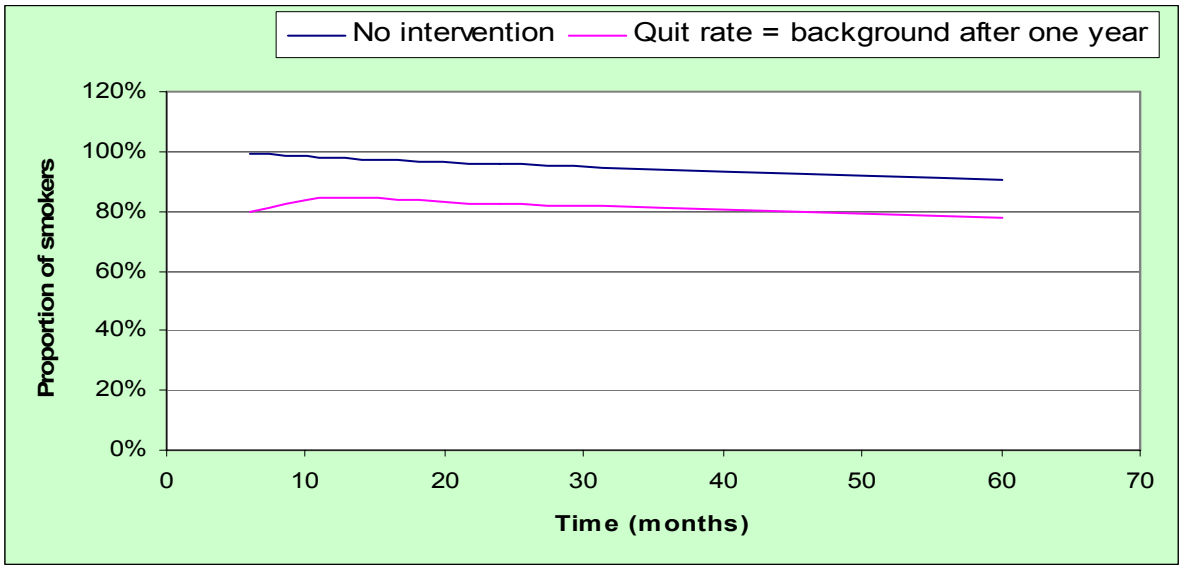


Table 2.19: 'NP-NC': intervention quit rate 12%, background quit rate 2%

	No intervention	Quit rate = background after one year
Annual cost per patient	0	£45.50
Proportion of smokers:		
At 6 months	99%	85%
At 12 months	98%	88%
At 24 months	96%	86%
At 60 months	90%	81%

Figure 2.10: 'NP-NC'

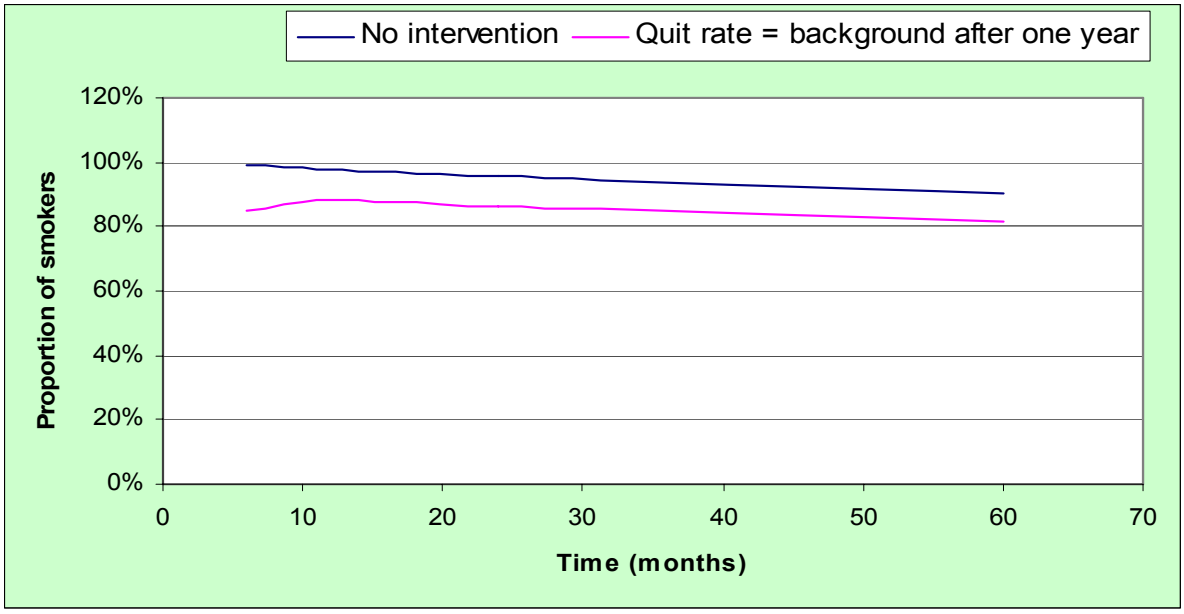


Table 2.20: 'NP-PC': intervention quit rate 24%, background quit rate 2%

	No intervention	Quit rate = background after one year
Annual cost per patient	0	£280.50
Proportion of smokers:		
At 6 months	99%	69%
At 12 months	98%	76%
At 24 months	96%	74%
At 60 months	90%	70%

Figure 2.11: 'NP-PC'

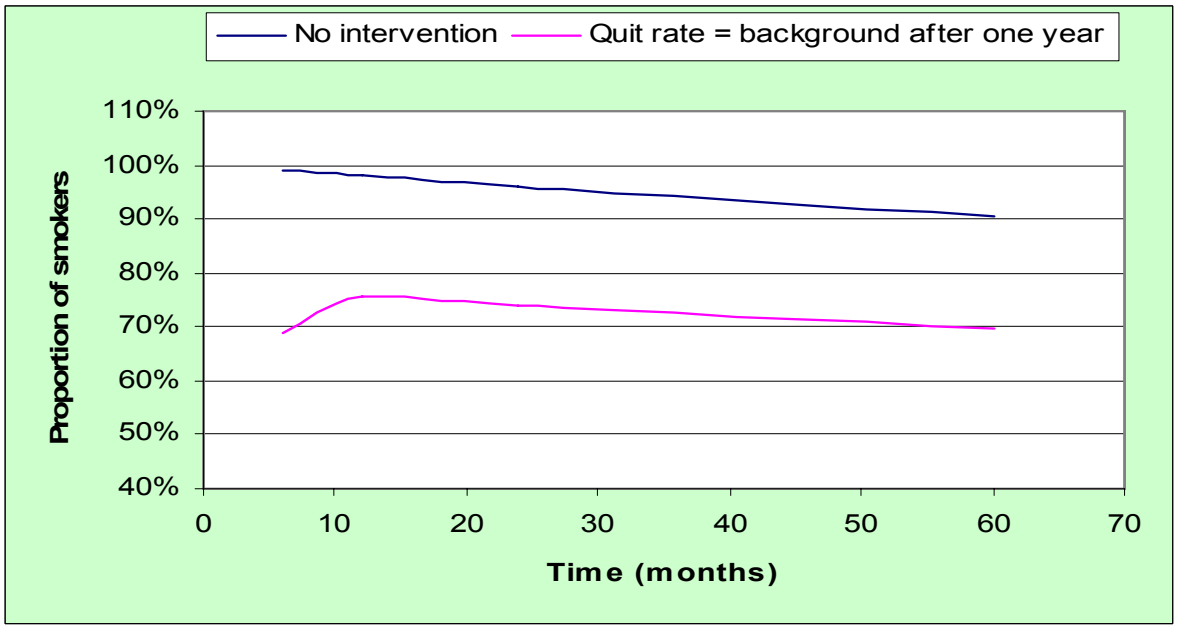
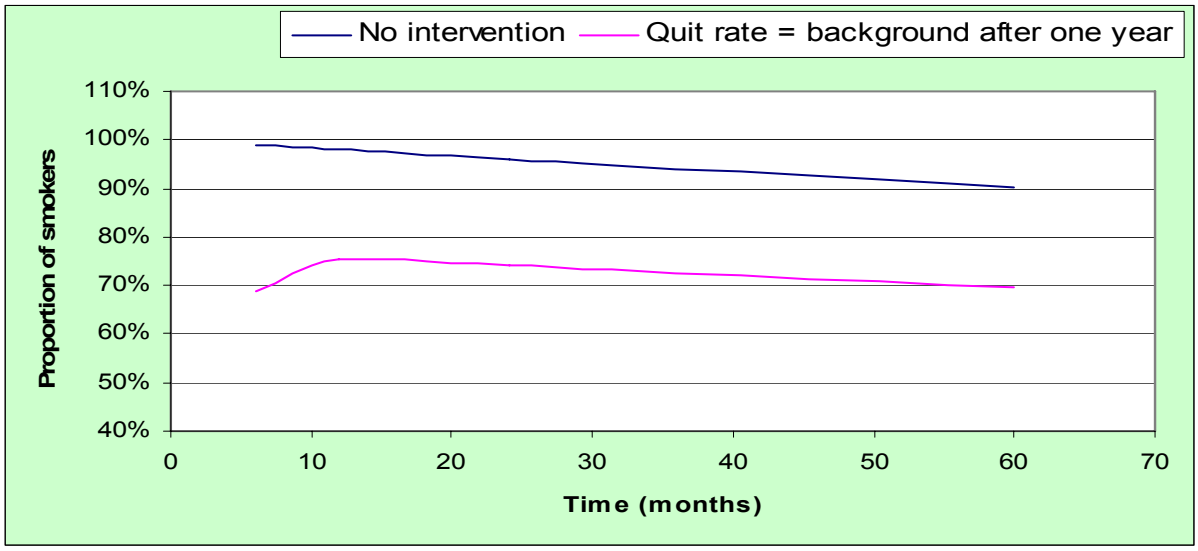


