| | |
|---|---|
| **Title: Smoke-free (Private Vehicles) Regulations 2014**<br><br>**IA No: 3073**<br>**Lead department or agency:** Department of Health<br><br>**Other departments or agencies:** | **Impact Assessment (IA)**<br>**Date: 01/07/2014**<br>**Stage: Consultation**<br>**Source of intervention:** Domestic<br>**Type of measure:** Secondary legislation<br>**Contact for enquiries**: DH Tobacco Programme |

## Summary: Intervention and Options

**RPC Opinion:** Not applicable

| Cost of Preferred (or more likely) Option | | | | |
|---|---|---|---|---|
| **Total Net Present Value** | **Business Net Present Value** | **Net cost to business per year** (EANCB on 2009 prices) | **In scope of One-In, Two-Out?** | **Measure qualifies as** |
| £30.8m - £63.8m | £0 | N/A | No | N/A |

**What is the problem under consideration? Why is Government intervention necessary?**

Tobacco use remains a significant challenge to public health and exposure to secondhand smoke (SHS) is hazardous to health, especially for children because they breathe more rapidly and inhale more pollutants than adults. In 2012, the Smoking, Drinking and Drug Use Among Young People in England survey (SDDS) reported that 26% of 11-15 year olds are exposed to SHS in their family's car. The Department of Health has worked to encourage positive behaviour change among parents and other smokers through social marketing campaigns. In February 2014, Parliament voted in favour of introducing legislation to make private vehicles carrying children smokefree. Government intervention is believed to be required to prevent SHS from adversely affecting the health of children in cars, where the levels of SHS can be significantly more concentrated. Intervention is further required on behalf of children as they cannot exert their choice to leave an SHS-exposed vehicle unlike adult passengers.

**What are the policy objectives and the intended effects?**

To prevent smoking in private vehicles carrying children to protect children from the harms of SHS, which is expected to reduce the incidence of illness.

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

Option 1: Do nothing (this option includes the continuation of the current social marketing campaign)
Option 2: Extend the current smokefree legislation to cover private vehicles and introduce two offences – smoking in a private vehicle with a person under 18 present and failure to prevent smoking in a private vehicle with a person under 18 present. Public Health England will continue its work to increase awareness of the harms associated with SHS and encourage behaviour change.

**Will the policy be reviewed? If applicable, set review date: N/A**

| | | | | | |
|---|---|---|---|---|---|
| Does implementation go beyond minimum EU requirements? | | | N/A | | |
| Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base. | **Micro** No | **< 20** No | **Small** No | **Medium** No | **Large** No |
| What is the $CO_2$ equivalent change in greenhouse gas emissions? (Million tonnes $CO_2$ equivalent) | | | **Traded:** | **Non-traded:** | |

*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 Minister  : Date: 2 July 2014

# Summary: Analysis & Evidence

Policy Option 1

**Description: Do nothing**

**FULL ECONOMIC ASSESSMENT**

| Price Base 2014 | PV Base 2015 | Time Period Years | Net Benefit (Present Value (PV)) (£m) | | |
|---|---|---|---|---|---|
| | | | **Low:** Optional | **High:** Optional | **Best Estimate:** 0 |

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

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

This is essentially a "do nothing" option and hence 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** | Optional | | Optional | **Optional** |
| **High** | Optional | | Optional | **Optional** |
| **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 (%)**

These are defined to be 0

**BUSINESS ASSESSMENT (Option 1)**

| Direct impact on business (Equivalent Annual) £m: | | | | | | In scope of OIOO? | Measure qualifies as |
|---|---|---|---|---|---|---|---|
| **Costs:** | 0 | **Benefits:** | 0 | **Net:** | 0 | | |

# Summary: Analysis & Evidence

Policy Option 2

**Description:** Extend the current smokefree legislation to cover private vehicles

**FULL ECONOMIC ASSESSMENT**

| Price Base Year 2014 | PV Base Year 2015 | Time Period Years 10 | Net Benefit (Present Value (PV)) (£m) | | |
|---|---|---|---|---|---|
| | | | **Low:** Optional | **High:** Optional | **Best Estimate:** £30.8m-63.8m |

| COSTS (£m) | Total Transition (Constant Price) | Years | Average Annual (excl. Transition) (Constant Price) | Total Cost (Present Value) |
|---|---|---|---|---|
| **Low** | Optional | | Optional | **Optional** |
| **High** | Optional | | Optional | **Optional** |
| **Best Estimate** | | | | £2.1m |

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

Expected costs incurred by the justice system from court proceedings are £352,000. Police administrative costs are estimated at £860,000 based on an assumed £50 cost per Fixed Penalty Notice issued. Driver fines also equate to £860,000 (this is offset in the net calculation by the increased revenue transferring to the MOJ from penalty fines).

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

We anticipate minimal, if any, opportunity costs to society due to police work diverted from other law enforcement activities. Loss of choice and the forced change in consumption profile to smokers is discussed under consumer surplus.

| BENEFITS (£m) | Total Transition (Constant Price) | Years | Average Annual (excl. Transition) (Constant Price) | Total Benefit (Present Value) |
|---|---|---|---|---|
| **Low** | Optional | | Optional | **Optional** |
| **High** | Optional | | Optional | **Optional** |
| **Best Estimate** | | | | £32.9m - £65.9m |

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

Reduced demand for smoking-related NHS treatments should enable treatment of other patients, securing an additional 540-1,087 QALYs, valued at £60,000 each (in total, £32m -£65m). MOJ to benefit from increased revenue due to driver fines worth an estimated £860,000 (which is offset by the cost to drivers in the net calculation).

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

Improvements in quality of life for children as a result of fewer disease cases. Other benefits include fewer driving accidents, future productivity gains and utility gains to children who are no longer exposed to secondhand smoke in cars.

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

Assuming the Royal College of Physician report on disease case estimates are a fair approximation, and that 5% - 10% are attributable to SHS in cars.
Assumption that the utility gains to children from not being exposed to SHS in cars offsets the consumer surplus lost to smokers.
Potential risk that smokers increase their smoking levels at home around children.

**BUSINESS ASSESSMENT (Option 2)**

| Direct impact on business (Equivalent Annual) £m: | | | | In scope of OIOO? | Measure qualifies as |
|---|---|---|---|---|---|
| **Costs:** | **Benefits:** | **Net:** | 0 | No | NA/ |

# Evidence Base

## What is the problem under consideration?

1. Exposure to SHS is hazardous to health. Today, many children in England report being exposed to secondhand smoke in private vehicles, including the family car (explained in more detail under 'Evidence' below).

2. In 2012, the Smoking, Drinking and Drug Use Among Young People in England survey (SDDS) results reported that 26% of 11-15 year olds are exposed to SHS in their family's car and 30% in someone else's car.[1] Evidence shows secondhand smoke is a real and substantial threat to child health, causing a variety of adverse health effects including increased susceptibility to lower respiratory tract infections such as pneumonia and bronchitis, worsening of asthma, middle ear disease, decreased lung function, and sudden infant death syndrome (see 'Evidence' below).

3. Additionally, children are more vulnerable to SHS exposure in vehicles. They breathe more rapidly and inhale more pollutants than adults.[2] Children are also less able to exert their choice to leave a private vehicle and/or request adults to stop smoking in a private vehicle compared to adults.

## Policy objectives

4. Given the view of Parliament, the Government will proceed with the introduction of regulations to end smoking in private vehicles carrying children in England. The purpose of this consultation is to seek views on draft regulations before they are made.

5. The aims of these proposed regulations on smoking in private cars carrying children would be to:

    - Protect children from the health harms associated with exposure to secondhand smoke in private cars
    - Encourage action by smokers to protect children from secondhand smoke
    - In time, lead to a reduction in health conditions in children caused by exposure to secondhand smoke

## Evidence

## Secondhand smoke (SHS)

6. Secondhand smoke is a serious health hazard, and there is no safe level of exposure. Every time someone breathes in SHS, they breathe in over 4,000 chemicals. Many are highly toxic. More than 50 are known to cause cancer. Scientific evidence also shows that ventilation does not eliminate the risks to health of SHS in enclosed places. The only way to provide effective protection is to prevent people breathing in SHS in the first place.[3]

7. In 2007, smokefree legislation was introduced in England and Wales to protect employees and the public from the harmful effects of secondhand smoke. That legislation does not extend to private vehicles.

