Title: Tobacco pack inserts **IA No:** 9609 **RPC Reference No:** **Lead department or agency:** Department of Health and Social Care **Other departments or agencies:**	**Impact Assessment (IA)** **Date:** May 2023 **Stage:** Consultation **Source of intervention:** Domestic **Type of measure:** Primary legislation **Contact for enquiries:**

Summary: Intervention and Options

RPC Opinion: RPC Opinion Status

Cost of Preferred (or more likely) Option (in 2019 prices)			
Total Net Present Social Value	**Business Net Present Value**	**Net cost to business per year**	**Business Impact Target Status**
1,011.4	-22.2	2.6	Qualifying provision / 12.9

What is the problem under consideration? Why is government action or intervention necessary?

Tobacco use remains one of the most significant challenges to public health across the United Kingdom and is the leading cause of premature death in the UK. The government remains concerned about the difficulties adult smokers can have in quitting smoking and the consequences for the health of others from the exposure to second hand smoke (SHS). Research evidence suggests tobacco pack inserts can increase the likelihood of smokers making a quit attempt, by providing motivational cessation messages and information on the benefits of quitting, which complement the graphic health warnings already on packs of tobacco.

What are the policy objectives of the action or intervention and the intended effects?

The objectives of tobacco pack inserts would be to improve public health by supporting quitting among smokers. The desired result of this intervention would be an increase in the number of smokers quitting smoking. Achieving these aims will improve the health of those who succeed in quitting smoking. Indicators of success could include an increase in the number of people reporting making quit attempts, an increase in the number of people accessing local Stop Smoking Services, and a reduction in overall smoking prevalence.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Option 1: Do nothing
Option 2: Mandate tobacco pack inserts in cigarette packs and packs of hand rolling tobacco (preferred option)
Option 3: Mandate tobacco pack inserts in cigarette packs
Option 4: Mandate tobacco pack inserts in hand rolling tobacco
Option 5: Mandate tobacco pack inserts in all tobacco products

Will the policy be reviewed? It will/will not be reviewed. **If applicable, set review date:** Month/Year

Is this measure likely to impact on international trade and investment?		No		
Are any of these organisations in scope?	**Micro** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)		**Traded:** N/A	**Non-traded:** N/A	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits, and impact of the leading options.

Signed by the responsible SELECT SIGNATORY: ..... Date: .....

Summary: Analysis & Evidence

Policy Option 1

Description: Do nothing

FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2020	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: 0	**High:** 0	**Best Estimate:** 0

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0		0	**0**
High	0		0	**0**
Best Estimate	0		0	**0**

Description and scale of key monetised costs by 'main affected groups'

These are defined to be 0.

Other key non-monetised costs by 'main affected groups'

These are defined to be 0.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low				
High				
Best Estimate	0		0	**0**

Description and scale of key monetised benefits by 'main affected groups'

These are defined to be 0.

Other key non-monetised benefits by 'main affected groups'

These are defined to be 0.

Key assumptions/sensitivities/risks	Discount rate (%)	1½ / 3½

The benefits in this IA are assessed on the basis of additional benefits and costs that would be likely to accrue over and above existing tobacco control measures and any anticipated measures in place at the time of the mandated pack inserts. See paragraphs in the Policy Options section under "Option 1" for a full description of the baseline.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 0	**Benefits:** 0	**Net:** 0	0

Summary: Analysis & Evidence

Policy Option 2

Description: Mandate tobacco pack inserts in cigarette packs and packs of hand rolling tobacco

FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2020	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low:	High:	Best Estimate: 1,011.4

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	0		-	-
High	0		-	-
Best Estimate	0.2		28.2	239.9

Description and scale of key monetised costs by 'main affected groups'

Appraisal is 10 years of policy implementation. Expected costs include: losses to the exchequer of £278m estimated over 10 years of reduced tobacco consumption, reduction in profits for retailers of £22.5m and wholesalers of £6m estimated over 10 years of reduced tobacco consumption. An estimated cost of £116m over 10 years to produce pack inserts for packs of cigarettes and hand rolling tobacco. These are current (2022) prices.

Other key non-monetised costs by 'main affected groups'

There could be an increase in litter associated with cigarette pack inserts, which would have an impact on the general population as well as the cost to local authorities for increased litter costs.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	-		-	-
High	-		-	-
Best Estimate	-		128.0	1251.3

Description and scale of key monetised benefits by 'main affected groups'

Appraisal is of 10 years' policy implementation with the consequential lifetime health gains discounted back to the year of behavioural change. Expected benefits are the health benefits that would accrue from an additional number of quitters over two years, saving 23,437 life years valued at £1.603bn at current prices (£1.251bn in 2020 prices).

Other key non-monetised benefits by 'main affected groups'

Benefits as a result of increased productivity from fewer smokers at work. Benefits in terms of reduced morbidity and mortality due to second hand smoke exposure. There may also be short term benefits as a result of changes in health and social care usage. There could benefits in the form of reduced litter from fewer smokers.

Key assumptions/sensitivities/risks	Discount rate	1½ / 3½

Assumptions: The estimated effect size is based on evidence from Canada on the proportion of smokers that would read pack inserts and the increased odds of those that read pack inserts making a quit attempt. The estimated costs and benefits are based on the assumption that pack inserts would have a similar impact in the UK. It is assumed the policy would have an impact for two years.
Sensitivity: The magnitude of the reduction in smoking caused by the policy.
Discount rate: 1.5% for health impacts denominated in life years, 3.5% for monetised impacts.

BUSINESS ASSESSMENT (Option 2)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 2.6	Benefits: 0	Net: 2.6	12.9

Summary: Analysis & Evidence

Policy Option 3

Description: Mandate tobacco pack inserts in cigarette packs

FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2020	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: 0	**High:** 0	**Best Estimate: 602.6**

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	**0**		-	**-**
High	**0**		-	**-**
Best Estimate	**0.2**		**18.3**	**155.7**

Description and scale of key monetised costs by 'main affected groups'

Appraisal is 10 years of policy implementation. Expected costs include: losses to the exchequer of £212.4m estimated over 10 years of reduced tobacco consumption, reduction in profits for retailers of £17.2m and wholesalers of £4.6m estimated over 10 years of reduced tobacco consumption. An estimated cost of £95m over 10 years to produce pack inserts for packs of cigarettes only. These are current (2022) prices.

Other key non-monetised costs by 'main affected groups'

There could be an increase in litter associated with cigarette pack inserts, which would have an impact on the general population as well as the cost to local authorities for increased litter costs.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	-		-	**-**
High	-		-	**-**
Best Estimate	-		77.6	**758.3**

Description and scale of key monetised benefits by 'main affected groups'

Appraisal is of 10 years' policy implementation with the consequential lifetime health games discounted back to the year of behavioural change. Expected benefits are the health benefits that would accrue from an additional number of quitters over two years, saving 14,203 life years valued at £971m at current prices (£758.3m 2020 prices).

Other key non-monetised benefits by 'main affected groups'

Benefits as a result of increased productivity from fewer smokers at work. Benefits in terms of reduced morbidity and mortality due to second hand smoke exposure. There may also be short term benefits as a result of changes in health and social care usage. There could benefits in the form of reduced litter from fewer smokers.

Key assumptions/sensitivities/risks	Discount rate (%)	1½ / 3½

Assumptions: The estimated effect size is based on evidence from Canada on the proportion of smokers that would read pack inserts and the increased odds of those that read pack inserts making a quit attempt. The estimated costs and benefits are based on the assumption that pack inserts would have a similar impact in the UK. It is also assumed the policy would have an impact for two years.
Sensitivity: The magnitude of the reduction in smoking caused by the policy.
Discount rate: 1.5% for health impacts denominated in life years, 3.5% for monetised impacts.

BUSINESS ASSESSMENT (Option 3)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 1.7	**Benefits:** 0	**Net:** 1.7	8.4

Summary: Analysis & Evidence

Policy Option 4

Description: Mandate tobacco pack inserts in packs of hand rolling tobacco

FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2020	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: 0	**High:** 0	**Best Estimate: 515.5**

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	**0**		-	**-**
High	**0**		-	**-**
Best Estimate	**0.2**		**12.9**	**110.3**

Description and scale of key monetised costs by 'main affected groups'

Appraisal is 10 years of policy implementation. Expected costs include: losses to the exchequer of £152.4m estimated over 10 years of reduced tobacco consumption, reduction in profits for retailers of £10.5m and wholesalers of £2.4m estimated over 10 years of reduced tobacco consumption. An estimated cost of £21m over 10 years to produce pack inserts for packs of hand rolling tobacco only. These are current (2022) prices.

Other key non-monetised costs by 'main affected groups'

There could be an increase in litter associated with cigarette pack inserts, which would have an impact on the general population as well as the cost to local authorities for increased litter costs.

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	-		-	**-**
High	-		-	**-**
Best Estimate	-		64.0	**625.8**

Description and scale of key monetised benefits by 'main affected groups'

Appraisal is of 10 years' policy implementation with the consequential lifetime health games discounted back to the year of behavioural change. Expected benefits are the health benefits that would accrue from an additional number of quitters over two years, saving 11,836 life years valued at £802m in current prices (£625.8m at 2020 prices).

Other key non-monetised benefits by 'main affected groups'

Benefits as a result of increased productivity from fewer smokers at work. Benefits in terms of reduced morbidity and mortality due to second hand smoke exposure. There may also be short term benefits as a result of changes in health and social care usage. There could benefits in the form of reduced litter from fewer smokers.

Key assumptions/sensitivities/risks	**Discount rate (%)**	1½ / 3½

Assumptions: The estimated effect size is based on evidence from Canada on the proportion of smokers that would read pack inserts and the increased odds of those that read pack inserts making a quit attempt. The estimated costs and benefits are based on the assumption that pack inserts would have a similar impact in the UK. It is also assumed the policy would have an impact for two years.
Sensitivity: The magnitude of the reduction in smoking caused by the policy.
Discount rate: 1.5% for health impacts denominated in life years, 3.5% for monetised impacts.

BUSINESS ASSESSMENT (Option 4)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 1.0	**Benefits:** 0	**Net:** 1.0	5.1

Summary: Analysis & Evidence

Policy Option 5

Description: Mandate tobacco pack inserts in all forms of tobacco

FULL ECONOMIC ASSESSMENT

Price Base Year 2019	PV Base Year 2020	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: 0	**High:** 0	**Best Estimate: 1,011.4**

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	**0**		-	**-**
High	**0**		-	**-**
Best Estimate	**0.2**		**28.2**	**239.9**

Description and scale of key monetised costs by 'main affected groups'

Appraisal is 10 years of policy implementation. Monetised costs would be the same as in Option 2, including loss of profits to retailers, wholesalers and manufacturers, and production costs for inserts.

Other key non-monetised costs by 'main affected groups'

In this option, costs may arise from extending pack inserts to more niche products, some manufacturers of which may be based in the UK. The additional costs are not able to be quantified due to the limited evidence available on the prevalence of use and consumption of these products

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	-		-	**-**
High	-		-	**-**
Best Estimate	-		**128.0**	**1251.3**

Description and scale of key monetised benefits by 'main affected groups'

Appraisal is of 10 years' policy implementation with the consequential lifetime health gains discounted back to the year of behavioural change. Monetised benefits would be the same as in Option 2, including the health benefits that would accrue from an additional number of quitters.

Other key non-monetised benefits by 'main affected groups'

In this option, there may be additional benefits from a wider number of tobacco users being targeted by pack inserts and being helped to quit using tobacco. This would include additional health benefits, increased productivity from fewer people using other tobacco products, reduced morbidity and mortality due to second hand smoke exposure and reduced litter. The additional benefits are not able to be quantified due to the limited evidence available on the prevalence of use and consumption of these products.

Key assumptions/sensitivities/risks	**Discount rate (%)**	1½ / 3½

Assumptions: The estimated effect size is based on evidence from Canada on the proportion of smokers that would read pack inserts and the increased odds of those that read pack inserts making a quit attempt. The estimated costs and benefits are based on the assumption that pack inserts would have a similar impact in the UK. It is also assumed the policy would have an impact for two years.
Sensitivity: The magnitude of the reduction in smoking caused by the policy.
Discount rate: 1.5% for health impacts denominated in life years, 3.5% for monetised impacts.

BUSINESS ASSESSMENT (Option 5)

Direct impact on business (Equivalent Annual) £m:			Score for Business Impact Target (qualifying provisions only) £m:
Costs: 2.6	**Benefits:** 0	**Net:** 2.6	12.9

Problem under consideration and rationale for intervention

1. Significant progress has been made in reducing smoking rates over recent decades and adult smoking prevalence in the UK is 13.3% (2021)[1], the lowest on record.

2. This has been driven by the UK being a global leader in tobacco control and our legislative framework is regarded as one of the most comprehensive in the world[2]. In the last 20 years a suite of tobacco control policies has been introduced.

3. This has included a ban for tobacco on advertising, establishing smoke-free places, introduction of prominent graphic health warnings, a ban on proxy purchasing of cigarettes and e-cigarettes, a ban on smoking in cars with children, the point-of-sale display ban and standardised packaging. Evaluations of some of these regulations[3,4] have found them to be effective in reducing smoking prevalence amongst young people and adults.

4. Smoking prevalence also varies by:

    - Age, where prevalence is higher among those who are younger (15.8% of 25-34 year olds) compared with those who are older (8% of those over 65)[1]

    - Ethnicity, where prevalence is higher among people with a mixed ethnic background (16.0%)[5]

    - Deprivation, where prevalence in the most deprived decile of LAs is higher (16.9%) compared with the least deprived decile of LAs (10.5%)[6]

5. There has been limited data on smoking prevalence post-pandemic. ONS found smoking prevalence continued to decline over the pandemic, falling from 14.1% in 2019 to 13.3% in 2021. Declines were seen across all constituent countries of the UK. This data also showed continued declines across most age groups.[1] Data from UCL's Smoking Toolkit Study (STS) did show an increase in young adults (18-21 year olds) currently smoking. The same STS data found significant increases in quit attempt and success rates among a similar age group (18-24 year olds).[7]

6. Smoking is also still the single biggest behavioural cause of preventable illness and death in England[8], significantly increasing risks of cancer, respiratory disease, and circulatory disease[9] and causing the death of two-thirds of lifelong smokers unless they

[1] ONS. 2022. Adult smoking habits in the UK: 2021.
[2] Tobacco Control Scale: Monitoring the implementation of tobacco control policies systematically at country level across Europe: https://www.tobaccocontrolscale.org/ (accessed 03/2023).
[3] A Post-Implementation Review report of tobacco legislation coming into force between 2010 to 2015: https://www.gov.uk/government/publications/tobacco-legislation-coming-into-force-between-2010-and-2015-post-implementation-review.
[4] OHID. The Standardised Packaging of Tobacco Products Regulations 2015: post-implementation review. 2022. The Standardised Packaging of Tobacco Products Regulations 2015: post-implementation review - GOV.UK (www.gov.uk)
[5] OHID. Local Tobacco Control Profiles: Smoking prevalence by ethnicity.
[6] OHID. Local Tobacco Control Profiles: Smoking prevalence by deprivation deciles.
[7] UCL. Smoking Toolkit Study.
[8] OHID. Health Profile for England. 2021. Health Profile for England 2021 (phe.org.uk).
[9] OHID. Smoking and tobacco: applying All Our Health. 2022 https://www.gov.uk/government/publications/smoking-and-tobacco-applying-all-our-health/smoking-and-tobacco-applying-all-our-health.

quit.[10] In 2019, approximately 64,000 deaths[11] were attributable to smoking, around 13% of all deaths.[12]

7. The use of tobacco also contributes significantly to health inequalities. Smoking is the risk factor that contributes most to disparities in health outcomes and is a major driver of the gap in life expectancy and healthy life expectancy between places.[13] The smoking-attributable mortality rate is 2.1 times higher in the most deprived local authorities than more affluent ones.[14]

8. The evidence shows that the majority of smokers in Great Britain want to quit (55.3%).[15] However, in 2019 in England only 31% attempted to quit and less than one in five of those making an attempt reported successfully stopped smoking.[16,17] In addition, nearly half of smokers making a quit attempt do so unaided[18] and many unsupported quit attempts end in relapse within a year.[19] The success rate for those making a quit attempt through Local Stop Smoking Services, people who get help from local Stop Smoking Services are three times as likely to quit successfully as those who try to quit unaided.[20]

9. In general, attempts to stop smoking are accompanied by powerful urges to smoke/cravings which are a major source of relapse and occur despite the individual concerned wanting to remain abstinent. Cravings overpower and undermine resolve to remain abstinent. These problems present examples of the difference between what smokers would prefer to do and what they are actually able to do with respect to tobacco consumption.