Table 2.21: 'NP-PCBP': intervention quit rate 35%, background quit rate 2%

	No intervention	Quit rate = background after one year
Annual cost per patient	0	£377.78
Proportion of smokers:		
At 6 months	99%	56%
At 12 months	98%	65%
At 24 months	96%	64%
At 60 months	90%	60%

Figure 2.12: 'NP-PCBP'



2.4.4 Mass Media

Mass media campaigns (including 'No Smoking Day') seek to achieve a range of positive outcomes including influencing public opinion and social norms around smoking, generating national and local publicity and action on smoking as well as encouraging and supporting smokers to stop smoking. These campaigns do not lend themselves to an assessment of cost effectiveness using the model that has been developed here for examining interventions with a single outcome. Assessing the cost-effectiveness of mass media campaigns will require a model that allows for complex interactions and subtleties.

2.5 NO INTERVENTION

The analysis was run for two different background quit rates of 1.2% and 2%. The base case analysis uses a 2% background quit rate, with an alternative analysis using the 1.2% rate, the results of which are discussed in the sensitivity analysis [31; 32].

2.6 ECONOMIC EVALUATION

Cost-effectiveness models are used to assess the relative benefits of a given treatment using patient outcomes and the costs incurred in achieving those outcomes. The calculation of the additional cost per additional unit gain of benefit (i.e. QALYs) is known as the

incremental analysis and results are presented as incremental cost-effectiveness ratios (ICERs).

After incremental costs and QALYs were estimated, the ICERs were calculated using the following formula:

$$ICER = \frac{Cost_{\text{int}ervention} - Cost_{Comparator}}{Effect_{\text{int}ervention} - Effect_{Comparator}}$$

The incremental cost per QALY were calculated for all the interventions modelled.

2.7 DISCOUNTING

Costs and outcomes were discounted at 3.5% per year.

2.8 SENSITIVITY ANALYSIS

Sensitivity analysis was carried out to examine the impact on cost-effectiveness of reducing the background quit rate to 1.2% and reducing the costs of the interventions to zero.

Section 3: Results

3.1 BASE CASE RESULTS

Table 3.1 provides the lifetime costs and QALYS, per person, associated with each intervention, using a 2% background rate.

All the interventions, apart from 'BA plus self help material plus NRT', result in decreased costs and increased QALYS compared to 'no intervention'.

The lifetime costs include all medical costs that are incorporated in the model. As such, they include not only the cost of the intervention, but other costs such as treatment and co-morbidities. Therefore, the cost of 'no intervention' is quite substantial, since rates of complications are likely to be high. The results refer to the 'average' smoker included in the model. The results are, therefore, a weighted average cost and QALY for each patient in the 1,000 cohort.

Table 3.1: Base case results

	Background cessation = 2%	
	Cost	**QALY**
'No intervention'	£7,232	11.90
'BA' (3%)	£7,221	11.91
'BA plus self-help material' (4%)	£7,206	11.92
'BA plus self help material plus NRT' (6%)	£7,268	11.94
'BA plus self-help material plus NRT plus specialist clinic' (15%)	£7,118	12.02
'LIC and bupropion' (24%)	£6,920	12.10
'MIC and bupropion' (31%)	£6,818	12.17
'NP-GC' (21%)	£7,037	12.07
'NP-IC' (16%)	£7,076	12.03
'NP-NC' (12%)	£7,098	11.99
'NP-PC' (24%)	£7,100	12.10
'NP-PCBP' (35%)	£7,010	12.20

3.2 COMPARING THE INTERVENTIONS TO 'NO INTERVENTION' OR 'BA'

Table 3.2 shows the results of comparing each intervention to 'no intervention'. All interventions lead to a reduction in the number of smokers, fewer co-morbidities and more QALYs compared to 'no intervention'. All interventions, apart from 'BA plus self help material plus NRT', result in a lower cost compared to 'no intervention'. 'BA plus self help material plus NRT' has a high cessation rate with an ICER value of £984.

Table 3.2: Comparing the interventions to 'no intervention'

Compared to 'no intervention'	Background cessation = 2%		
	Incremental cost	Incremental QALY	ICER
'BA' (3%)	-£12	0.01	Dominant
'BA plus self-help material' (4%)	-£26	0.02	Dominant
'BA plus self help material plus NRT' (6%)	£36	0.04	£984
'BA plus self-help material plus NRT plus specialist clinic' (15%)	-£115	0.12	Dominant
'LIC and bupropion' (24%)	-£312	0.19	Dominant
'MIC and bupropion' (31%)	-£414	0.26	Dominant
'NP-GC' (21%)	-£196	0.17	Dominant
'NP-IC' (16%)	-£156	0.12	Dominant
'NP-NC' (12%)	-£134	0.09	Dominant
'NP-PC' (24%)	-£132	0.20	Dominant
'NP-PCBP' (35%)	-£222	0.30	Dominant

Table 3.3 shows the analysis of each intervention compared to 'BA'. Here only the 'BA plus self help material plus NRT' intervention results in more costs than 'BA'.

Table 3.3: Comparing the interventions to 'BA'

Compared to 'BA'	Background cessation = 2%		
	Incremental cost	Incremental QALY	ICER
'BA plus self-help material' (4%)	-£15	0.01	Dominant
'BA plus self help material plus NRT' (6%)	£48	0.03	£1,768
'BA plus self-help material plus NRT plus specialist clinic' (15%)	-£103	0.11	Dominant
'LIC and bupropion' (24%)	-£300	0.19	Dominant
'MIC and bupropion' (31%)	-£402	0.26	Dominant
'NP-GC' (21%)	-£184	0.16	Dominant
'NP-IC' (16%)	-£145	0.12	Dominant
'NP-NC' (12%)	-£122	0.08	Dominant
'NP-PC' (24%)	-£120	0.19	Dominant
'NP-PCBP' (35%)	-£210	0.29	Dominant

3.3 SUMMARY OF RESULTS

Table 3.4 provides a summary of the main results.