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1 Health and Social Care Information Centre. *Smoking, Drinking and Drug Use Among Young People in England, 2012.* Health and Social Care Information Centre, Leeds, **http://www.hscic.gov.uk/searchcatalogue?productid=12096&q=title%3a%22smoking+drinking+and+drug+use%22&sort=Relevance&size=10&page=1#top**

2 Canadian Institute of Child Health. *Environmental hazards: Protecting children*. Canada 1997.

3 HM Government (2007). *Everything you need to prepare for the new smokefree law on 1 July 2007*. Smokefree England and Department of Health, London.

8. SHS refers to the inhalation of other people's tobacco smoke. The dangers of exposure to SHS have been well documented in a range of epidemiological[4] studies amongst the scientific community. Research suggests that there is no safe level of SHS exposure.[5]

9. The health hazards of exposure to SHS include an increase in the risk of the following diseases in adults:[6]

    i. Heart disease
    ii. Lung cancer
    iii. Stroke and chronic obstructive pulmonary disease

10. In 2010, the Royal College of Physicians published a report titled *Passive Smoking and Children* that synthesised evidence and research on this issue. The RCP report found that children are particularly vulnerable to SHS exposure, and that relative to children whose parents are non-smokers, SHS exposure in children is typically around three times higher if the father smokes, over six times higher if the mother smokes and nearly nine times higher if both parents smoke. Children from socio-economically disadvantaged backgrounds are generally more heavily exposed to SHS than other children.[7]

11. A 1998 report of the Government's independent Scientific Committee on Tobacco and Health (SCOTH) concluded that smoking in the presence of children is a cause of serious respiratory illness and asthmatic attacks. In 1999, the World Health Organization (WHO) convened an international consultation on SHS and child health. Its conclusions were similar to those of the 1998 SCOTH report. The WHO found that SHS is a real and substantial threat to child health, causing a variety of adverse health effects including increased susceptibility to lower respiratory tract infections such as pneumonia and bronchitis, worsening of asthma, middle ear disease, decreased lung function, and sudden infant death syndrome.[8]

12. According to a 2004 report of SCOTH, a considerable number of studies have been published since 1998 confirming adverse effects of exposure to SHS on a variety of endpoints in children. These include impairment of lung function, respiratory symptoms in adolescents, wheezing, school absence due to respiratory illness, middle ear disease and recurrent ear infections.[9] Evidence also suggests that secondhand smoke exposure can increase the risks of meningitis in children.

13. The 2010 RCP report suggested that exposure to SHS is a major cause of disease in children, and is responsible for over 300,000 UK general practice consultations and about 9,500 hospital admissions in the UK each year. The RCP emphasises in their report that this entire excess disease burden is avoidable.

## Children exposed to SHS in cars

14. In 2012, 26% of 11-15 year olds reported being exposed to SHS in their family's car and 30% in someone else's car.[1] Research shows that smoking in vehicles can result in the accumulation of high levels of SHS, which can persist even when windows are open or the ventilation system is in use.[10] Some public health groups have reported concern about the

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4 Epidemiology is the study of how often diseases occur in different groups of people and why **http://www.bmj.com/about-bmj/resources-readers/publications/epidemiology-uninitiated/1-what-epidemiology**

5 Environ Health Perspectives (Nov 2010) , *Smoking and secondhand smoke: Study Finds No Level of SHS Exposure Free of effects* **http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2974716/**

6 All Party Parliamentary Group on Smoking and Health – Inquiry into smoking in private vehicles, 2011

7 Royal College of Physicians (2010). *Passive Smoking and Children.* RCP, London.

8 SCOTH (1998). *Report of the Scientific Committee on Tobacco and Health.* TSO, London.

9 SCOTH (2004). *Secondhand Smoke: Review of evidence since 1998.* Department of Health, London.

10 Semple, S. et al (2012). "Secondhand smoke in cars: assessing children's potential exposure during typical journey conditions" in *Tobacco Control*. 2012;21(6), pp.578-83.

intensity of exposure to SHS in private vehicles, even if the duration of exposure may not lengthy. Research has shown that smoking just a single cigarette in a car generates high average levels of microscopic air pollutants, and where cars are ventilated (for example, air conditioning switched on or having the smoking driver hold the cigarette next to a half-open window), the average levels air pollutants, while reduced, were still at significantly high levels.[11]

15. As noted above, the 2012 SDDS results reported that 26% of 11-15 year olds were exposed to SHS in their family's car and 30% in someone else's car. If we were to assume that the same exposure rate applied to all children aged under-18 in 2014, it would imply approximately 3 million children in England are exposed to SHS in their family car.[12]

16. The 2010 Royal College of Physician report (RCP) on passive smoking and children estimates the impact of SHS exposure at home to children.[7] After conducting a systematic review of existing studies, they estimate an increased risk in the following diseases for children:

    i. Lower respiratory infections (comprises bronchitis, bronchiolitis, pneumonia, and acute respiratory infection)
    ii. Wheeze
    iii. Asthma
    iv. Meningitis
    v. Middle ear infection

## Why is Government intervention necessary?

17. As explained above, exposure to SHS is hazardous to health, especially for children. We have long understood the risks and harms of SHS and know that inhaling SHS is an unavoidable consequence of being in a smoke-filled environment.[13]

18. As part of the Government's work on tobacco control, smokefree laws were introduced to protect people from the harms of SHS in public places, public transport and work vehicles. The laws came into force in England in 2007 and have proved to be effective and popular and compliance is virtually universal.[14] Private vehicles are not covered by the original smokefree legislation.

19. The Tobacco Control Plan published in 2011 set out a comprehensive approach to tobacco control, including a commitment to raise awareness of the risks of exposing children to SHS. The Department of Health has also worked to encourage positive behaviour change among parents and other smokers through social marketing campaigns. Evaluation of the 2013 campaign shows that it was successful in changing both attitudes and behaviours, with 86% of those surveyed agreeing that SHS can cause significant harm to children and 37% saying that they took action (such as ordering a Smokefree Kit, stopping smoking or talking about it with friends and family) after seeing the adverts.[15]

20. In February 2014, Parliament voted in favour of the Children and Families Act 2014 that gave the Secretary of State powers to bring forward regulations to make private vehicles carrying children smokefree, which would build on the progress to date and speed up action to reduce the numbers of people who smoke in vehicles carrying children. The Department of Health is now consulting on these draft regulations which would extend smokefree legislation in the

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11 Sendzik, T. et al (2009). "An experimental investigation of tobacco smoke pollution in cars" in *Nicotine Tob Res*. 2009:11(6), pp.627-34.

12 2014 projected population for 0-17 year olds from ONS = 11.5m **http://www.ons.gov.uk/ons/interactive/2012-npp/index.html**

13 U.S. Department of Health and human Services. The Health Consequences of Involuntary Exposure to Tobacco Smoke: A Report of the Surgeon General. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, Coordinating Center for Health Promotion, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health 2006;

14 Smokefree Legislation Compliance Data, **http://www.smokefreeengland.co.uk/files/83433-coi-smokefree-legislation-webtagged.pdf**

15 **http://resources.smokefree.nhs.uk/news/campaigns/smokefree-homes-cars-2013/**

Health Act 2006 to make it an offence to smoke in a private vehicle and an offence for a driver not to stop someone smoking, when someone under the age of 18 is present.

21. The case for Government intervention draws on arguments from economic theory. Theory suggests that the health hazards of exposure to SHS represent a market failure (where the choices and decisions made by individuals produce an outcome which is sub-optimal). Market failures provide additional justification for Government intervention. In this case, the market failure is caused by a "negative externality" – the actions of the adult smoking take place without full consideration for the effects on the child present in the vehicle. Unlike adults, children exposed to SHS in vehicles are unable to protect themselves from SHS, for example by exiting the vehicle. Nor is there any sensible way for an adult to compensate the child for the harm caused. Government intervention is therefore required to prevent the negative externality from adversely affecting the health of children exposed to SHS in vehicles.

22. In this case the intervention is focused on preventing children from being exposed to SHS specifically in a private vehicle. The rationale for intervention is made stronger for two primary reasons:

    i. Children are more vulnerable to SHS than adults (noted above)
    ii. Children are less able to leave a private vehicle and/or stop adults from smoking in a private vehicle compared to adults

23. Statistics show that 86% of children who are exposed to SHS in cars would like the smokers to stop, but 31% actually feel able to tell their parents to stop.[16]

24. The Department of Health and Public Health England are committed to continuing action to protect children from the serious health harms from exposure to secondhand smoke. We will continue our work to increase awareness of these harms and encourage positive behaviour change among smokers.