10. As a result, tobacco use remains one of the most significant challenges to public health in this country and further action is required to reduce the uptake of smoking, particularly by young people, help people to quit and those that do quit from relapsing. In doing so, they will be better able to exercise their free choice in consumption decisions.

11. Introducing pack inserts represents a policy option for the Department of Health and Social Care in England, and for Devolved Administrations in Scotland, Wales, and Northern Ireland, as part of their wider comprehensive tobacco control strategies. This

[10] Banks, E., Joshy, G., Weber, M.F., et al. 2015. Tobacco smoking and all-cause mortality in a large Australian cohort study: findings from a mature epidemic with current low smoking prevalence. BMC Med 13, 38. https://doi.org/10.1186/s12916-015-0281-z.

[11] OHID. Local Tobacco Control Profiles – Smoking attributable mortality (new method). Directly standardised rate - per 100,000. 2021 Local Tobacco Control Profiles - Data - OHID (phe.org.uk)

[12] OHID analysis. 2022. Based on smoking attributable mortality (new method). Directly standardised rate - per 100,000 Local Tobacco Control Profiles - Data - OHID (phe.org.uk)

[13] OHID analysis. 2022. Based on Global Burden of Disease. 2019. https://www.healthdata.org/data-visualization/gbd-results.

[14] OHID analysis. 2022. Based on smoking attributable mortality (new method). Directly standardised rate - per 100,000. Local Tobacco Control Profiles - Data - OHID (phe.org.uk)

[15] ONS. 2022. Adult smoking habits in the UK: 2021.

[16] Pre-pandemic data on quitting behaviour is used throughout this Impact Assessment to avoid any potential short term impact of Covid on quitting behaviour.

[17] UCL. Top line findings from the Smoking Toolkit Study. https://smokinginengland.info/graphs/top-line-findings (accessed 03/2023).

[18] UCL. Top line findings from the Smoking Toolkit Study. https://smokinginengland.info/graphs/top-line-findings (accessed 03/2023).

[19] Data from the Smoking Toolkit Study by UCL found overall quit success rates of 14% in 2019.

[20] National Centre for smoking cessation and training. 2019. Stop smoking services: increased chances of quitting. 8. stop smoking services v7 (ncsct.co.uk)

was also one of the recommendations in *The Khan Review: making smoking obsolete*[21]*:* to include pack inserts that provide information on the health benefits of quitting.

12. Through previous interventions, smokers are made aware of the health harms of smoking. These are presented in the form of combined health warnings on tobacco which present a range of health harms attributable to smoking.

13. As part of the Tobacco and Related Products Regulations 2016[22] tobacco products for smoking are required to have some smoking cessation information as part of the combined health warning. The following message in black text, highlighted on a yellow background, is required on both the front and back of cigarette packs, and on hand rolling tobacco (see Figure 1[23]):

Get help to stop smoking at www.nhs.uk/quit

14. However, there is no information contained on or within the pack itself that provides detailed information for support to help a smoker quit or on the benefits of quitting.

Figure 1: A standard pack of cigarettes with smoking cessation message highlighted with yellow background colour

15. There is also public support for the government to do more to help smokers quit. In a 2022 survey of 10,000 adults commissioned by Action on Smoking and Health, the majority supported the governments ambition to become smoke free by 2030 (74% of all surveyed).[24] Specifically on pack inserts, 68% of those surveyed supported requiring cigarette packs to include inserts with government information about quitting. Support

[21] Dr Javed Khan OBE. The Khan Review: Making smoking obsolete. 2022. https://www.gov.uk/government/publications/the-khan-review-making-smoking-obsolete.
[22] The Tobacco and Related Products Regulations 2016. https://www.legislation.gov.uk/uksi/2016/507/contents/made.
[23] Pack conforming with 2021 GB regulations by Wee Creative for ASH
[24] Action on Smoking and Health. Public support in England for Government action on tobacco: Results extracted from the ASH Smokefree GB survey 2022. London: ASH, 2022.

for this measure was high among younger people (67% of those aged 18 to 24), and 43% of smokers also supported this, with just 16% of smokers opposing it.

Evidence on tobacco pack inserts

16. Canada currently mandates either pack inserts or on the pack messaging to supplement exterior health warning labels (HWL) (see Figure 2[25]). This has been the case for over

Figure 2: Canadian cigarette pack inserts, 2012 text and picture messaging insert

20 years, with initial inserts providing cessation messages on cards. In June 2012, the pack inserts used by Canada were updated to include cessation tips accompanied by a picture (Figure 2). Canada is in the process of updating this once more, mandating inserts as messaging on their slide and shell packaging. The rationale behind this more recent update includes changing the presentation in order to counter the desensitisation of smokers to current placement and presentation.

17. The Canadian policy of disposable pack inserts has been studied and evaluated and there exists evidence on the impact of pack inserts. Published research from Canada describes the impact of cigarette pack inserts on quitting behaviour, including self-efficacy, thoughts about quitting, and quit attempts. Further research from the UK in the form of online surveys and focus groups looked at the perceptions of pack inserts by UK smokers. A small amount of further international evidence is also available.

18. The policy of tobacco pack inserts would be mandated with the aim of aiding and achieving the broad objectives of tobacco control in the UK. In this case, the main objective targeted by this policy would be helping adult smokers quit smoking, and therefore the key factors requiring proportionate evidence are:

- Whether tobacco users will read/use pack inserts
- What, if any, behavioural changes occur as a result of reading/using pack inserts

The evidence surrounding each of these is presented below.

[25] Health Canada. Canada | Tobacco Labelling Regulations (tobaccolabels.ca).

Evidence of tobacco users reading tobacco pack inserts

19. An evaluation of the Canadian policy of inserts with cessation tips alongside pictures was done by Thrasher et al.[26] The study analysed data from an online consumer panel of Canadian adult smokers. Across 5 waves between September 2012 and January 2014 over 2,000 smokers were surveyed. Roughly 80% of the sample were daily smokers. The study found that between 26% and 31% of smokers in each wave read the inserts at least once in the past month. A smaller proportion, between 16% and 19% in each wave, reported reading them a few times or more in the past month.

20. Reading inserts was more likely among those already intending to quit, and among those who had recently tried to quit. The study found further differences in the odds of reading inserts by demographic characteristic. More likely to read inserts were: younger smokers (18-24) compared with older smokers, men compared with women, non-white participants compared with white participants, and those with a higher income compared with a lower income.

21. A further study by Thrasher et al.[27] analysed data, including a longitudinal subsample, from an online consumer panel of Canadian adult smokers. Across 7 waves of data collection, between 29% and 36% of smokers had read pack inserts in the past month. Based on the longitudinal sample, the study was also able to analyse the trend in frequency of reading inserts over time. It found a significant trend indicating increased frequency of reading pack inserts over time.

22. Moodie et al.[28] tested the perceptions of pack inserts in the UK. In an online survey in 2016, 1,700 smokers aged 16 to 34 were shown images of the Canadian pack inserts. 50% said they would read pack inserts, with 37% saying they would not, and 13% being unsure. A higher proportion agreed that all packs should have inserts: 55% agreed all packs should have inserts, with 20% disagreeing (the rest replied neither/do not know).

23. This study was able to look at the likelihood of reading pack inserts by socio-demographic characteristics. More likely to read inserts were: women compared with men, White British participants compared with White non-British and Asian participants, those who smoked roll-your-own cigarettes as well as factory made cigarette compared with just factory made cigarettes.

24. In Scotland, Moodie[29] looked at the perceptions of cigarette pack inserts promoting cessation. This was a focus group study consisting of 120 smokers, split by age and social grade. The consensus was that inserts would capture attention and be read due to novelty and visibility of the pack inserts.

[26] Thrasher et al. The use of cigarette package inserts to supplement pictorial health warnings: an evaluation of the Canadian policy. 2015.
[27] Thrasher et al. Cigarette package inserts can promote efficacy beliefs and sustained smoking cessation attempts: A longitudinal assessment of an innovative policy in Canada. 2016.
[28] Moodie et al. Perceptions of cigarette pack inserts promoting cessation and dissuasive cigarettes among young adult smokers in the UK: a cross sectional online survey. 2018.
[29] C Moodie. Adult smokers' perceptions of cigarette pack inserts promoting cessation: a focus group study. 2016.

25. Internationally, Mucan and Moodie[30] conducted a focus group study in Turkey that also investigated young adult smokers' perceptions of pack inserts. It found that in general, inserts would create interest and be read by smokers. However, they may be discarded afterwards.

Summary of evidence in relation to tobacco users reading tobacco pack inserts

26. The evidence from Canada suggests over a quarter of smokers will read pack inserts. There was also evidence that particular groups, such younger smokers where smoking rates are particularly high in the UK, were more likely to read inserts.

27. This evidence comes from a country where inserts have been policy for over 20 years. In the UK, pack inserts would be completely new to smokers. It is likely that more people would read these initially and the evidence supports this. The current UK evidence suggests an even higher proportion would read pack inserts, with qualitative evidence finding pack inserts would be read due to their novelty.

28. Further international evidence is limited, however generally inserts were expected capture attention and immediate interest.

Evidence of behavioural changes as a result of tobacco pack inserts

29. An evaluation of the Canadian policy by Thrasher et al.[31] analysed data from an online consumer panel of Canadian adult smokers. This study was able to look at the impact of reading inserts on making a quit attempt. Of the over 2,000 adult smokers surveyed between September 2012 and January 2014, a third of those who did not read inserts tried to quit smoking. A higher proportion (50%) tried to quit smoking if they had read the inserts once in the past month. This increased to 59% for those reading pack inserts a few times or more.

30. Reading inserts was significantly associated with increased likelihood of making a quit attempt. Compared with those who had not read pack inserts, those who had read inserts a few times or more had an increased odds ratio of making a quit attempt: 1.57 [95% CI: 1.16 – 2.11].

31. Thrasher et al.[32] also analysed data including a longitudinal sample with similar findings. Those who read pack inserts two or more times were more likely to make a quit attempt, with adjusted odds ratio of 1.68 [95% CI: 1.28 – 2.19]. Based on the longitudinal sample, reading inserts was also associated with making a sustained quit attempt of 30 days or more with adjusted odds ratio of 1.48 [95% CI: 1.01 – 2.17].

32. Within the UK, Moodie et al.[33] reported young adults' perceptions of pack inserts, including what they thought of inserts and the impact they may have on quit behaviour.

[30] B Mucan and C Moodie. Young adult smokers' perceptions of plain packs, numbered packs and pack inserts in Turkey: a focus group study. 2017.
[31] Thrasher et al. The use of cigarette package inserts to supplement pictorial health warnings: an evaluation of the Canadian policy. 2015.
[32] Thrasher et al. Cigarette package inserts can promote efficacy beliefs and sustained smoking cessation attempts: A longitudinal assessment of an innovative policy in Canada. 2016.
[33] Moodie et al. Perceptions of cigarette pack inserts promoting cessation and dissuasive cigarettes among young adult smokers in the UK: a cross sectional online survey. 2018.

Of the 1,970 adults surveyed, 61% thought inserts were an effective way to provide information about quitting. 53% agreed inserts would make you think more about quitting, with 52% agreeing inserts might help if you decided to quit. 53% also agreed inserts were an effective way of encouraging smokers to quit.

33. Further evidence from focus groups by Moodie[34] found similar support for pack inserts. Across 20 focus groups split by age, gender and social grade, some participants suggested that inserts could encourage them to stop smoking. They were generally viewed as having the potential to alter the behaviour of others, would be smokers, and those wanting to quit.

Summary of evidence in relation to behavioural changes as a result of tobacco pack inserts

34. The evidence suggests that pack inserts will increase the likelihood of making a quit attempt for those who read them. The effect is found to increase with the frequency of reading the pack inserts. Both studies analysing data from Canada found similar increased odds of making a quit attempt as a result of reading pack inserts more than once.

35. The increased quit attempt rate remained stable over this period, with authors suggesting *'an encouraging finding from this study is that there is no evidence of wear-out for attention towards package inserts, suggesting their impact may be sustainable over time.'*

36. There was limited evidence from the Canada studies linking cigarette pack inserts to an increase in 30 day quits, however across the analysis the baseline quit success rate is assumed to apply but to an increased number of smokers making a quit attempt (in line with the evidence, and tobacco product used where appropriate).

Further research and evidence

37. To further the evidence base and policy development of inserts in the UK, the Department has commissioned research led by the University of Stirling. They are exploring a variety of inserts with positive messages aimed at increasing the belief that smokers can quit and that they will benefit from doing so.

38. This research is split into two parts:

- Focus groups, testing a range of themes and card designs to capture the strongest and most effective messaging with a wide range of smokers
- An online survey of across the UK looking at opinions and views on pack inserts

39. The Department also intends to consult on this policy to understand the views of a wide range of stakeholders and gather any further evidence not currently accounted for.

[34] Moodie, C. Adult smokers' perceptions of cigarette pack inserts promoting cessation: a focus group study. 2016.

Policy Options

40. Below are the stated objectives of the policy and a summary of the options considered. This includes non-regulatory options and long-list options considered. The reasons for exclusion are covered below.

Policy objective(s)

41. The objective of the policy is to:

- Improve public health by supporting adult smokers to quit smoking

42. There may be wider benefits such as a narrowing of health inequalities and a reduction in the levels of exposure to second hand smoke which is particularly harmful to the health of children.

43. The intended outcomes would be an increase in the number of people quitting smoking. This would be measured through the various National Stop Smoking Services data available for each of the constituent countries, and also timelier through UCL's Smoking Toolkit Study that reports data for England monthly. People quitting smoking would also lead to an overall reduction in smoking prevalence, measured through the Annual Population Survey, with data on smoking prevalence published each year.

Policy option list

44. The policy option list covers a range of options with brief descriptions and reasons for exclusion where applicable:

- Do nothing – This constitutes the baseline against which pack inserts are assessed. No other tobacco control measures currently need to be accounted for, and the option involves zero costs and zero benefits in this impact assessment. The challenge, to which pack inserts may contribute, is to secure a further decline in the existing trend of smoking.

- Voluntary pack inserts – This would allow industry to decide if they wished to include inserts and for them to determine what the messaging would say. This would not be favourable as inserts may not be used, and if used there is likely to be inconsistency in the designs and messaging. It is also goes against WHO FCTC obligations under article 11 guidelines on health warnings and messaging should be mandated in legislation.

- Messaging in the form of text on the inside of packs – We do not believe this will have as big an impact on smokers making a quit attempt as this will be hidden beneath the tobacco product and obscure the messaging.

- Messaging in the form of text on the outside of packs – Cigarette packs and packs of hand rolling tobacco already include text and picture health warning messages. These text and picture warnings have been found to be effective at encouraging people to quit and discouraging people from taking up smoking. The Tobacco and Related Products Regulations 2016 (TRPR) introduced new text and picture health warning messages. The Post-Implementation Review[35] of these regulations concluded that they continue to

[35] DHSC. The Tobacco and Related Products Regulations 2016: post-implementation review - GOV.UK (www.gov.uk). 2022

meet their original objectives and that they should be retained. Changing these messages would mean a loss of the benefits of the existing text and picture warnings on the outside of packs and there is currently limited evidence on this option.

- **Tobacco pack inserts in the form of removable cards** – Inserts inside packs provide space to provide smokers with information that may help them try to quit. These are a relatively simple and evidenced public health measure. This option can be adapted to cover a combination of different products, and these combinations are what is covered in this impact assessment. The cards would be similar to those used by Health Canada (see Figure 2).