Table 3.4: Summary of results- Excess absence = 16 hours a cycle

Compared to 'no intervention'	Effectiveness	Duration of intervention	Inc. cost	Inc. QALY	ICER
'BA'	3%	Three minutes of a GPs time.	-£12	0.01	Dominant
'BA plus self-help material'	4%	Four minutes of a GPs time; self-help material.	-£26	0.02	Dominant
'BA plus self help material plus NRT'	6%	Seven minutes of a GPs time; self-help material; NRT.	£36	0.04	£984
'BA plus self-help material plus NRT plus specialist clinic'	15%	Four minutes of a GPs time; self-help material; NRT; clinic costs.	-£115	0.12	Dominant
'LIC and bupropion'	24%	8 weeks of bupropion; self-help material; 5-10min scripted call.	-£312	0.19	Dominant
'MIC and bupropion'	31%	8 weeks of bupropion; self-help material, five calls with smoking specialist.	-£414	0.26	Dominant
'NP-GC'	21%	NRT for five weeks, five group visits.	-£196	0.17	Dominant
'NP-IC'	16%	NRT for five weeks, five clinic visits.	-£156	0.12	Dominant
'NP-NC'	12%	NRT for five weeks.	-£134	0.09	Dominant
'NP-PC'	24%	NRT for five weeks, five pharmacist consultations.	-£132	0.20	Dominant
'NP-PCBP'	35%	NRT for five weeks, five pharmacist, consultations, five behavioural clinic visits.	-£222	0.30	Dominant

3.4 INCREMENTAL ANALYSIS

Incremental analysis would normally be carried out to compare each intervention to the 'next best' intervention in terms of the total costs and QALYs. However, the 'MIC and bupropion' intervention is the cheapest and the most effective intervention and therefore assuming that the interventions are mutually exclusive it dominates all the other interventions. If the NHS only interventions are examined then 'NP-PCBP' is the cheapest and the most effective intervention and therefore assuming that the interventions are mutually exclusive it dominates all the other NHS interventions.

3.5 SENSITIVITY ANALYSIS

The results of the following sensitivity analysis are shown in Appendix I and J.

Background quit rate is 1.2%

Reducing the background cessation rate to 1.2% but keeping everything else the same led to similar results as presented in the base case. All interventions apart from the 'BA plus self help material plus NRT' intervention dominate 'no intervention'. 'BA plus self help material plus NRT' has an ICER of £226. Compared to 'BA' the results follow the same pattern as in the base case analysis.

Background quit rate is 2%, costs of the intervention are zero

When the costs of the interventions are assumed to be zero all the interventions are dominant when compared to 'no intervention' or 'BA' (the interventions are less costly and result in more QALYs).

Section 4: Discussion and Conclusions

4.1 MAIN FINDINGS AND CONCLUSIONS

This analysis considers five interventions. Interventions that have a low cost and a low cessation rate dominate 'no intervention'. Interventions with a higher cost and high cessation rate only dominate 'no intervention'. The cost per QALY of each of the interventions was low (maximum = £984).

4.2 LIMITATIONS

There are a number of limitations inherent within the model. Due to a lack of data on the relative risk of having each co-morbidity by smoking status it was not possible to 'spilt' former smokers into 'recent' and 'long-term' categories. It is unclear what the impact of this simplification will have on the model's results. If the probability of developing some or all of the co-morbidities returns to the level found in non-smokers after a certain period of time the model will have overestimated the number of people with each co-morbidity. This in-turn may have resulted in an overestimation of the associated costs and an underestimation of the associated QALYs.

Within the model it is assumed that smokers attempt one type of cessation intervention and only try it once. In 'real life' smokers who fail to quit with one intervention may:

- Be more likely to repeat the intervention successfully;
- Go on to try a number of different smoking cessation interventions.

The effectiveness of the interventions were taken from published studies and may not be generalisable to the general population.

4.3 OTHER STUDIES

The results of this study are consistent with the results of other economic evaluations of smoking cessation interventions. Smoking cessation interventions have been shown to result in greater benefits at lower or marginally higher costs than 'no intervention' or 'BA'. Smoking cessation interventions that model NRT and bupropion have been shown to be more cost-effective than counselling alone. With incremental cost-effectiveness ratios (cost per life year saved) of between £800 and £3,500 (2006 £), when compared to counselling alone [33]. An annual background cessation rate of 2.5% along with a 35% lifetime probability of relapse after one-year abstinence was used in the analysis. Song *et al.* 2002 [34], using a background quit rate of 1%, evaluated the cost-effectiveness of bupropion and NRT for smoking cessation. The costs and effectiveness of the interventions used were similar to those in the Parrott study (the annual quit rate for advice alone was 4% and for counselling was 10%; the costs of the interventions ranged from £4 for BA to £194 for

counselling plus NRT and bupropion SR). The incremental costs per life year saved compared to advice or counselling alone ranged from £774-1,687 (2006 £).

In an economic analysis to determine the cost-effectiveness of smoking interventions in the Netherlands, Feenstra *et al*. 2005 [35] investigated five face-to-face interventions compared to current practice for smoking cessation advice offered by GPs (using 2000 euros). The results are shown in Table 4.1. Details of the interventions are as follows:

- 'Minimal counselling', lasting 12 minutes, provided by a GP;
- 'Minimal GP counselling plus NRT';
- 'Intensive counselling plus NRT';
- 'Intensive counselling plus bupropion';
- 'Telephone counselling'.

Compared to current practice 'minimal counselling' was a dominant intervention, generating both gains in QALYs and life years, with lower costs. The incremental cost per QALY gained of the other interventions when using a 75-year time horizon ranged from €1,100 (£758) for the 'telephone counselling' to €4,900 (£3,377) for the 'intensive counselling plus NRT'. All five interventions were cost-effective compared to current practice. The minimal GP counselling was also shown to be a dominant intervention, compared to current practice, when a one-year and ten-year implementation time horizon was used. Our results cost-effectiveness results are slightly lower than those found here. The 'minimal counselling plus NRT' is the most similar to the 'BA plus self help material plus NRT' intervention used in our model. Table 4.1 compares these two interventions, showing that the slight differences in our results could be due to a lower intervention cessation rate and/or lower comparator costs.

Table 4.1: Minimal counselling plus NRT' and 'BA plus self help material plus NRT'

	Feenstra		Our model	
	Intervention	**Comparator**	**Intervention**	**Comparator**
	'Minimal counselling plus NRT'	**Current practice**	**'BA plus self help material plus NRT'**	**'BA'**
Annual cessation (%)	12.7	3.5	6	3
Cost of the intervention (2006 £)	30	111	111	2
Incremental cost per QALY (2006 £)	965		984	

4.4 SUMMARY

Our model shows that all the interventions studied are cost-effective when compared to 'no intervention' or 'BA'. Interventions that have a low cost and a low cessation rate dominate 'no intervention'. Interventions with a higher cost and high cessation rate dominate 'no intervention'. The cost per QALY of each of the interventions was low, when compared to 'no intervention. This supports the position as shown in other papers.

The ‘MIC and bupropion’ intervention is the cheapest and the most effective intervention and therefore assuming that the interventions are mutually exclusive it dominates all the other interventions.

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APPENDIX A

Population Weights

Table A.1: Population weights

Age	Total	Male	Female
16	0.87%	0.43%	0.44%
17	0.87%	0.43%	0.44%
18	0.87%	0.43%	0.44%
19	0.87%	0.43%	0.44%
20	0.87%	0.43%	0.44%
21	0.87%	0.43%	0.44%
22	0.87%	0.43%	0.44%
23	0.87%	0.43%	0.44%
24	0.87%	0.43%	0.44%
25	1.85%	0.93%	0.93%
26	1.85%	0.93%	0.93%
27	1.85%	0.93%	0.93%
28	1.85%	0.93%	0.93%
29	1.85%	0.93%	0.93%
30	2.10%	1.05%	1.05%
31	2.10%	1.05%	1.05%
32	2.10%	1.05%	1.05%
33	2.10%	1.05%	1.05%
34	2.10%	1.05%	1.05%
35	2.09%	1.03%	1.05%
36	2.09%	1.03%	1.05%
37	2.09%	1.03%	1.05%
38	2.09%	1.03%	1.05%
39	2.09%	1.03%	1.05%
40	1.84%	0.92%	0.92%
41	1.84%	0.92%	0.92%
42	1.84%	0.92%	0.92%
43	1.84%	0.92%	0.92%
44	1.84%	0.92%	0.92%
45	1.69%	0.84%	0.85%
46	1.69%	0.84%	0.85%
47	1.69%	0.84%	0.85%
48	1.69%	0.84%	0.85%
49	1.69%	0.84%	0.85%
50	1.83%	0.91%	0.92%
51	1.83%	0.91%	0.92%
52	1.83%	0.91%	0.92%
53	1.83%	0.91%	0.92%
54	1.83%	0.91%	0.92%
55	1.48%	0.73%	0.75%
56	1.48%	0.73%	0.75%
57	1.48%	0.73%	0.75%
58	1.48%	0.73%	0.75%
59	1.48%	0.73%	0.75%
60	1.31%	0.64%	0.67%
61	1.31%	0.64%	0.67%
62	1.31%	0.64%	0.67%
63	1.31%	0.64%	0.67%
64	1.31%	0.64%	0.67%
65	1.18%	0.56%	0.61%
66	1.18%	0.56%	0.61%
67	1.18%	0.56%	0.61%

