



Royal College  
of Physicians



# Smoking and health 2021

## A coming of age for tobacco control?

A report by the Tobacco Advisory Group  
of the Royal College of Physicians

May 2021

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Royal College of Physicians  
11 St Andrews Place  
Regent's Park  
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**[www.rcplondon.ac.uk](http://www.rcplondon.ac.uk)**

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# Contributors

**Sanjay Agrawal** *Professor of respiratory medicine, University of Leicester*

**Deborah Arnott** *Chief executive, Action on Smoking and Health*

**Richard Ashcroft** *Professor of bioethics, City University, London*

**Paul Aveyard** *Professor of behavioural medicine, University of Oxford*

**Linda Bauld** *Professor of public health, University of Edinburgh*

**Alex B Barker** *Research fellow, University of Nottingham*

**Virginia Berridge** *Professor of history and health policy, London School of Hygiene and Tropical Medicine*

**Emma Beard** *Principal research fellow, University College London*

**Ilze Bogdanovica** *Principal research fellow, University of Nottingham*

**J Robert Branston** *Senior lecturer, University of Bath*

**John Britton** *Emeritus professor of epidemiology, University of Nottingham*

**Jamie Brown** *Professor of behavioural science and health, University College London*

**Phil Chamberlain** *Managing editor of Tobacco Tactics, University of Bath*

**Tim Coleman** *Professor of primary care, University of Nottingham*

**Lorraine Craig** *International tobacco control project dissemination manager, University of Waterloo, Canada*

**Martin Dockrell** *Tobacco control lead, Public Health England*

**Richard Edwards** *Professor of public health, University of Otago, New Zealand*

**Matthew Evison** *Consultant in respiratory medicine, Manchester University NHS Foundation Trust*

**Winifred Ekezie** *Research associate, University of Leicester*

**Becky Freeman** *Associate professor, University of Sydney, Australia*

**Geoffrey T Fong** *Professor of psychology and public health and health systems, University of Waterloo, Canada*

**Duncan Gillespie** *Research fellow, University of Sheffield*

**Anna B Gilmore** *Professor of public health, University of Bath*

**Dave Hammond** *Professor, University of Waterloo, Canada*

**Zeinab Hassanein** *Postgraduate student, University of Nottingham*

**Summer Sherburne Hawkins** *Associate professor, Boston College, USA*

**Thomas R Hird** *Research fellow, University of Bath*

**Rosemary Hiscock** *Research associate, University of Bath*

**Janet Hoek** *Professor of public health, University of Otago, Wellington, New Zealand*

**Marie Horton** *Senior public health intelligence analyst, Public Health England*

**Nick Hopkinson** *Reader in respiratory medicine, Imperial College London*

**Sarah Jackson** *Principal research fellow, University College London*

**Emma Knowles** *Director of policy and research, Healthcare Financial Management Association*

**Lynn T Kozlowski** *Professor of community health and health behaviour, University at Buffalo, USA*

**Mirte AG Kuipers** *Research fellow, Amsterdam UMC – University of Amsterdam, Netherlands*

**Tessa Langley** Associate professor in health economics,  
University of Nottingham

**Jo Leonardi-Bee** Professor of medical statistics and  
epidemiology, University of Nottingham

**Ann McNeill** Professor of tobacco addiction,  
King's College London

**Andrew Monahan** Policy and research manager,  
Healthcare Financial Management Association

**Crawford Moodie** Senior research fellow, University  
of Stirling

**Graham Moore** Professor of social sciences and  
public health, Cardiff University

**Marcus Munafò** Professor of biological psychology,  
University of Bristol

**Rachael Murray** Professor of population health, University  
of Nottingham

**Richard J O'Connor** Professor of oncology, Roswell Park  
Comprehensive Cancer Center, Buffalo, USA

**Rob Pryce** Research fellow, University of Sheffield

**Elena Ratschen** Senior lecturer, University of York

**Lion Shahab** Professor of health psychology, University  
College London

**Niamh K Shortt** Professor of health geographies,  
University of Edinburgh

**Judith Watt** Consultant for Action on Smoking and Health

**Sarah Williams** Tobacco control programme manager,  
Public Health England

**Luke B Wilson** Research associate, University of Sheffield

# Declaration of contributors' interests

J Robert Branston owns 10 shares in Imperial Brands for research purposes. The shares were a gift from a public health campaigner and are not held for financial gain or benefit. All dividends received are donated to tobacco/health-related charities, and proceeds from any future share sale or takeover will be similarly donated. He is the recipient of funding from Bloomberg Philanthropies, Stopping Tobacco Organizations and Products project funding as well as Cancer Research UK.

Jamie Brown has received unrestricted research funding to study smoking cessation from pharmaceutical companies (Johnson & Johnson and Pfizer) who manufacture smoking cessation medications.

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Lion Shahab has received honoraria for talks, an unrestricted research grant and travel expenses to attend meetings and workshops from Pfizer and an honorarium to sit on an advisory panel from Johnson & Johnson, both pharmaceutical companies that make smoking cessation products. He has acted as a paid reviewer for grant awarding bodies and as a paid consultant for healthcare companies.

All other contributors have no interests to declare.



# Members of the Tobacco Advisory Group of the Royal College of Physicians

Sanjay Agrawal (chair)

Deborah Arnott

Richard Ashcroft

Linda Bauld

John Britton

Tim Coleman

Linda Cuthbertson

Martin Dockrell

Anna Gilmore

Nick Hopkinson

Martin Jarvis

Tessa Langley

Jo Leonardi-Bee

Ann McNeill

Wendy Preston

Elena Ratschen

# Foreword

Tobacco smoking is a blight on health and society. The ill health, premature death and financial toll caused by tobacco use touches all communities in the UK, and is typically concentrated in the most disadvantaged and vulnerable in our society. Any ward round or GP surgery is testament to the devastation it causes on human life.

The Royal College of Physicians (RCP) has been a strong advocate for ways to control tobacco use for almost 60 years; from the initial and groundbreaking report *Smoking and health* in 1962, through constant lobbying, evidence collecting and reporting, to the modern day. Our work, though, is not done and the problem of smoking is far from solved. Across the UK smoking remains one of the leading causes of avoidable death and disease, exacerbating health inequalities and poverty, and blighting the 'levelling up' of our society. COVID-19, while not picking out smokers on its own rampage, has left a hidden iceberg of smoking-related disease that has been overlooked during the pandemic. Tobacco may still beat COVID-19 as the predominant cause of death and disease during the beginning of the 2020s.

Hence, this report is as timely as ones that have gone before it. Governments have not been idle but, as this report shows, without a fundamental renewal of our commitment to eradicating smoking, the UK will not meet the Smokefree 2030 ambitions to reduce smoking prevalence to less than 5% across all sociodemographic groups in the coming decade. However, there is much that can be done, and this report brings those practical solutions to the fore.

These include a suite of new measures to reduce uptake of smoking in children, targeting the drivers of youth smoking, most notably through taking radical measures to reduce exposure to and the effect of smoking imagery in the media; enhancing the use of health warnings on tobacco products; further reducing the affordability of tobacco products; and raising the minimum age of sale from 18 to 21 years; together with a range of other measures designed to de-normalise smoking. Taxation and limitation of the tobacco industry's ability to exploit loopholes, supporting the use of reduced risk nicotine products and treating tobacco dependency on an opt-out basis across the whole of the NHS will also be key to success. While none of these measures alone will put an end to tobacco use, their application together in a comprehensive package will deliver substantial health gains.

Too many UK generations have been blighted by addiction to tobacco. To ensure that those born today live their lives tobacco-free we must take the necessary steps to make smoking obsolete. In a historic time of medicine showing it can solve the health crises that come its way, this is our opportunity to make smoking and tobacco addiction history.

**Andrew Goddard**

President, Royal College of Physicians

# Abbreviations

APS	Annual Population Survey	MYO	make-your-own
ASA	Advertising Standards Authority	NGO	non-governmental organisation
ASH	Action on Smoking and Health	NICE	National Institute for Health and Care Excellence
BAT	British American Tobacco	NRT	nicotine replacement therapy
BBFC	British Board of Film Classification	ONS	Office for National Statistics
BTS	British Thoracic Society	OTC	over the counter
CO	carbon monoxide	PHE	Public Health England
CRUK	Cancer Research UK	QALY	quality-adjusted life year
COPD	chronic obstructive pulmonary disease	QoF	Quality and Outcomes Framework
EU TPD	European Union Tobacco Products Directive	RCP	Royal College of Physicians
FAS	Family Affluence Scale	RCT	randomised controlled trial
FCA	Framework Convention Alliance	RPI	Retail Price Index
FCTC	Framework Convention on Tobacco Control	RYO	roll-your-own
FM	factory-made	SALSUS	Scottish Schools Adolescent Lifestyle and Substance Use Survey
HIC	high-income country	SDDU	Smoking, Drinking and Drug Use survey
HRT	hand rolling tobacco	SES	socio-economic status
HSUV	health state utility value	SFAC	Smokefree Action Coalition
HSE	Health Survey for England	SHRN	School Health Research Network surveys
HTP	heated tobacco product	SMC	social media campaigns
IMD	Index of Multiple Deprivation	SMI	serious mental illness
JTI	Japan Tobacco International	STS	Smoking Toolkit Study
LGBT	lesbian, gay, bisexual, and transgender	TCS	Tobacco Control Scale
LMIC	low- and middle-income countries	TNCO	tar, nicotine and carbon monoxide levels
MET	minimum excise tax	TRPR	Tobacco and Related Products Regulation
MHRA	Medicines and Healthcare products Regulatory Agency	VAT	value added tax
MPAA	Motion Picture Association of America	WHO	World Health Organization
MLSA	minimum legal age of sale	WTO	World Trade Organization
MMC	mass media campaign		
MPOWER	Monitor tobacco use, Protect people from tobacco use, Offer help to quit tobacco, Warn about dangers of tobacco use, Enforce bans on tobacco advertising / promotion / sponsorship, Raise taxes on tobacco		

# Executive summary and recommendations

In 1962, when the Royal College of Physicians (RCP) published *Smoking and health*,<sup>1</sup> tobacco smoking was the largest avoidable cause of premature death and disability in the UK. During the ensuing 6 decades the UK has moved from being a global leader in tobacco consumption to a global leader in tobacco control,<sup>2</sup> and the subsequent reduction in smoking prevalence by about 75% from 1962 levels is widely regarded as evidence of success.

Yet tobacco smoking is entirely avoidable, so the persistence of smoking among almost 7 million regular smokers in the UK, and the fact that, as in 1962, smoking is still the largest avoidable cause of premature death and disability in the UK, actually represent an abject failure of public health policy. The ability of the UK and other countries to rise to major public health challenges is beyond doubt; the COVID-19 pandemic, by far the biggest new challenge to UK and global health in decades, has attracted a public health and economic response of a scale unique in the modern era. Yet in 2020, when COVID-19 killed around 80,000 UK citizens,<sup>3</sup> tobacco smoking killed 94,000.<sup>4</sup> Had the policies advocated by the RCP in 1962 been adopted and followed through, smoking would – to practical purposes – have been eradicated from the UK years ago. Modelling of current tobacco control policies in this report identifies a failure to achieve a smoking prevalence of <5% until after 2050. To end the wholly preventable loss of life from tobacco use in the decades to come, it is essential to act, radically and comprehensively, now. To do otherwise would be unforgivable.

To meet these obligations our national tobacco control plans must be much more ambitious across the whole spectrum of policies available, and in particular must target the most disadvantaged communities. The measures necessary to deliver these needs have been identified in this report, and to varying extents act by reducing the appeal of smoking and encouraging smokers to quit. All are simple and inexpensive to implement. These measures are summarised below along with a series of policy recommendations that the RCP considers necessary to put an end to tobacco smoking in the UK.

# 1. Taxation



Increasing tobacco taxation is one of the most effective means of reducing smoking uptake and promoting quitting. UK tobacco tax structures need to be reformed with the aim of making smoked tobacco

substantially less affordable and reduced harm nicotine alternatives much more affordable. This requires the imposition of large, above-inflation annual tax increases on smoked tobacco; reducing manufactured cigarette price differentials by imposing minimum prices and replacing ad valorem taxes with specific taxes; increasing the tax on hand rolling tobacco to close the current price differential between hand-rolled and manufactured cigarettes; and requiring all tax increases to be translated into retail prices simultaneously in a single annual increment.

The strong relation between smoking and poverty makes tobacco tax increases regressive, and this concern has acted as a brake on more radical imposition of tobacco taxes since 1962. For that reason alone it is essential that tax increases are used in combination with measures that make it as easy as possible for smokers to stop using tobacco, for example through the routine provision of stop smoking support in all NHS services, and by actively promoting the uptake of consumer alternatives to smoking such as electronic cigarettes. Tax increases are, however, also most effective among poorer smokers, so to hold back on their use only perpetuates health harms and health inequalities. On the other hand, eradicating tobacco use, even if tobacco is substituted with other nicotine products, could inject up to £7 billion of current tobacco spending directly back into the pockets of smokers and their communities.

To incentivise and signal the importance of substituting tobacco with less harmful forms of nicotine, the level of taxation applied to non-tobacco nicotine products should be proportionate to their harm relative to tobacco. To this end, tax on medicinal nicotine should be abolished and tax on electronic cigarettes reduced.

## Recommendations

- > Tobacco product affordability is reduced by large, annual, above-inflation tax increases on all tobacco products that are translated immediately into retail prices, consideration is given to applying more radical increases aiming, for example, to double the price of cigarettes over a 5-year period.
- > Tax on hand rolling tobacco is increased to a greater extent to ensure that within 5 years the tax paid per cigarette, containing the typical weight of tobacco, is equivalent to that on manufactured cigarettes.
- > The regressive nature of higher taxes on tobacco is ameliorated by making easy access to cessation support universal to all smokers, and by encouraging those who continue to smoke to switch to non-tobacco nicotine.
- > To support this approach, tax on medicinal nicotine is reduced to zero and to 5% on consumer non-tobacco nicotine products such as electronic cigarettes.

# 2. Health promotion



Educating people about the harms of smoking, and encouraging quitting, have played major roles in reducing smoking prevalence since the mid-20th century, and this approach remains essential to

further progress. Mass media campaigns are effective and relatively inexpensive but spending on mass media campaigns in the UK plummeted in 2010 and remains low. Restoring investment in media campaigns at the very least to the equivalent of the 2008 level of £23 million, the year that immediately preceded the highest uptake of NHS smoking cessation services by smokers,<sup>5</sup> would provide a low-cost, highly effective method to incentivise smokers to quit. Media campaigns should also encourage switching from smoked tobacco to e-cigarettes and provide balanced information on other harm reduction options such as heated tobacco. Health warnings on tobacco packaging need to be strengthened and extended to individual cigarettes and hand rolling papers.

## Recommendations

- > Funding of mass media campaigns is increased to at least 2008 levels, to provide a low-cost, high-impact intervention to strengthen a comprehensive tobacco control strategy.
- > Mass media campaigns support the use of electronic cigarettes as a quitting aid or substitute for smoking, and redress false perceptions about the safety of e-cigarettes compared with cigarettes.
- > Health warnings on tobacco products are enhanced in size and supplemented by quit lines or web links that support cessation and by package inserts that provide information on health effects and quitting.
- > The use of dissuasive colours and health warnings is extended to individual cigarettes and hand rolling papers.
- > Health warnings on e-cigarette packs include a statement that e-cigarette vapour is likely to be substantially less harmful than tobacco smoke.