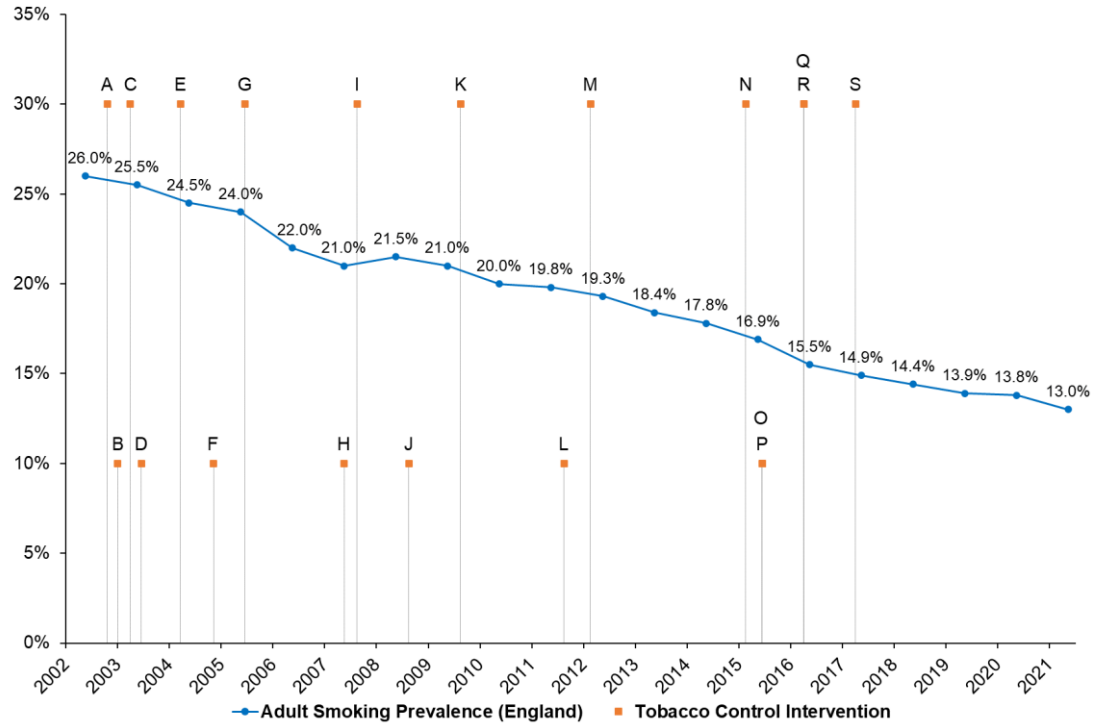
45. Across all these options, other existing measures would remain in place (such as Standardised Packaging, and the Display regulations), other activities around tobacco control will continue (such as work done around), and general campaigns and services will be available to smokers (such as Stoptober and Local Stop Smoking Services).

Option 1: Do nothing

46. Option 1: This constitutes the baseline against which tobacco pack inserts is assessed. This option would mean no changes to the current regulations around tobacco packs. The current regulations around the appearance of tobacco packs would remain in place.

47. The last major policy changes were in 2016 with the introduction of the EU's Tobacco Products Directive (TPD) and the introduction of Standardised Packaging of Tobacco (SPoT). Prevalence has continued to fall since their introduction, however at the current rate of decline it is unlikely the government's Smokefree 2030 target (5% or less by 2030) will be met[36]. On 11 April 2023, Minister Neil O'Brien delivered a speech[37] on achieving a Smokefree 2030, in the speech several policies to help reduce the number of smokers were announced, including consulting on pack inserts.

Figure 3: Adult smoking prevalence in England, and Tobacco Control Interventions. (Source: Adult smoking habits in the UK)



Above		Below	
A	Mandatory 'Smoking Kills' covering 30% of packaging	B	General advertising banned
C	Promotions banned	D	UK sport events sponsorship banned
E	Particular adverts in tobacconists banned	F	Large adverts in pubs/shops/clubs banned
G	Sponsorship of excepted global events banned	H	Smokefree public places
I	Minimum Age of sale raised to 18	J	Mandatory picture warnings on manufactured packages
K	Mandatory picture warnings on sold packages	L	Cigarettes vending machines banned
M	Tobacco display regulations in large shops	O	Smokefree Vehicles and NIP age of sale raised to 18
N	Tobacco display regulations in all shops	P	Nicotine Inhaling Products Age of Sale and Proxy Purchasing
Q	Standardised packaging - manufacturing regulations		
R	Tobacco and Related Products Regulations		
S	Standardised packaging - sale regulations		

48. The Minister's speech also included announcements relating to vaping, in particular a national 'swap to stop' scheme, which will offer a million smokers across England a free vaping starter kit. This policy and others that were announced are expected to increase the number of smokers that quit and reduce smoking prevalence which means they may

[36] Cancer Intelligence Team, Cancer Research UK. 2022. Smoking prevalence projections for England based on data to 2021.

[37] Minister Neil O'Brien speech on achieving a smokefree 2030: cutting smoking and stopping kids vaping - GOV.UK (www.gov.uk)

interact with this policy and change the impact that this policy has. For example, the impact pack inserts have on the number of smokers' quitting may be reduced if some quit as a result of other policies. However, currently there is no evidence on how pack inserts may interact with the other policies that were announced by the Minister.

49. As a result, there are currently no ongoing policies that are considered in the 'Do nothing' option and the most recent adult smoking prevalence, proportion quitting, and success rate of quitters is used as the baseline against which tobacco pack inserts are assessed. We will update this in any final stage impact assessment if there is more evidence on the interaction between policies.

50. The counterfactual trend in smoking prevalence is considered the same in all options, with the policy options below measuring the marginal impact against the baseline. These are discussed below in the relevant sections when assessing the options.

Option 2: Mandate tobacco pack inserts in cigarette packs and packs of hand rolling tobacco

51. Option 2: Mandate removable tobacco pack inserts in cigarette packs and packs of hand rolling tobacco.

    Introduce through regulations positive messaging insert cards into packs of cigarettes and hand rolling tobacco. This would include a standard set of images and messages as defined by the Department.

Option 3: Mandate tobacco pack inserts in cigarette packs

52. Option 3: Mandate removable tobacco pack inserts in cigarette packs only.

    Introduce through regulations positive messaging insert cards into packs of cigarettes. This would include a standard set of images and messages as defined by the Department.

Option 4: Mandate tobacco pack inserts in hand rolling tobacco only

53. Option 4: Mandate removable tobacco pack inserts in packs of hand rolling tobacco only.

    Introduce through regulations positive messaging insert cards into packs of hand rolling tobacco. This would include a standard set of images and messages as defined by the Department.

Option 5: Mandate tobacco pack inserts in all tobacco products

54. Option 5: Mandate removable tobacco pack inserts in all tobacco products.

    Introduce through regulations positive messaging insert cards into all tobacco products. This would cover cigarettes and packs of hand rolling tobacco, but also products such as cigars, cigarillos, pipe, and chewed tobacco. This would include a standard set of images and messages as defined by the Department.

Summary of preferred option

55. The preferred option at this stage is Option 2. This would make pack inserts with information helping smokers quit mandatory in packs of cigarettes and packs of hand rolling tobacco. The exact messaging is still in development at this time and the Department has commissioned external research into this.

56. In the analysis of this option (and all other options) we assume that these inserts will be at least as effective as they have been in other countries (specifically Canada). This is based on smoking prevalence in Canada being similar to the prevalence across England and the UK, and Canada and the UK having a similar framework of tobacco control policies in place.[38]

57. Inserts **may** have the following properties:

- Printed double sided cards
- Inserts would be one of a series of combined text and picture inserts from a Department of Health and Social Care approved list.
- Text on inserts would be in a specified typeface with a specified size. No additional messaging or text (such as promotions or advertising from manufacturers).
- Minimum dimensions of cards to fit into packaging, located at the front of the pack

58. The government has the necessary powers to introduce inserts by amending The Standardised Packaging of Tobacco Products regulations 2015 (SPoT) and with the agreement of the Devolved government's would like to introduce these UK wide. These regulations only apply to tobacco products packaging, and therefore new powers would be needed to extend to non-tobacco products packaging (such as filters, and rolling paper) and therefore are considered out of scope at this time.

59. The government is aware that introducing inserts into packets will require industry time to implement, and therefore a transition period would likely be in place: to reduce waste and financial impact on industry it is intended the regulations will include an implementation period of one year for existing stock on sale to be sold without inserts.

60. The policy would be intended to help people quit tobacco. We anticipate more smokers will seek advice to quit smoking and stop smoking in line with the evidence from Canada upon introduction of inserts in packs of cigarettes and hand rolling tobacco.

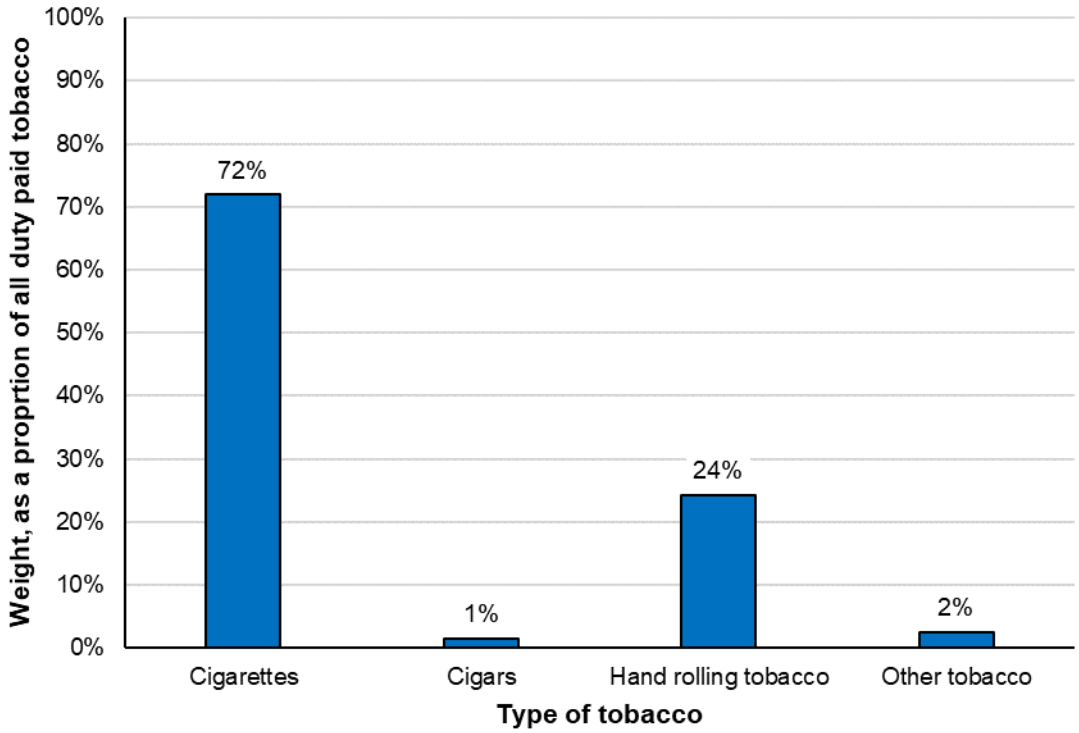
61. It is anticipated that the government will use the existing offences and enforcement powers set out in the Standardised Packaging of Tobacco Products Regulations 2015 where there is no compliance with insert cards rules. Local enforcement agencies would manage this. The analysis of the costs and benefits this and the other options considered is in the next section of this impact assessment.

[38] Heydari G. 2017. Which countries are the best in tobacco control? A quantitative analysis of the MPOWER.

Option 2: Costs and Benefits

62. This option is for adding pack inserts to both packs of factory made cigarettes and packs of hand rolling tobacco across the UK. Together, these make up over 95% of the volume of sold tobacco (based on duty clearances and receipts[39]).

Figure 4: Types of tobacco, and their volume as a proportion of all duty paid tobacco. Cigarettes assumed to weigh 1g on average. (Source: HMRC. Tobacco bulletin.)



63. If the policy is successful, the main benefits may accrue through:

- Health benefits upon improved quit rates
- Reduced adult and child ill-health caused by second hand smoke (SHS), including avoidable treatment costs
- Reduction in health inequalities

64. The main categories of costs considered are:

- The costs to manufacturers, wholesalers, and retailers, including a reduction in profits associated with fewer number of smokers
- Costs to the Exchequer through the loss of tax from reduced tobacco consumption

65. There may also be additional administrative costs to the Department as a result of research, design costs, and enforcement costs.

66. A summary of the costs and benefits is below, followed by details regarding each cost and benefit identified and estimated. Most elements of the cost-benefit analysis rely on the overall effect size of the policy, which we outline independently to begin with.

[39] HMRC. Tobacco Bulletin. January 2023.

Summary of costs and benefits by stakeholder group – Option 2

Stakeholder		Impact	Cost/Benefit	Quantified?	Estimate (£m)	In NPV?	In EANDCB?	Ref.
General population of smokers, quitters, and non-smokers	1	Health benefits from current adult smokers quitting	Benefit	Yes	1,603	Yes	No	76-79.
	2	Health benefits from reduced second hand smoke exposure	Benefit	No	-	N/A	N/A	80-83.
	3	Litter from increased packaging, environmental damage, etc	Cost	No	-	N/A	N/A	84-87.
Businesses who employ smokers	4	Fewer smokers at work improves productivity	Benefit	No	-	N/A	N/A	88-90.
Retailers of tobacco	5	Profits decreased due to reduced tobacco sales from fewer smokers	Cost	Yes	-22.5	Yes	Yes	91-99.
Wholesalers of tobacco	6	Profits decreased due to reduced tobacco sales from fewer smokers	Cost	Yes	-6.0	Yes	Yes	101-102.

Stakeholder		Impact	Cost/Benefit	Quantified?	Estimate (£m)	In NPV?	In EANDCB?	Ref.
Tobacco manufacturers and shareholders	7	Profits decreased due to reduced tobacco sales from fewer smokers	Cost	Yes	-8.2	No	No	104-106.
	8	Production of pack inserts	Cost	Yes	-116	No	No	108-117.
Manufacturers, retailers, and wholesalers of other goods and services	10	Increase in profits from less expenditure on tobacco	Benefit	No	-	N/A	N/A	100, 103, 107.
NHS	11	Reduced immediate healthcare usage	Benefit	No	-	N/A	N/A	118
HMRC & Taxpayers	12	Tax and duty decreased due to reduced tobacco sales	Cost	Yes	-278.7	Yes	No	119-127.
DHSC	13	Research/design of inserts	Cost	Yes	-0.3	Yes	No	128-131.
	14	Enforcement	Cost	No	-	N/A	N/A	132-133.
Local Authorities	15	Increased demand for LSSS	Cost	No	-	N/A	N/A	134-139.

Effect size

67. The outcome of the estimated effect size is the number of additional successful quitters we expect to see as a result of introducing pack inserts. This is based on a range of data and evidence outlined below.

68. To estimate the number of additional successful quitters, we first need to establish the number of people reading inserts. The estimated smoking prevalence in the UK in 2021 was 13.3%.[40] Multiplying this by the estimated number of adults (18+) in the UK in mid-2021 (53,188,204)[41], produces an estimate for the number of smokers in the UK: 7,074,031.[42]

69. Evidence from Thrasher et al. found between 16% and 19% of smokers were reading pack inserts a few times or more in the past month. The total proportion reading them at all was higher, however results were significant for those reading them a few times or more. Using the lower end at 16%, 1,131,845 smokers in the UK would read pack inserts a few times or more. This is likely an underestimate for the UK, as pack inserts were already in place in Canada, and the above evidence relates to a change in the visuals of the inserts. It is likely that in the UK, given their novelty, a higher proportion of smokers would initially read inserts.

70. Of those 1,131,845 smokers, a number of them would likely attempt to, and succeed in, quitting smoking without pack inserts. This could be from a range of measures already in place to reduce smoking prevalence.[43] Data from the Smoking Toolkit Study[44] found that pre-pandemic[45], around 29% of smokers attempted to quit in the past year. Therefore without the introduction of pack inserts we would expect around 329,367 quit attempts from the 1,131,845 smokers who would read inserts.

71. Evidence from Thrasher et al. found an increased odds ratio of attempting to quit of 1.57 for those reading pack inserts a few times or more. However, Thrasher et al. also found an increased odds ratio of reading inserts for smokers that already intend to quit of 1.23. Therefore, there may be additional smokers that read the inserts a few times or more that may also be planning on quitting that are not accounted for in the 329,367 quit attempts above. To avoid overestimating the number of additional quit attempts we would expect to see because of pack inserts, we have adjusted the odds ratio of attempting to quit found by Thrasher et al. by 20%. This is to account for the fact that other factors may have contributed to making a quit attempt. As a result, we assume that the increased odds ratio of making a quit attempt is 1.46[46] for those reading pack inserts a few times or more. This means of the 1,131,845 million smokers reading pack

[40] ONS. 2022. Adult smoking habits in the UK: 2021.
[41] ONS. 2022. Mid-year population estimates, 2021.
[42] This is higher than the number quoted in the publication, Adult smoking habits in the UK, however this methodology is consistent with estimates of the number of smokers in the population produced by OHID.
[43] Such as graphic text and picture warnings and price increases through the duty escalator
[44] UCL. Smoking Toolkit Study: Tried to stop smoking in the past year. 2022.
[45] Pre-pandemic data on quitting behaviour is used throughout this Impact Assessment to avoid any potential short term impact of Covid on quitting behaviour.
[46] 1 + ((1.57 - 1) x (1 - 0.2)) = 1.46

inserts, we would actually expect 479,558 of them to make a quit attempt (42% of those reading inserts a few times or more) – 150,191 more than normal.

72. There was limited evidence suggesting increased success chances related to pack inserts; therefore we assume the same proportion of quits attempts lead to successes. Based on an increase in the number of people making a quit attempt, applying the same quit success rate would result in an additional number of quitters compared with the “Do nothing” option.