## Summary and Conclusion of Smoking in Cars Impact Assessment

25. We estimate that approximately 3 million under-18 year olds in England are currently exposed to SHS in their family car. The regulations, if successful, are expected to reduce this by approximately 2.7 million children assuming a 95% compliance rate (based on previous vehicle legislation).

26. Quantified benefits are estimated at £32.9m-£65.9m depending on assumptions used. These relate to NHS cost savings from reduced treatments and the likely health gains accrued from saved lives. A key assumption is the attribution of SHS-related diseases to smoking in cars specifically. We estimate the total number of disease incidents in children that are caused by SHS using the Royal College of Physicians report.[7] We then assume 5%-10% of these incidents are due to SHS-exposure in cars. This is the Impact Assessment's assumed central estimate, and there is a large amount of uncertainty, so we welcome views during the consultation.

27. Other main unquantified benefits include reductions in morbidity to children associated with an improvement in quality of life. Future productivity gains from a healthier labour force and any impacts on uptake of smoking are considered under the section which considers the normalisation issue i.e. children seeing adults smoking and therefore making the behaviour seem normal.

28. Quantified costs are centred on the impact of enforcing these regulations, on the justice system and the fines paid by smokers found breaking the law (although the latter are offset by equally valued benefits to the Ministry of Justice – this is discussed further in sections below). Estimated gross costs discounted over 10 years amount to £2.1m. Other costs discussed include police administration costs and consumer surplus losses to smokers which are offset by

16 Protect children from second-hand smoke: Smoke-free Private Vehicles Amendment, Children and Families Bill: briefing for MPs, *British Lung Foundation*, **http://www.blf.org.uk**

utility gains to children. The focus of these regulations is not to impact on total smoking consumption. Consequently we anticipate no impacts on business

## Policy context/background

29. The Children and Families Act 2014 amends the Health Act 2006 to give the Secretary of State and Welsh Ministers regulation making powers to end smoking in private vehicles carrying children by extending the existing powers relating to smokefree legislation, which previously have been exercised in relation to enclosed vehicles used by members of the public or for work.

30. The aim of these regulations is to protect children from the health harms associated with breathing in SHS. SHS is harmful to children and can cause illnesses such as bronchitis, middle ear disease and asthma. In 2012, 26% of 11-15 year olds reported being exposed to SHS in their family's car and 30% in someone else's car.

31. Given the view of Parliament, the Government will proceed with the introduction of regulations to end smoking in private vehicles carrying children in England. The purpose of this consultation is to seek views on draft regulations before they are made. Policy option 2 below reflects what we consider to be the most straightforward approach to regulation and enforcement to achieve the policy aims.

32. We will not measure the success of the proposed regulations by the number of enforcement actions that result, but will rather look at how behaviour, attitudes and health outcomes change.

## Policy Options

Option 1 – Do nothing in addition to the current marketing activity

33. This option would mean continuing with the social marketing campaign and encouraging behaviour change to further reduce levels of exposure of children to SHS but not bringing in legislation to make it an offence to smoke in a private vehicle in the presence of a child under the age of 18. The proportion of children exposed to SHS in cars may continue to fall but this is expected to be slow and may take many years before we reach anticipated high levels of compliance. This is, therefore, not our recommended option. Additionally, this would not achieve the Parliamentary objective of ending smoking in a private vehicle carrying children.

Option 2 – Make regulations to extend the legislation to make it an offence of smoking in a private vehicle carrying children and failing to prevent smoking in a private vehicle carrying children

34. We are consulting on how to implement option 2, which is our recommended policy option and have drawn up draft regulations setting out how this could be enforced. Details of the main provisions in the regulations are set out at Annex 3 but in summary they introduce two offences – smoking in a private vehicle with under 18 present and failure to prevent smoking in a private vehicle with under 18 present. This mirrors the existing smokefree vehicles offences for public and work vehicles.

35. We think the most effective method of implementing regulations is with enforcement carried out by the police. The most appropriate method of penalty is in the form of a fixed penalty notice (FPN). We envisage the fixed penalty notice being at a level of £50 for both offences. If the decision by the enforcing authority is to prosecute and there is a summary conviction, the fine for smoking in a private vehicle is set at level 1 and for failing to prevent smoking in a private vehicle is level 4. The amount of the fine at level 1 is due to increase from £200 to £800 and at level 4 from £2,500 to £10,000, in the autumn. The levels of penalty are consistent with the original smokefree legislation and while there is not an FPN available for failure to prevent smoking in a smokefree place, there will be one available for failure to prevent smoking in a private car carrying children.

36. We have discussed how this offence would be enforced by the police with Home Office officials. We envisage that enforcement will be taken forward by local police forces as part of their usual work on road safety. A police officer may stop a car if they suspect an offence is being

committed or as part of a planned operation targeting a particular issue such as the use of seatbelts. We envisage the police adding this offence to the list of offences they consider (which includes correct use of seat belts, child seats and use of mobile phones while driving) when they stop a car for any reason. We expect decisions about whether to issue warnings, fixed penalty notices or consider court action to be at the discretion of officers depending on the specifics of the individual situation.

37. We will continue to run a hard hitting social marketing campaign to continue to raise awareness among the general public of the health harms associated with SHS, in particular to children. The adverts will be adapted to inform people of the new offences.

38. Local authorities would also be able to enforce the proposed regulations, by authorising appropriate officers, but would not have the powers to stop moving vehicles. We see an important role for both local authority regulatory officers, who enforce existing smokefree legislation, in working jointly with police on local enforcement activities, as well as continuing their efforts to build compliance for smokefree legislation generally. Local authority regulatory officers played a key role in the achievement of the very high levels of compliance seen with existing smokefree legislation.

## Costs and benefits

## Costs

39. The majority of quantified costs are for public services such as the police and justice system. The estimated fines charged on drivers or passengers who smoke in cars carrying children are also classified as a gain to the MOJ/public sector as extra revenue. As a result the net effect is a net cost/benefit of £0 in the NPV. This is further discussed below.

## Police

## Direct

## Resources

40. It is envisaged that the police will incorporate smoking-in-private vehicles checks as part of their usual work on road safety. This is based on discussions held with Home Office and the police. We, therefore, assume no direct financial costs are incurred by the police.

## Opportunity cost

41. The opportunity costs of a policy reflect the benefits foregone in using the resources required for enforcement of the new laws. In other words, time and resource that police officers could have spent doing other police work which would benefit society, instead of enforcing these particular regulations.

42. The magnitude of this cost will depend on the time taken by police officers to enforce the laws and any other resources used. This includes administrative burdens, such as the cost of staff having to process any additional fixed penalty notices. We do not quantify this cost here as any estimate would be speculative. We anticipate that the police will implement the policy alongside their current road safety checks. We therefore expect the additional time spent enforcing the new regulations to be short. We will test this assumption and seek further evidence during consultation.

## Indirect

### Admin costs

43. The administrative costs will depend on the number of fixed penalty notices the police issue. We estimate an average of around 2,100 FPNs to be issued every year for the new offences, with a small downward trend due to the continuation of current reduction in adult smoking prevalence. The basis for this estimate can be found in Annexes 1 and 2. In our cost estimates we assume that a 95% of drivers will comply with the regulations as soon as they come into effect (based on previous vehicle legislation).

44. During the consultation, we will consider the costs incurred per FPN issued by the police. For now we assume for simplicity that each FPN will cost the police £50 (equal to the fine). This sums up to £860,000 discounted at 3.5% over 10 years. We include this in our NPV estimate as a cost.

### Training

45. Advice from the police suggests that any training costs will be minimal. This is because existing FPN forms will be used and the issuing process will not change. Specific training will be needed to raise awareness of the new regulations, but this should not be lengthy and it is anticipated that it will be delivered as part of a virtual IT-based learning update for police officers. These costs have not been quantified but we assume they are not significant and immaterial compared to the impacts modelled.

## Justice system

46. There will be an impact on the justice system if and when cases are referred to the courts. For this offence, court proceedings may occur if:

    i. smokers dispute and do not accept an FPN issued to them they can take the matter to court
    ii. an enforcement body decides to refer an alleged offence directly to court to be dealt with.
    iii. FPNs issued are not paid within the allowed time and are referred to the courts

47. Cost estimates per case were provided by the Ministry of Justice and are set out in Annex 4. These are provisionally estimated at £500 per case[17] made up of costs to the Crown Prosecution Service. We provisionally assume that 4% of FPN issues lead to court appearances. We take this rate from the number of court hearings that took place for individuals smoking in a smokefree area relative to the number of FPNs issued.[14] We welcome any further evidence during consultation. Summing up and discounting over the ten year period 2015-2024 gives an estimated cost to the justice system of £350,000.