### 3. Public space smoking restrictions



Smoke-free policies reduce exposure to tobacco smoke, encourage quit attempts, generate health benefits, protect children, de-normalise smoking and have strong public support. In healthcare settings, smoke-free premises and grounds are an essential component of a comprehensive approach to treating tobacco dependency among service users. Smoke-free policies in NHS settings should therefore be reinforced through legislation.

Smoking in the home is a major source of involuntary exposure to tobacco smoke, particularly in disadvantaged households and should be reduced by interventions which target home smoking behaviour, including media campaigns and provision of cessation or temporary abstinence support, and particularly so in housing managed by local government and housing associations.

Use of non-tobacco nicotine, including e-cigarettes, is important as a means to support abstinence from smoking in public places, and in some circumstances also indoors. Therefore, smoke-free policies should not automatically be extended to include non-tobacco nicotine use.

#### Recommendations

- > Legislation prohibiting smoking in hospital grounds is adopted in England, thus aligning with laws adopted by the devolved nations.
- > Smoking in the home is reduced by interventions which target home smoking behaviour, encouraging quitting and/or smoking only outdoors.
- > Electronic cigarettes do not emit smoke, so smoke-free policies are not automatically extended to vaping.
- > Policies on vaping in indoor and outdoor areas are used to facilitate smoke-free policies, acknowledging that permitting vaping where smoking is prohibited may help indoor and outdoor smoke-free measures to succeed.

### 4. Tobacco and nicotine product regulation



Nicotine product regulation should be used more proactively to reduce harm from smoked tobacco and promote substitution with alternative nicotine products. Hence, measures such as prohibiting cigarette filter vents, minimising filter porosity and imposing lower maximum standard tar, nicotine, and carbon monoxide yields, may be helpful in making cigarettes less desirable, and might encourage smoking cessation or substitution with less-hazardous nicotine delivery systems. Reporting requirements on the content and emissions of non-tobacco consumer nicotine products such as electronic cigarettes should be standardised and made easily available to the public. Substitution with non-tobacco nicotine products should be encouraged by allowing the use of comparative health claims in promotional materials.

#### Recommendations

- > The toxicology of novel tobacco products is independently verified.
- > A review of the regulation of e-cigarettes in the UK is undertaken to assess the extent to which the regulations support switching from smoking, while limiting appeal to and use by youth, as well as the extent to which the current regulations ensure products on the market are safe.

### 5. Treating tobacco addiction



Treating tobacco addiction should become the norm in all areas of healthcare, with opt-out treatment services offered and provided at all points of NHS contact. Additional measures of proven efficacy should also be utilised, including financial incentives in maternal smoking cessation pathways and tailored treatment for tobacco dependency for patients with serious mental illness. There needs to be better access and services for the LGBT community. E-cigarettes are an effective treatment for tobacco dependency and their use should be included and encouraged in all treatment pathways.

The healthcare workforce needs targeted education to learn that treating smoking is a core duty, and healthcare delivery restructured to integrate smoking cessation treatment into all clinical contacts. Treating smoking

must be included in undergraduate, postgraduate and place-based training for clinicians and other healthcare professionals.

## Recommendations

- The NHS provides opt-out smoking cessation services to all smokers at any point of contact with the NHS.
- Financial incentives are provided in maternal smoking cessation pathways.
- Patients with serious mental illness are offered tailored treatment for tobacco dependency.
- Better access to services is provided for tobacco-dependent members of the LGBT community.
- Training in the practical delivery of cessation and temporary abstinence advice and in prescribing smoking cessation medications is universal across the NHS and social care system.
- Primary care practitioners treat tobacco dependency, supported by a reform to the system that rewards treatment and enhanced training in primary care.
- E-cigarettes are included in standard protocols to treat tobacco dependency.

## 6. Preventing smoking uptake



Smoking uptake occurs because children see others smoke. This role modelling can arise from personal encounters with smokers among family members, friends and peers, and from exposure to smoking imagery in the media.

Exposure to smoking role models among family members, friends and peers occurs as a function of the general prevalence of smoking, and while not instantly preventable can be reduced by the many other measures described in this report to help smokers to quit smoking.

Media exposure to smoking imagery, and particularly exposure occurring in mainstream media such as television and film, is entirely preventable in new content by extending to tobacco the regulations that currently and successfully protect young people from exposure to other harmful imagery, and can be ameliorated in existing content by following the example of India in requiring, among other measures, on-screen health warnings and anti-smoking health promotion messages in any television, film or on-demand media containing smoking. Measures

are also required to prohibit all forms of alibi marketing, tobacco industry sponsorship and social media promotion. Dissuasive cigarettes offer a means to make media smoking imagery less appealing. Since there is evidence that the decline in youth smoking may be slowing, these measures are a particular priority.

Other available policy options to make smoking uptake less likely are to reduce the availability of cigarettes by raising the minimum legal age of sale to 21 years, licensing tobacco vendors to discourage access to cigarettes through underage sale, extending standardised packaging legislation to include smoking paraphernalia such as cigarette papers, hand rolling filters and flavour cards, and extending point-of-sale legislation to remove tobacco gantries from sight.

## Recommendations

- Exposure to tobacco imagery is included in the definition of online harm used in the forthcoming Online Safety Bill.
- Regulation of film and television is reformed to ensure that children are not exposed to tobacco imagery in the media.
- New films showing smoking automatically receive an 18 certificate, and television programmes containing smoking are not broadcast before the 9pm watershed.
- All existing and future films, television programmes, video-on-demand, music videos and print media that include tobacco imagery are required to display health warnings when tobacco imagery is present.
- Anti-smoking health promotion messages are screened before any film, television programming and video on-demand service programmes containing smoking.
- Tobacco product imagery is not shown on online sales websites.
- Advertising legislation is reformed to end alibi marketing and all tobacco industry sponsorship.
- Exposure to tobacco at point of sale is ended by taking all retail tobacco gantries and cabinets out of sight and removing all product imagery from online sales websites.
- The tobacco display ban and standardised packaging regulations are extended to include tobacco paraphernalia such as hand rolling paper.
- The minimum legal age of sale of tobacco products is raised to 21 years.
- Flavour infusion products are prohibited and flavour restrictions extended to filters and other tobacco paraphernalia.



- Additional measures are introduced to reduce the uptake of smoking, including restricting access to tobacco vendors through tobacco licensing schemes, restrictions on the packaging of electronic cigarettes to make them less appealing to children, and school-based interventions targeting multiple risk behaviours simultaneously.

## 7. Countering tobacco industry tactics



The tobacco industry has been a lucrative business for more than a century, enjoying political influence and exemptions from rules and regulations that apply to other industries and consumer products. To

protect profits the tobacco industry has consistently slowed, blocked, circumvented or overturned comprehensive tobacco control policies, often in contravention of measures to counteract tobacco industry interference set out in Article 5.3 of the Framework Convention on Tobacco Control. The policies advocated in this report must therefore be accompanied by measures to prevent the tobacco industry from deploying these tactics to oppose them, which to practical purposes means excluding the tobacco industry, industry lobbyists and advocates from all areas of government policymaking.

### Recommendations

- The tobacco industry is excluded from all policymaking across government, from meeting with government officials and elected representatives, from making gifts or payments in kind and from any activity likely to or with the potential to promote tobacco use.
- A lobbying register is established for the disclosure of any and all funding sources of individuals or organisations lobbying government on tobacco control.
- Contributions (monetary or otherwise) from the tobacco industry or tobacco industry-funded third party organisations to political parties, government officials at all levels and all-party parliamentary groups are prohibited.
- Tobacco companies are statutorily required to provide information to government on their political activities and associated expenditure including the names of organisations they fund.
- A tax or levy on tobacco companies is introduced to fund independent tobacco control research, including independent testing of tobacco industry product contents and emissions.

## 8. Ethical aspects of tobacco control



Tobacco products are harmful, addictive, and are used predominantly by disadvantaged or marginalised people who in most cases become addicted while they are still children. The perpetuation of smoking in and by society thus contravenes the fundamental principles of autonomy and justice. Failure to do all that is possible to prevent young people from taking up smoking, and supporting and encouraging quitting among all existing smokers, is unethical.

## 9. Monitoring the effects of tobacco policy



To evaluate the effects of tobacco control policies, and to enable the early detection and reversal of unwanted or unpredicted adverse effects of policy, it is essential that government continues carefully to measure smoking prevalence, in detail, across the UK population.

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# 1 Introduction

## Key points

- > The publication of *Smoking and health*<sup>1</sup> in 1962 established the Royal College of Physicians (RCP) as a world leader in tobacco control policy.
- > The reluctance of the UK government to act on RCP recommendations led the RCP in 1971 to establish Action on Smoking and Health (ASH), a highly successful and effective advocacy organisation.
- > The policy recommendations set out in *Smoking and health*<sup>1</sup> have formed the basis of comprehensive tobacco control frameworks used around the world.
- > To the extent that they have been applied, these policies have led to significant reductions in smoking prevalence in the UK.
- > Smoking is driven by the commercial interests of the tobacco industry, which over the years has sought to avoid or undermine comprehensive tobacco control measures.
- > As a result, the tobacco industry remains highly profitable and has over 1.3 billion global consumers, including approximately 130 million children, addicted to its lethal product.
- > Smoking prevalence remains stubbornly high in the UK, is concentrated in deprived communities and contributes significantly to health inequalities.
- > Achieving national aspirations to 'level up' society, establish a 'smoke-free' generation by 2030 and reduce health inequalities will require a much more ambitious programme of interventions than currently proposed.
- > We can achieve these goals if we adopt a new set of comprehensive tobacco control measures set out in this report.

## 1.1 The evolution of tobacco control

In 1962 among a UK population of 53 million, 56% of men and 42% of women smoked cigarettes. Still more people, mostly men, smoked cigars or pipes. The RCP, whose only previous intervention in public health was a 1725 representation to the House of Commons on the disastrous consequences of rising consumption of cheap gin, elected in 1959 to establish a committee tasked to produce a report on 'the question of smoking and atmospheric pollution in relation to carcinoma of the lung and other illnesses'. The report, *Smoking and health*,<sup>1</sup> aimed at the public and policymakers as much as – if not more than – the medical profession, was published on 7 March 1962. Within weeks it had sold 50,000 copies in the UK and 30,000 in the USA.

The 1962 report laid out a range of actions for government which formed the basis of modern tobacco control. On a limited but evolving evidence base, an array of key interventions was proposed to reduce the harm from smoking. In 1971, disappointed at how little had changed, the RCP set up Action on Smoking and Health (ASH) to advocate for the 'decisive action' called for by the RCP. This effective combination of academia and advocacy led, some 4 decades later, to the adoption of these interventions in the World Bank 1999 report,<sup>2</sup> the landmark Framework Convention on Tobacco Control (FCTC)<sup>3</sup> – the World Health Organization (WHO)'s first international health treaty, and the Tobacco Control Scale (TCS) – an approach to independent assessment developed for the Association of European Cancer Leagues<sup>4</sup> (Table 1.1).

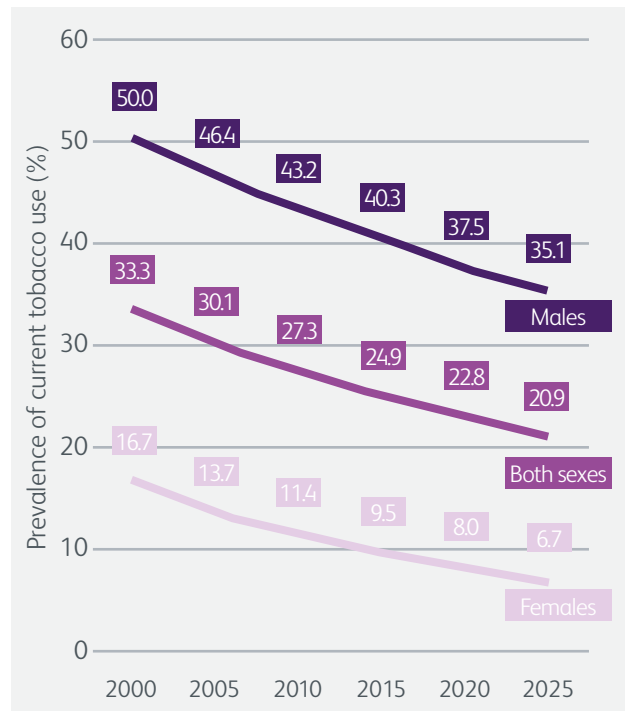
**Table 1.1 Tobacco control frameworks**

Sources Domains	RCP <sup>1</sup>	World Bank <sup>2</sup>	FCTC <sup>3</sup>	TCS <sup>4</sup>
Education and awareness	X	X	X	
Age-related sale restriction	X	X	X	
Marketing and promotion	X	X	X	X
Second-hand smoke	X	X	X	X
Affordability	X	X	X	X
Regulation	X	X	X	X
Cessation support	X	X	X	X
Tar and nicotine recommendations	X			
Supply reduction			X	
Environmental protection			X	
Tobacco industry legal liability			X	
Research and data		X	X	
Protect health policy from vested interests			X	X

The only measure proposed by the RCP in the 1962 report<sup>1</sup> that has proved over time to be misdirected was a requirement to inform smokers of tar and nicotine levels in cigarettes. However, the RCP also recommended, in the text of the report, measures to reduce the harmful effects of cigarettes. Although at the time this concept involved using filters or modified tobacco, the principle of modifying tobacco products to reduce their risk is one that has in recent years attracted considerable new interest. This concept of harm reduction was not included in the FCTC<sup>3</sup> nor explored by the World Bank report.<sup>2</sup> Since 1962 the RCP has continued to produce reports on aspects of tobacco control and to campaign on tobacco control matters in partnership with ASH and other organisations committed to tobacco control.

Nearly 60 years after the 1962 RCP report<sup>1</sup> was published, smoking rates have fallen substantially in the UK – to 14.1% in 2019.<sup>5</sup> However, this figure translates into an alarming

total of almost 7 million UK citizens, predominantly the most disadvantaged and marginalised in our society, who are still smoking<sup>5</sup> and hence on track to bear a substantial future burden of disease and premature death. Globally, the pattern is similar. Although the prevalence of smoking has declined substantially in most countries over the past 20 years (Fig 1.1), for a product that is known to be lethal to its consumers, it is shocking that over 20% of the world’s population, equivalent to around 1.3 billion people, currently use tobacco.<sup>6</sup>



**Fig 1.1 Global trends in prevalence of tobacco use by sex.**<sup>6</sup>  
© World Health Organization 2019

## 1.2 Tobacco industry response to tobacco control

The epidemic of smoking and of death and disease caused by tobacco use is a phenomenon driven by the commercial profit motive of the global tobacco industry. Over much of the 20th and all of the 21st centuries, tobacco companies have adapted to and where possible circumvented legislation and regulations intended to curb tobacco use through a number of mechanisms including: influencing politicians and using litigation to prevent or hold up tobacco control legislation;<sup>7</sup> embracing new media and viewing habits to promote their products to vast audiences;<sup>8-10</sup> denying or misleading the public and politicians about the harmful and addictive nature of their products;<sup>11</sup> supporting the illicit tobacco trade;<sup>12,13</sup> using brand variants or pricing strategies to offset tax rises

on tobacco products;<sup>14</sup> downplaying the environmental impact of tobacco production<sup>15</sup> and introducing new tobacco products to keep current or entice new users, all while regularly reinventing themselves to portray corporate and social responsibility.<sup>16</sup> These and other strategies have been successful in growing the global tobacco market: indeed, with a global total of over 1.3 billion users<sup>6</sup> including 130 million adolescents,<sup>17</sup> 6 trillion cigarettes manufactured worldwide in 2014<sup>15</sup> and estimated global revenues of around \$767 billion in 2019,<sup>18</sup> selling tobacco has never been more profitable. To maintain this successful commercial position, the tobacco industry has not been shy in shifting its consumer base to low- and middle-income countries,<sup>6</sup> which now account for 80% of global sales, and to those who can least afford to smoke, exacerbating health inequalities and poverty.<sup>5</sup> The success of the tobacco industry is acknowledged by global stock markets: tobacco industry stocks are viewed as a ‘defensive stock’ when there is economic turbulence and have enjoyed consistent investor support and sustained high prices over many decades.<sup>19</sup> Despite comprehensive tobacco policies, tobacco use remains the leading cause of death in men worldwide, and is responsible for nearly 8% of all disability-adjusted life years lost globally.<sup>20</sup>

The UK is home to two of the world’s four transnational tobacco companies. It was at the forefront of the global smoking epidemic in the 20th century, then became a world leader in implementing tobacco control measures in the 21st century.<sup>4</sup> However, the UK is still failing to take all the necessary steps to bring the smoking epidemic to an end. Smoking rates remain unacceptably high, especially in disadvantaged communities.<sup>5</sup> The current UK government ambition to achieve a ‘smoke-free’ generation,<sup>21</sup> which they define as a smoking prevalence of less than 5% across the UK in the next 10–15 years is unattainable on the current trajectory.<sup>22</sup> The renewed Tobacco Control Plan for England, due in 2021,<sup>23</sup> provides an opportunity to introduce far more radical and effective tobacco control measures in the UK.