73. From the Smoking Toolkit Study 14% of quits were successful. This accounts for smokers who attempt to quit but end up relapsing. Based on this, of the 150,191 extra quit attempts made due to pack inserts, there would be an additional 21,177 adults successfully quitting smoking as a result of pack inserts a year.

74. The evidence from Thrasher et al. included 2,252 adult smokers surveyed between September 2012 and January 2014. The study surveyed smokers for two years, and based on this we expect the policy to have an impact for at least two years.

75. The policy is expected to have a transition period as pack inserts are introduced over a year, with old stock being sold off. Therefore we assume that the expected impact would be halved across the transition period (10,588 quitters) – the first year of implementation.

- Based on the fact that we use the lower bound for many of these estimates and adjusted the odds ratio for making a quit attempt for optimism bias, we might expect them to underestimate the actual impact pack inserts will have. The pack inserts will be present at least until the regulations are evaluated, having some level of impact. However, no evidence has quantified the long term impacts of pack inserts.

- The use of pre-pandemic data for quit attempt and success rate also likely produces more conservative estimates. A rise in quit attempts and success rates was observed during the pandemic. Using the most recent data post-pandemic would produce a significantly increased estimated numbers of quitters.

- The methodology outlined above does not account for the illicit market for tobacco. While we have some data on the estimated market share of illicit cigarettes and hand rolling tobacco (9% and 34% respectively) we do not have evidence on individuals’ smoking habits, for instance to understand whether smokers smoke solely licit or illicit tobacco and whether they may be exposed to pack inserts some of the time. It has therefore not been possible to adjust our estimates of the number of successful quitters to account for a proportion of smokers not seeing the inserts.

- The effect size, which a lot of the estimated impacts depend upon, is explored in the sensitivity analysis.

General population of smokers, quitters, and non-smokers

Health benefits from current adult smokers quitting smoking

76. There are established benefits from quitting smoking[47], and previous impact assessments have quantified the average benefit from a person quitting smoking.[48] Based on the same methodology, the estimated average benefit in life years from a person quitting smoking has been updated. The estimates were first produced over 5 years ago, and there have been changes in the profile of smokers that affect the results. A summary of the methodology can be found in Annex B with the main result as follows:

- The discounted number of life years saved for a randomly chosen adult smokers who quits smoking is 0.74.[49]

77. HMT's The Green Book[50] places a value of £70,000 on a QALY. The estimated benefits are in life years gained; however it remains appropriate to use the same value of a QALY for life years where QALY estimates are not readily available. Therefore for every adult quitting smoking we estimate benefits of roughly £52,040 by multiplying the number of life years saved by the value of a QALY.

78. Based on the estimated effect size of an additional 10,588 quitters in the first year, and 20,937 adults quitting smoking in the second year (a total of 31,525) the number of life years gained would be 23,437. The benefits from adults quitting smoking would be roughly £1,640,569,737 (1.6 billion). These are discounted in line with RPC guidance to produce a final figure included in the NPV of £1,603,725,191 (£1.6 billion).

- It is assumed that these health benefits are realised within the 10-year appraisal period. Figure 5[51] shows the established health benefits of quitting smoking are shown to accrue relatively quickly.

Figure 5: What happens when you quit smoking

[47] NHS. Quit smoking, Stopping smoking for your mental health, Prevention: Lung Cancer.
[48] DHSC. Standardised packaging of tobacco products. 2015.
[49] Rounded figure.
[50] HMT. The Green Book. Updated 2022.
[51] NHS. Quit smoking

79. As above[52], it is likely this is an underestimate of the true benefits expected as a result of this option. This is because the effect size uses conservative estimates throughout and an assumed reduced initial impact in the first year over the transition period, and one full year of impact following this.

Health benefits from a reduction in second hand smoke exposure

80. Any reduction in smoking rates and the number of smokers would result in a reduction in second-hand smoke (SHS) exposure. SHS is harmful to anyone, with children being particularly vulnerable to health conditions caused by SHS exposure.[53]

81. Previous impact assessments of tobacco control policies[54] reviewed the evidence available to quantify the economic impact of SHS exposure and estimate the benefits any reduction in exposure would bring.

82. In 2010, the Royal College of Physicians (RCP) identified links between SHS and a number of causes of morbidity in infants and children. The report estimated the cost of primary care and hospital admissions related to childhood disease caused by SHS to be £23.3 million a year in the UK.[55] Since 2010 and the introduction of further smoke-free legislation[56], children's exposure to SHS has decreased.[57] In 2018, the RCP produced the 'Hiding in plain sight' report.[58] This provided an estimate for the cost of admitted patient care in children attributable to smoking in England in 2015/16. The cost range was based on two alternative estimates of the percentage of children exposed to second hand smoke. They estimated that exposure of children to passive smoking costs the NHS in England between £5 and £12 million in hospital costs.

83. Although the evidence identified above presents a range of costs, it is not possible to quantify the specific impact pack inserts would have on the costs second hand smoke exposure imposes on the NHS. For this reason, these benefits remain a non-monetised benefit and are not included in the NPV or EANDCB.

Impact of tobacco litter

84. The latest estimates from the Department for Environment, Food & Rural Affairs (DEFRA) put the cost of cleaning up cigarette butts to local authorities at £40 million per year.[59] Keep Britain Tidy surveyed 7,200 sites across the country with cigarette butts being the most commonly littered item (found on 77% of sites).[60]

85. The pack inserts in this option are considered to be removable cards inside cigarette packs and packs of hand rolling tobacco. If these were introduced, it would increase the

[52] See *Effect Size*
[53] NHS. Passive smoking. Reviewed 2022.
[54] DHSC. Standardised packaging of tobacco products. 2015.
[55] Royal College of Physicians. 2010. Passive smoking and children.
[56] Such as the Smoke-free (Private Vehicles) Regulations, 2015
[57] NHS Digital. 2019. Smoking Drinking and Drug use among Young People in England, 2018.
[58] Royal College of Physicians. 2018. Hiding in plain sight.
[59] DEFRA, DHSC. 2021. Government explores next steps to clean up tobacco litter in England - GOV.UK (www.gov.uk).
[60] Keep Britain Tidy. Litter in England: The local environmental quality survey of England 2019/20.

overall amount of ‘packaging’ included with each purchase, and in turn increase the amount of potential litter associated with tobacco. However, pack inserts are also expected to reduce the number of smokers in the UK. This would reduce the overall litter associated with tobacco as there would be fewer of packs of cigarettes and packs of hand rolling tobacco sold each year. There would be more inserts produced than fewer packs sold due the pack inserts, therefore there may be an overall increase in tobacco litter.

86. It has not been possible to quantify the specific impact of pack inserts on litter costs, and therefore remains non-monetised and is not included in the Net Present Value (NPV) of the policy or the Equivalent Annual Net Cost to Business (EANDCB).

87. Further environmental impacts are considered in the specific impact tests at the end of the impact assessment.

Businesses who employ smokers

Fewer smokers at work improved productivity

88. Estimates suggest that the cost of smoking to society goes beyond the impact of smoking on health services. Estimates from Action on Smoking and Health (ASH) suggested the total cost of smoking to society to be £17 billion in England, of which over £13 billion was the productivity cost of smoking. The analysis found that in the UK, the total lost productivity due to smoking was £14 billion. This was made up of loss of earnings for current smokers already in work and the earnings of people not currently in work but otherwise would be. Dividing the expected number of quitters by the total number of UK smokers, and applying this to the total productivity losses of £14 billion would suggest a benefit of roughly £62 million.[61]

89. Previous impact assessments have quantified benefits from fewer smokers at work as a result of the policies. Standardised packaging of Tobacco was expected to provide £900 million in benefits as a result of fewer smokers at work. This was based on the estimated productivity loss per smoker (as time lost as a result of smoking) and the average hourly wage, then multiplied by the number of quitters as a result of the policy. Based on the same methodology tobacco pack inserts would provide a benefit of £90 million. However, the evidence these estimates are based on is from 2007.

90. These estimates suggest there would be some productivity gains from a reduction in smoking prevalence. However given the range of these estimates and that the realisation of these productivity gains is not well evidenced, this benefit is considered not monetised and not included in the final NPV of the policy or the EANDCB.

[61] (31,525 / 7,074,031) x £14 billion = £62 million

Retailers

Profits decreased due to reduced tobacco sales from fewer smokers

91. A reduction in the number of smokers would result in a reduction in sales of tobacco. As a result, retailers, wholesalers, and manufacturers of tobacco would experience a reduction in profits on tobacco.

92. In this option, both factory made packs of cigarette and packs of rolling tobacco would be affected. To quantify the cost to this group of stakeholders as a result of this option, the number of fewer packs sold is estimated and combined with the estimated profit loss per pack to produce an estimate for the total cost to retailers.

93. The number of fewer packs sold is based on the effect size (the number of quitters), and the number of cigarettes the average person smokes, as well as the proportion of smokers who smoke each type of product.

94. The Health Survey for England[62] (HSE) found that in 2021 the median consumption was around 9 cigarettes a day. Adult Smoking Habits in the UK found a similar level of consumption, with consumption increasing with age. Based on the median figure from the HSE of 9 cigarettes a day, the average smoker is estimated to smoke around 3,285 cigarettes a year.

95. For those smoking factory made packs of cigarettes with a minimum pack size of 20, this would be roughly 164 packs a year. Hand rolling tobacco is sold in packs of minimum 30g. Hand rolled cigarettes differ in weight, with one study finding a broad range[63] with the median being roughly 0.5g, with the highest being 0.9g. Using the higher end of this range and estimating 1g per hand rolled cigarette, those smoking hand rolled tobacco would consume an equivalent of 110 packs a year.

- Using the higher end reduces the risk of underestimating the costs, as we are assuming a greater level of consumption.

96. The impact of pack inserts is assumed to apply equally to those smoking factory made packs of cigarettes and those smoking hand rolled tobacco. Around 56% of smokers smoked mainly factory made cigarettes[64], so we assume 56% of those who quit mainly smoked factory made cigarettes.

97. A smoker who quits is assumed to not purchase tobacco for the remainder of the appraisal period (10 years). Therefore, retailers lose out on profits each year for every smoker who quits. Based on the number of quitters[65], and that 56% mainly smoke factory made cigarettes, an estimated 2.9 million fewer factory make packs of cigarettes will be sold each year, and 1.8 million fewer packs of hand rolling tobacco. Future years costs are discounted at a rate of 3.5% in line with The Green Book.

[62] NHS Digital. 2022. Health Survey for England, 2021 part 1.
[63] KG Darral, JA Figgins. Roll-your-own smoke yields: theoretical and practical aspects. 1998.
[64] ONS. Adult Smoking Habits in the UK 2019. 2020.
[65] See *Effect size*

98. Evidence suggests profit margins for retailers (particularly small retailers) on tobacco is small. One paper[66] found the majority had profit margins of less than 6%, with the most common response being 4-6%. Based on this a profit margin for retailers of 5% is used to estimate lost profits to retailers. The average price of a 20-pack of cigarettes in 2021 was £12.61[67], producing an estimated profit loss per pack of £0.60.[68]

99. Therefore based on an estimated 2.9 million fewer factory made packs of cigarettes will be sold each year, and 1.8 million fewer packs of hand rolling tobacco, multiplied by the estimated profit margin, we estimate the total costs in lost profits to retailers to be:

- £22.5 million for retailers (borne by all retailers of tobacco, and over 10 years)

Increase in profits from less expenditure on tobacco

100. It is likely that losses estimated will at least in part be offset by increased profits on goods and services purchased in place of tobacco. Specifically for retailers, these goods will also likely carry a higher profit margin than tobacco.

Do you have any more evidence to inform the estimated loss in profits for retailers?

Are there any other impacts on retailers not currently accounted for (such as reduced footfall in shops)?

Wholesalers

Profits decreased due to reduced tobacco sales from fewer smokers

101. The methodology for estimating lost profits for wholesalers is the same as for retailers above, with the only change being the overall profit per pack lost.

102. Profit estimates for wholesalers is based on information obtained through the Standardised packaging of tobacco (SPoT) impact assessment consultation. This concluded the average profit for wholesalers to be £0.16 per pack. Therefore based on an estimated 2.9 million fewer factory made packs of cigarettes will be sold each year, and 1.8 million fewer packs of hand rolling tobacco we estimate the total costs in lost profits to wholesalers to be:

- £6.0 million for wholesalers (borne by all wholesalers, and over 10 years)

Increase in profits from less expenditure on tobacco

103. It is likely that losses estimated will at least in part be offset by increased profits on goods and services purchased in place of tobacco.

[66] S Hitchman et al. 2016. Small retailers' tobacco sales and profit margins in two disadvantaged areas of England.
[67] ONS. RPI: Average price – Cigarettes 20 king size filter.
[68] Calculated as the difference between the price, and the price divided by 1 plus the expected profit margin of 5%.

If you have further evidence to inform the estimated loss in profits for wholesalers, please provide information.

If you think there will by any other impacts to wholesalers that we have not accounted for, please provide information.

Manufacturers of tobacco and shareholders

Profits decreased due to reduced tobacco sales from fewer smokers

104. The methodology for estimating lost profits for wholesalers is the same as for retailers above, with the only change being the overall profit per pack lost.

105. Profit estimates for manufacturers are based on information obtained through the Standardised packaging of tobacco (SpoT) impact assessment consultation.. For manufacturers this was £0.22 per pack of factory made cigarettes and £0.26 per pack of hand rolling tobacco. Therefore based on an estimated 2.9 million fewer factory make packs of cigarettes will be sold each year, and 1.8 million fewer packs of hand rolling tobacco we estimate the total costs in lost profits to manufacturers to be:

- £8.2 million for manufacturers (assumed to be mostly borne by transnational tobacco companies not based in the UK. No UK production of cigarettes or hand rolling tobacco currently occurs[69]).

106. The profit losses are not considered to be in the NPV or EANDCB due to the cost being borne by business not based in the UK.[70]

Increase in profits from less expenditure on tobacco

107. It is likely that losses estimated will at least in part be offset by increased profits on goods and services purchased in place of tobacco.

Increased production costs of pack inserts

108. Additional packaging would incur a cost to tobacco manufacturers. This would be in the form of materials as well as printing of the pack inserts. To estimate the cost of producing pack inserts, the unit cost of inserts has been estimated from a range of data, and then combined with the number of packs of factory made cigarettes and hand rolling tobacco that are sold in the UK each year.

109. No direct evidence on the production cost of pack inserts was available, therefore at this stage alternative evidence is used to produce a range of estimates for the unit cost.

110. In the Standardised Packaging of Tobacco impact assessment, responses to the consultation provided a cost for a ‘blank carton’ for factory made cigarette packs. This was quoted as 10 to 50 euros for 1,000 blank cartons (the whole box), or 1 to 5 pence per blank carton. The maximum size of an insert would be the same size as the largest

[69] BBC. 2016. Last English-produced cigarettes made in Nottingham (accessed 03/2023).
[70] RPC. RPC short guidance note on issues around defining a ‘business’.

(front or back facing) side of the carton. This would make up less than 50% of the total surface area of a carton, therefore we assume material costs of around half the stated range per unit, so 0.5p to 2.5p per insert.

111. In the Tobacco and Related Products Regulations 2016 impact assessment a similar policy was introduced for e-cigarettes and e-liquids. This was to include information leaflets in e-cigarette packs. Responses from the consultation suggested a cost of between 1p to 10p per leaflet and used an average of 4p in the impact assessment.

112. The pack inserts would also be similar to business cards. Online quotes for business cards also provide a useful guideline as these include the material and printing cost. Two different companies were looked at. For standard 85mm x 55mm business cards, the following was available[71]:

Company 1		**Company 2**	
Volume	Price per unit	Volume	Price per unit
100	£0.13	100	£0.15
250	£0.07	250	£0.08
500	£0.04	500	£0.06
1,000	£0.03	1,000	£0.04
-	-	5,000	£0.03

113. Across the evidence, unit costs could vary depending on the volume, from 0.5p per insert to 4p per insert. It is likely given the number of packs sold (and therefore required pack inserts), that the unit cost would be on the lower end of this due to the cost reducing based on volume required. For this reason, an assumed unit cost of 1p per insert is used for cigarettes and hand rolling tobacco.

114. From HMRC's tobacco duty bulletin[72], there were roughly 22 billion cigarettes released for clearance in the UK in 2021. Based on a minimum pack size of 20 cigarettes, this results in roughly 1.1 billion packs per year. There were also roughly 7.5 million kilograms of hand rolling tobacco released for clearance. Based on the minimum pack size of 30 grams this would be roughly 250 million packs of hand rolling tobacco each year. This would be a total of almost 1.36 billion pack inserts required each year.

- Using the minimum pack sizes of 20 cigarettes and 30 grams reduces the risk of underestimating the costs of production.