68	1.18%	0.56%	0.61%
69	1.18%	0.56%	0.61%
70	1.06%	0.48%	0.58%
71	1.06%	0.48%	0.58%
72	1.06%	0.48%	0.58%
73	1.06%	0.48%	0.58%
74	1.06%	0.48%	0.58%
75	0.92%	0.38%	0.54%
76	0.92%	0.38%	0.54%
77	0.92%	0.38%	0.54%
78	0.92%	0.38%	0.54%
79	0.92%	0.38%	0.54%
80	0.57%	0.21%	0.36%
81	0.57%	0.21%	0.36%
82	0.57%	0.21%	0.36%
83	0.57%	0.21%	0.36%
84	0.57%	0.21%	0.36%
85	0.35%	0.10%	0.24%
86	0.35%	0.10%	0.24%
87	0.35%	0.10%	0.24%
88	0.35%	0.10%	0.24%
89	0.35%	0.10%	0.24%
90	0.08%	0.02%	0.06%
91	0.08%	0.02%	0.06%
92	0.08%	0.02%	0.06%
93	0.08%	0.02%	0.06%
94	0.08%	0.02%	0.06%
95	0.08%	0.02%	0.06%
96	0.08%	0.02%	0.06%
97	0.08%	0.02%	0.06%
98	0.08%	0.02%	0.06%
99	0.08%	0.02%	0.06%
100	0.08%	0.02%	0.06%
Total	**100.00%**	**48.00%**	**52.00%**

APPENDIX B

Additional Search Strategies

B.1 PRODUCTIVITY LOSSES AND ABSENTEEISM

MEDLINE and In-Process MEDLINE. 2000-2006/Sep week 3. Searched 2nd October 2006

1. Smoking/
2. (smoke or smoker or smokers or smoking).ti,ab.
3. (tobacco or cigar$).ti,ab.
4. or/1-3
5. ((loss$ or lost or reduc$) adj3 productivity).ti,ab.
6. ((loss$ or lost or reduc$) adj3 output$).ti,ab.
7. 5 or 6
8. 4 and 7
9. Absenteeism/
10. Sick Leave/
11. (sick$ adj3 (certificat$ or absence or leave or work)).ti,ab.
12. absenteeism.ti,ab.
13. or/9-12
14. 4 and 13
15. 8 or 14

EMBASE. 2000-2006/week 39. Searched 2nd October 2006

1. SMOKING/
2. (smoke or smoker or smokers or smoking).ti,ab.
3. (tobacco or cigar$).ti,ab.
4. or/1-3
5. PRODUCTIVITY/
6. ((loss$ or lost or reduc$) adj3 productivity).ti,ab.
7. ((loss$ or lost or reduc$) adj3 output$).ti,ab.
8. or/5-7
9. 4 and 8
10. ABSENTEEISM/
11. Medical Leave/
12. (sick$ adj3 (certificat$ or absence or leave or work)).ti,ab.
13. absenteeism.ti,ab.
14. or/10-13
15. 4 and 14
16. 9 or 15

CINAHL. 2000-2006/Sep week 4. Searched 2nd October 2006

1. SMOKING/
2. (smoke or smoker or smokers or smoking).ti,ab.
3. (tobacco or cigar$).ti,ab.
4. or/1-3
5. ((loss$ or lost or reduc$) adj3 productivity).ti,ab.
6. ((loss$ or lost or reduc$) adj3 output$).ti,ab.
7. PRODUCTIVITY/
8. or/5-7
9. 4 and 8
10. ABSENTEEISM/
11. Sick Leave/
12. (sick$ adj3 (certificat$ or absence or leave or work)).ti,ab.
13. absenteeism.ti,ab.
14. or/10-13

15. 4 and 14
16. 9 or 15

Health Management Information Consortium (HMIC). 2000-2006/Sep. Searched 2nd October 2006

1. exp SMOKING/
2. (smoke or smoker or smokers or smoking).ti,ab.
3. (tobacco or cigar$).ti,ab.
4. or/1-3
5. exp PRODUCTIVITY/
6. ((loss$ or lost or reduc$) adj3 productivity).ti,ab.
7. ((loss$ or lost or reduc$) adj3 output$).ti,ab.
8. or/5-7
9. 4 and 8
10. exp ABSENTEEISM/
11. exp SICK LEAVE/
12. (sick$ adj3 (certificat$ or absence or leave or work)).ti,ab.
13. absenteeism.ti,ab.
14. or/10-13
15. 4 and 14
16. 9 or 15

NHS Economic Evaluation Database (NHS EED). CRD internal database. 2000-2006/Sep. Searched 2nd October 2006

s smoke or smoker or smokers or smoking
s tobacco or cigar$
s s1 or s2
s (loss$ or lost or reduc$)(w3)productivity
s (loss$ or lost or reduc$)(w3)output$
s s4 or s5
s s3 and s6
s sick$(w3)(certificat$ or absence or leave or work)
s absenteeism
s s8 or s9
s s3 and s10

B.2 ANNUAL COSTS OF LUNG CANCER AND STROKE IN THE UK

Lung Cancer

Sanderson H, Spiro S. *Cancer of the lung*. In. Stevens A, Raftery J, Mant J, Simpson S. Health care needs assessment: the epidemiologically based needs assessment reviews: Volume 1. Second Edition. Abingdon: Radcliffe Publishing, 2004. p.503-548.

Stroke

Mant J, Wade D, Winner S. *Stroke*. In. Stevens A, Raftery J, Mant J, Simpson S. Health care needs assessment: the epidemiologically based needs assessment reviews: Volume 1. Second Edition. Abingdon: Radcliffe Publishing, 2004. p.141-244.

National Audit Office. *Reducing brain damage: faster access to better stroke care*. London: Stationery Office, 2005.

B.3 UTILITIES: MYOCARDIAL INFARCTION; CHRONIC OBSTRUCTIVE PULMONARY DISEASE; LUNG CANCER; CORONARY HEART DISEASE; AND STROKE

MEDLINE and In-Process MEDLINE. 1996-2006/Nov week 1. Searched 15th November 2006

1. exp Quality-Adjusted Life Years/
2. quality adjusted life year$.ti,ab.
3. qaly$.ti,ab.
4. (utility or utilities).ti,ab.
5. (preference or preferences).ti,ab.
6. (time adj2 trade).ti,ab.
7. standard gamble.ti,ab.
8. rating scale.ti,ab.
9. or/1-8
10. *Myocardial Infarction/
11. 9 and 10
12. *Pulmonary Disease, Chronic Obstructive/
13. 9 and 12
14. *Lung Neoplasms/
15. 9 and 14
16. *Coronary Disease/
17. 9 and 16
18. *Cerebrovascular Accident/
19. 9 and 18

EMBASE. 1996-2006/week 45. Searched 15th November 2006

1. exp quality adjusted life year/
2. quality adjusted life year$.ti,ab.
3. qaly$.ti,ab.
4. (utility or utilities).ti,ab.
5. (preference or preferences).ti,ab.
6. standard gamble.ti,ab.
7. rating scale.ti,ab.
8. or/1-7
9. *Heart Infarction/
10. 8 and 9
11. *Chronic Obstructive Lung Disease/
12. 8 and 11
13. *Lung Cancer/
14. 8 and 13
15. *Ischemic Heart Disease/
16. 8 and 15
17. *STROKE/
18. 8 and 17

NHS Economic Evaluation Database (NHS EED). CRD internal database. 2006/Oct. Searched 15th November 2006

s quality(w)adjusted(w)life(w)year$
s qaly$
s utility or utilities
s preference or preferences
s time(w2)trade
s standard(w)gamble
s rating(w)scale
s s1 or s2 or s3 or s4 or s5 or s6 or s7
s myocardial(w)infarct$
s s8 and s9
s chronic(w)obstructive(w)pulmonary(w)disease$ or COPD
s s8 and s11
s lung(w)(cancer$ or neoplasm$)
s s8 and s13
s coronary(w2)disease or CHD
s s8 and s15
s stroke
s s8 and s17

Health Economic Evaluation Database (HEED). CD-ROM. September 2006. Searched 15th November 2006