### 1.3 Objectives of this report

This report sets out to review the evidence on existing and potential new tobacco control policies and to propose a comprehensive suite of evidenced-based tobacco control measures to reduce smoking uptake in children and help existing smokers to quit. The measures include reforming tax policy, eradicating media promotion of smoking, prioritising the treatment of tobacco dependency, realising the potential of comprehensive public health campaigns to promote quitting, raising the legal age of sale for tobacco products, and silencing the voice of the tobacco industry.

Critically, the effect of the sum of these measures is likely to be much greater than the individual parts and together can form the basis of a national ambition to make smoking obsolete within a generation. If implemented, the measures proposed in this report will prevent countless deaths, dramatically reduce the burden placed by tobacco use on health services and wider society, substantially reduce inequalities in health and, by alleviating poverty and improving health, contribute significantly to the levelling up of our society.

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# 2 Impact of tobacco control policy on smoking prevalence from 2000 and modelling to 2050

## Key points

- > Comprehensive implementation of Framework Convention on Tobacco Control (FCTC) policies has been demonstrated to reduce smoking prevalence.
- > Evidence on the effect of FCTC policies on inequalities in smoking prevalence is more limited; increasing tobacco prices has been found to be the most likely to reduce inequalities in smoking.
- > In the UK, comprehensive implementation of tobacco control policies over the past 20 years has been associated with substantial reductions in smoking prevalence in adults and young people; however, a significant proportion of adults continue to smoke.
- > Tobacco use in disadvantaged groups in the UK has declined but remains much higher than in other groups.
- > Modelling suggests that current tobacco control measures will not achieve a target smoking prevalence of less than 5% by 2030 and that people living in the most deprived socio-economic conditions are likely to lag far behind the 2030 target.
- > A sixfold increase in the odds of quitting among males living in the most deprived socio-economic conditions would be needed for smoking prevalence in this population subgroup to reach the 5% target by 2030.

## Recommendation

- > A renewed set of tobacco control policies that supports quitting smoking is introduced to reduce prevalence across the general population and in particular in low income smokers.

### 2.1 Introduction

Although UK tobacco control policies originated in the 1962 *Smoking and health* report,<sup>1</sup> national and international tobacco policy was revolutionised some 4 decades later by a legally binding global treaty – the World Health Organization (WHO) Framework Convention on Tobacco Control (FCTC). This came into force in 2005 and requires governments to implement evidence-based measures to curb the tobacco epidemic.<sup>2</sup> The UK was among early adopters of the treaty, and as of May 2020, the FCTC has been ratified by 182 Parties (181 countries and the EU), covering more than 90% of the world's population.

The FCTC calls on parties to implement measures to reduce both the demand for and supply of tobacco products by implementing cost-effective tobacco control measures including price and tax measures; bans on tobacco advertising, promotion and sponsorship; smoke-free policies; health warnings on tobacco packages; monitoring and surveillance; and measures to combat illicit trade in tobacco products. In 2008, these measures were summarised and repackaged under the acronym MPOWER (see Box 1).<sup>3</sup>

**M**onitor tobacco use and prevention policies **P**rotect people from tobacco use **O**ffer help to quit tobacco use **W**arn about the dangers of tobacco use **E**nforce bans on tobacco advertising, promotion and sponsorship **R**aise taxes on tobacco

#### Box 1 MPOWER measures.

## 2.2. Effects of the WHO Framework Convention on Tobacco Control policies on smoking behaviour

Several major studies published over the last 5 years have examined the relation between the extent of implementation of MPOWER policies in different countries and smoking prevalence; quitting; and consumption. Some studies focus only on the POWER policies because monitoring is not in itself a demand-reduction policy. Most identify an association between levels of policy implementation and falls in tobacco use.

A 2017 study by Gravely *et al* examined WHO data from 126 countries for the first 10 years of FCTC implementation (2005 to 2015), to examine the relation between the number of POWER policies that had been implemented at the highest level (rated by WHO as having achieved level 5 implementation according to a scale of 2–5, where 1=no data available) between 2007 and 2014 and change in smoking prevalence.<sup>4</sup> The study found that each additional highest level policy implementation was associated with an average decrease in smoking prevalence of 1.57 percentage points, or a relative decrease of 7.09%. This analysis extended the findings of previous studies that used single timepoint measures of policy implementation. In a study of 60 countries, Dubray *et al* found that those with a higher MPOWER implementation score (a sum of each of the six MPOWER measure scores) in 2008 experienced greater decreases in smoking prevalence between 2006 and 2009.<sup>5</sup> In 2016, Anderson *et al* found that higher POWER implementation scores in 2010 were associated with greater reductions in smoking prevalence between 2010 and 2015.<sup>6</sup>

In 2017, Ngo *et al* examined the relation between smoking prevalence (in 63 countries) and cigarette consumption (in 75 countries) among adults and MPOWER composite scores – with a possible range between 6 (1 in each of the six scores) and 29 (4 in M score and 5 in POWER scores) – measured in 2007–8, 2010, 2012 and 2014.<sup>7</sup> Results indicated that greater implementation significantly reduced both smoking prevalence and per capita cigarette consumption between 2007 and 2014. With a one-unit increase in the MPOWER composite score, smoking prevalence among adults reduced by 0.2 percentage points and cigarette consumption by 23 sticks (approximately 1 pack) per person per year. The study concluded that implementing the MPOWER package at its highest level from 2007 to 2014 would have generated additional reductions in adult smoking prevalence during this period of 7.3%, and in cigarette consumption per capita per year: 13.8%.

Several studies have analysed the association between MPOWER policy implementation as measured by the Tobacco Control Scale (TCS) – a weighted average of the strength of implementation of six tobacco control FCTC/MPOWER measures<sup>8</sup> – and smoking and quitting behaviour. Feliu *et al* analysed the relation between TCS scores and adult smoking prevalence across the 27 EU member states between 2006 and 2014.<sup>9</sup> Those member states with higher TCS scores had significantly greater relative reductions in smoking prevalence and higher quit ratios, as measured by the Eurobarometer surveys, over that 8-year period. However, a cross-sectional study of 27 EU countries by Bosdriesz *et al* found no statistically significant association between national TCS score and adult smoking cessation and smoking intensity.<sup>10</sup> Inconsistencies between these two studies may reflect differences in study design and outcome measures. Serrano-Alarcón *et al* studied longitudinal changes in older adults' smoking prevalence in 10 European countries.<sup>11</sup> They found that a 10-point increase in TCS was associated with a 1.6 percentage point decrease in smoking prevalence among 50- to 65-year-olds, but not among those over 65. A cross-sectional study among adolescents in 13 European countries found an inverse association between the TCS score and smoking prevalence, with 15% lower odds of smoking with a TCS score of 10 points higher in 2011.<sup>12</sup>

Hoffman *et al* assessed the impact of the FCTC on global cigarette consumption from 1970 to 2015 in 71 countries by measuring trends in consumption before and after the treaty was adopted in 2003.<sup>13</sup> The analyses were conducted using a new open access dataset of national cigarette consumption estimates from verified data sources. Changes in cigarette consumption which are based on sales data can reflect changes in consumption among people who continue to smoke as well as changes in smoking prevalence but may not (accurately) capture consumption of illicit tobacco; however, unlike survey data, such data are not subject to reporting bias. The Hoffman study found no significant change in global cigarette consumption trends after 2003. However, this overall finding was the result of two significant, but opposing effects: a significant reduction in consumption after the FCTC in high-income countries (HICs), including the UK and other European countries; and a significant increase in consumption in low- and middle-income countries (LMICs) and Asian countries. The authors suggest that the increase in consumption in LMICs may be due to limited implementation of tobacco control policies in these countries and rapidly increasing incomes resulting in greater affordability and demand for cigarettes. In addition, the enormous shift in tobacco use from HICs to



LMICs had been foreseen by epidemiologists,<sup>14,15</sup> as rapid economic growth in LMICs made such countries vulnerable to the tobacco industry seeking to regain lost sales in richer countries.<sup>16</sup>

Although it is possible that FCTC policies might be less effective in some countries compared to others, LMICs which have effectively implemented and enforced FCTC policies have seen substantial reductions in tobacco use.<sup>17</sup>

The research evidence thus supports the general conclusion that FCTC tobacco control measures reduce smoking prevalence. Considering the benefits of the FCTC, it is distressing that global implementation of these measures remains extremely low. The WHO reports that in 2018, 59 countries (of which 6 have neither ratified nor signed the FCTC), 49 of which are LMICs, had yet to adopt a single MPOWER measure at the highest level of achievement,<sup>18</sup> despite the inclusion of FCTC implementation as an important means to achieving global health targets. Barriers to the implementation of FCTC policies in LMICs include: political commitment, institutional capacity and operational effectiveness, social climate, and tobacco industry interference.<sup>19</sup> The WHO Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020 set a global target to cut prevalence of current tobacco use by 30% by 2025 relative to 2010, but only 32 countries are currently on track to reach this target.<sup>20</sup> The urgent need to accelerate and strengthen the global implementation of the FCTC is also recognised as crucial to the achievement of the overall health agenda of the United Nations (UN) Sustainable Development Goals (SDGs). The SDGs were adopted in 2015 and one of their targets is to reduce premature mortality from non-communicable diseases by one-third by 2030.<sup>21–23</sup>

### 2.3 Effects of FCTC policies on socio-economic inequalities

While smoking uptake in LMICs often begins among the more affluent, over time smoking tends to become concentrated among the relatively poor and disadvantaged. Socio-economic inequalities in smoking have increased in many countries over the last few decades<sup>24</sup> suggesting that tobacco control policies may be less effective in or are failing to reach the most disadvantaged groups. This may be in part because FCTC policies were not developed from an equity perspective; reducing inequalities in smoking was not specified as an aim.<sup>2</sup> Many policies have taken a population-shift approach, in which the behaviour of the general population is targeted, but not specifically that of the groups at highest risk.

Studies of the relation between FCTC policy implementation in European countries, based on the Tobacco Control Scale,<sup>8</sup> and smoking behaviour have produced mixed results. In a study of 18 European countries in 2008, Schaap *et al.* concluded that high and low income adult smokers benefit approximately equally from population-level tobacco control policies,<sup>25</sup> while a more recent study of adults in 27 European countries concluded that associations between tobacco control policies and smoking cessation were detectable mostly among higher socio-economic groups.<sup>10</sup> In a study assessing the differential policy effects in adolescent smokers of 13 European countries in 2003–2011, researchers also found no statistical difference by parental education level, although effects were consistently somewhat stronger in adolescents with highly educated parents.<sup>12</sup>

A number of reviews have synthesised the evidence on the impact of tobacco control policies on inequalities in smoking. In 2008, Thomas *et al.* concluded that population-level tobacco control interventions have the potential to benefit more disadvantaged groups.<sup>26</sup> A subsequent review by Hill *et al.* in 2014 found that evidence on the equity impact of interventions other than price – which was identified as an intervention which could best reduce inequalities – was inconclusive.<sup>27</sup> Similarly, in reviews of the equity impact of tobacco control policies in both adults and young people, Brown *et al.* found that tax increases had the most consistent positive equity impact, but that overall the evidence base was limited.<sup>28,29</sup> However, Brown *et al.* found that that most studies which identified a neutral equity impact found that policies benefited all SES groups.<sup>28</sup> Most recently, in an update of the Hill review, Smith *et al.* identified an increase in the number of studies assessing the equity impact of tobacco control interventions, but highlighted that findings are often mixed or unclear, due to methodological challenges.<sup>30</sup>

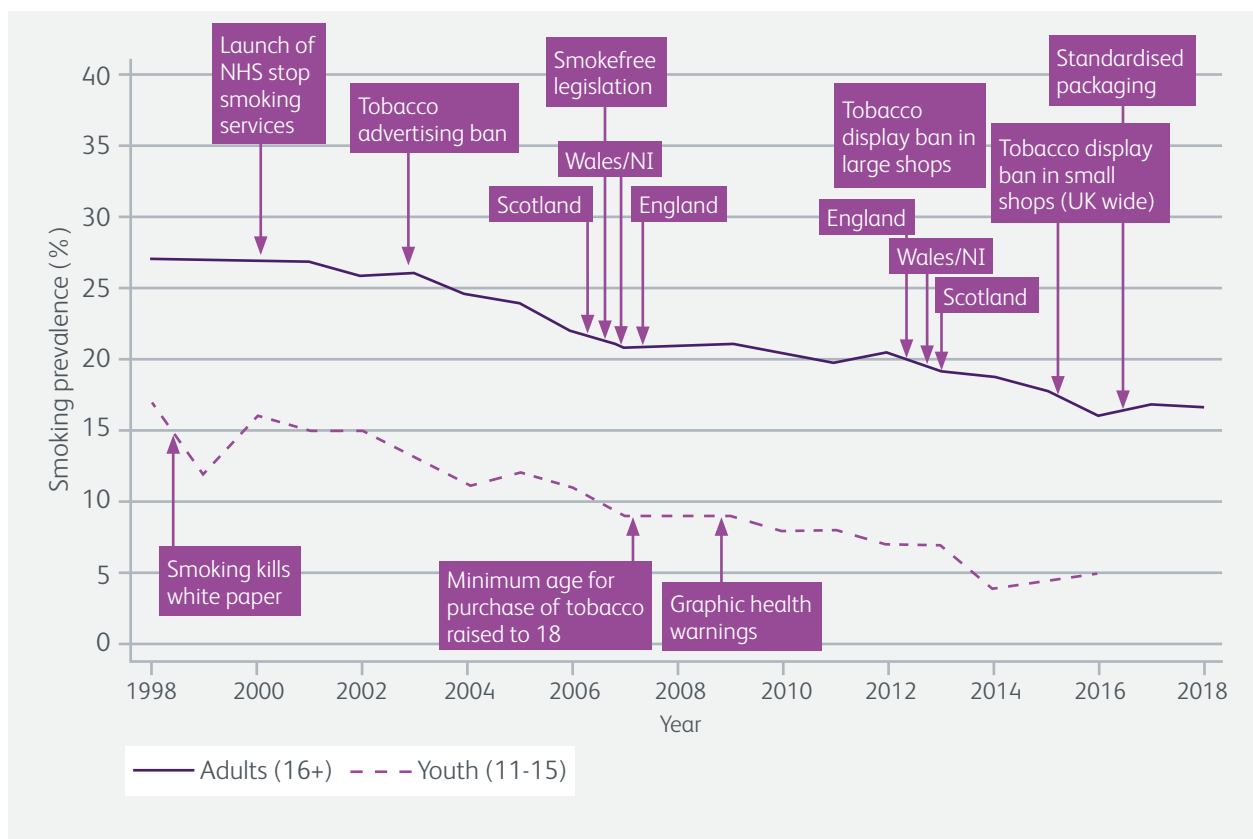
Despite these uncertainties, reducing the affordability of tobacco has been consistently found to be most likely to reduce inequalities in smoking, both among adults and in youth<sup>27–30</sup> and use of tax to increase tobacco price is generally regarded as the most effective tobacco control policy.<sup>31</sup> Tobacco price increases are regressive, in that low income smokers spend a higher proportion of their income on tobacco; however, the benefits of price increases are progressive, with low income groups benefiting most, because low income smokers are more likely to reduce their tobacco consumption in response.<sup>32</sup> To offset the regressive aspect of tobacco price increases it is argued that on ethical grounds, price increases should be implemented in combination with provision of smoking cessation

support targeted towards disadvantaged smokers, which have in turn also been found to contribute to reducing inequalities.<sup>30</sup> As such, there is a need to combine national-level strategies with activity at the local level to ensure that support focuses on communities where smoking prevalence is highest.