48. Annex 4 outlines the associated assumptions and limitations for the cost estimates provided.

## Smokers - FPN fines

49. We estimate about 2,100 FPNs to be issued every year for the new offences adjusted for population numbers and smoking prevalence rates. Assuming that each fine will be paid at £50 each, this sums up to £860,000 discounted at 3.5% over 10 years. This is a cost to those smokers who do not comply with the regulations. The recovery of driver fines will be managed by the Ministry of Justice (MOJ) who stand to gain from the income received from penalty charges. We, therefore, treat the FPN fines as transfer payments and value the net cost as £0 in the NPV estimate. Transfer payments are those monies transferred from one segment of the economy (in this case, the individuals that are fined) to another segment (in this case MOJ/ the public sector) without any production taking place.

[17] All costs rounded to the nearest £100 and are in 2012/13 prices.

## Costs to Business

50. We do not expect total consumption of tobacco to alter as a result of these regulations. It is assumed that the lost opportunities to smoke in a private vehicle will be replaced by smoking at other times. We, therefore, anticipate no impacts to business. Readers may wish to comment on this assumption during consultation.

## Consumer surplus

51. Consumer surplus is the value a consumer places on the opportunity to consume goods or services over and above the price paid. We assume smokers unable to smoke in a vehicle when children are present will alter their consumption of tobacco to how they currently behave. This means that they will lose some of the total net present value they attach to smoking on days when they would normally smoke in their vehicle, with children present. This value is difficult to quantify, but likely to be low, because it is the location they are able to smoke in which has changed, rather than the total amount of their consumption and the time spent in a car with children will probably form a relatively small component of the average day.

52. We should also take account of the increase in consumer surplus that the child would place on being in a smoke free journey compared to a journey where tobacco is consumed by an adult (increase over and above the health benefits the children will gain from the smokefree journey). 86% of children who are exposed to SHS in cars would like the smokers to stop, but 31% are actually able to tell their parents to stop.[16] We assume that, at the very least, the benefits (or gain in consumer surplus) that children receive will cancel out the loss incurred by smokers. It is also possible, however, that the net effect will be a surplus gain. The net effect has not been quantified here and has not been included in the NPV calculation.

## Loss of choice

53. We assume that the value in the ability to choose when to consume tobacco is intrinsic in the value placed by the consumer on the product in total. We, therefore, treat any losses incurred from the inability to choose to consume tobacco as already factored into the consumer surplus losses above.

## Health Benefits

## Morbidity

<u>Children</u>

54. Data from the 2012 SDDS shows that 26% of children aged 11-15 years old are exposed to SHS in their family cars. We reduce this by 6% to reflect the impact of the 2013 smokefree campaign (please see Annex 1 for more detail). Over 50% of these children will be exposed at least once or twice a week up to a maximum level of exposure every day. The data also shows that 30% of 11-15 year olds are exposed to SHS in someone else's car, with 23% of these children exposed at least once or twice a week.

55. Children exposed to SHS are subject to increased risks of a range of diseases. The RCP report finds an increased likelihood in the following diseases when children are exposed to SHS at home:[7]

    - Lower respiratory infections (comprises bronchitis, bronchiolitis, pneumonia, and acute respiratory infection)
    - Wheeze
    - Asthma
    - Meningitis
    - Middle ear infection

56. The report estimates the number of new cases of these diseases in UK children (between varying ages) in 2008 that are attributable to SHS exposure at home. These are summarised in Table 1:

**Table 1: Events of disease in children in the UK caused by SHS exposure in the home (2008)**

| Disease incidence | Age range in years | UK cases attributable to smoking |
|---|---|---|
| Lower respiratory infections | 0-2 | 20,500 |
| Middle ear infections | 0-16 | 121,400 |
| Wheeze | 0-2 | 7,200 |
| Asthma | 3-4 | 1,700 |
| Asthma | 5-16 | 13,700 |
| Meningitis | 0-16 | 600 |
| **Total incident cases** | | 165,100 |

57. We treat these estimates from the RCP report as our best estimate for the number of SHS-related new disease cases in children for the UK in 2008. For England we estimate the number of diseases to be approximately 139,000 based on the 2014 population ratio of UK to England.[18]

58. Using the RCP report and updating some of the assumptions we can estimate the total number of cases expected to be attributed to SHS exposure for the 10 year period 2015-2024. The report uses data from research papers from the 1970s up to 2008 (most are 2006 and prior) to determine the increased risk of disease from exposure to SHS. One of the assumptions used is a 22% exposure rate to SHS at home. The SDDS figures, however, imply a 2012 exposure estimate of 43% for 11-15 year olds in England.[1] We cannot identify how the RCP report defines SHS-exposure since it is a systematic review of a range of other studies.

59. Rather than updating the RCP report with exposure statistics from the SDDS, we have adjusted using overall smoking prevalence rates. In 2008 smoking prevalence was approximately 21%. Our ten year estimates of prevalence from 2015-2024 are taken from the Department's analysis undertaken for the Standardised Packaging Impact Assessment. We also adjust for the population of children aged 0-16 years old (we only look at 0-16 year olds under health benefits despite the policy covering all under-18s because this was the age range analysed in the RCP study as seen in Table 1) between 2015-2024.[19] The estimated number of 0-16 year olds in England in 2008 was 10.3m.[20] These are taken from ONS projections.

[18] 53.5m/63.7m. Source: **http://www.ons.gov.uk/ons/rel/pop-estimate/population-estimates-for-uk--england-and-wales--scotland-and-northern-ireland/mid-2011-and-mid-2012/index.html**

[19] Interactive Download Table Tool - National Population Projections 2012-based, *ONS*, **http://www.ons.gov.uk/ons/interactive/2012-npp/index.html**

[20] Report Summary Table, projected populations - UK and constituent countries, 2008-based, *ONS*, **http://www.ons.gov.uk/ons/rel/npp/national-population-projections/2008-based-projections/sum-2008-based-national-population-projections.html**

60. Table 2 presents the 10 year profile of incident numbers.

**Table 2 – Ten year profile of expected disease cases in children attributable to exposure to SHS at home in England**

| Year | Adult smoking prevalence (%) | Estimated 0-16 years old population | Total incident cases |
|---|---|---|---|
| 2015 | 19.8 | 10,961,632 | 140,154 |
| 2016 | 19.3 | 11,050,973 | 137,939 |
| 2017 | 18.8 | 11,155,808 | 135,859 |
| 2018 | 18.7 | 11,277,057 | 136,425 |
| 2019 | 18.6 | 11,409,741 | 137,109 |
| 2020 | 18.5 | 11,529,702 | 137,620 |
| 2021 | 18.4 | 11,629,846 | 138,515 |
| 2022 | 18.4 | 11,717,106 | 139,251 |
| 2023 | 18.4 | 11,774,576 | 139,630 |
| 2024 | 18.3 | 11,816,358 | 139,820 |
| **Total** | | | **1,382,323** |

61. The relationship between SHS exposure at home and specifically exposure to SHS in vehicles is not clear. In an average day the time spent by children at home will presumably be greater than time spent in a vehicle. This would suggest a greater exposure to SHS at home if measured solely by time. Partially offsetting this, vehicles are more enclosed relative to a typical room in a house or flat, resulting in a greater concentration of particulate matter, known as PM2.5, in a child's surrounding space.[21]

62. The factors that influence an individual child's exposure to SHS will depend on individual circumstances. For example, exposure in a vehicle is likely to be of higher intensity but of shorter duration whereas exposure in the home is likely to be of a lower intensity but a longer duration. Some people may smoke in the family home but not in the family vehicle and vice versa and some children may only be exposed to SHS when they travel in a friend's car and not in the family car. From the evidence that DH is aware of, we do not feel able to assess with certainty the share of SHS-related illnesses in children caused by exposure in vehicles. For the purposes of this Impact Assessment we have made an assumption that between 5-10% of the health impacts are attributable to exposure to SHS in vehicles and we welcome views during the consultation. The results of this range (and others) are presented in Table 3.