115. The cost of producing pack inserts would be incurred each year as a continuous cost to manufacturers. To produce 1.36 billion pack inserts a year would cost almost £13.6 million. Discounting future years in line with rates from The Green Book, would mean a total cost of £117 million to manufacturers of tobacco over 10 years.

- This assumes the amount of tobacco produced and consumed remains the same for the next 10 years.

116. This is the largest cost to business, and would be borne by large transnational tobacco companies. However, for packs of factory made cigarettes and packs of hand rolling

[71] These prices were gathered from online sources in late 2022.
[72] HMRC. Tobacco Bulletin. April 2022.

tobacco, there is no longer any manufacturing based in the UK.[73] This cost is therefore not included in the Net Present Value or Equivalent Annual Net Direct Cost to Business.

117. The range of unit costs for producing pack inserts is explored in the sensitivity analysis.

If you have evidence to inform the estimated loss in profits to manufacturers, please provide information.

If you have evidence to inform the cost of producing and implementing pack inserts, please provide details.

If you have evidence to inform further impacts to manufacturers by mandating pack inserts, please provide details.

NHS

Changes in healthcare use

118. A reduction in the number of smokers would have an impact on the NHS. In 2019/20 there were an estimated 448,034 hospital admissions attributable to smoking.[74] The overall cost to the NHS is estimated to be £2.4 billion a year.[75] Evidence found a statistically significant impact on the number of hospital admissions due to a reduction in smoking[76], therefore any reduction in the number of smokers would reduce the cost of smoking to the NHS. As in previous impact assessments an impact on the NHS costs is not included, despite evidence on the immediate impact on hospital admissions. This is due to the lack of evidence on how changes would be realised in terms of costs, and over what timescale.

HMRC and Taxpayers

119. A reduction in the number of smokers would result in a reduction in sales of tobacco. This would also reduce the amount of tobacco tax and duty collected by HMRC.

120. In this option, both factory made packs of cigarette and packs of rolling tobacco would be affected. To quantify the reduction in tax and duty collected as a result of this option, the number of fewer packs sold is estimated and combined with the estimated tax and duty loss per pack to produce an estimate for the total reduction in tax and duty.

121. The number of fewer packs sold is based on the effect size (the number of quitters), and the number of cigarettes the average person smokes. The methodology here is the same as for calculating the lost profits for other stakeholders

[73] BBC, Last UK-made cigarettes roll off JTI production line. 2017.
[74] OHID. Local tobacco control profiles: Smoking attributable hospital admissions.
[75] ASH. 2022. Smoking costs society £17bn – £5bn more than previously estimated. Smoking costs society £17bn – £5bn more than previously estimated - Action on Smoking and Health (ash.org.uk) (accessed 03/23).
[76] M Sims, R Maxwell, L Bauld, A Gilmore. Short-term impact of smoke free legislation in England: retrospective analysis of hospital admissions for myocardial infarction. 2010.

122. Tobacco duty rates set by HMRC are set out below. 2021 rates are used to be consistent with cigarette price data available:

Product	**Duty rate** (October 2021)	
Cigarettes	Highest of:	£262.90 per 1,000 cigarettes plus 16.5% of retail price
		£347.86 per 1,000 cigarettes (MET)
Hand rolling tobacco	£351.03 per kg	

123. Based on the price of an average pack of cigarettes of £12.61[77] in 2022, which is above the MET threshold; we calculate the total duty to be the specific duty per pack (£294.72 per 1,000) plus the ad-valorem rate of 16.5% of the retail price. The estimated duty per pack is then £5.89 in specific duty plus £2.08 of ad-valorem tax, for a total of £7.98 duty paid per pack. This is 63% of the total price of the average pack.

124. The only duty payable on hand rolling tobacco is the specific duty (£351.03 per kg). The total duty payable per 30g pack of hand rolling tobacco is estimated to be £10.53.

125. A smoker who quits is assumed to not purchase tobacco for the remainder of the appraisal period (10 years). Based on the number of quitters[78], and that 56% mainly smoke factory made cigarettes, an estimated 2.9 million fewer factory made packs of cigarettes will be sold each year, and 1.8 million fewer packs of hand rolling tobacco.

126. Future years costs are discounted at a rate of 3.5% in line with The Green Book, meaning the total reduction in tax and duty revenue will be around £278.7 million over 10 years.

127. The potential changes in duty rates will be explored in the sensitivity analysis, and future changes to duty rates and cigarette prices will be considered after the consultation.

Department of Health and Social Care

Research and design of pack inserts

128. As part of these regulations, inserts would require tobacco manufacturers to include a range of information cards inside smoked tobacco packets. Tobacco manufacturers would pay for the printing and inserting of the cards, but DHSC would host the insert designs for industry to access.

129. To further develop the UK knowledge base of inserts, The Department of Health and Social Care has commissioned the University of Stirling to undertake further research on UK smokers on their views on cards and to test their impact and what appeals to

[77] ONS. RPI: Ave price – Cigarettes 20 king size filter.
[78] See *Effect size*

them. This work commenced in January 2023. The Department will then provide the necessary designs of cards through regulations.

130. We currently expect the costs of the research undertaken by DHSC to be between £100,000 and £300,000. We have used £300,000 as our central estimate to avoid underestimating the costs to DHSC.

131. There will be additional costs on the Department in designing them, hosting them and making them available for manufacturers to use. We do not currently have an estimate for these costs but expect them to be small.

Enforcement

132. Additional enforcement to ensure the regulations are being followed may be necessary. The government will use the existing offences and enforcement powers set out in the Standardised Packaging of Tobacco Products Regulations 2015 where there are failures to include inserts in packs. This will be managed by local enforcement agencies.

133. We do not currently have an estimate for the cost of enforcement.

Are there any other stakeholder groups that would be impacted by introducing pack inserts?

Provide the stakeholder group, reasoning, and any evidence to estimate the impact

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Local Authorities

Additional quitters engaging with stop smoking services

134. Smokers who attempt to quit might do so through a range of different methods. Not all smokers who attempt to quit will access Local Stop Smoking Services – many will attempt to quit by themselves using alternatives that are available to buy, such as over the counter nicotine replacement therapies. In these cases, there would not be a cost to local authorities to provide support for those attempting to quit.

135. However it is likely that the inserts would guide smokers towards Local Stop Smoking Services in order to make a quit attempt, as supported quit attempts are much more likely to be successful. These would impose a burden on Local Authorities to provide support and pharmacotherapies to smokers attempting to quit.

136. The latest data from Local Stop Smoking Services shows that between April 2021 and March 2022, 178,198 people set a quit date with services in England. Of those, 97,654

were successful in quitting smoking.[79] The average cost per quitter[80] in 2021/22 was £759, however this varies by local authority.

137. While not all those who quit will do so through Local Stop Smoking Services, to demonstrate the potential burden if we apply the cost per quitter to the total number of additional quits, the cost would be roughly £30 million over two years.

138. The central effect size estimates use a quit success rate of 14% (which is an average for all smokers making a quit attempt). Evidence shows that people using a Local Stop Smoking Service to try and quit smoking are more likely to be successful. For example, a study by Kotz et al.[81] estimated that smokers that used specialist behavioural support alongside prescribed medication were 2.58 times more likely to be abstinent 6-months after trying to quit. Therefore, if all those making a quit attempt as a result of pack inserts do so through Local Stop Smoking Services, a much larger number of additional quitters would be expected. This would produce increase the total benefits and costs associated with this policy, assuming Local Stop Smoking Services were able to provide support for an additional number of quitters.

139. It has not been possible to produce a robust estimate for the impact on Local Authorities as it is not clear how people will attempt to quit smoking; therefore this cost remains unquantified and is not included in the Net Present Value.

[79] NHS Digital. 2022. Statistics on NHS Stop Smoking Services in England April 2021 to March 2022.

[80] Across all Local Authorities, including pharmacotherapy costs, but excluding nil returns. Cost per quitter is estimated as the total spent divided by the number of successful quitters.

[81] Kotz et al. her et al. Prospective Cohort Study of the Effectiveness of Smoking Cessation Treatments Used in the "Real World". 2014

Option 3: Costs and Benefits

140. This option is for adding pack inserts to packs of factory made cigarettes across the UK. These make up over 70% of the volume of sold tobacco (based on duty clearances and receipts[82]).

141. If the policy is successful, the main benefits may accrue through:

- Health benefits upon improved quit rates
- Reduced adult and child ill-health caused by second hand smoke (SHS), including avoidable treatment costs
- Reduction in health inequalities
- Improved workplace productivity

142. The main categories of costs to be considered are:

- The costs to manufacturers, wholesalers, and retailers, including a reduction in profits associated with fewer number of smokers
- Costs to the Exchequer through the loss of tax from reduced tobacco consumption
- There may also be additional administrative costs to the Department as a result of research, design costs, and enforcement costs.

143. A summary of the costs and benefits is presented below. Many elements of the cost-benefit analysis rely on the overall effect size of the policy, and use the same methodology as in Option 2 but restricted to only those who smoke packs of cigarettes.

[82] HMRC. Tobacco Bulletin. January 2023.

Summary of costs and benefits by stakeholder group – Option 3

Stakeholder		Impact	Cost/Benefit	Quantified?	Estimate (£m)	In NPV?	In EANDCB?	Ref.
General population of smokers, quitters, and non-smokers	1	Health benefits from current adult smokers quitting	Benefit	Yes	971.9	Yes	No	146
	2	Health benefits from reduced second hand smoke exposure	Benefit	No	-	Yes	No	147
	3	Litter from increased packaging, environmental damage, etc	Cost	No	-	N/A	N/A	148
Businesses who employ smokers	4	Fewer smokers at work improves productivity	Benefit	No	-	N/A	N/A	150-152.
Retailers of tobacco	5	Profits decreased due to reduced tobacco sales from fewer smokers	Cost	Yes	-14.6	Yes	Yes	153-156.
Wholesalers of tobacco	6	Profits decreased due to reduced tobacco sales from fewer smokers	Cost	Yes	-3.9	Yes	Yes	158

Stakeholder		Impact	Cost/Benefit	Quantified?	Estimate (£m)	In NPV?	In EANDCB?	Ref.
Tobacco manufacturers and shareholders	7	Profits decreased due to reduced tobacco sales from fewer smokers	Cost	Yes	-5.4	No	No	160-161
	8	Production of pack inserts	Cost	Yes	-95	No	No	163-166.
Manufacturers, retailers, and wholesalers of other goods and services	10	Increase in profits from less expenditure on tobacco	Benefit	No	-	N/A	N/A	157, 159, 162.
NHS	11	Reduced immediate healthcare usage	Benefit	No	-	-	-	167
HMRC & Taxpayers	12	Tax and duty decreased due to reduced tobacco sales	Cost	Yes	-180.7	Yes	No	168-170.
DHSC	13	Research/design of inserts	Cost	Yes	-0.3	Yes	No	171
	14	Enforcement	Cost	No	-	N/A	N/A	172
Local Authorities	15	Increased demand on LSSS	Cost	No	-	N/A	N/A	173-174.

Effect size

144. The methodology of this option is the same as in Option 2, but restricted to only those who smoke packs of cigarettes. For this, we use data from ONS' Adult smoking habits in the UK for the proportions of smokers who smoke different types of cigarette. The latest data available is 2019[83] and this found 48.8% of smokers mainly smoked packs of cigarettes and a further 7.7% smoked both packs and hand rolling tobacco, and a further 4.1% smoked both but mainly hand rolling tobacco. This puts the proportion smoking packs of cigarettes to be 60.6% which is applied to the number of smokers (7,074,031) to get the number of smokers smoking cigarettes.

145. Then, based on the same methodology as Option 2, compared to the baseline, this option estimates an additional 6,417 quitters in year one during the transition period, and 12,688 in year two. The total expected number of quitters is 19,104.

General population of smokers, quitters, and non-smokers

Health benefits from current adult smokers quitting smoking

146. Based on the estimated effect size of an additional 6,417 quitters in the first year, and 12,688 adults quitting smoking in the second year (a total of 23,874) the number of life years gained would be 14,203. The benefits from adults quitting smoking would be £994,185,260 (£994 million), and once discounted the final figure to include in the NPV is £971,857,466 (£971 million).

Health benefits from a reduction in second hand smoke exposure

147. In this option, the potential benefits remain a non-monetised benefit and are not included in the NPV or EANDCB as in Option 2.

Impact of tobacco litter

148. If pack inserts were required for only cigarettes, there would be fewer pack inserts produced than in Option 2, and therefore any associated costs would be lower.

149. In this option, the potential impact on tobacco litter remains non-monetised and is not included in the Net Present Value (NPV) of the policy or the Equivalent Annual Net Cost to Business (EANDCB).

Businesses who employ smokers

Fewer smokers at work improved productivity

150. In this option, the proportional decrease in productivity losses based on 23,874 quitters applied to the ASH estimates of £14 billion in lost productivity suggests a benefit of roughly £38 million.[84]

[83] ONS. 2020. Adult smoking habits in the UK:2019.
[84] (19,104 / 7,074,031) x £14 billion = £38 million

151. Using previous impact assessment methodology, this option would provide a benefit of £54 million.

152. As in Option 2, while fewer smokers would provide some benefit in terms of productivity, the realisation of these productivity gains is not well evidenced. Therefore, this benefit is not monetised and not included in the final NPV of the policy or the EANDCB.

Retailers of tobacco

Profits decreased due to reduced tobacco sales from fewer smokers

153. As in Option 2, a reduction in the number of smokers would result in a reduction in sales of tobacco and therefore profits would be affected.

154. Despite this option only requiring pack inserts in packs of cigarettes, it is likely there would be some impact on sales of hand rolling tobacco too to some extent due to the overlap in products smokers smoke.

155. Of the 23,874 quitters, an estimated 93% would mainly smoke packs of cigarettes, with roughly 7% smoking both packs of cigarettes and hand rolling tobacco, but mainly hand rolling tobacco.[85]

156. Based on this, there would be an estimated 2.9 million fewer packs of cigarettes sold, and 0.1 million fewer equivalent packs sold due to quitters who mainly smoked hand rolling tobacco. Multiplying the reduction in the number of packs of factory sold and hand-rolling tobacco sold by the profit margins, we estimate the total costs in lost profits to be:

- £14.6 million for retailers (borne by all retailers of tobacco, and over 10 years)

Increase in profits from less expenditure on tobacco

157. In this Option, it is likely that the losses estimated will at least in part be offset by increased profits on goods and services purchased in place of tobacco. Specifically for retailers, these goods will also likely carry a higher profit margin than tobacco.

Wholesalers of tobacco

Profits decreased due to reduced tobacco sales from fewer smokers

158. Based on the changes in packs sold above by retailers of tobacco, 2.9 million fewer packs of cigarettes, and 0.1 million fewer equivalent packs of hand rolling tobacco, the total costs in lost profits to wholesalers for this option is estimated to be:

- £3.9 million for wholesalers (borne by all wholesalers, and over 10 years)

Increase in profits from less expenditure on tobacco

[85] Based on ONS. 2020. Adult Smoking Habits in the UK 2019: Those who smoke both products, but mainly cigarettes, as a proportion of all those who smoke cigarettes at all (Denominator: 48.8% + 7.7% + 4.1% = 60.6%, Numerator: 48.8% + 7.7% = 56.5%).

159. As in other options, it is likely that the losses estimated will at least in part be offset by increased profits on other goods and services purchased in place of tobacco.

Manufacturers of tobacco and shareholders

Profits decreased due to reduced tobacco sales from fewer smokers

160. Based on the changes in packs sold above by retailers of tobacco, 2.9 million fewer packs of cigarettes, and 0.1 million fewer equivalent packs of hand rolling tobacco, the total costs in lost profits to manufacturers for this option is estimated to be:

- £5.4 million for manufacturers (assumed to be mostly borne by transnational tobacco companies not based in the UK. No UK production of cigarettes currently occurs[86]).

161. The profit losses are not considered to be in the NPV or EANDCB due to the cost being borne by business not based in the UK.[87]

Increase in profits from less expenditure on tobacco

162. As in other options, it is likely that the losses estimated will at least in part be offset by increased profits on other goods and services purchased in place of tobacco.

Increased production costs of pack inserts

163. As in Option 2, no direct evidence on the production cost of pack inserts was available, therefore we use the central estimate of 1p per pack insert.

164. The cost of producing pack inserts would be incurred each year as a continuous cost to manufacturers. In this option, pack inserts would only be required in packs of cigarettes, of which there were an estimated 1.1 billion in 2022.

165. To produce 1.1 billion pack inserts a year would cost an estimated £11.1 million. Discounting future years in line with rates from The Green Book, would mean a total cost of £95.3 million to manufacturers of tobacco over 10 years.