Although more evidence is needed to understand the differential effects of tobacco control policies, overall it appears that multiple tobacco control interventions as part of a comprehensive tobacco control approach can reduce smoking in low income groups. Increasing acknowledgment of the barrier that smoking poses to the achievement of Sustainable Development Goals and human rights<sup>33–36</sup> and the potential for tobacco taxation to be used to fund healthcare and other social programmes also supports tobacco taxation as a socially progressive policy. Further reducing tobacco use in disadvantaged groups requires sustained implementation of a comprehensive set of tobacco control policies, among which reducing access to affordable tobacco and enhancing cessation support for disadvantaged communities may have the biggest impact on inequalities.

### 2.4 UK tobacco control policy and smoking prevalence

The implementation of a comprehensive set of tobacco control policies over the past 2 decades has coincided with consistent falls in smoking prevalence among both adults and young people. Nevertheless, despite these reductions in prevalence approximately 14% of adults continue to smoke in 2020, with smoking increasingly concentrated in disadvantaged populations such as low-income groups and individuals with a mental health condition (see section 2.5). Smoking thus remains a significant public health problem. Figure 2.1 demonstrates trends in smoking prevalence among adults and youth since the announcement of a comprehensive package of tobacco control policies in the *Smoking kills* white paper in 1998<sup>37</sup> and a chronology of the policies implemented since. In addition to those listed in Fig 2.1, tobacco tax increases have been consistently implemented since the 1990s (see chapter 7) and a range of tobacco control mass media campaigns delivered (see chapter 3). However, funding for mass media campaigns has been reduced in recent years: in 2009–10 funding for national anti-smoking mass media campaigns in England was just under £25 million, whereas in 2019–20 it was £1.78 million.<sup>38,39</sup>



**Fig 2.1 Smoking prevalence in adults in Great Britain and young people in England (current and occasional smokers) and key dates for implementation of tobacco control policy.**

Adapted from ONS<sup>40</sup> and NHS Digital.<sup>41</sup>

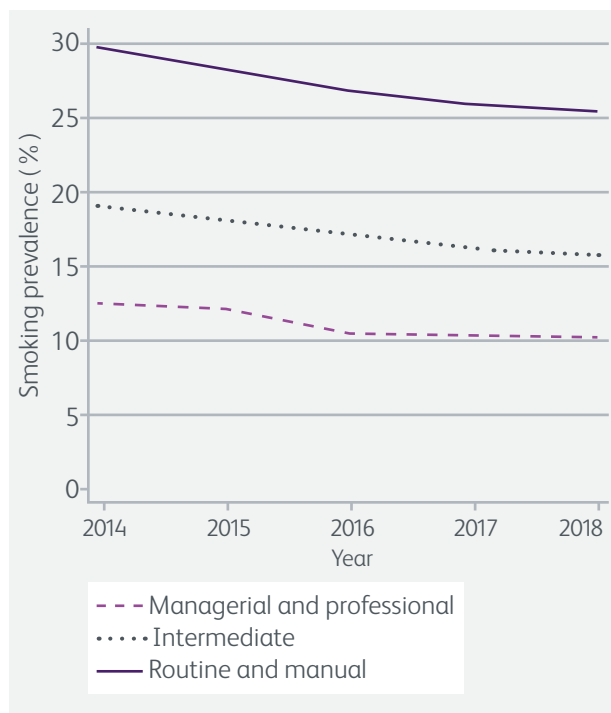


## 2.5 Inequalities in smoking in the UK

Smoking is the leading preventable cause of socio-economic inequalities in health across the UK, accounting for around half the difference in life expectancy between the richest and poorest groups.<sup>42</sup> Smokers from more deprived communities in the UK disproportionately bear the burden of the health harms of combustible tobacco use.<sup>43</sup> Furthermore, the cost of smoking exacerbates and perpetuates poverty for families and individuals, and accounts for over £2 billion per year in avoidable NHS expenditure.<sup>44-46</sup>

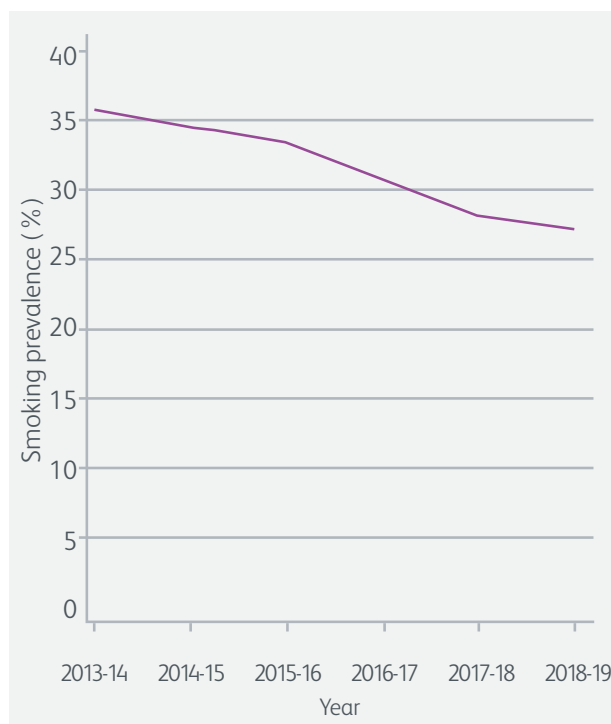
Although smoking prevalence has declined in all socio-economic groups in recent years (Fig 2.2), smoking remains more than twice as prevalent among adults in routine and manual occupations than among those in managerial and professional occupations (25% vs 10%).<sup>40</sup> Smoking prevalence is also high among adults with a mental health condition.<sup>47</sup> Although prevalence has declined in this group in recent years, more than a quarter of adults with a long term mental health condition are current smokers (Fig 2.3).

The UK is one of few countries worldwide to focus its tobacco control strategies on reducing inequalities in smoking. Recent action plans including the Tobacco Control Plan for England,<sup>42</sup> the 2013 Scottish strategy and its 2018 successor,<sup>48,49</sup> the Northern Ireland Tobacco Control Strategy<sup>50</sup> and the Welsh Action Plan<sup>51</sup> all specify smoking reduction among disadvantaged groups, including low income smokers and smokers with a mental health condition, among their main aims and priorities. Actions set out in these plans to achieve reductions include identifying and targeting support into areas with high levels of smokers and the implementation of national smoking cessation guidance in mental health contexts. Recent trends indicate that reductions in smoking prevalence have indeed occurred in these groups, but huge disparities in smoking prevalence remain. The effects of action plans focused on disparities will need to be closely monitored to evaluate whether these are sufficient to eventually close the gap. However, future policies may need to be further developed to reduce and accelerate reductions in inequalities in tobacco.



**Fig 2.2 Smoking prevalence in the UK, by occupational group.**

Adapted from ONS<sup>40</sup>



**Fig 2.3 Smoking prevalence in adults with a long-term mental health condition, England.**

Adapted from PHE Public Health Profiles<sup>52</sup>

## 2.6 Projecting future trends in smoking prevalence

The 2019 UK government prevention green paper<sup>53</sup> set the ambition for England to be smoke-free by 2030, with smoke-free defined in the 2017 Tobacco Control Plan as a smoking prevalence below 5%. The target date for Scotland is 2034, whereas Wales and Northern Ireland have not set such a date. In this section, scenarios for the future trends in smoking prevalence in England are forecast up to 2050 and the health differences between these trends are investigated in terms of quality-adjusted life years (QALYs), using the recently developed Sheffield Tobacco Policy Model.<sup>54</sup> The primary data source for this model was the Health Surveys for England (HSE).<sup>55</sup> The model simulates smoking and health in the population by tracking individual movements among smoking states (never, current and former regular cigarette smoker) in 1-year time steps as people age, and then linking these states to rates of morbidity and mortality. The time trends in smoking prevalence are determined by initiation rates at young ages (<30 years), quitting, relapse, and mortality linked to smoking. Individuals are indexed by sex, age (in the range from 11 to 89 years) and socio-economic conditions defined in terms of Index of Multiple Deprivation (IMD) quintiles.<sup>56</sup> The IMD is a composite area-level measure based on 37 indicators reflecting income, employment, health and disability, education and skills, housing, services, accessibility, crime and living/physical environment. It is calculated for small geographic areas in England of approximately 1,500 people. The model uses IMD scores divided into quintiles, the first quintile being the least deprived, and the fifth quintile the most deprived.

Trends in smoking prevalence are linked to morbidity and mortality from a set of 52 tobacco-related diseases of adult smokers.<sup>57</sup> This disease list is derived from recent reviews of tobacco-related diseases.<sup>43,58</sup> The model also uses published estimates of the time-lag between quitting smoking and changes to the risk of disease, which can be immediate for some conditions but for other conditions such as cancers, can take decades.<sup>59,60</sup> The rates of morbidity and mortality from the 52 tobacco-related diseases that are used in the model are stratified by age, sex and IMD quintiles. QALYs are calculated by summing the time spent in a health state (ie with one of the 52 tobacco-related diseases) weighted by the health-state utility value (HSUV) associated with the health state, which incorporates both length of survival and quality of life into a single metric.<sup>61</sup> HSUVs stratified by age and sex are estimated with EuroQol-5D (EQ-5D) data for each of the 52 tobacco-related diseases. These were applied so that if a person within the modelled population lives a year of

life with one of the 52 tobacco-related diseases, then that year of life is given a disease-specific utility score, but if a person lives a year of life without a tobacco-related disease, then that year of life is given the general population utility score. Following NICE guidelines, the model discounts the estimated gains in QALYs over time by 3.5%.<sup>62</sup>

### 2.6.1. Forecast scenarios

Four scenarios for the future trends in smoking prevalence are investigated, which make different assumptions about the trends up to 2050 in the probabilities of smoking initiation, quitting and relapse (Table 2.1).

**Table 2.1 Scenarios summary**

Scenario	Initiation probabilities	Quitting probabilities	Relapse probabilities
1*	Constant from 2020 to 2050	Constant from 2020 to 2050	Constant from 2020 to 2050
2	Constant from 2020 to 2050	<b>Increasing from 2020 to 2050**</b>	Constant from 2020 to 2050
3	<b>Decreasing from 2020 to 2050***</b>	Constant from 2020 to 2050	Constant from 2020 to 2050
4	<b>Decreasing from 2020 to 2050</b>	<b>Increasing from 2020 to 2050</b>	Constant from 2020 to 2050

\* The probabilities are held constant into the future at their 2020 levels.

\*\* Forecasts are based on continuing the past trends of increase in quitting probabilities based on the estimated trends from 2013–2018; trends are forecast separately for each sex and IMD quintile subgroup of the population. The estimated age-specific quitting probabilities from ages 11 to 89 years are summarised here for a particular calendar year by calculating the weighted average probability of quitting, where weights are proportional to the estimated numbers of smokers at each age in 2018. In 2020, the average estimated probability of quitting is 0.12 (range across sex and IMD quintile subgroups: 0.08 to 0.20), ie on average, 12% of current regular cigarette smokers transition to being former regular cigarette smokers within 1 year. There is strong age variation in the probabilities of quitting – the average estimated probabilities of quitting at ages 11–20 years are 0.43, 21–50 years 0.10, 51–75 years 0.07, and 75+ years 0.14. For years 2025, 2030, 2035, 2040, 2045, 2050, the average forecast probabilities of quitting used in scenarios 2 and 4 have the following relative differences to 2020 (scenarios 1 and 3), expressed as odds ratios: 1.20, 1.43, 1.71, 2.03, 2.42, 2.86, which result in the following percentages of current smokers who quit: 14%, 16%, 18%, 21%, 24%, 27%.

\*\*\* Forecasts are based on continuing the past trends of decrease in initiation probabilities based on the estimated trends from 2013–2018; trends are forecast separately for each sex and IMD quintile subgroup of the population. The estimated age-specific initiation probabilities from age 11 years are summarised here by calculating the expected probability of ever smoking by age 25 given the age-specific initiation probabilities estimated for a particular calendar year. In 2020, the average estimated probability of ever smoking by age 25 is 0.46 (range across sex and IMD quintile subgroups: 0.30 to 0.73), ie given the age-specific probabilities of initiation estimated for 2020, 46% of people would have had a period of current regular cigarette smoking by age 25. For years 2025, 2030, 2035, 2040, 2045, 2050, the forecast probabilities of ever smoking by age 25 in scenarios 3 and 4 have the following relative differences to 2020 (scenarios 1 and 2), expressed as odds ratios: 0.86, 0.75, 0.66, 0.59, 0.54, 0.49, which result in the following percentages of ever-smokers by age 25: 42%, 39%, 36%, 33%, 31%, 29%.

2.6.2. Projected trends in smoking prevalence

The model shows that trends in smoking prevalence among 11–89 year olds will continue to fall, with the trends being more sensitive to the increasing probabilities of quitting smoking (scenario 2 and 4) than smoking initiation due to the large cohort of current smokers (Fig 2.4). Scenario 4 forecasts the greatest declines in smoking prevalence with a combination of continuing decreases in initiation probabilities and continuing increases in

quitting probabilities and represents a situation where tobacco control is progressively strengthened to levels greater than current policies. The model indicates that smoking prevalence in the English population will not reach the 2030 smoke-free target of 5% of smokers in any of the forecast scenarios, and continuing with the current policy environment (scenario 1) will not achieve a smoking prevalence of 5% by 2050.