21 Sanchez-Jimenez A, Galea K et al. *Exposure of children to second-hand smoke in cars*, Journal of Environmental Health Research, 2011

**Table 3 – SHS-related incidents attributable to cars**

| | | Incidents attributable to SHS in cars | | | |
|---|---|---|---|---|---|
| **Year** | **Total incident cases** | **2.5%** | **5%** | **10%** | **12.5%** |
| 2015 | 140,154 | 3,504 | 7,008 | 14,015 | 17,519 |
| 2016 | 137,939 | 3,448 | 6,897 | 13,794 | 17,242 |
| 2017 | 135,859 | 3,396 | 6,793 | 13,586 | 16,982 |
| 2018 | 136,425 | 3,411 | 6,821 | 13,642 | 17,053 |
| 2019 | 137,109 | 3,428 | 6,855 | 13,711 | 17,139 |
| 2020 | 137,620 | 3,441 | 6,881 | 13,762 | 17,203 |
| 2021 | 138,515 | 3,463 | 6,926 | 13,851 | 17,314 |
| 2022 | 139,251 | 3,481 | 6,963 | 13,925 | 17,406 |
| 2023 | 139,630 | 3,491 | 6,982 | 13,963 | 17,454 |
| 2024 | 139,820 | 3,496 | 6,991 | 13,982 | 17,478 |
| **Total** | 1,382,323 | 34,558 | 69,116 | 138,232 | 172,790 |

63. Taking between 5% and 10% as our quantified value, we estimate the number of disease cases in 0-16 year olds due to SHS exposure in cars in England for the period 2015-2024 to be between 69,000 and 138,000.

64. We assume that to achieve a similar magnitude of benefits under policy option 1, it will take a significantly longer amount of time compared to option 2. The benefits of policy option 2, therefore, will be the reductions in disease incidents. We base these estimated benefits on Table 3 but allow for a phasing in period to reflect that impacts on health are unlikely to be immediate. We assume a 2 year period of phasing in, with 2015 experiencing half the benefit and 2016 onwards the full reduction in cases. These are presented in Table 4.

**Table 4 – Morbidity benefits – reduction in new disease incidents in 0-16 year olds in England under Option 2**

| | Number of fewer new incidents attributable to SHS in cars | |
|---|---|---|
| **Year** | **5%** | **10%** |
| 2015 | 3,504 | 7,008 |
| 2016 | 6,897 | 13,794 |
| 2017 | 6,793 | 13,586 |
| 2018 | 6,821 | 13,642 |
| 2019 | 6,855 | 13,711 |
| 2020 | 6,881 | 13,762 |
| 2021 | 6,926 | 13,851 |
| 2022 | 6,963 | 13,925 |
| 2023 | 6,982 | 13,963 |
| 2024 | 6,991 | 13,982 |
| **Total** | 65,612 | 131,225 |

65. We will test these assumptions during the consultation process and welcome views on this approach and any evidence that will help us refine this assumption.

66. As mentioned above the estimates made in this section of the Impact Assessment do not represent a definitive picture of the health burden caused by SHS exposure by children in cars, and should not be represented as such. The uncertainties that surround the figures used here are discussed further below in the “Uncertainties” section. These morbidity benefits are

uncertain and a value has not been given to them in the NPV. Hence, all other things equal, the NPV can be considered an underestimate of the value of this policy.

Adults

67. Non-smoking adults currently exposed to SHS in vehicles can also expect to benefit from these regulations if they share journeys with children. The hazards of SHS to adults are outlined in the earlier sections of this Impact Assessment. We can expect a reduction in the adverse health impacts on adults in proportion to the number of journeys that they will no longer be exposed to SHS.

## Mortality

Adults

68. A 2005 study estimated that over 11,000 people aged 20 and above in the UK die per year as a result of SHS exposure at home.[22] We do not expect these new regulations to have a significant impact on adult mortality but this study does demonstrate the potential benefits for non-smoking adults who will no longer be exposed to SHS in cars, albeit at the top end.

Children

69. The methodology used to derive Table 1 is also used in the RCP report to estimate the number of cot deaths attributable to SHS exposure at home. It estimates 22% of cot deaths to be attributable to SHS. Using 2012 statistics on causes of death, there were 369 deaths to children under the age of 1 in England and Wales due to sudden infant syndrome (ICD-10 code R95). Using the RCP approach would suggest 81 of these deaths were related to SHS.

70. We are wary of including lives saved in our health benefit estimates. The extent of infant exposure to SHS in cars is more uncertain than the exposure of children 11+ years old because of lack of data. We, therefore, do not attribute any benefits in the form of prevented cot deaths from non-exposure to SHS in cars. We welcome any informed views from the consultation that could confirm or suggest other conclusions to this.

## Avoidable treatment costs

71. The RCP report estimates the cost of treating illnesses caused by SHS exposure to children. These estimates are based on the incidents of new diseases approximated in Table 1. It estimates the cost of UK primary care visits and asthma drugs at about £9.7m, which roughly comes to £8.1m for England after adjusting for population figures.[1] This, in addition to the cost of child hospital admissions in England which is estimated at £12.2m per year, suggests a total cost saving of £20.3m per year to the NHS in England.

72. Taking these figures as our best estimate, we adopt a similar approach to morbidity benefits and adjust based on smoking prevalence rates and population size to get a more accurate estimate. We assume a 2 year phasing in period, as per the morbidity health benefits, and focus on a 5% and 10% allocation due to SHS in vehicles. This is discounted at 3.5% to arrive at the estimated present value of NHS cost saving benefits. We again assume that to achieve a similar magnitude of benefits under policy option 1, it will take a significantly longer amount of time compared to option 2. The results are shown in Table 5.

[22] Jamrozik K, *Estimate of deaths attributable to passive smoking among UK adults*: database analysis: *BMJ*, 2005

**Table 5 – Discounted NHS cost savings in England due to reduction in SHS exposure in cars**

| | Discounted cost savings attributable to SHS exposure in cars (£) | |
|---|---|---|
| **Year** | **5%** | **10%** |
| 2015 | 510,430 | 1,020,860 |
| 2016 | 970,750 | 1,941,500 |
| 2017 | 923,775 | 1,847,550 |
| 2018 | 896,257 | 1,792,514 |
| 2019 | 870,292 | 1,740,584 |
| 2020 | 843,996 | 1,687,991 |
| 2021 | 820,756 | 1,641,513 |
| 2022 | 797,218 | 1,594,435 |
| 2023 | 772,353 | 1,544,707 |
| 2024 | 747,251 | 1,494,502 |
| **Total** | 8,153,078 | 16,306,156 |

73. We value these estimated cost savings to reflect the additional benefits of health care expenditure in terms of saved lives made possible by the reduced demand for NHS resources for smoking related conditions. Cost effectiveness studies have estimated one Quality Adjusted Life Year (QALY) to cost the NHS about £15,000. So for approximately every £15,000 that is not spent by the NHS on smoking related conditions, one QALY is likely to be gained elsewhere. The estimates above divided by this £15,000 reflect the number of QALYs gained from the cost savings (i.e. from freed up NHS resources).

74. DH assigns a value of £60,000 to a Quality Adjusted Life Year. This is consistent with similar valuation of policies that mitigate mortality or morbidity risk by other Government departments, based upon studies of what members of the public are on average willing to spend to reduce their own mortality risk, or to improve their own health outcomes.

75. The estimated benefits amount to approximately £32m-£65m.

## Ministry of Justice

76. We estimate about 2,100 FPNs to be issued every year for the new offences adjusted for population numbers and smoking prevalence rates. The estimated fines charged to smokers in the costs section above are transferred to the MoJ. This came to £860,000 discounted at 3.5% over 10 years. We, therefore, treat the income received by the FPN fines to the MoJ as a transfer payment from those individuals fined which results in a net cost/benefit of £0.

## Driving accidents

77. A literature review found that smoking can act as a distraction to drivers.[23] The review summarises its findings from the studies it looked at with the following:

    - Smokers have an increased crash risk compared to non-smokers after accounting for age, gender, education, alcohol consumption and driving experience
    - Smoking was a source of distraction in 0.9% of distraction-related crashes
    - Smoking while driving is a hazard

78. Possible explanations behind the increased risk of accidents included the physical distraction of smoking and carbon-monoxide toxicity. A separate study found that smokers in Taiwan have higher injury rates than non-smokers even after controlling for alcohol and social class.[24] In light

[23] Young K et al. *Driver Distraction: A Review Of The Literature*: Monash University Accident Research Centre, 2003

[24] Wen CP *et al.* Excess injury mortality among smokers: a neglected tobacco hazard: *Tobacco Control*, 2005

of the evidence we might expect a small reduction in the risk of car accidents following the reduction of smoking in cars. We welcome any evidence on smoking-related accidents in England. The benefits from a potential reduction in accidents have not been quantified here and have not been included in the NPV calculation.