AX=(quality adjusted life year) or (quality adjusted life years)
AX=qaly or qalys
AX= utility or utilities
AX=preference or preferences
AX=(time trade off)
AX=(standard gamble)
AX=(rating scale)
CS=1 or 2 or 3 or 4 or 5 or 6 or 7
AX=(myocardial infarction)
CS=8 and 9
AX=(chronic obstructive pulmonary disease) or COPD
CS=8 and 11
AX=(lung cancer) or (lung cancers) or (lung neoplasm) or (lung neoplasms)
CS=8 and 13
AX='coronary disease' within 2 OR CHD
CS=8 and 15
AX=stroke
CS=8 and 17

The Cost-Effectiveness (CEA) Registry. Internet. Comprehensive Table of Cost-Utility Ratios 2002-2003 and Comprehensive Table of Cost-Utility Ratios 1976-2001. Searched 15th November 2006

B.4 ASSOCIATION BETWEEN SMOKING AND COPD/STROKE: SEPARATED INTO CURRENT, FORMER AND NEVER SMOKERS

MEDLINE and In-Process MEDLINE. 1996-2006/Nov week 2. Searched 20th November 2006

1. Smoking/
2. (former$ and never and current$).ti,ab.
3. (smoking status).ti,ab.
4. 1 and (2 or 3)
5. Pulmonary Disease, Chronic Obstructive/
6. ((chronic adj2 pulmon$) or copd).ti,ab.
7. 5 or 6
8. 4 and 7
9. Cerebrovascular Accident/
10. stroke.ti,ab.
11. 9 or 10
12. 4 and 11

EMBASE. 1996-2006/week 46. Searched 20th November 2006

1. SMOKING/
2. (former$ and never and current$).ti,ab.
3. smoking status.ti,ab.
4. 1 and (2 or 3)
5. Chronic Obstructive Lung Disease/
6. ((chronic adj2 pulmon$) or copd).ti,ab.
7. 5 or 6
8. 4 and 7
9. STROKE/
10. stroke.ti,ab.
11. 9 or 10
12. 4 and 11

NHS Economic Evaluation Database (NHS EED). CRD internal database. 2006/Oct. Searched 20th November 2006

s smoking
s former$ and never and current$
s smoking(w)status
s s1 and (s2 or s3)
s chronic(w2)pulmon$ or copd
s s4 and s5
s stroke
s s4 and s7

Health Economic Evaluation Database (HEED). CD-ROM. October 2006. Searched 20th November 2006

AX=smoking
AX=(former and never and current)
AX=(smoking status)
CS=1 and (2 or 3)
AX='chronic pulmonary' within 2 OR COPD
CS=4 and 5
AX=stroke
CS=4 and 7

APPENDIX C

Male Mortality in the General Population

Table C.1: Male mortality in the general population

Age	Mortality
0	0.005709
1	0.000414
2	0.000243
3	0.000182
4	0.000145
5	0.000114
6	0.000122
7	0.000101
8	0.000106
9	0.000117
10	0.000106
11	0.000122
12	0.000142
13	0.000173
14	0.000192
15	0.000254
16	0.000321
17	0.000486
18	0.000644
19	0.000612
20	0.000738
21	0.000665
22	0.000778
23	0.000759
24	0.000716
25	0.000820
26	0.000786
27	0.000765
28	0.000815
29	0.000851
30	0.000923
31	0.000937
32	0.001037
33	0.001027
34	0.001052
35	0.001124
36	0.001217
37	0.001302
38	0.001279
39	0.001457
40	0.001595
41	0.001648
42	0.001822
43	0.002132
44	0.002144
45	0.002345
46	0.002623
47	0.002956
48	0.003201
49	0.003554
50	0.003901

Age	Mortality
51	0.004234
52	0.004641
53	0.004968
54	0.005386
55	0.005915
56	0.006354
57	0.007306
58	0.007891
59	0.008734
60	0.010033
61	0.010965
62	0.012447
63	0.013166
64	0.014799
65	0.016079
66	0.017600
67	0.019556
68	0.021774
69	0.024228
70	0.026342
71	0.029574
72	0.032947
73	0.036459
74	0.040973
75	0.045751
76	0.050710
77	0.056151
78	0.061724
79	0.069489
80	0.075742
81	0.083605
82	0.091501
83	0.097921
84	0.106861
85	0.118207
86	0.135494
87	0.148454
88	0.161954
89	0.175991
90	0.185602
91	0.200472
92	0.220085
93	0.239483
94	0.251598
95	0.280321
96	0.292331
97	0.310996
98	0.331163
99	0.345437
100	0.362748

APPENDIX D

Lung Cancer

Table D.1: Prevalence of lung cancer [15]

Age	Prevalence
0-44	0.00%
45-64	0.15%
65+	0.80%
All ages	0.14%

Table D.2: Relative risk of lung cancer by smoking status [16]

	Smoker	Former	Non
Men	1	0.44	0.03
Women	1	0.21	0.05

Table D.3: Prevalence of lung cancer by smoking status

	Men			Women		
Age	Smoker	Former smoker	Non	Smoker	Former smoker	Non
16	0.00007	0.00003	0.00000	0.00006	0.00001	0.00000
17	0.00007	0.00003	0.00000	0.00006	0.00001	0.00000
18	0.00007	0.00003	0.00000	0.00006	0.00001	0.00000
19	0.00007	0.00003	0.00000	0.00006	0.00001	0.00000
20	0.00007	0.00003	0.00000	0.00006	0.00001	0.00000
21	0.00007	0.00003	0.00000	0.00006	0.00001	0.00000
22	0.00007	0.00003	0.00000	0.00006	0.00001	0.00000
23	0.00007	0.00003	0.00000	0.00006	0.00001	0.00000
24	0.00007	0.00003	0.00000	0.00006	0.00001	0.00000
25	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
26	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
27	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
28	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
29	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
30	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
31	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
32	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
33	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
34	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
35	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
36	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
37	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
38	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
39	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
40	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
41	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
42	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
43	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
44	0.00005	0.00002	0.00000	0.00006	0.00001	0.00000
45	0.00383	0.00169	0.00012	0.00214	0.00045	0.00011
46	0.00383	0.00169	0.00012	0.00214	0.00045	0.00011
47	0.00383	0.00169	0.00012	0.00214	0.00045	0.00011
48	0.00383	0.00169	0.00012	0.00214	0.00045	0.00011

	Men			Women		
Age	**Smoker**	**Former smoker**	**Non**	**Smoker**	**Former smoker**	**Non**
49	0.00383	0.00169	0.00012	0.00214	0.00045	0.00011
50	0.00383	0.00169	0.00012	0.00214	0.00045	0.00011
51	0.00383	0.00169	0.00012	0.00214	0.00045	0.00011
52	0.00383	0.00169	0.00012	0.00214	0.00045	0.00011
53	0.00383	0.00169	0.00012	0.00214	0.00045	0.00011
54	0.00383	0.00169	0.00012	0.00214	0.00045	0.00011
55	0.00384	0.00169	0.00012	0.00241	0.00051	0.00012
56	0.00384	0.00169	0.00012	0.00241	0.00051	0.00012
57	0.00384	0.00169	0.00012	0.00241	0.00051	0.00012
58	0.00384	0.00169	0.00012	0.00241	0.00051	0.00012
59	0.00384	0.00169	0.00012	0.00241	0.00051	0.00012
60	0.00384	0.00169	0.00012	0.00241	0.00051	0.00012
61	0.00384	0.00169	0.00012	0.00241	0.00051	0.00012
62	0.00384	0.00169	0.00012	0.00241	0.00051	0.00012
63	0.00384	0.00169	0.00012	0.00241	0.00051	0.00012
64	0.00384	0.00169	0.00012	0.00241	0.00051	0.00012
65	0.02236	0.00984	0.00067	0.01007	0.00211	0.00050
66	0.02236	0.00984	0.00067	0.01007	0.00211	0.00050
67	0.02236	0.00984	0.00067	0.01007	0.00211	0.00050
68	0.02236	0.00984	0.00067	0.01007	0.00211	0.00050
69	0.02236	0.00984	0.00067	0.01007	0.00211	0.00050
70	0.02236	0.00984	0.00067	0.01007	0.00211	0.00050
71	0.02236	0.00984	0.00067	0.01007	0.00211	0.00050
72	0.02236	0.00984	0.00067	0.01007	0.00211	0.00050
73	0.02236	0.00984	0.00067	0.01007	0.00211	0.00050
74	0.02236	0.00984	0.00067	0.01007	0.00211	0.00050
75	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
76	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
77	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
78	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
79	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
80	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
81	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
82	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
83	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
84	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
85	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
86	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
87	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
88	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
89	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
90	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
91	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
92	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
93	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
94	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
95	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
96	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
97	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
98	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
99	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058
100	0.02304	0.01014	0.00069	0.01167	0.00245	0.00058