- This assumes the amount of tobacco produced and consumed remains the same for the next 10 years.

166. This remains the largest cost to business in this option, and again would be borne by large transnational tobacco companies. However, for packs of factory made cigarettes and packs of hand rolling tobacco, there are no longer any manufacturers based in the UK[88]. This cost is therefore not included in the Net Present Value or Equivalent Annual Net Direct Cost to Business.

[86] BBC. 2016. Last English-produced cigarettes made in Nottingham (accessed 03/2023).
[87] RPC. RPC short guidance note on issues around defining a 'business'.
[88] BBC, Last UK-made cigarettes roll off JTI production line. 2017.

NHS

Changes in healthcare use

167. As in Option 2, the changes in healthcare use are not directly estimated and therefore are considered a non-monetised impact, and are not included in the NPV.

HMRC and Taxpayers

168. In this option, a smoker who quits is assumed to not purchase tobacco for the remainder of the appraisal period (10 years). Based on the number of quitters[89], an estimated 2.9 million fewer factory made packs of cigarettes will be sold each year, and 0.1 million fewer packs of hand rolling tobacco.

169. Future years costs are discounted at a rate of 3.5% in line with The Green Book, meaning the total reduction in tax and duty revenue will be around £180.7 million over 10 years.

170. The potential changes in duty rates will be explored in the sensitivity analysis.

Department of Health and Social Care

Research and design of pack inserts

171. The costs here would remain the same as in Option 2, at between £100,000 to £300,000, with additional costs once these designs are finalised in publishing them and making them available for manufacturers to use.

Enforcement

172. Additional enforcement as in Option 2 to ensure the regulations are being followed would also be necessary. We do not currently have an estimate for the cost of enforcement.

Local Authorities

Additional quitters engaging with stop smoking services

173. As in Option 2, an additional number of quitters may produce a burden on Local Authorities who provide Local Stop Smoking Services. In this option there would be fewer quitters, and therefore the expected burden would be reduced.

174. As in Option 2 is has not been possible this impact has not been quantified and is not included in the Net Present Value.

[89] See *Effect size*

Option 4: Costs and Benefits

175. This option is for adding pack inserts to packs of hand rolling tobacco across the UK. These make up over 20% of the volume of sold tobacco (based on duty clearances and receipts[90]).

176. If the policy is successful, the main benefits may accrue through:

- Health benefits upon improved quit rates
- Reduced adult and child ill-health caused by second hand smoke (SHS), including avoidable treatment costs
- Reduction in health inequalities
- Improved workplace productivity

177. The main categories of costs to be considered are:

- The costs to manufacturers, wholesalers, and retailers, including a reduction in profits associated with fewer number of smokers
- Costs to the Exchequer through the loss of tax from reduced tobacco consumption
- There may also be additional administrative costs to the Department as a result of research, design costs, and enforcement costs.

178. A summary of the costs and benefits is presented below. Many elements of the cost-benefit analysis rely on the overall effect size of the policy, and use the same methodology as in Option 2 but restricted to only those who smoke packs of hand rolling tobacco.

[90] HMRC. Tobacco Bulletin. January 2023.

Summary of costs and benefits by stakeholder group - Option 4

Stakeholder		Impact	Cost/Benefit	Quantified?	Estimate (£m)	In NPV?	In EANDCB?	Ref.
General population of smokers, quitters, and non-smokers	1	Health benefits from current adult smokers quitting	Benefit	Yes	802.0	Yes	No	181
	2	Health benefits from reduced second hand smoke exposure	Benefit	No	-	N/A	N/A	182
	3	Litter from increased packaging, environmental damage, etc	Cost	No	-	N/A	N/A	183-184.
Businesses who employ smokers	4	Fewer smokers at work improves productivity	Benefit	No	-	N/A	N/A	185-187.
Retailers of tobacco	5	Profits decreased due to reduced tobacco sales from fewer smokers	Cost	Yes	-8.9	Yes	Yes	188-191.
Wholesalers of tobacco	6	Profits decreased due to reduced tobacco sales from fewer smokers	Cost	Yes	-2.4	Yes	Yes	193

Stakeholder		Impact	Cost/Benefit	Quantified?	Estimate (£m)	In NPV?	In EANDCB?	Ref.
Tobacco manufacturers and shareholders	7	Profits decreased due to reduced tobacco sales from fewer smokers	Cost	Yes	-3.3	No	No	195-197.
	8	Production of pack inserts	Cost	Yes	-21	No	No	199-202.
Manufacturers, retailers, and wholesalers of other goods and services	10	Increase in profits from less expenditure on tobacco	Benefit	No	-	N/A	N/A	192, 194, 198.
NHS	11	Reduced immediate healthcare usage	Benefit	No	-	N/A	N/A	203
HMRC & Taxpayers	12	Tax and duty decreased due to reduced tobacco sales	Cost	Yes	-129.7	Yes	No	204-206.
DHSC	13	Research/design of inserts	Cost	Yes	-0.3	Yes	No	207-208.
	14	Enforcement	Cost	No	-	N/A	N/A	209
Local Authorities	15	Increased demand for LSSS	Cost	No	-	N/A	N/A	209-210.

Effect size

179. The methodology of this option is the same as in Option 2, but restricted to only those who smoke packs of hand rolling tobacco. For this, we use data from ONS' Adult smoking habits in the UK for the proportions of smokers who smoke different types of cigarette. The latest data available is 2019[91] and this found 39% of smokers mainly smoked packs of hand rolling tobacco, 7.7% smoked both packs and hand rolling tobacco but mainly, and 4.1% smoked both but mainly hand rolling tobacco. This puts the proportion smoking packs of hand rolling tobacco to be 50.5% which is applied to the number of smokers (7,074,031) to get the number of smokers smoking hand rolling tobacco at all.

180. Then, based on the same methodology as Option 2, compared to the baseline, this option estimates an additional 5,347 quitters in year one during the transition period, and 10,573 in year two. The total expected number of quitters is 15,920.

General population of smokers, quitters, and non-smokers

Health benefits from current adult smokers quitting smoking

181. Based on the estimated effect size of an additional 5,347quitters in the first year, and 10,573 adults quitting smoking in the second year (a total of 15,920) the number of life years gained would be 11,836. The monetised benefits from adults quitting smoking would be £820,356,377 (£820 million), and once discounted the final figure to include in the NPV is £ 802,024,854 (£802 million).

Health benefits from a reduction in second hand smoke exposure

182. In this option, the potential benefits remain a non-monetised benefit and are not included in the NPV or EANDCB as in Option 2.

Impact of tobacco litter

183. If pack inserts were required for only hand rolling tobacco, there would be fewer pack inserts produced than in Option 2, and therefore any associated costs would be lower. There would also be fewer inserts produced than in Option 3, and therefore the costs would be lower in this option.

184. In this option, the potential impact on tobacco litter remains non-monetised and is not included in the Net Present Value (NPV) of the policy or the Equivalent Annual Net Cost to Business (EANDCB).

[91] ONS. 2020. Adult smoking habits in the UK:2019.

Businesses who employ smokers

Fewer smokers at work improved productivity

185. In this option, the proportional decrease in productivity losses based on 19,895 quitters applied to the ASH estimates of £14 billion in lost productivity suggests a benefit of roughly £32 million.[92]

186. Using previous impact assessment methodology, this option would provide a benefit of £45 million.

187. As in Options 2 and 3, while fewer smokers would provide some benefit in terms of productivity, the realisation of these productivity gains is not well evidenced. Therefore, this benefit is not monetised and not included in the final NPV of the policy or the EANDCB.

Retailers of tobacco

Profits decreased due to reduced tobacco sales from fewer smokers

188. A reduction in the number of smokers would result in a reduction in sales of tobacco. As a result, retailers, wholesalers, and manufacturers of tobacco would experience a reduction in profits on tobacco.

189. Despite this option only requiring pack inserts in packs of cigarettes, it is likely there would be some impact on sales of hand rolling tobacco too to some extent due to the overlap in products smokers smoke.

190. Of the 19,895 smokers, an estimated 85% would mainly smoke packs of cigarettes, with roughly 15% smoking both packs of cigarettes and hand rolling tobacco, but mainly hand rolling tobacco.[93]

191. Based on this, there would be an estimated 0.4 million fewer packs of cigarettes sold, and 1.5 million fewer equivalent packs sold due to quitters who mainly smoked hand rolling tobacco a year. Multiplying the reduction in the number of packs of factory sold and hand-rolling tobacco sold by the profit margins, we estimate the total costs in lost profits to be:

Included in the NPV

- £8.9 million for retailers (borne by all retailers of tobacco, and over 10 years)

Increase in profits from less expenditure on tobacco

192. As in other options, it is likely that the losses estimated will at least in part be offset by increased profits on other goods and services purchased in place of tobacco.

[92] (15,920 / 7,074,031) x £14 billion = £32 million

[93] Based on ONS. 2020. Adult Smoking Habits in the UK 2019: Those who smoke both products, but mainly hand rolling, as a proportion of all those who smoke hand rolling at all (Denominator: 39% + 7.7% + 4.1% = 50.8%, Numerator: 39% + 4.1% = 43.1%)

Wholesalers of tobacco

Profits decreased due to reduced tobacco sales from fewer smokers

193. Based on the changes in packs sold above by retailers of tobacco, 0.4 million fewer packs of cigarettes, and 1.5 million fewer equivalent packs of hand rolling tobacco, the total costs in lost profits to wholesalers for this option is estimated to be:

- £2.4 million for wholesalers (borne by all wholesalers, and over 10 years)

Increase in profits from less expenditure on tobacco

194. As in other options, it is likely that the losses estimated will at least in part be offset by increased profits on other goods and services purchased in place of tobacco.

Manufacturers of tobacco and shareholders

Profits decreased due to reduced tobacco sales from fewer smokers

195. The following costs are not considered in the NPV or EANDCB due to the cost being borne by business not based in the UK.[94]

196. Based on the changes in packs sold above by retailers of tobacco, 0.4 million fewer packs of cigarettes, and 1.5 million fewer equivalent packs of hand rolling tobacco, the total costs in lost profits to manufacturers for this option is estimated to be:

- £3.3 million for manufacturers (assumed to be mostly borne by transnational tobacco companies not based in the UK. No UK production of hand rolling tobacco currently occurs[95]).

197. The profit losses are not considered to be in the NPV or EANDCB due to the cost being borne by business not based in the UK:[96]

Increase in profits from less expenditure on tobacco

198. As in other options, it is likely that the losses estimated will at least in part be offset by increased profits on other goods and services purchased in place of tobacco.

Increased production costs of pack inserts

199. As in Option 2, no direct evidence on the production cost of pack inserts was available, therefore we use the central estimate of 1p per pack insert.

200. The cost of producing pack inserts would be incurred each year as a continuous cost to manufacturers. In this option, pack inserts would only be required in packs of hand rolling tobacco, of which there were an estimated 250 million in 2022.

[94] RPC. RPC short guidance note on issues around defining a 'business'.
[95] BBC. 2016. Last English-produced cigarettes made in Nottingham (accessed 03/2023).
[96] RPC. RPC short guidance note on issues around defining a 'business'.

201. To produce 250 million pack inserts a year would cost an estimated £2.5 million. Discounting future years in line with rates from The Green Book, would mean a total cost of £21.4 million to manufacturers of tobacco over 10 years.

- This assumes the amount of tobacco produced and consumed remains the same for the next 10 years.

202. This remains the largest cost to business in this option, and again would be borne by large transnational tobacco companies. However, for packs of factory made cigarettes and packs of hand rolling tobacco, there are no longer any manufacturers based in the UK[97]. This cost is therefore not included in the Net Present Value or Equivalent Annual Net Direct Cost to Business.

NHS

Changes in healthcare use

203. As in Option 2, the changes in healthcare use are not directly estimated and therefore are considered a non-monetised impact, and are not included in the NPV.

HMRC and Taxpayers

204. In this option, a smoker who quits is assumed to not purchase tobacco for the remainder of the appraisal period (10 years). Based on the number of quitters[98], an estimated 0.4 million fewer factory made packs of cigarettes will be sold each year, and 1.5 million fewer equivalent packs for hand rolling tobacco smokers.

205. Future years costs are discounted at a rate of 3.5% in line with The Green Book, meaning the total reduction in tax and duty revenue will be around £129.7 million over 10 years.

206. The potential changes in duty rates will be explored in the sensitivity analysis.

Department of Health and Social Care

Research and design of pack inserts

207. The costs here would remain the same as in Option 2, at between £100,000 to £300,000.

208. There will be additional costs once these designs are finalised in publishing them and making them available for manufacturers to use.

[97] BBC. 2017. Last UK-made cigarettes roll off JTI production line.
[98] See *Effect size*

Enforcement

209. Additional enforcement as in Options 2 and 3 to ensure the regulations are being followed would also be necessary. We do not currently have an estimate for the cost of enforcement.

Local Authorities

Additional quitters engaging with stop smoking services

210. As in Option 2, an additional number of quitters may produce a burden on Local Authorities who provide Local Stop Smoking Services. In this option there would be fewer quitters, and therefore the expected burden would be reduced.

211. As in Option 2 is has not been possible this impact has not been quantified and is not included in the Net Present Value.

Option 5: Costs and Benefits

212. This option is for adding pack inserts to all tobacco products sold in the UK.

213. If the policy is successful, the main benefits may accrue through:

- Health benefits upon improved quit rates
- Reduced adult and child ill-health caused by second hand smoke (SHS), including avoidable treatment costs
- Reduction in health inequalities
- Improved workplace productivity

214. The main categories of costs to be considered are:

- The costs to manufacturers, wholesalers, and retailers, including a reduction in profits associated with fewer number of smokers
- Costs to the Exchequer through the loss of tax from reduced tobacco consumption
- There may also be additional administrative costs to the Department as a result of research, design costs, and enforcement costs.

215. This option is discussed qualitatively below due to the nature of the evidence available on wider tobacco products. The discussion is split into two sections:

- Costs and benefits associated with pack inserts in packs of cigarettes and hand rolling tobacco
- Costs and benefits associated with pack inserts in all other forms of tobacco.

Costs and benefits associated with pack inserts in packs of cigarettes and hand rolling tobacco

216. The overall option is an extension of Option 2. Therefore, for everything related to cigarette packs and hand rolling tobacco, the costs and benefits associated with this option would be the same as in Option 2.

Costs and benefits associated with pack inserts in all other forms of tobacco.

217. Beyond cigarette packs and hand rolling tobacco, there are a range of other tobacco products that are sold in the UK:

- Cigars and cigarillos
- Pipe tobacco
- Water pipe tobacco
- Chewing tobacco

- Snuff
- Tobacco for heating products

Effect size

218. The prevalence of use and consumption of these products is less well evidenced than for cigarettes and hand rolling tobacco. Prevalence for these individual products is not collected in national smoking statistics (that focus on smoking cigarettes, either packs or hand rolling tobacco). For some products, prevalence is known to be low (less than 1% for heated tobacco[99]).

219. When looking to extend pack inserts to all tobacco products, it is hard to estimate the effect size as in previous options due to the lack of prevalence data here. As a result, we have not estimated the number of people that we think would stop using these other tobacco products. Despite this, it is likely that the effect would be small given the prevalence and type of these products.

220. As the pack inserts would still be included in cigarette packs and hand-rolling tobacco we would still expect this option to deliver the same number of quits for these products as in Option 2 (additional 10,588 quitters in year one during the transition period, and 20,937 in year two, a total of 31,525).

Do you have any data or evidence on the prevalence of use of other tobacco products (such as oral and pipe tobacco)?

General population of smokers, quitters, and non-smokers

Health benefits from current adult smokers quitting tobacco

221. As above, the impact resulting from mandating pack inserts in all other forms of tobacco would likely be small. As a result, the additional monetised health benefits of adults quitting tobacco would be expected to be small.

Businesses who employ tobacco users

Fewer smokers at work improved productivity

222. Given the overall prevalence and likely small impact of pack inserts in other forms of tobacco, additional productivity gains as a result of these would likely also be minimal.

[99] UCL. Smoking Toolkit Study: Prevalence of e-cigarette and heated tobacco product use. https://smokinginengland.info/graphs/e-cigarettes-latest-trends.

Retailers, wholesalers, and manufacturers of tobacco

Profits decreased due to reduced tobacco sales from fewer tobacco users

223. The Tobacco duty bulletin[100] contains the volume of other tobacco products that are cleared each year. This does not provide detailed breakdowns on the volume of individual products (except for cigars). In 2022, there were 437,000 kilograms of cigars, and 753,000 kilograms of all other tobacco products cleared for UK consumption.

224. The standardised packaging regulations do not apply to these products, therefore estimating the number of sales is not currently possible. Evidence on the profit margins of these other products is also lacking, and therefore it is not possible to estimate the decrease in profits as a result of pack inserts.