## Productivity

79. Over the medium-to-long term we would expect additional benefits in the form of wider economic gains. The children who don't suffer from the illnesses in Table 1 (because of the prohibition on smoking in a private vehicle as suggested in policy option 2) will be more productive as they grow older and enter the labour force, all other things held constant. This will arise firstly from being healthier individuals and therefore being able to work at a higher intensity and, secondly, from taking fewer sickness absences.

## Risks and wider issues

## Offsetting tobacco consumption and unintended consequences

80. We have considered unintended consequences which may arise from the new provisions. We anticipate that there may be a change in smoking behaviour. Smokers may alter the way in which they travel (stopping for breaks more often for example) or they may consume more tobacco products while they are stopped (two cigarettes per stop instead of one for example). The new provisions may also have an impact on smoking prevalence levels, although this is not the policy intention. Some people may smoke less frequently if they are often travelling in a vehicle carrying children. Some may also smoke more in other places since they are unable to smoke in their vehicle. We do not have any data to enable us to quantify the likely impact of regulations on these behaviours.

81. We have evidence to suggest that the regulations will not displace smoking from private cars into the home, because:

    - Evidence of behaviour changes following the smoke free regulations in 2007 has suggested the opposite. Rather than increasing smoking levels at home, reductions in exposure to SHS have been observed in private and in public places in the lead up to and after the smokefree legislation was introduced,[6] as awareness of the risks of SHS exposure increased. We could expect the same affect if legislation to end smoking in private cars carrying children is introduced.
    - Even if home consumption was to increase, the reduction in car exposure is likely to have the greater impact on health because of the higher toxicity of SHS in enclosed spaces such as vehicles. This would suggest an overall net gain to the health of children.

## Denormalisation

82. The *Tobacco Control Plan for England* sets out that:

    > *To promote health and wellbeing, we will work to encourage communities across England to reshape social norms, so that tobacco becomes less desirable, less acceptable and less accessible. We want all communities to see a tobacco-free world as the norm and we aim to stop the perpetuation of smoking from one generation to the next. To reduce smoking uptake by young people, we all need to influence the adult world in which they grow up* (p.10)*.*

83. Over time the uptake of smoking to children may reduce as a result of these regulations. Children will be less exposed to smoking by adults, potentially helping to reshape social norms around smoking. We can expect large health benefits if this were the case for generations to come. We do not attempt to quantify this as the range of uncertainty is significant.

## Uncertainties

84. This section outlines the reasons why the main estimates quantified in this Impact Assessment should be treated in context with respect to their ranges of uncertainty.

85. The health benefits are driven by the estimates from the RCP report. The report does not quantify the number of disease cases caused by exposure to SHS by explicitly identifying each and every case. Their approach can be summarised as follows:

    - They measure overall disease incidence by analysing primary care data recorded in The Health Improvement Network (THIN) for all children born between 1988 and 2004
    - The number of new diagnoses and episodes of the illnesses in Table 1 are recorded for the age ranges of study
    - This data is used to estimate new disease incidence per 1,000 person years
    - Applying this incidence to the 2008 population for the relevant age group provides an estimate of the number of total disease cases for children
    - To find the proportion of these cases attributable to exposure to SHS, they use the following formula: [p(OR – 1)] / [p(OR - 1) +1] ; where p=proportion of children exposed to SHS at home, OR = odds ratio of disease if exposed to SHS at home
    - Applying this formula, the number of total cases attributed to SHS exposure is presented in Table 1

86. The odds ratios used are based on a systematic review of older studies, most of which are 2006 and prior. There is a risk that the odds ratio is biased upwards. This is because the amount of exposure the average child would have been subject to in the studies pre-2007 is larger than an average child now due to the smokefree legislation. This may suggest that the number of cases attributable to SHS exposure is over estimated.

87. The RCP report does not define SHS exposure nor explain the development in time of catching the diseases. Since we do not know how exposure is defined, we have only adjusted for updated overall smoking prevalence rates, which is not ideal. If possible we would adjust for SHS-exposure rates. To overcome the issues around time lag in the realisation of health benefits, we have assumed a two year phased impact. Both are additional elements of uncertainty.

88. The disease cases attributable to SHS exposure are estimated for only the age ranges presented in Table 1. The RCP report is constricted to these ages only because of the studies they reviewed. This creates uncertainty over the applicability of the health benefit estimates to all children between 0-16 years, and, the implication would be that the number of cases we have used is actually an under estimate.

89. The above main reasons for uncertainty contribute to the quantified cost savings as well. Since these savings are based on assumptions of disease incidence, the estimated range of savings will be of similar magnitude to the range of uncertainty around disease cases. In addition there will be uncertainty with respect to the costs used by the RCP report since the report is a few years old and may also be subject to data errors.

## Wellbeing

90. Wellbeing is about feeling good and functioning well and comprises an individual's experience of their life and a comparison of life circumstances with social norms and values.[25] Wellbeing exists in two interrelated dimensions:

    i. Subjective wellbeing (or personal wellbeing) asks people directly how they think and feel about their own wellbeing, and includes aspects such as life satisfaction (evaluation), positive emotions (hedonic), and whether their life is meaningful (eudemonic).

[25] Wellbeing and health policy, *Department of Health*, **https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/277566/Narrative__January_2014_.pdf**

ii. Objective wellbeing is based on assumptions about basic human needs and rights, including aspects such as adequate food, physical health, education, safety etc. Objective wellbeing can be measured through self-report (e.g. asking people whether they have a specific health condition), or through more objective measures (e.g. mortality rates and life expectancy).

91. This policy is likely to influence both subjective and objective wellbeing measures. Reduced exposure to environmental smoke is expected to result in an improvement in physical health – which is in itself a measure of objective wellbeing. In turn, physical health has been consistently associated with levels of subjective wellbeing. For example, the ONS Measuring National Wellbeing: Life in the UK 2012 report showed that people's self-reported health was positively associated with overall life satisfaction.[26] This trend has also been demonstrated among children; the Health Behaviour in School-aged Children (HBSC) England survey found that self-reported health was associated with life satisfaction (93% of those who reported excellent health also reported high life satisfaction).[27]

92. As assessed above, health benefits are expected to accrue to children from this policy. This is likely to have a positive impact on both objective and subjective levels of wellbeing.

## Equality Test

93. The measure should benefit children under 18 years of age who are currently exposed to secondhand smoke in private vehicles in England. We believe that the regulations may have a bigger positive health impact on young people who from communities where smoking prevalence is higher, and may helping to reduce health inequalities caused by the use of tobacco.

94. In its initial assessment of the impact on equality of this measure, the Department of Health has concluded that it does not create or increase any unlawful discrimination, harassment or victimisation of any particular group by gender, race, religion, ethnicity, sexuality, sexual orientation or disability. It is a wide-ranging public health measure aimed at protecting the health of all children in England.

[26] Predicting wellbeing, *NatCen Social Research*, **http://www.natcen.ac.uk/media/205352/predictors-of-wellbeing.pdf**

[27] Developing Well – 11-19 years, *Department of Health*, **https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/277574/Developing_Well_-_11_to_19_years.pdf**

# Annex 1: Estimated number of children exposed to SHS in cars and number of car journeys with children exposed to SHS

1. The "Smoking, drinking and drug use among young people in England in 2012" survey (SDDS) is the latest in a series designed to monitor smoking, drinking and drug use among secondary school pupils aged 11 to 15. Information was obtained from 7,589 pupils in 254 schools throughout England in the autumn term of 2012. The 2012 SDDS results for smoking in cars can be seen in Table 1A.