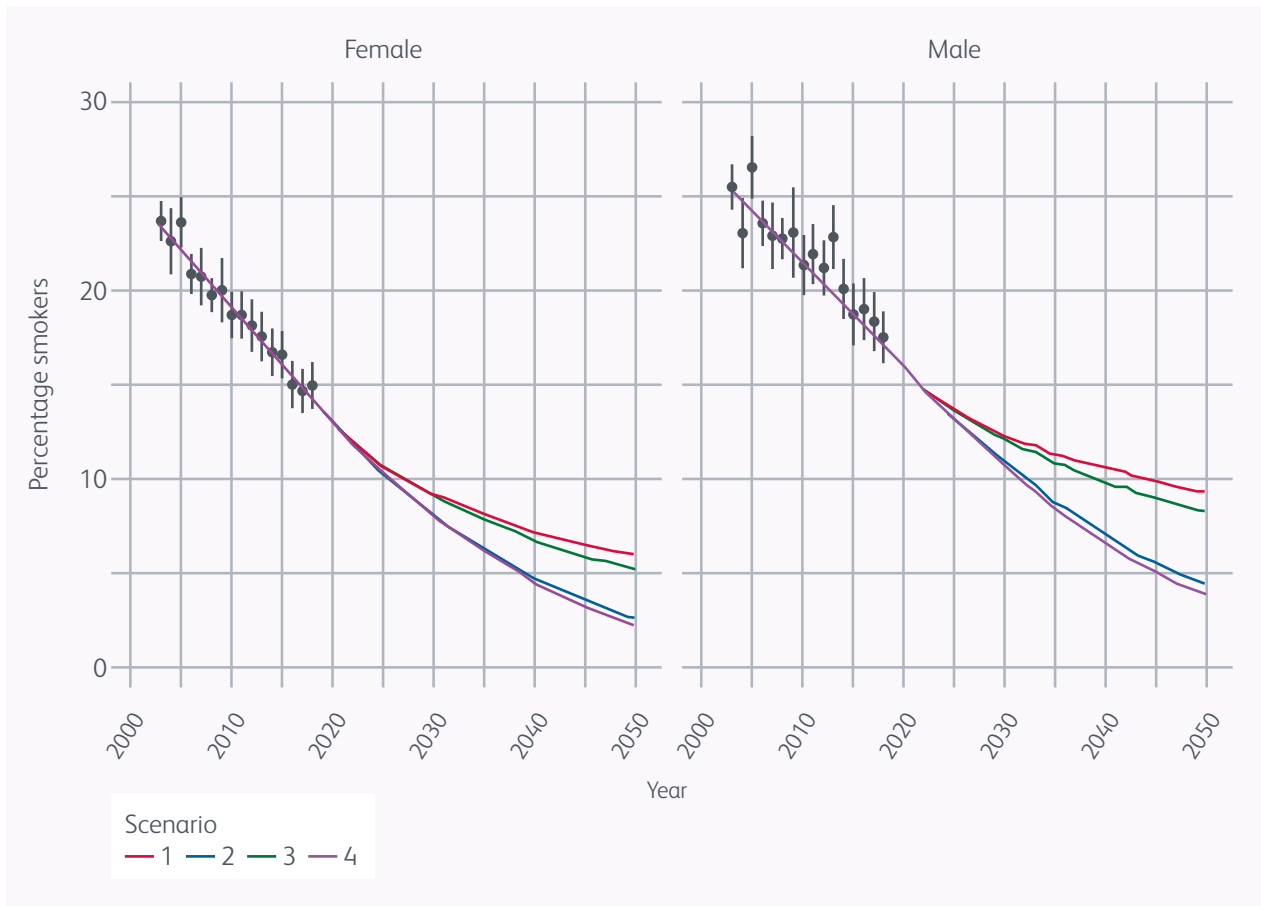
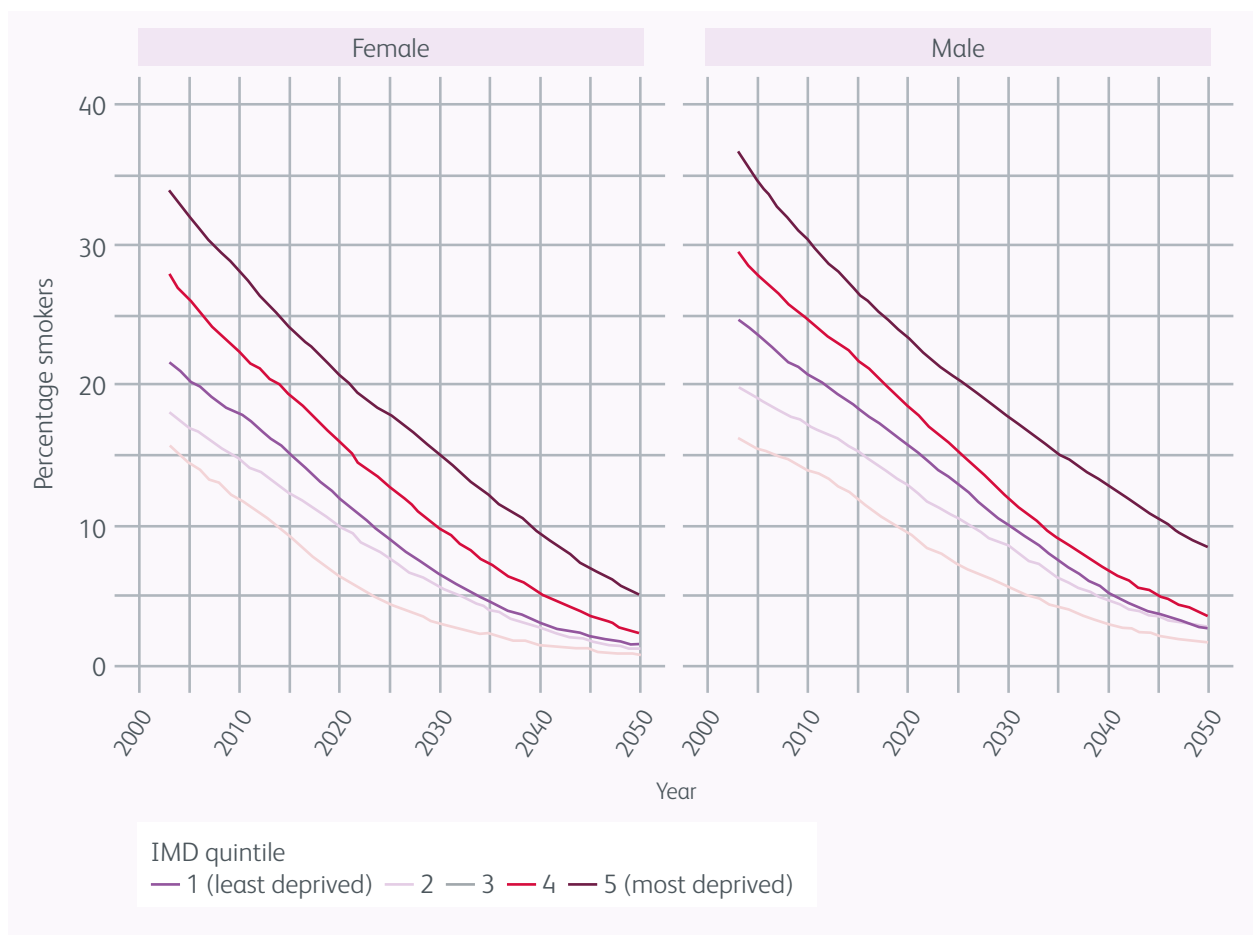


Fig 2.4 Smoking prevalence (%) among males and females aged 11–89 years in England, by sex 2003–2050. Lines show model predictions for our four forecast scenarios. Points and error bars show the percentage of smokers in the Health Survey for England data with 95% confidence intervals.

### 2.6.3. Smoking and deprivation

In Scenario 4, which reflects a progressive strengthening of the tobacco control environment for initiation and quitting, all deprivation groups for both sexes, with the exception of males in the most deprived IMD quintile, are projected

to reach 5% smokers by 2050, but this would take many groups until beyond 2040 (Fig 2.5). Without these additional policy efforts, the smoking prevalence target of <5% by 2030 for England will be missed by almost all population groups. Table 2.2 provides detailed forecasts of smoking prevalence for all scenarios by sex and deprivation quintile.



**Fig 2.5 Smoking prevalence (%) among males and females aged 11–89 years by Index of Multiple Deprivation quintiles in England, 2003–2050. Results are for Scenario 4, where initiation probabilities continue to fall and quitting probabilities continue to rise.**

Table 2.2 Smoking prevalence (%) among males and females aged 11–89 years by Index of Multiple Deprivation quintiles in England, 2003–2050 for each forecast scenario.

Scenario	IMD quintile	2020 (Female)	2020 (Male)	2030 (Female)	2030 (Male)	2040 (Female)	2040 (Male)	2050 (Female)	2050 (Male)
1	1 (least deprived)	6.4	9.4	3.8	6.9	3.1	5.6	2.9	4.9
1	2	10.0	12.8	6.7	10.1	5.0	8.7	3.9	7.8
1	3	11.9	15.7	7.8	12.0	5.8	10.2	4.7	9.1
1	4	16.0	18.5	11.4	14.0	8.5	11.6	7.0	10.0
1	5 (most deprived)	20.6	23.4	15.9	18.6	12.7	16.2	10.7	14.4
2	1 (least deprived)	6.4	9.4	3.1	5.7	1.7	3.3	1.2	2.0
2	2	10.0	12.8	5.7	8.7	3.0	5.2	1.5	3.7
2	3	11.9	15.7	6.5	10.4	3.2	6.2	1.7	3.9
2	4	16.0	18.5	9.9	12.1	5.4	7.1	2.8	3.9
2	5 (most deprived)	20.6	23.4	15.1	17.7	9.6	12.8	5.3	8.1
3	1 (least deprived)	6.4	9.4	3.7	6.8	2.7	5.1	2.0	4.1
3	2	10.0	12.8	6.5	9.8	4.5	7.8	3.1	6.1
3	3	11.9	15.7	7.8	11.6	5.6	8.9	4.3	6.8
3	4	16.0	18.5	11.3	13.8	8.1	11.0	5.8	8.9
3	5 (most deprived)	20.6	23.4	15.9	18.6	12.4	16.2	10.2	14.8
4	1 (least deprived)	6.4	9.4	3.0	5.6	1.4	2.0	0.8	1.6
4	2	10.0	12.8	5.6	8.5	2.7	4.6	1.1	2.7
4	3	11.9	15.7	6.4	10.0	3.0	5.1	1.5	2.6
4	4	16.0	18.5	9.8	11.9	5.2	6.7	2.2	3.5
4	5 (most deprived)	20.6	23.4	15.0	17.7	9.4	12.8	5.1	8.4

Numbers show percentage of smokers aged 11 to 89 years.

2.6.4. QALY differences between scenarios

Reductions in smoking prevalence will gradually decrease the rates of morbidity and mortality from tobacco-related diseases, and therefore differences between the four scenarios in the number of quality-adjusted life years (QALYs) lived in the population will gradually emerge. Taking as the comparator scenario 1 (initiation and quitting constant at 2020 levels), the estimated cumulative gains in QALYs that might be expected under scenario 4 (continued falls in initiation and rises in quitting) are presented. By 2050, the difference between these scenarios amounts to a total cumulative gain of 153,153 QALYs: 49,885 for

females and 103,268 for males. However, differences between scenarios in morbidity and mortality will continue to emerge beyond 2050.

Figure 2.6 shows how the cumulative QALY gains from scenario 4 in comparison to scenario 1 would be distributed among IMD quintiles. This shows substantial QALY gains in all IMD quintiles, and despite a complex distribution of QALY gains among IMD quintiles, which arises from the interaction between the trends in smoking prevalence and the existing morbidity and mortality rates in these population groups, a trend for greater QALY gains among more deprived IMD quintiles is evident.

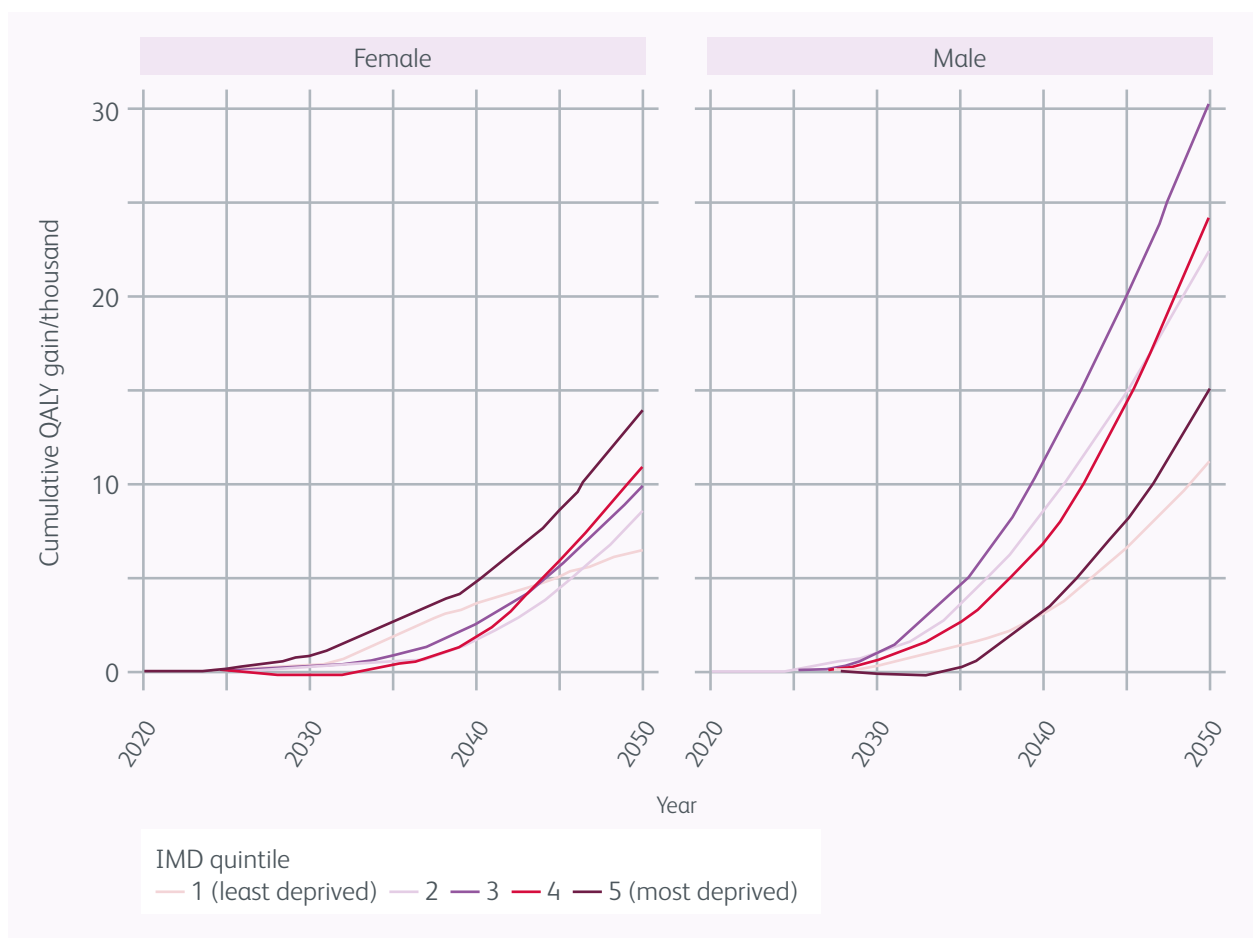


Fig 2.6 Potential cumulative gain in quality-adjusted life years (QALYs) for males and females aged 11–89 years in England, by IMD quintile. The figure presents the comparison of scenario 1 to scenario 4 and shows the expected gain in QALYs if the past trajectories of increase in the probabilities of quitting and the past trajectories of decrease in the probabilities of initiation continue to 2050. The QALY differences are discounted at a rate of 3.5% from an index year of 2020.