Manufacturers of tobacco and shareholders

Increased production costs of pack inserts

225. As in other options, no direct evidence on the production cost of pack inserts was available, therefore we use the central estimate of 1p per pack insert.

226. The cost of producing pack inserts would be incurred each year as a continuous cost to manufacturers. Pack inserts would be required in all other forms of tobacco. However, as above, these other forms of tobacco and not sold in standard packs. Therefore it is not clear how many pack inserts would be required to be manufactured each year.

227. Despite this, they are generally niche products. While there is no longer any cigarette manufacturing in the UK, it is not clear whether manufacturing of any other products happens in the UK.

228. It is also the case that pack inserts designed for packs of cigarettes or hand rolling tobacco may not be suited to other forms of tobacco. This would mean additional costs associated with pack inserts for other tobacco products.

229. It is likely that this would remain the largest cost to business in this option, however it is not possible to accurately quantify the costs.

NHS

Changes in healthcare use

230. The changes in healthcare use are not directly estimated and therefore are considered a non-monetised impact, and are not included in the NPV.

[100] HMRC. Tobacco Bulletin. April 2022

HMRC and Taxpayers

231. The duty paid on other forms of tobacco is lower than for cigarettes and hand rolling tobacco. Combined with the small impact, the additional losses in duty as a result of pack inserts in other forms of tobacco would be small. However, it is not possible to quantify the loss in duty.

Department of Health and Social Care

Research and design of pack inserts

232. The costs here may increase as a result of including other forms of tobacco. This may arise from having to produce pack inserts that relate to other forms of tobacco, and are suited to the packaging of other tobacco.

233. There will be additional costs once these designs are finalised in publishing them and making them available for manufacturers to use.

Enforcement

234. Additional enforcement to ensure the regulations are being followed would also be necessary.

Local Authorities

Additional quitters engaging with stop smoking services

235. As in Option 2, an additional number of quitters may produce a burden on Local Authorities who provide Local Stop Smoking Services. In this option there would be fewer quitters, and therefore the expected burden would be reduced.

236. As in Option 2 is has not been possible this impact has not been quantified and is not included in the Net Present Value.

Summary of Option 5 costs and benefits

237. In summary:

- The costs and benefits for cigarettes and hand rolling tobacco would remain the same as in Option 2, where the cost benefit appraisal is largely dominated by the health benefits.

- The costs and benefits for extending to all tobacco products would provide incremental health gains as a result of low prevalence of use of other tobacco products. The manufacturing costs would increase as a result of producing pack inserts for all other forms of tobacco.

Sensitivity Analysis

238. The analysis suggests that the expected Net Present Value of the preferred policy option (Option 2) is considered to be highly positive. There are always uncertainties in any measurement or assumption, and we therefore consider the sensitivities of this finding to certain key variables, as well as other risks. This section does not cover all uncertainties and there will be many that effect the NPV but to a much lower extent.

Effect size

239. The most sizable benefits of this policy are the health benefits from the people quitting smoking. These key variables are derived from the work of Thrasher et al. as described above. We consider both the size and length of the impact (independently) below.

Size of impact

240. On the size of the impact, we consider the number of people we expect to quit and how changes to the key assumptions would affect the costs and benefits.

241. For the central estimate, the lower values from the relevant studies are used to account optimism bias. Due to the limited evidence available, this represents a more conservative estimate. For instance, for the proportion reading inserts a few times or more, this was done by between 16% and 19% of people at each wave of the study.

242. Two scenarios beyond the central estimate are considered here. The first is that pack inserts have no effect on adult smokers, and generate no more additional quit attempts as a result of their implementation. The second uses the upper values in the papers and a ‘UK uplift’ to account for the novelty of pack inserts in the UK, also based on evidence outlined above.

243. Under the no impact scenario, nearly all costs and benefits that impact the NPV would reduce to 0. For instance, there would be no health benefits as a result, however this would therefore mean there was no reduced consumption of tobacco by smokers. Based on this, profits for retailers, wholesalers and manufacturers, and duty revenue for the exchequer would not fall. There would still be the cost of production, however as noted this does not fall on UK based business and therefore is not accounted for in the NPV. Other costs and benefits, such as those to the Department for research and design into the cards, and any enforcement costs, would remain. Under this scenario, the NPV of the policy would likely be less than -£1 million.

244. The higher impact scenario first assumes that 19% of smokers would read inserts a few times or more a month. This is then uplifted based on findings from Moodie. The papers by Thrasher et al. have estimates for the proportion reading inserts at least once in the past month, at roughly 30%. Moodie found that 50% of smokers would read inserts in the UK, therefore we uplift the proportion reading inserts a few times or more by 0.5/0.3, or two thirds. The combined increases raise the total number of quitters from roughly 31,000 to over 62,000.

245. Based on this, the health benefits from adults quitting would rise to almost £3.4 billion (from £1.6 billion). The costs in terms of lost profits to retailers, wholesalers and manufacturers would rise to £40 million, £12 million, and £16 million (from £20 million, £6 million, and £8 million) as a result of a greater reduction in consumption. Production costs would remain the same, with the only other cost increasing being the reduction in duty revenue collected - £580 million (from £292 million).

246. As above, due to the scaling nature of the costs and benefits, as the number of quitters increases so do the costs. However, the benefits continue to heavily outweigh any costs incurred as a result.

Table 1: Example difference in the costs and benefits based on the sensitivity analysis

Effect, Cost or Benefit	**Central Estimate**	**Low Estimate**	**High Estimate**
Number of quitters	31,525	0	62,200
Health Benefits	£1,603m	£0	£3,205m
Production costs[101]	*-£117m*	*-£117m*	*-£117m*
Retailers	-£23m	£0	-£44m
Wholesalers	-£6m	£0	-£12m
Manufacturers	-£8m	£0	-£16m
HMRC & Taxpayers	-£279m	£0	-£550m
Total NPV	**£1,011m**	**-£0.2m***	**£3,094m**

*Due to costs to the Department for design and research

Length of impact

247. The central estimate of an impact that lasts for two years is based on the available evidence. However, if the inserts are present for more than two years (up to the evaluation period, or beyond), there may be a continued impact.

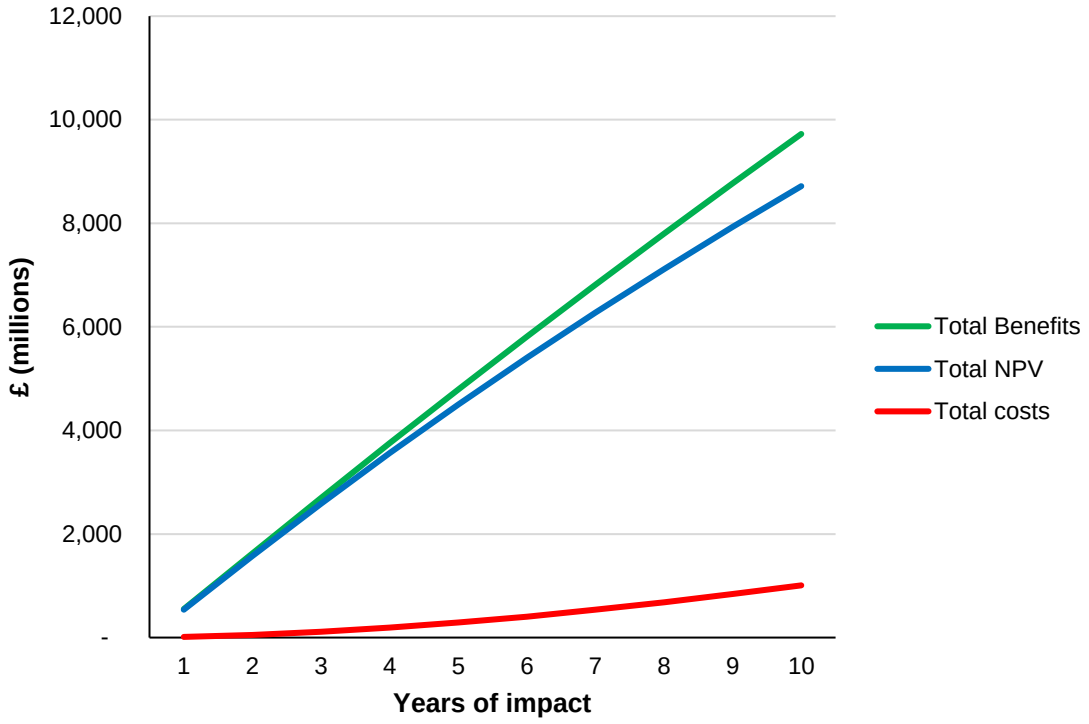
248. While it is likely that any impact over time would be reduced, it is unclear how exactly the impact would diminish if it did. For this reason, when looking at the length of impact, we assume the effect size would remain the same for each additional year. The transition period for the first year remains the same. This is a proportional impact, therefore the number additional quitters each year would decline as the number of smokers reduced. Therefore the benefits over time would also reduce slightly. The additional annual benefits range from £1.3 billion in Year 3, to £1.1 billion in Year 10.

[101] Independent sensitivity analysis is also conducted on this for the central estimate. These are also not included in the EANDCB or NPV.

249. The costs to retailers, wholesaler, and amount of duty collected is based on the additional number of quitters. However these costs would be cumulative and increase over time as more people quit and do not purchase tobacco for the remainder of the appraisal period. As in the main cost and benefit appraisal, these costs would likely be offset to some extent as smokers who quit purchase other goods and services. The additional annual costs (to all stakeholders included in the NPV/EANDCB) increase from £60 million in Year 3 to £169 million in Year 10.

250. Figure 6 below presents the estimated costs, benefits, and net present value of the policy in the cast where there is additional impact from Years 3 to 10. The net present value remains highly positive in all cases.

Figure 6: Total costs, benefits, and net present value if the impact of the policy continued.



251. If the impact were reduced over time, the costs and benefits would be expected to scale (as in the sensitivity analysis above related to the size of the impact), and therefore the net present value is expected to remain positive.

Production costs – Unit cost of pack inserts

252. The central estimate of 1 pence per insert produces a final cost over 10 years of £117 million, assumed to be borne by tobacco manufacturers. While this manufacturing is based outside the UK, and not included in the NPV, the range of estimates for an insert cost of 0.5 pence per insert to 4 pence per insert is still explored below due to being one of the largest costs estimated in this assessment.

253. The volume of cigarettes packs estimated to be sold is 1.1 billion, and the volume of hand rolling tobacco packs is estimated to be 248 million. Based on this, the cost at 0.5 pence over 10 years would be £58 million. The cost at 4 pence per pack would increase to £467 million.

254. The cost on the higher end (assuming all other costs and benefits remain to be the central estimates) still produces a higher positive NPV at roughly £1.3 billion and a benefit to cost ratio of 5.3.

255. Beyond the cost per insert, other unknowns are around exactly how production and consumption will change as a result of the policy. While a reduction in consumption is expected this will be minor compared to the overall consumption of tobacco, and therefore is not accounted for in the estimates included in either the central estimate or sensitivity analysis.

Loss of duty revenue – reduced consumption

256. The loss of duty is estimated at £279 million over a ten year time horizon. These estimates are indicative and do not account for future changes in rates of duty per cigarette or per kg of hand rolling tobacco, nor do they allow for any change in the number of cigarettes or weight of hand rolling tobacco per smoker.

257. Tobacco is currently subject to high duty rates, and these continue to rise as a result of the tobacco duty escalator. This ensures that the duty rate on tobacco increases above the rate of inflation by 2% (RPI+2%), with additional increases for specific products. The latest rises were estimated to raise an extra £25m per year from 2022/23 onwards.[102] Based on HMRC's tobacco duty bulletin a total of £10,022m in duties was collected on cigarettes and hand rolling tobacco in 2021/22. The extra £25m constitutes 0.25% of the total collected. If this were to occur each year during the implementation period, there could be an overall increase of 2.5% in the revenue collected on these tobacco products (that are now not sold due to pack inserts).

258. To demonstrate the uncertainty the loss of duty, currently estimated at £279m over 10 years, is that it could be either 2.5% higher or lower. This is an estimated £7m[103], which is small relative to the overall NPV of this policy.

[102] HMRC. 2023. Changes to tobacco duty rates.

[103] 279 million x 0.025 = 7 million

Specific Impact Tests

259. This impact assessment has considered impacts on a range of stakeholders. Below are a series of specific impact tests undertaken as part of the impact assessment, based on the preferred option (Option 2).

Small and Micro Business Assessment (SaMBA)

260. Based on the scope of the policy, it would not be possible to exempt small businesses from these regulations while still achieving the aims and objectives of the policy. This is because a large proportion of tobacco is still sold in small businesses (retailers), and therefore to exempt them would significantly reduce the reach of the policy – particularly in areas with less access to larger shops (such as rural areas).

261. With respect to Small and Micro Businesses (SaMBAs), the IA considers the following impact:

- Lost profits as a result of reduced consumption
- Increase in profits from less expenditure on tobacco

262. Lost profits as a result of reduced consumption are detailed above in Option 2.[104] However this applies to all retailers. Here, specific the impact on Small and Micro Businesses is considered. Only retailers are considered in scope for this assessment, as no wholesalers or manufacturers are expected to be operating as small or micro businesses.

263. Evidence from the Standardised Packaging of Tobacco impact assessment[105] suggests around 46% of tobacco sales are through small and micro businesses.[106] Applying this percentage to the overall loss in profits (£22.5 million) to retailers suggests that small and micro businesses would see a loss of roughly £10 million across 10 years, borne by all small and micro retailers. The ACS Local Shop Report 2022 put the number of convenience stores in mainland UK to be 48,590 in 2022[107] and therefore the cost to any one retailer is likely to be small and spread over 10 years (around £200 on average).

264. SaMBAs may also incur lost income form reduced footfall-related sales. These are sales of non-tobacco goods bought in addition to tobacco. No data or evidence was found in order to quantify this potential impact.

265. An increase in profits from less expenditure on tobacco may occur as consumers who previously spent money on tobacco now spend money on other products. Profit margins vary by product, but as an example:

[104] See paragraphs 91 - 99.
[105] Department of Health. 2015. Standardised packaging of tobacco products. Specific Impact Tests.
[106] Euromonitor International. 2011. Cigarettes in the United Kingdom.
[107] ACS. The Local Shop Report (2022). https://www.acs.org.uk/research/local-shop-report.

- An alternative that some smokers may move to as a result of quitting smoking is vaping. The Nicotine Inhaling Products impact assessment[108] assumed a profit margin of 10% for these products, therefore money spent on vapes could double the profits associated with that money spent for retailers that sell both tobacco and vapes.

Do you have any evidence on the wider impacts to small and micro businesses if pack inserts are mandated?

Health and longevity impacts

266. Health and longevity impacts are discussed in detail above in Option 2.[109]

Equalities assessment

267. This is a wide-ranging public health measure aimed at preventing ill health among the adult population by helping smokers to quit. Smoking prevalence is also higher in more deprived areas, and so these communities may see a bigger positive impact and the reduction of health inequalities caused by tobacco use. This is also the case among certain groups, such as those with mental health conditions, and those in routine and manual occupations.

268. The evidence found inserts to be generally impactful across the population of smokers, though some demographics did respond more strongly (in the UK evidence: women more so than men, white ethnic groups compared with other ethnicities)[110].

269. However, it is understood that use of tobacco is not limited to just cigarettes and other forms of tobacco. Mandating pack inserts in just packs of cigarettes and hand rolling tobacco may miss some tobacco users. Those using more niche tobacco (such as waterpipe and chewing tobacco) may also be more prevalent in some demographic groups. We do not currently have evidence to further assess the equalities impact of not including pack inserts for more niche tobacco products.

270. The language the messages on inserts are written in could affect how many people engage with them. Based on census data from 2021[111], 91% of usual residents in England and Wales had English (English, or Welsh in Wales) as a main language. A further 7.1% of the overall population were proficient in English (or Welsh in Wales) but did not speak it as their main language.

[108] Department of Health. 2015. Nicotine Inhaling Products (Age of Sale and Proxy Purchasing) Regulations 2015.
[109] See paragraphs 80 - 83.
[110] OHID. Local Tobacco Control Profiles - Data - OHID (phe.org.uk). (Accessed 26 April 2023)
[111] ONS. 2022. Language, England and Wales: Census 2021.

Do you have any evidence on whether pack inserts will affect people differently?

Rural proofing

271. There is no evidence to suggest that including pack inserts in tobacco products will have a significant impact on people living in rural areas. Smoking prevalence is higher in more deprived areas it may have more of positive impact on health in deprived rural areas but also more of an impact on retailers in these areas.