APPENDIX E

Coronary Heart Disease

Table E.1: Prevalence of CHD [36]

Age	Prevalence
16-24	0.00%
25-34	0.00%
35-44	0.90%
45-54	3.50%
55-64	11.10%
65-74	21.50%
75+	26.40%

Table E.2: Relative risk of CHD by smoking status [37]

	Smoker	Former	Non
RR	3.12	1.55	1

Table E.3: Prevalence of CHD by smoking status

	Men			Women		
Age	Smoker	Former smoker	Non	Smoker	Former smoker	Non
16	0.00000	0.00000	0.00000	0.00378	0.00188	0.00121
17	0.00000	0.00000	0.00000	0.00378	0.00188	0.00121
18	0.00000	0.00000	0.00000	0.00378	0.00188	0.00121
19	0.00000	0.00000	0.00000	0.00378	0.00188	0.00121
20	0.00000	0.00000	0.00000	0.00378	0.00188	0.00121
21	0.00000	0.00000	0.00000	0.00378	0.00188	0.00121
22	0.00000	0.00000	0.00000	0.00378	0.00188	0.00121
23	0.00000	0.00000	0.00000	0.00378	0.00188	0.00121
24	0.00000	0.00000	0.00000	0.00378	0.00188	0.00121
25	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
26	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
27	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
28	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
29	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
30	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
31	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
32	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
33	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
34	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
35	0.01677	0.00833	0.00538	0.00747	0.00371	0.00239
36	0.01677	0.00833	0.00538	0.00747	0.00371	0.00239
37	0.01677	0.00833	0.00538	0.00747	0.00371	0.00239
38	0.01677	0.00833	0.00538	0.00747	0.00371	0.00239
39	0.01677	0.00833	0.00538	0.00747	0.00371	0.00239
40	0.01677	0.00833	0.00538	0.00747	0.00371	0.00239
41	0.01677	0.00833	0.00538	0.00747	0.00371	0.00239
42	0.01677	0.00833	0.00538	0.00747	0.00371	0.00239
43	0.01677	0.00833	0.00538	0.00747	0.00371	0.00239
44	0.01677	0.00833	0.00538	0.00747	0.00371	0.00239
45	0.06416	0.03188	0.02057	0.03767	0.01871	0.01207

	Men			Women		
Age	**Smoker**	**Former smoker**	**Non**	**Smoker**	**Former smoker**	**Non**
46	0.06416	0.03188	0.02057	0.03767	0.01871	0.01207
47	0.06416	0.03188	0.02057	0.03767	0.01871	0.01207
48	0.06416	0.03188	0.02057	0.03767	0.01871	0.01207
49	0.06416	0.03188	0.02057	0.03767	0.01871	0.01207
50	0.06416	0.03188	0.02057	0.03767	0.01871	0.01207
51	0.06416	0.03188	0.02057	0.03767	0.01871	0.01207
52	0.06416	0.03188	0.02057	0.03767	0.01871	0.01207
53	0.06416	0.03188	0.02057	0.03767	0.01871	0.01207
54	0.06416	0.03188	0.02057	0.03767	0.01871	0.01207
55	0.20977	0.10421	0.06724	0.11597	0.05761	0.03717
56	0.20977	0.10421	0.06724	0.11597	0.05761	0.03717
57	0.20977	0.10421	0.06724	0.11597	0.05761	0.03717
58	0.20977	0.10421	0.06724	0.11597	0.05761	0.03717
59	0.20977	0.10421	0.06724	0.11597	0.05761	0.03717
60	0.20977	0.10421	0.06724	0.11597	0.05761	0.03717
61	0.20977	0.10421	0.06724	0.11597	0.05761	0.03717
62	0.20977	0.10421	0.06724	0.11597	0.05761	0.03717
63	0.20977	0.10421	0.06724	0.11597	0.05761	0.03717
64	0.20977	0.10421	0.06724	0.11597	0.05761	0.03717
65	0.44038	0.21878	0.14115	0.20962	0.10414	0.06718
66	0.44038	0.21878	0.14115	0.20962	0.10414	0.06718
67	0.44038	0.21878	0.14115	0.20962	0.10414	0.06718
68	0.44038	0.21878	0.14115	0.20962	0.10414	0.06718
69	0.44038	0.21878	0.14115	0.20962	0.10414	0.06718
70	0.44038	0.21878	0.14115	0.20962	0.10414	0.06718
71	0.44038	0.21878	0.14115	0.20962	0.10414	0.06718
72	0.44038	0.21878	0.14115	0.20962	0.10414	0.06718
73	0.44038	0.21878	0.14115	0.20962	0.10414	0.06718
74	0.44038	0.21878	0.14115	0.20962	0.10414	0.06718
75	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
76	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
77	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
78	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
79	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
80	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
81	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
82	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
83	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
84	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
85	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
86	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
87	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
88	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
89	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
90	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
91	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
92	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
93	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
94	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
95	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
96	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294

	Men			Women		
Age	**Smoker**	**Former smoker**	**Non**	**Smoker**	**Former smoker**	**Non**
97	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
98	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
99	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294
100	0.55568	0.27606	0.17810	0.41478	0.20606	0.13294

APPENDIX F

Chronic Obstructive Pulmonary Disease

Table F.1: Prevalence of COPD [38]

Age	Prevalence
0-64	1.00%
65-74	5.00%
75+	10.00%

Table F.2: Relative risk of COPD by smoking status

This is the association between smoking and the risk of acute respiratory illness used as a proxy for COPD [37].

	Smoker	Former	Non
Men	1	0.84	0.68
Women	1	0.96	0.92

Table F.3: Prevalence of COPD by smoking status

	Men			Women		
Age	Smoker	Former smoker	Non	Smoker	Former smoker	Non
16	0.01299	0.01091	0.00883	0.01057	0.01015	0.00973
17	0.01299	0.01091	0.00883	0.01057	0.01015	0.00973
18	0.01299	0.01091	0.00883	0.01057	0.01015	0.00973
19	0.01299	0.01091	0.00883	0.01057	0.01015	0.00973
20	0.01299	0.01091	0.00883	0.01057	0.01015	0.00973
21	0.01299	0.01091	0.00883	0.01057	0.01015	0.00973
22	0.01299	0.01091	0.00883	0.01057	0.01015	0.00973
23	0.01299	0.01091	0.00883	0.01057	0.01015	0.00973
24	0.01299	0.01091	0.00883	0.01057	0.01015	0.00973
25	0.01216	0.01022	0.00827	0.01054	0.01012	0.00970
26	0.01216	0.01022	0.00827	0.01054	0.01012	0.00970
27	0.01216	0.01022	0.00827	0.01054	0.01012	0.00970
28	0.01216	0.01022	0.00827	0.01054	0.01012	0.00970
29	0.01216	0.01022	0.00827	0.01054	0.01012	0.00970
30	0.01216	0.01022	0.00827	0.01054	0.01012	0.00970
31	0.01216	0.01022	0.00827	0.01054	0.01012	0.00970
32	0.01216	0.01022	0.00827	0.01054	0.01012	0.00970
33	0.01216	0.01022	0.00827	0.01054	0.01012	0.00970
34	0.01216	0.01022	0.00827	0.01054	0.01012	0.00970
35	0.01254	0.01053	0.00853	0.01054	0.01012	0.00970
36	0.01254	0.01053	0.00853	0.01054	0.01012	0.00970
37	0.01254	0.01053	0.00853	0.01054	0.01012	0.00970
38	0.01254	0.01053	0.00853	0.01054	0.01012	0.00970
39	0.01254	0.01053	0.00853	0.01054	0.01012	0.00970
40	0.01254	0.01053	0.00853	0.01054	0.01012	0.00970
41	0.01254	0.01053	0.00853	0.01054	0.01012	0.00970
42	0.01254	0.01053	0.00853	0.01054	0.01012	0.00970
43	0.01254	0.01053	0.00853	0.01054	0.01012	0.00970
44	0.01254	0.01053	0.00853	0.01054	0.01012	0.00970
45	0.01236	0.01038	0.00840	0.01053	0.01011	0.00969
46	0.01236	0.01038	0.00840	0.01053	0.01011	0.00969