### 2.6.5. Requirements to achieve a 2030 target of less than 5% smokers

To estimate how much progress would be needed for all deprivation groups for both sexes to reach 5% smokers by 2030, additional forecasts were conducted to investigate by how much the probabilities of quitting in the most deprived IMD quintile, which has the highest smoking prevalence, would need to increase for this population subgroup to reach 5% smokers by 2030. Table 2.3 shows that the odds of quitting would need to increase fivefold in females and sixfold in males from their estimated 2020 levels for the 5% target to be achieved by 2030. At the estimated 2020 levels, an average of 8% of current smokers in the most deprived IMD quintile would transition to being former smokers each year, but a sixfold increase in the odds of quitting would mean that this increases to 30% of current smokers.

**Table 2.3 Smoking prevalence trends (%) for females and males in the most deprived Index of Multiple Deprivation quintile.**

Quit odds ratio	2030 (Female)	2030 (Male)
1	15.9	18.6
2	12.3	13.9
3	8.5	9.6
4	6.5	7.7
5	5.0	5.9
6	4.3	5.0

Initiation and relapse probabilities are held constant into the future at their 2020 levels.

The six scenarios presented are produced by adjusting the probabilities of quitting in 2020. The adjusted probabilities are applied and held constant in each future year from 2021 onwards.

A quit odds ratio of 1 corresponds to holding quitting probabilities constant into the future at their 2020 levels, ie this is the same as scenario 1 in Table 2.1.

The probabilities of quitting for each age, sex and IMD quintile are adjusted by first converting them to the odds of quitting. One of the six odds ratios shown in the table is applied to the 2020 odds of quitting. The adjusted odds of quitting are converted back to the probabilities of quitting for use in the model.

Results are shown only for the percentage of smokers at ages 11–89 years in the most deprived IMD quintile because this is the population subgroup with the highest smoking prevalence.

The weighted average probabilities of quitting in the most deprived IMD quintile corresponding to each of the six scenarios are: 0.08, 0.14, 0.19, 0.23, 0.27, 0.30. This means 8%, 14%, 19%, 23%, 27% or 30% of current regular cigarette smokers transitioning to being former smokers each year.

### 2.6.6. Implications of the trends

The UK government has set the smoke-free target of reaching fewer than 5% smokers in England by 2030,<sup>53</sup> but the model projections above indicate that this will not be achieved and that smoking prevalence among people living in the most deprived socio-economic conditions, particularly for males, is likely to lag far behind. There might also be additional factors that the model has not accounted for, such as smoking gradually becoming concentrated among people who find it hardest to quit,<sup>63</sup> which have the potential to further slow progress. However, notwithstanding that the current smoke-free target for England might not be met, if tobacco control policy is put in place that accelerates progress in decreasing initiation and increasing quitting until 2050 then the model projections indicate that there would be a total cumulative gain of 153,153 QALYs in England by 2050, and that the largest gains would accrue to the more deprived in our society. Our additional forecasts indicate that a sixfold increase in the odds of quitting among males living in the most deprived socio-economic conditions would be needed for smoking prevalence in this population subgroup to reach the 5% target by 2030.

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# 3 Education: policymakers, the public and the healthcare workforce

## Key points

- > Tobacco control in the UK has been strengthened substantially over the past 70 years by a coalition of advocacy groups, non-governmental organisations, academics, clinicians and parliamentarians.
- > Sustained activity by this coalition is required to hold government to account with ambitions such as Smokefree 2030 and national tobacco control plans, to ensure tobacco-related public health functions are fit for purpose and adequately funded, and to combat tobacco industry efforts to undermine tobacco control.
- > These activities are particularly important at present, following the abolition of Public Health England in 2020 and progressive reductions in local authority public health budgets during recent years.
- > Health warnings and labelling policies play an important role in communicating the risks of smoking, dissuading young people from tobacco use and promoting smoking cessation among established smokers.
- > Mass media and social marketing campaigns trigger quit attempts, increase the prevalence of smoke-free homes and support reductions in smoking prevalence and cigarette consumption. ‘Stoptober’ is estimated to have initiated 2.1 million quit attempts between 2012 and 2019, and is cost-effective.
- > In recent years national spending in England on anti-smoking campaigns has fallen sharply from a peak of £23.38 million in 2008 to £1.78 million in 2019.
- > The role of smoking in disease aetiology and management remains widely ignored in clinical guidelines for diseases strongly related to smoking and represents a neglect of the overriding duty of care in medical practice.
- > Training in the practical delivery of smoking cessation and temporary abstinence advice is poor across the NHS.

## Recommendations

- > Health warnings on tobacco products are enhanced using larger warnings, with provision of quit-line information or weblinks that support cessation, and use of package inserts that provide information on health effects and quitting.
- > The appeal of e-cigarettes to children is reduced by introducing standardised packaging for these products.
- > Health warnings on e-cigarette packs include a statement that e-cigarette vapour is likely to be substantially less harmful than tobacco smoke.
- > Funding of mass media campaigns is increased to at least 2008 levels to provide a low-cost, high-impact intervention to strengthen a comprehensive tobacco control strategy.
- > Campaigns to support the use of electronic cigarettes as a quitting aid or harm reduction alternative to smoking are carried out, and false perceptions about the safety of e-cigarettes compared with cigarettes are redressed.
- > Training in the practical delivery of cessation and temporary abstinence advice and in prescribing smoking cessation medications is completed by all patient-facing NHS and social care staff.

### 3.1 Introduction

For centuries tobacco companies have promoted tobacco consumption, governments have become reliant on tobacco-related tax revenues and individual tobacco use has become the norm; the combination of marketing, money, power and addiction maintaining the *status quo*. Over the past 6 decades much has been achieved to change these deep-rooted behaviours, including influencing policymakers to implement wide-ranging tobacco control measures, raising public awareness of the harms of tobacco use and training clinicians to treat tobacco use as an addiction rather than a lifestyle choice. The use of advocacy, influence and education in further reducing tobacco use is reviewed in this chapter.

## 3.2 The evolution of advocacy, lobbying and campaigning for policy change

### 3.2.1 1950 to 2000

Researchers in the UK have been at the forefront of developing the evidence base about the harm caused by smoking since the 1950s.<sup>1</sup> Initially, the conventional wisdom among academic researchers and professional clinical societies was that their role should simply be to publish evidence of the harms caused by smoking, believing that this would be sufficient to change smokers' behaviour.<sup>2</sup> This did not prove to be the case.

In the 1950s tobacco was accepted as an essential part of daily life and a vital generator of tax revenues.<sup>3</sup> Tobacco was included in military rations and as an economic supplement to old age pensions.<sup>2</sup> Tobacco was even included in the Geneva Conventions, in recognition that for many it was 'as essential as food'.<sup>4</sup> The tobacco industry fought to keep things that way, and for many years succeeded.

At that time Britain was the home of three of the top five global tobacco manufacturers: Imperial Tobacco, Gallaher and British American Tobacco. These companies were highly effective lobbyists, meeting regularly with policy makers.<sup>3</sup> The industry argued that the evidence of the harm caused by smoking was inconclusive, that smokers knew the risks, that smoking was an adult choice entered into willingly, and therefore that it was not for government to interfere. They did this despite acknowledging privately in internal documents dating back to the 1960s that smoking was not a free choice but an addiction to the nicotine contained in the smoke.<sup>5</sup>

Tobacco-related health policy began to be changed as a result of civil society campaigns waged over many decades, spearheaded by a tripartite alliance of non-governmental organisations, clinicians and academics. This was not unique to Britain, with advocacy groups emerging at the same time in other industrialised societies, which successfully engaged with the World Health Organization (WHO) and colleagues in low- and middle-income countries. Similar to tobacco manufacturers, civil society worked collaboratively to develop an effective global lobbying capacity that led eventually to the WHO Framework Convention on Tobacco Control (FCTC).<sup>6-8</sup>

In the UK the RCP played a leading role in nurturing and developing this alliance, recognising that it could not remain a passive bystander and needed to advocate for policy change.<sup>9</sup> The RCP's 1962 report, *Smoking and health*, was a turning point, the first time that evidence of the health harms caused by smoking was coupled

with practical recommendations for policymakers. The report was widely publicised<sup>10</sup> and had an impact on smokers' behaviour and tobacco consumption in the years that followed, but policymakers did not adopt the interventionist policies recommended.<sup>11</sup> By 1971, when the second RCP report on smoking was published<sup>12</sup> there was a recognition that RCP reports alone would not be sufficient to achieve the changes that were needed in public policy; rather, that sustained and relentless advocacy would be essential. In 1971 therefore, the RCP established Action on Smoking and Health (ASH) as a standalone advocacy organisation. ASH has remained close to the medical and academic community, who have been active supporters and participants in ASH's campaigns for concrete policy measures to reduce smoking attributable harm. ASH has been successful in engaging the media to raise awareness about the harms of smoking as the evidence base has grown. From the 1960s to the 1980s media advocacy played the major role in the decline of smoking prevalence, as government resisted active interventions, relying on an investment in health promotion, part of which was funding ASH.<sup>13</sup> Although British governments accepted that smoking was harmful, they were nervous of being branded 'the nanny state' by interfering in people's individual 'lifestyle choices' such as smoking and drinking. Governments were happy to fund ASH to support the provision of health education, but less keen to intervene themselves. Even when health ministers were receptive, changing government policy proved difficult. It was necessary that ASH was able to operate on the outside, funded by the leading heart and cancer charities to advocate for political change, and working with the All-Party Parliamentary Group on Smoking and Health, a cross-party group of backbench parliamentarians supportive of its aims.

The 1990s were a major turning point in tobacco control since the rate of decline in adult smoking prevalence had slowed considerably, and uptake of smoking in children under 16 was not falling (Fig 4.1). The industry was successfully fighting back by undermining health messaging. It was estimated that in 1992 the industry was spending £100 million a year on advertising.<sup>14</sup> Most egregiously, the TV advertising ban had been undermined by an explosion in sport sponsorship which opened the door to far more extensive and lengthy tobacco promotion on public as well as commercial television. In contrast with the UK, during this period other countries introduced tobacco control measures including advertising bans in Norway, Canada, New Zealand and Finland as well as health warnings in the EU. Both of these measures were opposed by the UK government, which still chose to rely on voluntary agreements with the industry.

The first UK Tobacco Control Plan<sup>15</sup> was launched in 1998 and stated:

‘Smoking is now the principal avoidable cause of premature deaths in the UK. It hits the worst off people hardest of all. It harms people who do not smoke. It harms babies in the womb. That is why the Government is determined to turn things round. We want to help existing smokers quit the habit and help children and young people not to get addicted in the first place. These objectives can only be achieved by a concerted campaign to reduce smoking ... a package of measures each of which will add to the impact of the others. A major part of the effort will be targeted on children.’

The 1998 Tobacco Master Settlement Agreement in the USA was the result of a wave of litigation brought by US states. It opened the door to a treasure trove of millions of industry documents, revealing what became known as the industry’s ‘playbook’ and including ‘throwing sands in the gears’ of attempts to regulate by sowing doubt, and using deceit and denial of what they knew to be the overwhelming evidence of the harm caused by tobacco.<sup>16</sup> The documents also revealed how the industry fuelled a global parallel market on a gigantic scale to undermine government tax policy by providing easy access to cheap and illicit cigarettes.<sup>17</sup>

The idea of a tobacco treaty to put in place global regulation of the industry was first articulated by American lawyers at the start of the 1990s. In 1999 the new Norwegian director-general of the WHO, Gro Harlem Brundtland, made it a key objective.<sup>18</sup> This was the first treaty negotiated by the WHO, and it faced a powerful well-funded adversary, the transnational tobacco industry. ASH played a leading role in mobilising tobacco control civil society organisations around the world into a loose network, which evolved into the Framework Convention Alliance (FCA) by 2000.<sup>19</sup> The FCA was influential in ensuring that the FCTC covered all relevant policy levers, including protection of public health policy from industry vested interests and the enshrinement of the role of civil society in the Treaty. Subsequent to the entering into force of the FCTC the FCA has continued to play a key role in ensuring that the framework set out in the convention has been strengthened by the adoption of more detailed guidelines and the protocol on the illicit trade in tobacco.<sup>19</sup>

## 3.2.2 2000 to the present

### 3.2.2.1 International tobacco control

The FCTC was adopted by the World Health Assembly in 2003 and came into force in 2005 (see section 2.2). The FCTC framework calls on parties to reduce demand and supply of tobacco products through implementation

of a series of articles and has been strengthened by the development of guidelines on everything from packaging and labelling (Article 11), advertising (Article 13), tax policy (Article 6) and tobacco industry interference (Article 5.3) plus a protocol on illicit trade requiring the implementation of stringent supply chain controls by tobacco manufacturers.

### 3.2.2.2 Tobacco control in the UK

Following a long campaign by ASH and others working with parliamentarians, the end of the 1990s saw the publication in the UK of the first government tobacco control strategy, *Smoking kills*.<sup>20</sup> Among other measures, this document committed the government to ban advertising, raise tobacco taxes and set up a comprehensive NHS smoking cessation service. However, the government refused to commit to smoke-free legislation, believing that it would not be politically expedient and instead adopting a process of voluntary agreements to reduce smoking in public places.<sup>21</sup> By 2003 it was clear that this approach was failing, so ASH set up the Smokefree Action Coalition (SFAC) to campaign for smoke-free laws that would prohibit smoking in public places, and began regular polling which demonstrated growing public support. The administrations in Scotland, Wales and Northern Ireland agreed early on to support implementation of comprehensive legislation in their jurisdictions. The UK government on the other hand tabled legislation for England which included exemptions for pubs and clubs. It was only as a result of a well-disciplined campaign from ASH and the SFAC which included charities, royal colleges, trade unions, public health bodies, health professionals and academics, with strong support from the Health Select Committee and backbench parliamentarians in both houses of parliament, that the exemptions were removed on a free vote in parliament.<sup>21</sup> This established an important precedent in Westminster, that tobacco was not a party-political issue.

The Smokefree Action Coalition has since grown from around 50 to over 300 members, and has successfully campaigned for increasingly stringent regulation of tobacco, including the ban on tobacco displays in shops, prohibition of the sale of tobacco from vending machines, and, most recently, standardised ‘plain’ packaging. Labour, Coalition and Conservative governments have all accepted that ending smoking is a justifiable objective requiring active government intervention. Consequently, while it lagged behind until this century, the UK has now become a global leader in tobacco control.<sup>22–24</sup> In 2019 the Conservative government announced that its ambition was for England to be smoke-free by 2030. This included an ultimatum for industry to make smoked tobacco obsolete by the same year.<sup>25</sup>

However, the abolition of Public Health England (PHE) in 2020 during the COVID-19 pandemic, puts the delivery of the government's smoke-free ambition in question. Sustained advocacy by an alliance of non-governmental organisations (NGOs), clinicians, public health professionals and academics which comes together in the Smokefree Action Coalition will be essential to ensure the government lives up to its ambition and the devolved nations are able to live up to theirs.