Competition assessment

272. The policy does not directly affect the number of range of suppliers. All manufacturers and producers of specific tobacco will have to include the same pack inserts. The policy also does not indirectly limit the number or range of suppliers, nor does the policy limit the ability of suppliers to compete. Pack inserts will be included inside packs and therefore not visible to customers at the point of sale. The policy also does not reduce suppliers' incentives to compete vigorously.

Do you have any evidence on the impact on competition of mandating pack inserts?

Environmental impact

273. The overall cost of tobacco litter to local authorities has been discussed above in specific options, however we have not currently been able to quantify the overall cost of any changes in tobacco litter.

274. Alongside litter, fuel consumption and fuel emissions are potentially impacted as a result of this measure. Defra's impact assessment on the proposal to ban plastic drinking straws considered fuel consumption and fuel emissions as a result of this ban.[112] This was due to the increase in weight moving from plastic drinking straws to paper ones. A similar impact could be considered for pack inserts as mandating their inclusion would mean including additional packaging that may need to be accounted for.

275. The number of plastic straws used in England was estimated to be 4.7 billion a year – almost four times the number of pack inserts expected in the preferred option. The additional fuel costs associated with 4.7 billion paper straws was estimated to be £16,000 discounted over 10 years. The additional fuel emissions associated with 4.7 billion paper straws, using Green book non-traded carbon prices, was £4,593 over 10 years. Based on the even lower number of pack inserts expected to be introduced, the costs above are low. It is unclear who these costs would fall on, and therefore are excluded from the NPV.

[112] Defra. 2020. Impact Assessment on the proposal to ban the supply of plastic drinking straws to the end user in England.

Do you have any evidence on the environmental impact of mandating pack inserts?

Human rights

276. It is not thought that the introduction of pack inserts will have any human rights impact.

Justice

277. Based on the Ministry of Justice screening questions:

The policy may involve creating or amending a criminal offence if it will be an offence to not include pack inserts. The policy is unlikely to create a new civil sanction or fixed penalty notice. It is unclear whether this policy will create a civil order or injunction that will lead to further proceedings or criminal sanctions. It is unclear whether there will be new, or amendments to, court or tribunal procedure results. It is unclear whether there will be an increase in applications to the courts or tribunals. It is unclear whether this will create a new tribunal jurisdiction. It is unclear whether this will require an appeals mechanism.

278. A full justice impact assessment will be conducted in due course.

Monitoring and Evaluation

279. The regulations would be subject to review after 5 years in the form of a post implementation review. The review period will be from when the regulations apply. The specifics of this evaluation will be fully developed following the consultation phase of this Impact Assessment.

280. The impact of the new arrangements can be monitored through a range of publicly available data sources. These data sources will be used to assess whether the original objectives have been met and whether the intervention should be amended.

281. Currently, NHS collects and publishes data on the Local Stop Smoking Services (LSSS) across England.[113] These are official statistics, published on a quarterly basis. They include the number of people accessing LSSS to set a quit date each quarter, alongside the number who successfully quit at 4 weeks. Unfortunately, this data does not contain the route by which those accessing the services came through (i.e. whether they were referred by a GP, independently decided to quit, etc).

282. Other sources such as ONS' Adult smoking habits in the UK contain smokers' intention to quit. The underlying survey data could be used to assess whether the introduction of pack inserts is associated with an increase in smokers' intention to quit. This is split by the timeframe by which smokers want to quit (within the next 3 months, want to quit but not sure when, etc) and so changes to these would also be an indicator of success. This is an annual data source and therefore changes would be assessed over a longer period of time.[114]

283. Further data from UCL in the Smoking Toolkit Study[115] could also be used to assess the impact of pack inserts on quitting behaviour. This is a monthly data source, includes data on those who tried to stop smoking in the past year and the success rate for stopping in those who tried.

284. These three data sources with different reporting periods will provide flexibility in assessing the impact and success of the regulations. Together they will also capture a range of information that will form a robust evidence base on the impact of introducing pack inserts.

285. The Department will consider commissioning independent research into the impact of any implemented policy, as previously done for the Display regulations, Standardised Packaging of Tobacco, and the Tobacco and Related Products Regulations.

286. Depending on the option introduced, changes to the market sector involving significant shifts in the type of tobacco that is used may require the policy to be reviewed sooner.

[113] NHS Digital. Statistics on Stop Smoking Services.
[114] ONS. 2022. Adult smoking habits in the UK: 2021.
[115] UCL. Smoking Toolkit Study.

Annex A: List of consultation questions

287. This annex lists all the questions specific to the impact assessment that are included in the consultation.

Impact assessment consultation questions

- Do you have any more evidence to inform the estimated loss in profits for retailers?
- Do you think there will be any other impacts on retailers that we have not currently accounted for (such as reduced footfall in shops)?
- If you have further evidence to inform the estimated loss in profits for wholesalers, please provide information.
- If you think there will be any other impact to wholesalers that we have not currently accounted for, please provide information.
- If you have evidence to inform the estimated loss in profits to manufacturers, please provide information.
- If you have any evidence to inform the cost of producing and implementing pack inserts, please provide details.
- If you have evidence to inform further impacts to manufacturers by mandating pack inserts, please provide details.
- Are there any other stakeholder groups that would be impacted by introducing pack inserts?
- Do you have any data or evidence on the prevalence of use of other tobacco products (such as oral and pipe tobacco)?
- Do you have any evidence on the wider impacts to small and micro businesses if pack inserts are mandated?
- Do you have any evidence on whether pack inserts will affect people differently?
- Do you have any evidence on the impact on competition of mandating pack inserts?
- Do you have any evidence on the environmental impact of mandating pack inserts?

Annex B: Life years saved by quitting

288. This Annex described the method and data sources behind the estimation of The discounted number of life years saved for a randomly chosen adult who quits smoking today.

289. The methodology was used in the Standardised Packaging of Tobacco impact and data has been updated throughout to reflect the changes in the profile of smokers between 2014 (when the estimates were first produced) and 2019.

290. Estimates account for the fact that many smokers quit during their lifetime, which reduces the expected number of life years gained by quitting today. Compared with the original estimates in SPoT, this has changed significantly. Many more adult smokers are quitting earlier, reducing the expected number of life years gained compared with previous estimates.

291. The following are the main sources of data:

- Annual Population Survey (APS, 2019) source data, used to identify the age distribution of smokers and the relationship between age and the percentage of smokers who have quit.
- Doll, Peto, Boreham and Sutherland (2004). '*Mortality in relation to smoking: 50 years observations on male British doctors'*. (BMJ 2004;328;1519). This reports the impact of smoking on mortality, split by age of quitting smoking (if applicable).
- Office for National Statistics (ONS) National life tables, United Kingdom (2019-2020), which reports population mortality estimates used to transform the outputs of the doctors' study above into life years saved.

292. The methodology for how the discounted life years per quitter is calculated based on the data sources above is presented below.

293. **1. Identify an estimate of the percentage of smokers who have quit by each year of age.** Data from APS (2019) is used, which reports the number of people who: currently smoke, are ex-smokers, have never smoked. This is by single year of age. Over time, quitting behaviour results in a decline in the proportion of current smokers among those who have ever smoked (ever smokers). This percentage declines at a fairly constant rate as age increases. A linear relationship was estimated between age and the percentage of ever smokers who are currently smoking[116]. The results imply that 47.7% of ever smokers have already quit by age 35, with 0.9 percentage points of ever smokers quitting each year afterwards (or 9% across each subsequent 10 year age band), with those who have not quit by 65 assumed to be lifelong smokers.

[116] This is done using 73 data points from those aged 18 to 89 inclusive. Ages over 89 are excluded so this value is not overly affected by variations due to small samples and numbers in older ages.

Table A2: Proportion of adults that quit in the given age bands or are lifelong smokers and never quit

Quit age band	Proportion of smokers[117]
Under 35	47.7%
35 to 44	9.0%
45 to 54	9.0%
55 to 64	9.0%
Lifelong smokers	25.1%

294. **2. Estimate the proportion of smokers that will quit at various ages.** 5 age bands of current adult smoker are considered that correspond with the evidence available on smoking and mortality. The proportions estimated in Table A1 are used for this.

295. For a current smoker to be picked at random, they need to have already reached their age category. For example, a smoker picked at random aged 55 to 64 could not have quit at 40 since that would mean they are not a current smoker and could not have been picked.

296. This is also considered for age bands with corresponding quit age bands. For example, if a 35 year old smoker is picked from the age band 35 to 44, the chances they quit in the quit age band 35 to 44 is $\frac{9\%}{9\%+9\%+9\%+25.1\%} = 17\%$. However, if a 44 year old was picked the day before their 45th birthday there is a near 0% chance they will quit in the 35 to 44 age band. Therefore, the chance is of quitting in this age band for those picked in this age band is roughly half.

Table A3: Proportion of smokers that quit in given age bands or are lifelong smokers

Quit age band	Smoker age				
	Under 35	**35 to 44**	**45 to 54**	**55 to 64**	**Over 65**
Under 35	31.4%				
35 to 44	11.9%	9.5%			
45 to 54	11.9%	18.9%	11.7%		
55 to 64	11.9%	18.9%	23.4%	15.2%	
Lifelong	33.0%	52.6%	64.9%	84.8%	100%

297. **3. Identify mortality data (by year of age and sex) for lifelong smokers and for the five "quit age bands".** Mortality data are taken from Doll et al. (2004, Table 5) which lists the number of deaths per 1,000 people at ages 35 to 44, 45 to 54, 55 to 64, 65 to

[117] Column may not sum due to rounding.

74, and 75 to 84. This is presented at these age bands for lifelong non-smokers as well as ex-smokers (who have quit at the first three age bands) and those who continue to smoke beyond the age of 65.

298. These categories of smoker correspond to our quit age bands (alongside an Under 35 band). The data are converted into relative risks by dividing the number of deaths per 1,000 in each of these four categories by the equivalent number of deaths for lifelong non-smokers. The Doll et al. study does not report results for all ages and quit bands, so we assume:

- The relative risk of smokers aged Under 35 is 1.
- The relative risk of those in the Under 35 quit band is 1.
- The relative risk of those in the same age as quit band is the same as a smoker in that age band
- The relative risk of smokers aged 85 or over is 1.

299. **4. The average mortality rate observed in the population is made up from the mortality rates of any subpopulations weighted by the size of each sub population.** Above, relative risks of smokers compared with non-smokers have been estimated using the best available evidence. For any year of age and sex, six simultaneous equations are obtained that have 6 unknown mortality rates. Solving these provides us with the following formulae:

i. $M_{ns} = M/(P_{ns} + R_{qu35}P_{qu35} + R_{q40}P_{q40} + R_{q50}P_{q50} + R_{q60}P_{q60} + R_{ll}P_{ll})$

ii. $M_{q35} = MR_{qu35}/(P_{ns} + R_{qu35}P_{35} + R_{q40}P_{q40} + R_{q50}P_{q50} + R_{q60}P_{q60} + R_{ll}P_{ll})$

iii. $M_{q40} = MR_{q40}/(P_{ns} + R_{qu35}P_{35} + R_{q40}P_{q40} + R_{q50}P_{q50} + R_{q60}P_{q60} + R_{ll}P_{ll})$

iv. $M_{q50} = MR_{q50}/(P_{ns} + R_{qu35}P_{35} + R_{q40}P_{q40} + R_{q50}P_{q50} + R_{q60}P_{q60} + R_{ll}P_{ll})$

v. $M_{q60} = MR_{q60}/(P_{ns} + R_{qu35}P_{35} + R_{q40}P_{q40} + R_{q50}P_{q50} + R_{q60}P_{q60} + R_{ll}P_{ll})$

vi. $M_{ll} = MR_{ll}/(P_{ns} + R_{qu35}P_{35} + R_{q40}P_{q40} + R_{q50}P_{q50} + R_{q60}P_{q60} + R_{ll}P_{ll})$

Where:

i. M is the Central mortality estimate from ONS National Life Tables

ii. Subscripts represent the following quit age bands:
    1. ns – lifetime non-smokers
    2. qu35 – smoker who quits before they are 35
    3. q40 – smoker who quits between age 35 and 44 (i.e. around 40)
    4. q50 – smoker who quits between age 45 and 54 (i.e. around 50)
    5. q60 – smoker who quits between age 55 and 64 (i.e. around 60)
    6. qll – for a lifelong smoker

iii. R is the relative risk of mortality compared to a lifelong smoker estimated using the Doll et al. study.

iv. P is the proportion of the population that this subpopulation represents. P_{ns} is the average value for those aged 18 to 89 of around 60%. The remaining 40% is split by the values in Table A1 to derive the other values of P (all subpopulations).

300. **5. Identify the number of life years lived from by adults (by age band and sex), and for the 5 "quit age bands".** For each combination of quit age band and sex, life tables are calculated following the method of Chiang (1984). These life tables are used to model the expected number of life years lived per capita for each age band for the quit age bands: Under 35, 35 to 44, 45 to 54, 55 to 64, and Over 65 (the median ages of 25, 40, 50, 60 and 70 are used). This is done separately for both males and females, with analysis of each sex considered separately throughout the analysis.

Table A4: Life years lived from now – Males

Quit age band	Smoker age				
	Under 35	**35 to 44**	**45 to 54**	**55 to 64**	**Over 65**
Under 35	56.5				
35 to 44	55.2	40.9			
45 to 54	52.0	37.8	29.0		
55 to 64	50.7	36.4	27.6	19.8	
Lifelong	48.9	34.6	25.7	17.7	11.2

301. **6. Discount the number of years of life lived.** As the life years occur in the future, they should be discounted appropriately. For life years the discount rates in HMTs The Green book are provided for short, medium, and long term time periods:

Discount Type	Discount Start Year	Discount End Year	Discount Rate
QALYs	1	30	1.5%
QALYs	31	75	1.29%
QALYs	76	125	1.07%

302. The sum of the discounted number of life years lived at each year of age equals the discounted number of life years lived by the specified combination of quit age band and sex.

Table A5: Discounted life years lived from now - Males

Quit age band	Smoker age				
	Under 35	**35 to 44**	**45 to 54**	**55 to 64**	**Over 65**
Under 35	38.3				

35 to 44	37.6	23.1			
45 to 54	26.1	22.1	23.1		
55 to 64	35.4	27.7	22.1	16.7	
Lifelong	34.6	26.6	20.9	15.2	10.1

303. **7. Identify the life years saved per quitter (by age and sex) for the five "quit age bands".** The difference between the life years lived for each quit age band and the life years lived if a smoker quit at their current age in Table A3 is used to estimate these values. For example, Table A4 suggests a 40 year old who is going to be a lifelong smoker expects to live another 34.6 years, however if they were to quit now they would expect to live another 40.9 years. Therefore the difference of 6.3 years is the life year gain for that quit age band. This is repeated across all smoker quit age bands and ages, and for discounted values as well:

Table A6: Life years saved by quitting - Males

Quit age band	**Smoker age**				
	Under 35	**35 to 44**	**45 to 54**	**55 to 64**	**Over 65**
Under 35	-				
35 to 44	1.3	-			
45 to 54	4.4	3.2	-		
55 to 64	5.7	4.5	1.4	-	
Lifelong	7.5	6.3	3.3	2.1	-

Table A7: Discounted life years saved by quitting - Males

Quit age band	**Smoker age**				
	Under 35	**35 to 44**	**45 to 54**	**55 to 64**	**Over 65**
Under 35	-				
35 to 44	0.68	-			
45 to 54	2.2	1.9	-		

55 to 64	2.9	2.7	0.9	-	
Lifelong	3.7	3.7	2.1	1.5	-

304. **8. Estimate the proportion of current smokers by the 5 age categories.** This is done using APS 2019 source data and is used to provide an estimate of the probability of the age of a current smoker picked at random:

Table A8: Proportion of smokers in each age band

Smoker age				
Under 35	**35 to 44**	**45 to 54**	**55 to 64**	**Over 65**
35.1%	17.8%	19.4%	15.1%	12.6%

305. **9. Estimate the life years saved per quitter, and their discounted values.** Final values are calculated by weighting the discounted values in Table A6 by the probabilities of quitting in Table A2 (See Table A8 below), and then weighted again by the values in Table A7.

Table A9: Weighted discounted life years saved by quitting smoking, by age band - Males

Smoker age				
Under 35	**35 to 44**	**45 to 54**	**55 to 64**	**Over 65**
1.9	2.8	1.6	1.3	-

306. 10. To produce the final value of 0.74 discounted life years saved per person who quits smoking, the average of the results for men and women are taken, and then also downscaled in line with decreased consumption. The median doctor from the Doll et al. study smoked 18 cigarettes per day. The latest estimates from the Health Survey for England found that the median daily consumption of cigarettes was for Men and Women was 9 and 8, respectively. The estimates are downscaled proportionally.