	Men			Women		
Age	**Smoker**	**Former smoker**	**Non**	**Smoker**	**Former smoker**	**Non**
47	0.01236	0.01038	0.00840	0.01053	0.01011	0.00969
48	0.01236	0.01038	0.00840	0.01053	0.01011	0.00969
49	0.01236	0.01038	0.00840	0.01053	0.01011	0.00969
50	0.01236	0.01038	0.00840	0.01053	0.01011	0.00969
51	0.01236	0.01038	0.00840	0.01053	0.01011	0.00969
52	0.01236	0.01038	0.00840	0.01053	0.01011	0.00969
53	0.01236	0.01038	0.00840	0.01053	0.01011	0.00969
54	0.01236	0.01038	0.00840	0.01053	0.01011	0.00969
55	0.01231	0.01034	0.00837	0.01055	0.01013	0.00971
56	0.01231	0.01034	0.00837	0.01055	0.01013	0.00971
57	0.01231	0.01034	0.00837	0.01055	0.01013	0.00971
58	0.01231	0.01034	0.00837	0.01055	0.01013	0.00971
59	0.01231	0.01034	0.00837	0.01055	0.01013	0.00971
60	0.01231	0.01034	0.00837	0.01055	0.01013	0.00971
61	0.01231	0.01034	0.00837	0.01055	0.01013	0.00971
62	0.01231	0.01034	0.00837	0.01055	0.01013	0.00971
63	0.01231	0.01034	0.00837	0.01055	0.01013	0.00971
64	0.01231	0.01034	0.00837	0.01055	0.01013	0.00971
65	0.06235	0.05237	0.04240	0.05306	0.05093	0.04881
66	0.06235	0.05237	0.04240	0.05306	0.05093	0.04881
67	0.06235	0.05237	0.04240	0.05306	0.05093	0.04881
68	0.06235	0.05237	0.04240	0.05306	0.05093	0.04881
69	0.06235	0.05237	0.04240	0.05306	0.05093	0.04881
70	0.06235	0.05237	0.04240	0.05306	0.05093	0.04881
71	0.06235	0.05237	0.04240	0.05306	0.05093	0.04881
72	0.06235	0.05237	0.04240	0.05306	0.05093	0.04881
73	0.06235	0.05237	0.04240	0.05306	0.05093	0.04881
74	0.06235	0.05237	0.04240	0.05306	0.05093	0.04881
75	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
76	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
77	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
78	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
79	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
80	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
81	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
82	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
83	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
84	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
85	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
86	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
87	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
88	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
89	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
90	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
91	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
92	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
93	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
94	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
95	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
96	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
97	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
98	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777

	Men			Women		
Age	**Smoker**	**Former smoker**	**Non**	**Smoker**	**Former smoker**	**Non**
99	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777
100	0.12504	0.10504	0.08503	0.10627	0.10202	0.09777

APPENDIX G

Myocardial Infarction

Table G.1: Prevalence of MI [36]

Age	Prevalence
0-54	0.00%
55-64	6.70%
65-74	12.10%

Table G.2: Relative risk of MI by smoking status [37]

	Smoker	Former	Non
Men	1.6	1.11	1.00
Women	2.76	1.05	1

Table G.3: Prevalence of MI by smoking status

	Men			Women		
Age	Smoker	Former smoker	Non	Smoker	Former smoker	Non
16	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
17	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
18	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
19	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
20	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
21	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
22	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
23	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
24	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
25	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
26	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
27	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
28	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
29	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
30	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
31	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
32	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
33	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
34	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
35	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
36	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
37	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
38	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
39	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
40	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
41	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
42	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
43	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
44	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
45	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
46	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
47	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
48	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
49	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000

	Men			Women		
Age	**Smoker**	**Former smoker**	**Non**	**Smoker**	**Former smoker**	**Non**
50	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
51	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
52	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
53	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
54	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
55	0.09210	0.06390	0.05756	0.04250	0.01617	0.01540
56	0.09210	0.06390	0.05756	0.04250	0.01617	0.01540
57	0.09210	0.06390	0.05756	0.04250	0.01617	0.01540
58	0.09210	0.06390	0.05756	0.04250	0.01617	0.01540
59	0.09210	0.06390	0.05756	0.04250	0.01617	0.01540
60	0.09210	0.06390	0.05756	0.04250	0.01617	0.01540
61	0.09210	0.06390	0.05756	0.04250	0.01617	0.01540
62	0.09210	0.06390	0.05756	0.04250	0.01617	0.01540
63	0.09210	0.06390	0.05756	0.04250	0.01617	0.01540
64	0.09210	0.06390	0.05756	0.04250	0.01617	0.01540
65	0.17246	0.11965	0.10779	0.09283	0.03532	0.03363
66	0.17246	0.11965	0.10779	0.09283	0.03532	0.03363
67	0.17246	0.11965	0.10779	0.09283	0.03532	0.03363
68	0.17246	0.11965	0.10779	0.09283	0.03532	0.03363
69	0.17246	0.11965	0.10779	0.09283	0.03532	0.03363
70	0.17246	0.11965	0.10779	0.09283	0.03532	0.03363
71	0.17246	0.11965	0.10779	0.09283	0.03532	0.03363
72	0.17246	0.11965	0.10779	0.09283	0.03532	0.03363
73	0.17246	0.11965	0.10779	0.09283	0.03532	0.03363
74	0.17246	0.11965	0.10779	0.09283	0.03532	0.03363
75	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
76	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
77	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
78	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
79	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
80	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
81	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
82	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
83	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
84	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
85	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
86	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
87	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
88	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
89	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
90	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
91	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
92	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
93	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
94	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
95	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
96	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
97	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
98	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
99	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555
100	0.17463	0.12115	0.10914	0.09811	0.03732	0.03555

APPENDIX H

Stroke

Table H.1: Prevalence of stroke [36]

Age	Prevalence
16-24	0%
25-34	0%
35-44	0.30%
45-54	1.20%
55-64	2.20%
65-74	7.60%
75+	13.30%

Table H.2: Relative risk of Stroke by smoking status [37]

	Smoker	Former	Non
RR	1.37	1.11	1.00

Table H.3: Prevalence of stroke by smoking status

	Men			Women		
Age	Smoker	Former smoker	Non	Smoker	Former smoker	Non
16	0.00125	0.00101	0.00091	0.00246	0.00199	0.00179
17	0.00125	0.00101	0.00091	0.00246	0.00199	0.00179
18	0.00125	0.00101	0.00091	0.00246	0.00199	0.00179
19	0.00125	0.00101	0.00091	0.00246	0.00199	0.00179
20	0.00125	0.00101	0.00091	0.00246	0.00199	0.00179
21	0.00125	0.00101	0.00091	0.00246	0.00199	0.00179
22	0.00125	0.00101	0.00091	0.00246	0.00199	0.00179
23	0.00125	0.00101	0.00091	0.00246	0.00199	0.00179
24	0.00125	0.00101	0.00091	0.00246	0.00199	0.00179
25	0.00475	0.00385	0.00347	0.00367	0.00297	0.00268
26	0.00475	0.00385	0.00347	0.00367	0.00297	0.00268
27	0.00475	0.00385	0.00347	0.00367	0.00297	0.00268
28	0.00475	0.00385	0.00347	0.00367	0.00297	0.00268
29	0.00475	0.00385	0.00347	0.00367	0.00297	0.00268
30	0.00475	0.00385	0.00347	0.00367	0.00297	0.00268
31	0.00475	0.00385	0.00347	0.00367	0.00297	0.00268
32	0.00475	0.00385	0.00347	0.00367	0.00297	0.00268
33	0.00475	0.00385	0.00347	0.00367	0.00297	0.00268
34	0.00475	0.00385	0.00347	0.00367	0.00297	0.00268
35	0.00367	0.00297	0.00268	0.00734	0.00595	0.00536
36	0.00367	0.00297	0.00268	0.00734	0.00595	0.00536
37	0.00367	0.00297	0.00268	0.00734	0.00595	0.00536
38	0.00367	0.00297	0.00268	0.00734	0.00595	0.00536
39	0.00367	0.00297	0.00268	0.00734	0.00595	0.00536
40	0.00367	0.00297	0.00268	0.00734	0.00595	0.00536
41	0.00367	0.00297	0.00268	0.00734	0.00595	0.00536
42	0.00367	0.00297	0.00268	0.00734	0.00595	0.00536
43	0.00367	0.00297	0.00268	0.00734	0.00595	0.00536
44	0.00367	0.00297	0.00268	0.00734	0.00595	0.00536
45	0.01459	0.01182	0.01065	0.01103	0.00894	0.00805