### 3.3 Health warnings and product labelling

#### 3.3.1 Packaging as a way to communicate with consumers

Product packaging represents an important medium of communication between the tobacco industry and consumers. For the industry, packaging is a critical component of marketing and represents the 'cornerstone' of brand imagery.<sup>26,27</sup> Packaging is important given its frequency of exposure and the timing of exposure, which occurs at the point-of-purchase and immediately preceding use. In the case of cigarettes and other widely used tobacco products, packages also have broad reach among children and young people during the typical age of tobacco initiation.<sup>28</sup>

Packaging not only serves as an important promotional channel for industry, but is increasingly used by governments to communicate health information.<sup>28,29</sup> For most of the 20th century, health warnings were either absent or obscure, with vague statements about the risks of smoking. However, health warning policies have rapidly evolved over the past 2 decades. An important precedent was established in 2000 when Canada implemented the first pictorial health warnings on cigarette packs and required these to cover 50% of the principal display area of the pack. Soon after, international labelling standards were established in the World Health Organization's FCTC, including minimum requirements for rotating text warnings that cover at least 30% of the package, and recommendations for warnings that cover 50% or more and pictorial warnings.<sup>30</sup> To date, more than 100 countries have implemented large pictorial health warnings that cover 50% or more of the package.<sup>31</sup> In the UK, pictorial health warnings covering approximately 50% of the package were adopted in 2008 and revised in 2016 as part of the European Tobacco Product Directive.<sup>32</sup>

A vast evidence base has established that comprehensive pictorial health warnings are an effective means of communicating the health effects of smoking and help reduce positive attitudes towards smoking.<sup>28,33–35</sup> Research has also demonstrated that larger warnings increase the consumer attention given to them, are more likely to be recalled, and allow greater space for text and pictorial message components.<sup>28,36–40</sup>

The remarkable scope of disease caused by smoking provides regulators with the opportunity to have a large range of warnings which comprise anywhere from two to 16 individual messages and can be refreshed and rotated over time to sustain their impact.<sup>40</sup> Regulators have applied a variety of principles when selecting which health effects to feature in warnings, including overall disease burden, a mix of health effects to represent different disease categories (cancer, cardiovascular disease, other lung illnesses), direct versus second-hand smoke effects, and health effects specific to a particular demographic or population subgroup.<sup>41</sup> Different executional styles can also be used to depict health effects, including graphic depictions of disease, symbolic imagery, and narratives or personal testimonials. In general, graphic depictions of disease – images that feature 'real' images of health effects from 'real' people – are consistently identified as the most effective theme across diverse age groups and cultural contexts.<sup>28,42</sup> Indeed, warnings featuring graphic images of diseased lungs and other organs are most likely to be recalled in post-implementation studies in Canada, Australia, and Europe. Graphic depictions are also most likely to elicit emotional arousal, which is associated with greater message acceptance, perceived health risk, and downstream behavioural outcomes.<sup>28,33,43–47</sup> (See Fig 3.1.)





**Fig 3.1** The evolution of health warning and packaging regulations in Australia.

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The impact of health warnings can be enhanced in several ways. Health warnings can be linked to other public education efforts, such as mass media campaigns,<sup>48–52</sup> ‘refreshed’ to maintain effectiveness over time, and ‘rotated’ at regular intervals.<sup>53–56</sup> The impact of health warnings can also be enhanced through the inclusion of supportive information on smoking cessation services, such as a telephone helpline and website, which can increase population-level usage of these services.<sup>57–63</sup> In many countries, weblinks and helpline numbers are displayed on every warning along with a short, supportive statement designed to enhance motivation to quit smoking. Canada has extended this practice by requiring ‘inserts’ that are displayed on the interior of packages and feature additional information on the health benefits of quitting and smoking cessation<sup>64,65</sup> (see section 5.9).

Beyond communicating health information, labelling policies can also limit the promotional information on packaging, most notably through standardised or ‘plain’ packaging regulations. Standardised packaging prohibits the display of brand imagery and logos, and standardises the colour and font across all packages (see Fig 3.2). The first country to introduce plain packaging was Australia, in 2012, and plain packaging has since been implemented in more than 15 other countries, including the UK in 2016, in accordance with recommendations under FCTC Article 13.<sup>30,31</sup> Standardised packaging can reduce brand appeal among young people, reduce false health beliefs about the relative risks of different cigarette brands, and enhance the impact of health.<sup>66</sup> Many countries have also restricted other misleading packaging elements, including brand descriptors, such as ‘light’, ‘mild’, and ‘low tar’, as well as tar and nicotine numbers on the basis that they promote the false belief that some cigarettes are less harmful than others.<sup>40</sup>

\*Image source: Quit Victoria pack collection 2012



Fig 3.2. Example of branded versus 'plain' packaging in Australia.\*

### 3.3.2 Novel nicotine products, including e-cigarettes and heated tobacco products

In contrast to well-established regulatory practices for conventional tobacco products, there is less evidence to guide labelling policies for novel nicotine products, such as e-cigarettes.<sup>67</sup> In considering the broad spectrum of tobacco and nicotine products, there is a general principle that the design of health warnings should be commensurate with the level of harm.<sup>28,36</sup> Accordingly, mandated warnings on non-combusted products are generally smaller than those on cigarette packs and feature text-only warnings. Novel products present additional challenges given that the long-term health effects are not fully known; therefore, e-cigarette warning messages typically focus on nicotine and addiction, rather than specific health outcomes which are less certain. For example, under the EU Tobacco Product Directive, e-cigarettes must display a black and white text warning covering 30% of the principle display area that reads, 'this product contains nicotine which is a highly addictive substance'<sup>68,69</sup> with similar requirements in other countries

such as the USA.<sup>70</sup> To date, population-based studies suggest that relatively few consumers recall noticing e-cigarette warnings, particularly in countries with voluntary or vague warning policies.<sup>71–74</sup> Indeed, voluntary warning practices are highly variable in terms of the presence of warnings, type of information included in the warning message, and the accuracy of other labelling components, such as nicotine levels.<sup>75–77</sup>

There is controversy over whether e-cigarette messages should include explicit relative risk statements to encourage switching among established smokers for the purposes of harm reduction.<sup>67</sup> Research suggests that e-cigarette warnings can increase consumer perceptions of risk from vaping; however, their impact on perceptions of relative risk compared with smoking remain unclear.<sup>78–82</sup> In most countries, manufacturers are prohibited from making health claims, including statements on relative risks or smoking cessation unless individual products receive approval as a therapeutic product. In the USA, companies can apply to the Food and Drug Administration for designation as a 'modified risk tobacco product' and

\*Image used with permission from: Tobacco Labelling Resource Centre

request approval to make reduced risk or reduced exposure claims.<sup>83</sup> For example, Philip Morris' IQOS device and Marlboro Heatsticks have been approved to make the following claims: 'This significantly reduces the production of harmful and potentially harmful chemicals', and 'Scientific studies have shown that switching completely from conventional cigarettes to the IQOS system significantly reduces your body's exposure to harmful or potentially harmful chemicals.'<sup>84</sup> Preliminary evidence suggests that these types of claims may reduce risk perceptions relative to cigarettes; however, their impact on product appeal among existing adult smokers and young people has yet to be assessed in post-market studies.<sup>85-87</sup> Several jurisdictions have also considered allowing proscribed relative risk statements, which are drafted by government agencies and could be used by manufacturers on a voluntary basis; however, these proposals have not been implemented to date.<sup>88,89</sup>

As is the case for health warnings, restrictions on the promotional elements of packaging are generally less comprehensive for non-combusted tobacco and nicotine products compared with cigarettes. Several notable exceptions include Norway's standardised packaging requirements for snus (a tobacco powder placed under the lip) products and Israel's standardised packaging regulations for e-cigarettes. To date, there is little evidence regarding the impact of these policies on patterns of use among young people or 'switching' among users of other tobacco products;<sup>90</sup> it would be prudent to reduce the appeal of e-cigarettes to children by introducing standardised packaging for these products.

#### 3.3.3 Industry opposition and legal precedents

The evolution of health warnings and packaging regulations have attracted strong opposition from the tobacco industry. However, courts in a wide range of jurisdictions have upheld comprehensive packaging laws, including challenges to the EU tobacco warnings and standardised packaging in the UK.<sup>91</sup> Notably, a recent ruling from the World Trade Organization (WTO) upheld Australia's health warnings and standardised packaging laws, and ruled that such measures did not violate pre-existing trade agreements based on their importance to public health.<sup>92</sup> Nevertheless, tobacco companies continue to issue legal challenges to health warnings, including a 2020 legal challenge to pictorial warnings in the USA.<sup>93,94</sup>

In summary, health warnings and labelling policies have played an important role in communicating the risks of smoking and shaping social norms around tobacco use. Large pictorial warnings and standardised packaging regulations for cigarettes are effective at dissuading

young people from tobacco use and promoting smoking cessation among established smokers. Beyond their impact on individual consumers, these policies serve as a vivid illustration of a country's commitment to tobacco control, commensurate for a product that causes more than 50 diseases and kills approximately half of its long-term users. Labelling practices for novel, non-combusted products are less established and are rapidly evolving as the nicotine market undergoes further diversification. To date, there is little consensus regarding the optimal labelling policies for novel products, and how to ensure that consumers are adequately informed of potential harms, while also promoting accurate relative risk perceptions, particularly among current tobacco users seeking to reduce the risks of tobacco use.<sup>95</sup>

#### 3.4 Mass media and social marketing campaigns

Mass media campaigns (MMCs) expose high proportions of large populations to messages through traditional media such as television, radio, billboards (Fig 3.3) and newspapers, in a largely passive manner, iteratively over a set duration at a low cost per head. Such campaigns often target health-risk behaviours such as tobacco and drug use, cancer screening and more recently infection prevention related to COVID-19.<sup>96-98</sup> Social marketing campaigns (SMCs) integrate marketing activities to reinforce a specific goal through multiple media channels with the ability to target audiences and measure reach. Modern-day MMCs integrate SMCs, while SMCs may or may not include an MMC component. MMCs and SMCs often compete with well-funded industry-led product marketing and advertising (see chapter 5 and chapter 10), ingrained social norms, behaviours driven by addiction and misaligned government policy.<sup>99</sup> The goals of MMCs and SMCs may be to produce positive changes (smoking cessation) or prevent negative changes (uptake of smoking).





Fig 3.3 Billboard campaign promoting smoking cessation.

### 3.4.1 Effectiveness and cost-effectiveness

A Cochrane review of mass media interventions for smoking cessation in adults concluded that tobacco control programmes which include MMCs can be effective in changing smoking behaviour in adults, and show positive effects whether initiated at national, regional or local levels. The effectiveness of these campaigns may be greater in relation to their intensity and duration.<sup>100</sup> Several studies looking at UK MMCs have identified associations with triggering quit attempts,<sup>101,102</sup> increasing the prevalence of smoke-free homes,<sup>103</sup> and reductions in smoking prevalence and cigarette consumption.<sup>104</sup> Little evidence was found to support MMCs to prevent youth uptake of smoking.<sup>105</sup> The National Institute for Health and Care Excellence (NICE) guideline NG92 recommends campaigns to promote awareness of stop smoking services.<sup>106</sup>

'Stoptober' is a campaign delivered by PHE that successfully combines MMCs and SMCs to motivate

smokers to make a quit attempt. It is estimated to have prompted 2.1 million quit attempts between 2012 and 2019, with an average of 8% reporting they were not smoking at 4 weeks.<sup>107,108</sup> 'Quit for COVID' and 'Today is the Day' SMCs to motivate people with COVID-19 related health concerns to quit smoking were launched in 2020<sup>109</sup> and await evaluation.

A systematic review of the cost-effectiveness of tobacco MMCs concluded that they offer value for money,<sup>110</sup> while a systematic review of MMCs to communicate public health messages in six health topic areas that included tobacco also found tobacco MMCs to be cost-effective.<sup>111</sup> Evaluation of the 'Stoptober' SMC has identified it to be cost-effective.<sup>108,112</sup>

The argument for further substantial investment in England is strengthened by the sensitivity of the effectiveness of campaigns to budget.<sup>108,113–117</sup> For example, a time-series analysis between 2008 and 2016 found higher monthly

expenditure on tobacco control mass media campaigns in England was associated with significantly higher quit success rates.

### 3.4.2 Funding of MMCs

In recent years national spending in England on MMCs and SMCs has fallen sharply, with a more than tenfold reduction from a peak of £23.38 million in 2008<sup>118</sup> to £1.78 million in 2019.<sup>119</sup> Over the same period there has been a significant fall in the proportion of smokers trying to quit. In 2007, 44% of smokers in England had made a quit attempt over the preceding year, by 2018 this had fallen by a quarter to only 33%.<sup>120</sup>

The lack of national campaigns has in the past to some extent been made up for by mass media campaigns at regional level backed up by proactive public relations activity. However, cuts in public health funding to local authorities<sup>121,122</sup> have led to the south-west regional MMC work coming to an end, with threats to funding of a similar initiative in the north-east of England too.

If the overall budget in England was returned to £5.5 million a year, which it averaged between 2008 and 2016, we can extrapolate that an additional uplift of £1 million to £6.5 million would save about 3,000 additional life years at a cost of just £344 per life year.<sup>117</sup> A further increase in funding of MMCs to 2008 levels,<sup>118</sup> which was associated with peak uptake in NHS stop smoking services in subsequent years,<sup>123</sup> would provide a low-cost, high-impact intervention to strengthen a comprehensive tobacco control strategy.

### 3.4.3 E-cigarette related media campaigns

E-cigarettes are substantially less harmful than smoking combustible tobacco and have been contributing to recent declines in smoking prevalence<sup>124,125</sup> (see chapter 9). There has however been little application of MMCs or SMCs to the use of electronic cigarettes as a quitting aid or harm reduction alternative to smoking, or to redress false perceptions about the safety of e-cigarettes compared with cigarettes. Although e-cigarettes are safer than cigarettes, most smokers do not believe this,<sup>126</sup> a perception exacerbated by the US outbreak of vaping-associated lung injury (VALI) that received extended news coverage worldwide despite subsequent clarification that most cases from the outbreak were associated with inhalation of vitamin E acetate, an additive found in some tetrahydrocannabinol vaping devices, typically obtained informally or illicitly and not nicotine e-cigarettes.<sup>127–129</sup> Vitamin additives are in fact explicitly banned from legal vaping products by the EU Tobacco Products Directive (TPD). These misperceptions are important because there is evidence at the population-level and individual-level that

perceptions of harm are closely associated with whether cigarette smokers decide to use them.<sup>130–132</sup>

## 3.5 Medical guidelines

Since the burden of disease caused by smoking can be prevented by helping smokers to quit, smoking cessation support should be a routine component of all medical care. However, since quitting smoking also generates substantial improvements in disease progression for many of the conditions caused by smoking,<sup>123</sup> treating smoking dependence should be a key component of the management of all diseases caused by smoking. Clinical management guidelines for diseases caused by smoking should in particular therefore include, or refer to, guidance on smoking cessation. In an earlier report<sup>123</sup> we reported on the low extent to which the delivery of smoking cessation support is included in clinical guidelines for a range of diseases caused by smoking. We have therefore updated that review for this report.

We used the methods described previously<sup>133</sup> to identify guidelines and recommendations published between January 2014 and January 2019 relating to any of the 16 diseases established in an extensive review by the Royal College of Physicians to be at least twice as common among smokers<sup>123</sup> and produced or endorsed by a relevant UK national or European transnational medical specialty association, international professional society or government agency. The three outcomes of interest were inclusion in the guidance of (i) identification of smoking as a risk factor or major cause of disease; (ii) recommending smoking cessation intervention and (iii) provision of or reference to smoking cessation guidelines or recommendations of evidence-based treatments for smoking cessation.

The review included 159 disease management guidelines. For some of the conditions of interest, guidelines were found where multiple conditions were included together in the same guidelines (pharynx/oral cavity and larynx cancers; ischaemic heart disease and peripheral artery disease; and psychosis and schizophrenia), and in such cases these conditions were reported together.