**Table 1A - Frequency of exposure to secondhand smoke in the last year, by smoking status 2012**

| | | | | |
|---|---|---|---|---|
| *All pupils* | | | | *2012* |
| **Frequency of exposure to secondhand smoke** | **Smoking status** | | | |
| | Regular smoker | Occasional smoker | Non-smoker | Total[a] |
| | % | % | % | % |
| **In family's car** | | | | |
| Every day or most days | 23 | 9 | 5 | 6 |
| Once or twice a week | 19 | 13 | 8 | 8 |
| Once or twice a month | 11 | 10 | 5 | 5 |
| Less often than once a month | 8 | 9 | 7 | 7 |
| Never in the past year | 40 | 59 | 76 | 74 |
| **In someone else's car** | | | | |
| Every day or most days | 17 | 4 | 2 | 2 |
| Once or twice a week | 21 | 9 | 4 | 5 |
| Once or twice a month | 22 | 18 | 6 | 7 |
| Less often than once a month | 16 | 28 | 15 | 16 |
| Never in the past year | 24 | 42 | 73 | 70 |
| *Unweighted bases[b,c]* | *275* | *255* | *5746* | *6304* |
| *Weighted bases[b,c]* | *269* | *256* | *5768* | *6320* |

2. Before using this data to estimate the number of children exposed to SHS in cars, we make a slight adjustment for the impact of the smokefree campaigns. Analysis of the 2013 campaign[15] and evidence supplied from PHE indicate an increase in the number of households banning smoking in the car of approximately 6%. We reduce the values in Table 1A by 6% to reflect this impact.

3. We assume the exposure rates reported are applicable to all children in England. Population projections estimate the number of 11-15 year olds in England in 2015 to be just under 3m. This is taken from the ONS. Multiplying the percentage of children exposed to SHS by 3m gives the total expected number of children to be exposed to SHS per exposure unit. We define "exposure unit" as the different levels of frequency of exposure to SHS described in Table 1A (i.e. "Every day or most days", "Once or twice a week", "Once or twice a month" etc). For example:

    - Percentage of children exposed every day or most day's in the family car = 5%-6%
    - Estimated number of 11-15 year olds in England in 2015 = approximately 3m
    - Expected number of 11-15 year olds exposed to SHS every day or most days in the family car = 5%-6% x 3m = approximately **165,000**

4. Taking the definition of "***Frequency of exposure to secondhand smoke***" from Table 1A, we assume the following monthly exposure rates in Table 1B. We assume a 30.5 day month in our calculations:

**Table 1B – Frequency of exposure to SHS in terms of days[28]**

| Frequency of exposure to SHS | Assumed days per month exposed |
|---|---|
| Every day or most days | 21.8 |
| Once or twice a week | 6.5 |
| Once or twice a month | 1.5 |
| Less often than once a month | 0.5 |
| Never in the past year | 0 |

5. According to the 2012 National Travel Survey[29] there are on average 954 trips per person per year in Great Britain (The basic unit of travel in the National Travel Survey is a trip, defined as a one-way course of travel with a single main purpose). 42% of these trips are made by car or van as a driver (a further 22% as a passenger). This would indicate 611 average car trips per person per year (64%), but 401 of these are separate car journeys (42%) since there will be overlap with passengers.

6. The number of car journeys in which an 11-15 year old is exposed to SHS per day per exposure unit as defined in the SDDS (e.g. an exposure unit could be "Every day or most days", or, "Once or twice a week") is estimated as 1.1. This is the number of separate car journeys (401) on average per year per person divided by the number of days in a year (365).

7. The estimated number of car journeys in which an 11-15 year old is exposed to SHS per month is calculated as follows:

    - Number of 11-15 year olds exposed to SHS (exposure unit) * Assumed number of days per month exposed (per exposure unit) * Assumed number of SHS-exposed car journeys per day (per exposure unit)

8. For example, the number of car journeys with a 11-15 year old exposed to SHS "*Every day or most days*" in the family car per month is:

    - 165,000 children * 21.8 days/month exposed * 1.1 car journeys per day = approximately 3.9m car journeys per month

9. This methodology is applied to all exposure units and for those exposed in someone else's car. Aggregating the numbers gives an estimate of 9.4m car journeys per month across England in which an 11-15 year old will be exposed to SHS. Multiplying by 12 gives an annual estimate of 112m car journeys.

10. We assume that the exposure rates from the SDDS are applicable to children aged 0-10 and 16-17 years old (relevant population estimated as 8.6m for 2015). We exclude the figures for 0-10 year olds under "Regular smokers" since we expect this cohort to be very small. Otherwise using the same approach as 11-15 year olds to all other relevant children the total number of SHS-exposed car journeys is about 432m.

11. This represents approximately 2% of all estimated annual car journeys. We estimate the total number of car journeys at just under 22bn. This is calculated by multiplying the average number of trips made per person per year as a driver (401) by the projected 2015 population for England (54.5m).[30] Tables 1C-1F summarise the main estimated statistics.

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28 Days calculated as follows: 21.8 = 5 days per week, 6.5 = 1.5 days per week, 1.5 = 1.5 days per month, 0.5 = 0.5 days per month

29 National Travel Survey 2012, **https://www.gov.uk/government/publications/national-travel-survey-2012**

30 Greener Journeys estimated 24bn car journeys in total using the 2009 National Travel Survey **http://www.greenerjourneys.com/wp-content/uploads/2012/06/1nb.pdf**

**Table 1C – Estimated number of 11-15 year olds exposed to SHS in cars in England, 2015 (family car or someone else's car)**

| Frequency of exposure to SHS | No of regular smokers exposed | No of occasional smokers exposed | No of non-smokers exposed | Total |
|---|---|---|---|---|
| Every day or most days | 47,246 | 14,613 | 177,287 | 239,146 |
| Once or twice a week | 47,246 | 24,730 | 303,921 | 375,897 |
| Once or twice a month | 38,978 | 31,474 | 278,594 | 349,046 |
| Less often than once a month | 28,348 | 41,591 | 557,188 | 627,126 |
| Never in the past year | 89,819 | 127,069 | 4,078,705 | 4,295,593 |
| **Total** | 251,637 | 239,476 | 5,395,696 | 5,886,809 |

*Summary: Approximately 1.6m 11-15 year olds are estimated as being exposed to SHS in cars in England (ranging from less often than once a month to every day).*

**Table 1D – Estimated number of 0-10 and 16-17 year olds exposed to SHS in cars in England, 2015 (family car or someone else's car)**

| Frequency of exposure to SHS | No of regular smokers exposed | No of occasional smokers exposed | No of non-smokers exposed | Total |
|---|---|---|---|---|
| Every day or most days | 20,189 | 42,724 | 518,334 | 581,247 |
| Once or twice a week | 20,189 | 72,302 | 888,573 | 981,063 |
| Once or twice a month | 16,656 | 92,020 | 814,525 | 923,201 |
| Less often than once a month | 12,113 | 121,598 | 1,629,050 | 1,762,762 |
| Never in the past year | 38,381 | 371,511 | 11,924,902 | 12,334,794 |
| **Total** | 107,528 | 700,156 | 15,775,383 | 16,583,067 |

*Summary: Applying the 11-15 year old exposure rates there are approximately 4.2m 0-10 and 16-17 year olds are estimated as being exposed to SHS in cars in England (ranging from less often than once a month to every day)*

**Table 1E – Estimated total number of car journeys in England in which 11-15 year olds are exposed to SHS, 2015**

| Frequency of exposure to SHS | No of car journeys with 11-15 year old exposed to SHS per month | No of car journeys with 11-15 year old exposed to SHS per year |
|---|---|---|
| Every day or most days | 5,719,263 | 68,631,159 |
| Once or twice a week | 2,696,908 | 32,362,898 |
| Once or twice a month | 574,750 | 6,896,999 |
| Less often than once a month | 344,215 | 4,130,581 |
| Never in the past year | - | - |
| **Total** | 9,335,136 | 112,021,638 |

*Summary: Approximately 112m car journeys per year expose an 11-15 year old to SHS in England (ranging from less often than once a month to every day)*

**Table 1F – Estimated total number of car journeys in England in which 0-10 and 16-17 year olds are exposed to SHS, 2015**

| Frequency of exposure to SHS | No of car journeys with 0-10 and 16-17 year olds exposed to SHS per month | No of car journeys with 0-10 and 16-17 year olds exposed to SHS per year |
|---|---|---|
| Every day or most days | 13,900,714 | 166,808,563 |
| Once or twice a week | 7,038,739 | 84,464,872 |
| Once or twice a month | 1,520,171 | 18,242,051 |
| Less often than once a month | 967,539 | 11,610,465 |
| Never in the past year | - | - |
| **Total** | 23,427,163 | 281,125,951 |

*Summary: Approximately 281m car journeys per year expose a 0-10 or 16-17 year old to SHS in England (ranging from less often than once a month to every day). When Table 1E are added, there are 393m estimated journeys exposing an under-18 to SHS in the car.*

## Annex 2 – Estimated number of Fixed Penalty Notices to be issued

1. Annex 1 estimates the total number of car journeys of under-18 year olds exposed to SHS at about 393m per year and the total number of car journeys in England per year at about 22bn.