	Men			Women		
Age	**Smoker**	**Former smoker**	**Non**	**Smoker**	**Former smoker**	**Non**
46	0.01459	0.01182	0.01065	0.01103	0.00894	0.00805
47	0.01459	0.01182	0.01065	0.01103	0.00894	0.00805
48	0.01459	0.01182	0.01065	0.01103	0.00894	0.00805
49	0.01459	0.01182	0.01065	0.01103	0.00894	0.00805
50	0.01459	0.01182	0.01065	0.01103	0.00894	0.00805
51	0.01459	0.01182	0.01065	0.01103	0.00894	0.00805
52	0.01459	0.01182	0.01065	0.01103	0.00894	0.00805
53	0.01459	0.01182	0.01065	0.01103	0.00894	0.00805
54	0.01459	0.01182	0.01065	0.01103	0.00894	0.00805
55	0.02691	0.02181	0.01965	0.03095	0.02507	0.02259
56	0.02691	0.02181	0.01965	0.03095	0.02507	0.02259
57	0.02691	0.02181	0.01965	0.03095	0.02507	0.02259
58	0.02691	0.02181	0.01965	0.03095	0.02507	0.02259
59	0.02691	0.02181	0.01965	0.03095	0.02507	0.02259
60	0.02691	0.02181	0.01965	0.03095	0.02507	0.02259
61	0.02691	0.02181	0.01965	0.03095	0.02507	0.02259
62	0.02691	0.02181	0.01965	0.03095	0.02507	0.02259
63	0.02691	0.02181	0.01965	0.03095	0.02507	0.02259
64	0.02691	0.02181	0.01965	0.03095	0.02507	0.02259
65	0.09473	0.07675	0.06914	0.06840	0.05542	0.04993
66	0.09473	0.07675	0.06914	0.06840	0.05542	0.04993
67	0.09473	0.07675	0.06914	0.06840	0.05542	0.04993
68	0.09473	0.07675	0.06914	0.06840	0.05542	0.04993
69	0.09473	0.07675	0.06914	0.06840	0.05542	0.04993
70	0.09473	0.07675	0.06914	0.06840	0.05542	0.04993
71	0.09473	0.07675	0.06914	0.06840	0.05542	0.04993
72	0.09473	0.07675	0.06914	0.06840	0.05542	0.04993
73	0.09473	0.07675	0.06914	0.06840	0.05542	0.04993
74	0.09473	0.07675	0.06914	0.06840	0.05542	0.04993
75	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
76	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
77	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
78	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
79	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
80	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
81	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
82	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
83	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
84	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
85	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
86	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
87	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
88	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
89	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
90	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
91	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
92	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
93	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
94	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
95	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
96	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304

	Men			Women		
Age	**Smoker**	**Former smoker**	**Non**	**Smoker**	**Former smoker**	**Non**
97	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
98	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
99	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304
100	0.16675	0.13510	0.12172	0.11377	0.09218	0.08304

APPENDIX I

Background Quit Rate is 1.2%,

Table I.1: Base case results

	Background cessation = 1.2%	
	Cost	**QALY**
'No intervention'	£7,470	11.80
'BA' (3%)	£7,440	11.82
'BA plus self-help material' (4%)	£7,424	11.83
'BA plus self help material plus NRT' (6%)	£7,481	11.85
'BA plus self-help material plus NRT plus specialist clinic' (15%)	£7,310	11.94
'LIC and bupropion' (24%)	£7,093	12.02
'MIC and bupropion' (31%)	£6,974	12.10
'NP-GC' (21%)	£7,217	11.99
'NP-IC' (16%)	£7,267	11.94
'NP-NC' (12%)	£7,298	11.90
'NP-PC' (24%)	£7,271	12.03
'NP-PCBP' (35%)	£7,158	12.13

Table I.2: Comparing the interventions to 'no intervention'

Compared to 'no intervention'	**Background cessation = 1.2%**		
	Incremental cost	**Incremental QALY**	**ICER**
'BA' (3%)	-£30	0.02	Dominant
'BA plus self-help material' (4%)	-£47	0.03	Dominant
'BA plus self help material plus NRT' (6%)	£11	0.05	£226
'BA plus self-help material plus NRT plus specialist clinic' (15%)	-£160	0.14	Dominant
'LIC and bupropion' (24%)	-£377	0.22	Dominant
'MIC and bupropion' (31%)	-£497	0.30	Dominant
'NP-GC' (21%)	-£254	0.19	Dominant
'NP-IC' (16%)	-£204	0.15	Dominant
'NP-NC' (12%)	-£172	0.11	Dominant
'NP-PC' (24%)	-£199	0.23	Dominant
'NP-PCBP' (35%)	-£312	0.33	Dominant

Table I.3: Comparing the interventions to 'BA'

Compared to 'BA'	Background cessation = 1.2%		
	Incremental cost	Incremental QALY	ICER
'BA plus self-help material' (4%)	-£17	0.01	Dominant
'BA plus self help material plus NRT' (6%)	£41	0.03	£1,368
'BA plus self-help material plus NRT plus specialist clinic' (15%)	-£130	0.12	Dominant
'LIC and bupropion' (24%)	-£347	0.21	Dominant
'MIC and bupropion' (31%)	-£466	0.28	Dominant
'NP-GC' (21%)	-£224	0.17	Dominant
'NP-IC' (16%)	-£174	0.13	Dominant
'NP-NC' (12%)	-£142	0.09	Dominant
'NP-PC' (24%)	-£169	0.21	Dominant
'NP-PCBP' (35%)	-£282	0.32	Dominant

APPENDIX J

Background Quit Rate is 2%,
Costs of the Intervention = Zero

Table J.1: Base case results

	Background cessation = 2%	
	Cost	**QALY**
'No intervention'	£7,232	11.90
'BA' (3%)	£7,214	11.91
'BA plus self-help material' (4%)	£7,195	11.92
'BA plus self help material plus NRT' (6%)	£7,159	11.94
'BA plus self-help material plus NRT plus specialist clinic' (15%)	£6,997	12.02
'LIC and bupropion' (24%)	£6,841	12.10
'MIC and bupropion' (31%)	£6,701	12.17
'NP-GC' (21%)	£6,897	12.07
'NP-IC' (16%)	£6,982	12.03
'NP-NC' (12%)	£7,054	11.99
'NP-PC' (24%)	£6,825	12.10
'NP-PCBP' (35%)	£6,640	12.20

Table J.2: Comparing the interventions to 'no intervention'

Compared to 'no intervention'	**Background cessation = 2%**		
	Incremental cost	**Incremental QALY**	**ICER**
'BA' (3%)	-£19	0.01	Dominant
'BA plus self-help material' (4%)	-£37	0.02	Dominant
'BA plus self help material plus NRT' (6%)	-£73	0.04	Dominant
'BA plus self-help material plus NRT plus specialist clinic' (15%)	-£236	0.12	Dominant
'LIC and bupropion' (24%)	-£391	0.19	Dominant
'MIC and bupropion' (31%)	-£532	0.26	Dominant
'NP-GC' (21%)	-£336	0.17	Dominant
'NP-IC' (16%)	-£250	0.12	Dominant
'NP-NC' (12%)	-£179	0.09	Dominant
'NP-PC' (24%)	-£407	0.20	Dominant
'NP-PCBP' (35%)	-£592	0.30	Dominant

Table J.3: Comparing the interventions to 'BA'

Compared to 'BA'	Background cessation = 2%		
	Incremental cost	Incremental QALY	ICER
'BA plus self-help material' (4%)	-£18	0.01	Dominant
'BA plus self help material plus NRT' (6%)	-£54	0.03	Dominant
'BA plus self-help material plus NRT plus specialist clinic' (15%)	-£217	0.11	Dominant
'LIC and bupropion' (24%)	-£372	0.19	Dominant
'MIC and bupropion' (31%)	-£513	0.26	Dominant
'NP-GC' (21%)	-£317	0.16	Dominant
'NP-IC' (16%)	-£231	0.12	Dominant
'NP-NC' (12%)	-£160	0.08	Dominant
'NP-PC' (24%)	-£388	0.19	Dominant
'NP-PCBP' (35%)	-£574	0.29	Dominant