2. Following the introduction of the offences we assume a compliance rate of 95%. This is based on the following evidence:

    - General attitudes appear growing in favour of these measures with 78% supporting a ban on smoking in cars with children in 2011 (62% of smokers in support).[31] The support for smokefree legislation rose from 51% in May 2004 to 80% in March 2010.[32] It would not be unexpected for a similar growth in support to be shared for the offence of smoking in cars with children.
    - The proportion of car drivers wearing seat belts is 95%[33]
    - The compliance rate of smoke free work vehicles is estimated at 98%[14]

3. A 95% compliance rate implies approximately 22m journeys still exposing children to SHS per year.

4. It is estimated that about 0.016% of these journeys will be subject to FPN issues. This is based on the following:

    Seat belt example

    - 5% of drivers are observed not to wear seatbelts[33] * 22bn estimated total car journeys across England per year = 1bn car journeys with no seat belt worn
    - Number of FPNs issued in 2012 for seat belt offences in 2012 = 116,727[34]
    - 116,727 is 0.01% of 1bn

    Mobile phone example

    - Approximately 2% of drivers use their mobile phone whilst driving[35] * 22bn estimated total car journeys across England per year = 440m car journeys with mobile phone usage
    - Number of FPNs issued in 2012 for mobile phone offences in 2012 = 92,665
    - 92,665 is 0.02% of 440m

5. This leaves an initial estimate of about 3,100 FPNs issued per year. We adjust slightly to allow for cases where more than one FPN will be issued per car journey. This will occur when passenger are found to be smoking in the car. The passenger will be issued with an FPN for smoking in the presence of a child but the driver will also be issued with an FPN for failing to prevent the passenger from smoking. We do not have data on the likelihood of these events so we assume in 10% of cases 2 FPNs will be issued. Our total FPN estimate increases to 3,500. The following estimates of other offences in England and Wales in 2012 puts this estimate in context:

    - Careless driving offences (excl. use of handheld mobile phone while driving) = 3,700 FPNs
    - Use of handheld mobile phone while driving = 92,700 FPNs
    - Seat belt offences = 116,700 FPNs
    - Miscellaneous motoring offences (excluding seat belt offences) = 800

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31 YouGov/ASH survey results 2011, **http://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/7esbdcg26g/YouGov-Survey-ASH-smoking-in-cars-children-110316.pdf**

32 Smokefree Legislation – ASH Factsheet, **http://www.ash.org.uk/files/documents/ASH_119.pdf**

33 **https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/8900/seat-belt-rates.pdf**

34 **https://www.google.co.uk/url?q=https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/299471/ppp-fixed-penalty-notice-1213-tabs.ods&sa=U&ei=2kFzU5PeFcSw7AbrrYHYAg&ved=0CCgQFjAC&usg=AFQjCNFUjfNKFNfME80r0tGvrCWKIf5hRw**

35 **https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/8901/mobile-use-drivers.pdf**

- Individuals smoking in a smokefree area (including work vehicles) = 2,268 cumulatively between 2007-2010 (approximately 756 per year)[14]

6. Lastly, we take an average of our 3,500 estimate and the 756 per year issued for smoking in a smokefree area (last bullet point above). Our final estimate is around 2,100 FPNs to be issued.

## Annex 3 - Proposed provisions in the draft Smoke-free (Private Vehicles) Regulations 2014

1. The Children and Families Act provides the Secretary of State and Welsh Ministers with the powers to make regulations to provide for an enclosed private vehicle to be smokefree when a person under the age of 18 is present.
2. The regulations would extend smokefree legislation in the Health Act 2006 to make it an offence to smoke in a private vehicle and an offence for a driver not to stop someone smoking, when someone under the age of 18 is present. Anyone who smokes in a smokefree private vehicle would be guilty of an offence, regardless of their age.
3. The offence of failing to prevent smoking falls on the driver of the car in all instances.
4. Offences relate to 'enclosed vehicles' on the public highway:
    - Enclosed means enclosed wholly or partly by a roof and by any door or window that may be opened, it does not include, for instance, a convertible car with the roof completely down
    - On the public highway would include a vehicle stopped in a car park or grass verge. It is intended to cover a motor caravan when being used as a vehicle but not when it is being used as a home
5. Ships, hovercraft and aircraft are exempt, as they are from the current smokefree legislation, and they are covered by separate legislation such as maritime laws.
6. The penalties for both offences are:
    - a fixed penalty notice of £50
    - a fine on conviction if the case goes to court
7. Enforcement will largely be carried out by the police as only they have the power to stop moving vehicles but environmental health officers may also be involved as they enforce current smokefree legislation. The police may stop a car if they suspect an offence is being committed or as part of a planned operation targeting a particular issue such as the use of seatbelts.

## Annex 4 – Justice system costs assumptions and limitations

1. Both offences are summary only, triable only in the magistrates. They are both subject to a maximum penalty of a fine.

2. As the offences are summary only, all cases will progress through the Magistrates Court. There are no associated prison or probation costs for the new offences as the maximum penalty is a fine.

3. We estimate that a prosecution for either of these new offences could cost the Criminal Justice System (CJS) approximately £500 per defendant (cost to the Crown Prosecution Service per defendant approximately £200 and costs to Her Majesty's Courts and Tribunals Service approximately £300 per defendant– figures provided by the MOJ).

4. We estimate there will be no impact on Legal Aid.

| **Assumption** | **Risks/Limitations** |
|---|---|
| Crown Prosecution Service (CPS) costs:<br><br>Current CPS costs are based on Activity Based Costings (ABC), the primary purpose of which is resource distribution.<br><br>Source: CPS 2013 | • The key limitation of the ABC model is that it is built purely on staff time and excludes accommodation and other ancillary costs (e.g. those associated with complex cases and witness care). It also relies on several assumptions. This could mean there is a risk that costs are underestimated.<br>• For further information about how CPS ABC costs are calculated please see the following CPS guidance (CPS, 2012): http://www.cps.gov.uk/publications/finance/abc_guide.pdf. |
| Her Majesty's Courts and Tribunals Service (HMCTS) costs:<br><br>Magistrates Courts Costs<br><br>To generate the costs by offence categories, HMCTS timings data for each offence group were applied to court costs per sitting day. Magistrate's court costs are £1,200 per sitting day in 2012/13 prices. A sitting day is assumed to be 5 hours.<br>Source: The HMCTS costs are based on average judicial and staff costs, found at HMCTS Annual Report and Accounts 2012-13. HMCTS timings data from the Activity based costing (ABC) model, the Timeliness Analysis Report (TAR) data set and the costing process. | Timings data for offence categories:<br><br>• The timings data are based on the time that a legal advisor is present in court. This is used as a proxy for court time. Please note that, there may be a difference in average hearing times as there is no timing available e.g. when a DJ(MC) sits.<br>• Timings do not take into account associated admin time related with having a case in court. This could mean that costings are an underestimate. There is some information is available on admin time, however we have excluded it for simplicity.<br>• The timings are collection of data from February 2009. Any difference in these timings could influence costings.<br>• The data also excludes any adjournments (although the ABC model does), and is based on a case going through either one guilty plea trial (no trial) or one effective trial. However a combination of cracked, ineffective and effective trials could occur in the case route. As a result the costings could ultimately be underestimates.<br>• Guilty plea proportions at the Initial |

| Assumption | Risks/Limitations |
|---|---|
| | hearing from Q2 in 2012 are used, based on the Time Analysis Report. As these can fluctuate, any changes in these proportions could influence court calculations (effective trials take longer in court than no trials (trials where there was a guilty plea at the initial hearing).<br><br>HMCTS average costs per sitting day:<br><br>• HMCTS court costs used may be an underestimate as they include only judicial and staff costs. Other key costs which inevitably impact on the cost of additional cases in the courts have not been considered; for example juror costs. |
| Legal Aid costs:<br>We assume an eligibility rate of 0%, and estimate no impact on Legal Aid.<br><br>We assume this because both offences are subject to a maximum penalty of a fine. In cases where custodial sentences aren't available, it is unlikely that defendants will pass the interests of justice test to qualify for Legal Aid.<br><br>Source: MoJ Internal Analysis 2014, agreed with the Legal Aid Agency. | • There is a risk if some defendants were eligible for Legal Aid, that there would be some downstream costs on the Legal Aid Agency. |