Just under half (78; 49%) of the 159 guidelines mentioned smoking. This comprised 37 UK<sup>134–170</sup> and 41 European specialty association, international professional society or government agency publications.<sup>171–210</sup> Of the 81 that made no reference to smoking, 48% were from the UK<sup>210–290</sup> (Table 3.1). Smoking was mentioned as a risk factor for the development of the disease by 69 (43%) guidelines, a statement recommending smoking cessation was included in 50 (31%) and reference to specific treatments for smoking cessation or to a smoking cessation guideline in 30 (19%).

Table 3.1 Summary of clinical guidelines and recommendations with reference to smoking

Disease	Number of included guidelines	Number (%) mentioning smoking	Type of reference to smoking, n (%)			Number (%) not mentioning smoking
			Smoking as a risk factor	Smoking cessation advice	Specific treatment/reference to guideline	
<b>Cancer</b>						
Pharynx/oral cavity cancer	10 (8 UK, 2 EU)	6 (60) (5 UK, 1 EU)	6 (60) (5 UK, 1 EU)	3 (30) (2 UK, 1 EU)	2 (20) (2 UK)	4 (40) (3 UK, 1 EU)
Larynx cancer and lung cancer	17 (4 UK, 13 EU)	8 (47) (2 UK, 6 EU)	6 (35) (2 UK, 4 EU)	6 (35) (2 UK, 4 EU)	4 (24) (2 UK, 2 EU)	9 (53) (3 UK, 6 EU)
<b>Cardiovascular</b>						
Abdominal aortic aneurysm	11 (4 UK, 6 EU, 1 Intl.)	7 (64) (3 UK, 4 EU)	7 (64) (3 UK, 4 EU)	5 (45) (1 UK, 4 EU)	2 (18) (2 EU)	4 (36) (1 UK, 2 EU, 1 Intl.)
Ischaemic heart disease and peripheral artery disease	28 (10 UK, 18 EU)	20 (71) (8 UK, 12 EU)	17 (61) (7 UK, 10 EU)	15 (54) (5 UK, 10 EU)	7 (25) (3 UK, 4 EU)	8 (29) (2 UK, 6 EU)
<b>Mental health</b>						
Psychosis and schizophrenia	18 (11 UK, 5 EU, 2 Intl.)	9 (50) (7 UK, 2 EU)	6 (33) (4 UK, 2 EU)	9 (50) (7 UK, 2 EU)	8 (44) (6 UK, 2 EU)	9 (50) (4 UK, 3 EU, 2 Intl.)
<b>Respiratory</b>						
COPD	16 (5 UK, 11 EU)	13 (81) (5 UK, 8 EU)	13 (81) (5 UK, 8 EU)	6 (36) (2 UK, 4 EU)	5 (31) (2 UK, 3 EU)	3 (19) (3 EU)
Pneumonia	7 (5 UK, 2 EU)	1 (14) (1 UK)	1 (14) (1 UK)	1 (14) (1 UK)	1 (14) (1 UK)	6 (86) (4 UK, 2 EU)
Lab-confirmed influenza	4 (4 UK)	0 (0)	0 (0)	0 (0)	0 (0)	4 (100) (4 UK)
Sleep apnoea	5 (1 UK, 1 EU, 3 Intl.)	1 (20) (1 Intl.)	1 (20) (1 Intl.)	0 (0)	0 (0)	4 (80) (1 UK, 1 EU, 2 Intl.)
<b>Others</b>						
Bulimia	5 (5 UK)	0 (0)	0 (0)	0 (0)	0 (0)	5 (100) (5 UK)
Hearing loss	8 (3 UK, 2 EU, 3 Intl.)	1 (12) (1 Intl.)	1 (12) (1 Intl.)	0 (0)	0 (0)	7 (88) (3 UK, 1 EU, 3 Intl.)
Hernia	13 (5 UK, 5 EU, 3 Intl.)	7 (54) (3 UK, 2 EU, 2 Intl.)	7 (54) (3 UK, 2 EU, 2 Intl.)	1 (8) (1 UK)	2 (15) (2 Intl.)	6 (46) (2 UK, 3 EU, 1 Intl.)
Rheumatoid arthritis	17 (10 UK, 7 EU)	5 (29) (3 UK, 2 EU)	4 (24) (3 UK, 1 EU)	4 (24) (2 UK, 2 EU)	0 (0)	12 (71) (7 UK, 5 EU)
<b>Total</b>						
	<b>159</b> <b>(75 UK, 72 EU, 12 Intl.)</b>	<b>78 (49%)</b> <b>(37 UK, 38 EU, 3 Intl.)</b>	<b>69 (43%)</b> <b>(33 UK, 33 EU, 3 Intl.)</b>	<b>50 (31%)</b> <b>(23 UK, 27 EU)</b>	<b>30 (19%)</b> <b>(17 UK, 13 EU)</b>	<b>81 (51%)</b> <b>(38 UK, 34 EU, 9 Intl.)</b>

Although different smoking-related diseases were considered, the proportions of guidelines reporting smoking as a risk factor, offering cessation advice or referring to specific cessation guidance in this present review of guidelines published from 2014 to 2019 are very

similar to those published between 2000 and 2013 in our previous report (50%, 40% and 19% respectively).<sup>133</sup> Direct comparisons for guidelines on diseases included in both our earlier and current review are presented in Table 3.2.

**Table 3.2 Comparison of clinical guidelines, report on smoking as a risk factor and smoking recommendations of conditions assessed in both the previous and current review**

Conditions reported in both reviews	Number of guidelines		Number providing smoking cessation advice		Number providing specific cessation treatment/guideline reference	
	2000–13	2014–19	2000–13	2014–19	2000–13	2014–19
Pharynx/oral cancer	2	10	2	3	2	2
Lung cancer	26	17	14	6	4	4
Cardiovascular disease	21	29	16	20	13	9
Respiratory disease	11	32	9	7	6	6

This study demonstrates that acknowledgement of the role of smoking in disease aetiology and management remains widely ignored in clinical guidelines for diseases strongly related to smoking.

Since the clinical management of smoking-related diseases should include ascertainment of smoking status and delivery of effective smoking cessation support, this represents a significant and sustained neglect of a major reversible cause of disease.

Quitting smoking reduces the progression of COPD and has been identified by NICE as one of the ‘five fundamentals’ of COPD care,<sup>291,292</sup> it reduces the incidence of acute lung infections and asthma exacerbations,<sup>293</sup> improves lung cancer survival,<sup>294</sup> and reduces the risk of recurrence of myocardial infarction and stroke.<sup>295–299</sup> Smoking cessation also improves the outcome of head and neck cancer,<sup>300</sup> peripheral artery disease,<sup>301</sup> rheumatoid arthritis,<sup>302</sup> and a range of other conditions.<sup>123</sup> Encouraging patients with diseases caused by smoking to quit smoking should therefore be a routine component of disease management, and systematic intervention to treat smoking is a fundamental component of evidence-based smoking cessation guidance.<sup>106,303</sup> For nearly half of the guidelines on managing diseases caused by smoking included in this study to fail even to mention smoking cessation is clearly a neglect of the overriding duty of care in medical practice.

The consequence of this omission is likely to be that smoking is not addressed by practitioners delivering care for people with these conditions. The role of smoking as a cause of disease, and of smoking cessation in disease management, remains substantially overlooked and neglected in clinical practice, even in relation to the diseases most strongly related to smoking.

### 3.6 The healthcare workforce

The healthcare workforce has a unique role to play in preventing smoking. Since smoking is associated with an increased risk of a wide range of diseases and disorders,<sup>123</sup> smokers use health services far more than non-smokers and every health service contact and inpatient stay represents an opportunity to identify individuals who smoke, and help them to quit.<sup>123</sup> Systematic treatment of smokers is also highly cost-effective in almost all settings<sup>304,305</sup> and by reducing acute events produces in-year cost savings in secondary care.<sup>123</sup> It is therefore vital that the healthcare workforce is trained to capitalise on these opportunities and ensure that all smokers receive treatment aimed either at achieving cessation or supporting temporary abstinence while using healthcare services.

The precise content of the training required differs according to the role of the healthcare worker and their level of patient contact. However, all healthcare workers who have face-to-face clinical contact with patients need



to be able to ascertain smoking status, advise quitting and act to ensure that smoking cessation support is delivered. Training in the elements of this approach, termed 'very brief advice' (VBA) is available free of charge from the National Institute for Smoking Cessation and Training (NCSCT) website<sup>306</sup> and takes less than 20 minutes to complete. Although presented for use in the context of primary care consultations, the training can be applied in most clinical interactions. All patient-facing NHS and social care staff should therefore complete this training.

Delivery of behavioural support and pharmacotherapy for smoking cessation requires more specialist skills. Training in these areas is also available via the NCSCT website, but as outlined in the 2019 NHS Long Term Plan,<sup>307</sup> these services should be available and easily accessible across the NHS. Since provision of smoking cessation interventions on an opt-out rather than opt-in basis typically doubles service uptake, the services should be provided as an opt-out default. In secondary care this is achievable by following the principles of the Ottawa Model<sup>308</sup> which have been shown to be effective in UK acute and mental health settings,<sup>309–311</sup> with smoking ascertainment occurring on admission and delivery of pharmacotherapy and behavioural support automatically after establishing that an individual smokes. In primary care, doctors need to be ready to prescribe cessation medications and provide advice on e-cigarette use, and either provide or otherwise ensure the delivery of behavioural support from a local NHS stop smoking service if available and preferred, or else in-house. Training in prescribing for smoking cessation and delivering behavioural support are both available via the NCSCT website but is not currently required training.

Ensuring that the healthcare workforce is properly trained and that smoking interventions become fully embedded in clinical practice requires all staff to be trained. The 2018 RCP *Hiding in plain sight* report summarised existing training content of undergraduate, postgraduate and other higher training packages for a range of health professionals and found that almost across the board, these were inadequate. For existing staff in most settings, training in smoking cessation occurs at individual initiative rather than as a mandatory requirement. There is little evidence that these training deficiencies have been remedied since 2018.<sup>312,313</sup> Training in the practical delivery of cessation and temporary abstinence advice and in prescribing smoking cessation medications needs to become universal across the NHS and social care system.

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# 4 Preventing uptake of smoking by children

## Key points

- › Smoking among young people is twice as common in those from disadvantaged backgrounds, representing a key mechanism by which health inequalities are sustained over the course of successive generations.
- › Smoking forms part of a wider pattern of risk-taking behaviours which emerge at similar times and for similar reasons during adolescence.
- › Reducing exposure to smoking role models among household members and peer groups, and smoking norms in the media, will be important to continued progress in reducing smoking uptake (see chapter 5 for further detail on smoking imagery in the media).
- › While young people's e-cigarette use has grown rapidly in the USA, regular use in the UK remains rare and limited almost exclusively to smokers. Hence, e-cigarettes do not seem to be a major source of nicotine addiction for young people in the UK to date.

## Recommendations

- › The minimum age of sale is raised from 18 to 21 years.
- › Access to tobacco vendors through tobacco vendor licensing schemes is limited.
- › The use of dissuasive cigarettes and health warnings on cigarettes is introduced.
- › Smoke-free legislation is expanded, to de-normalise smoking behaviour.
- › School-based interventions targeting multiple risk behaviours are introduced.
- › Measures to support adult role models to quit smoking are continued.
- › Long-standing survey monitoring tools are maintained: important for informing and evaluating action in relation to both smoking and e-cigarette use among youth.

### 4.1 Introduction

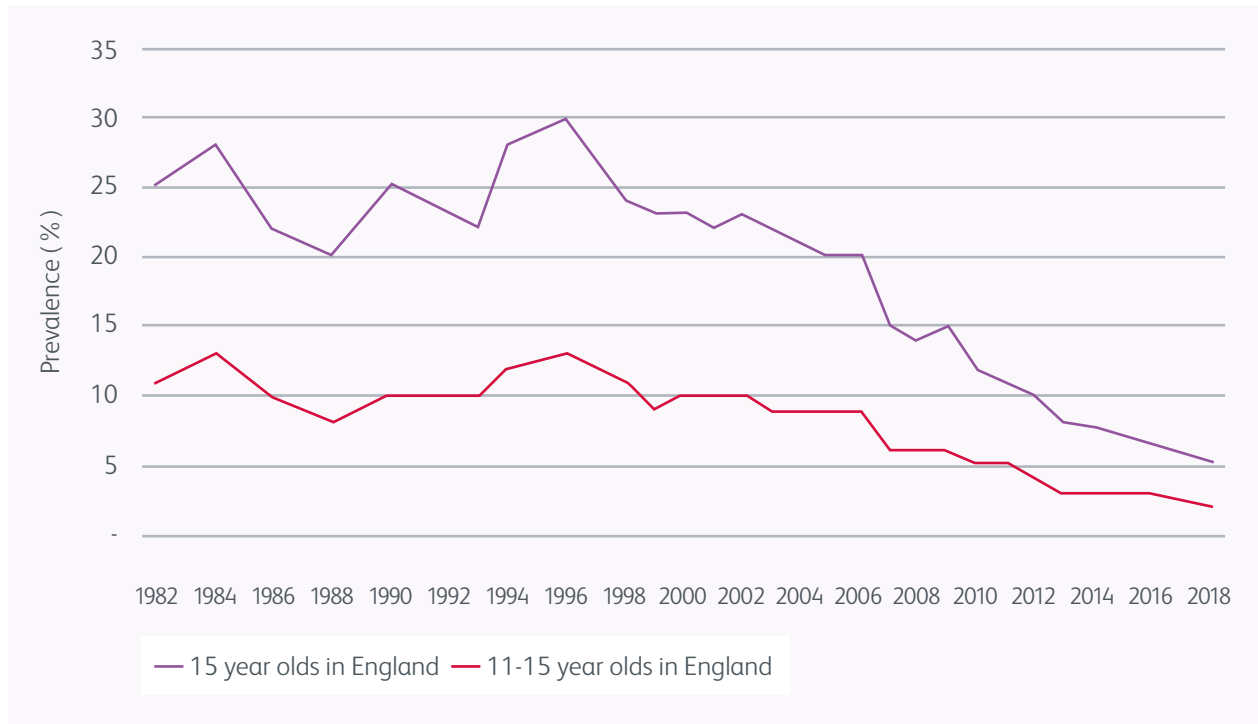
The persistent decline in use of tobacco by young people during the late 20th and early 21st centuries represents a major public health success, one that has been achieved through a diverse range of regulation and education. As in adults, smoking among young people is particularly concentrated in those from disadvantaged backgrounds, representing a key mechanism by which health inequalities are sustained over the course of successive generations. Globally, over 130 million adolescents continue to smoke daily.<sup>1</sup>

The majority of established smokers first took up smoking in adolescence.<sup>2</sup> As UK nations develop their ambitions to become smoke-free,<sup>3</sup> strategies are needed both to support smokers to quit and to prevent young people becoming smokers. Cessation and preventing uptake are complementary goals; reducing the proportion of adults who smoke also reduces the modelling of smoking behaviour to young people and hence reduces smoking uptake.<sup>4,5</sup> This chapter focuses on preventing uptake, reflecting on what has been achieved to date through combining regulation and education, before discussing challenges and priorities for further progress.

## 4.2 Trends in young people's smoking

Trends in smoking prevalence among young people in England, taken from the Smoking, Drinking and Drug Use (SDDU) surveys from 1982 to 2018,<sup>6</sup> demonstrate that regular smoking (ie smoking weekly or more) among

15-year-olds reached a peak of about 30% in 1996, shortly before the publication of the newly elected Labour government's white paper *Smoking kills* in 1998<sup>7</sup> (Fig 4.1). There has since been an approximately linear decline in smoking prevalence among all young people, to below 3% of 11- to 15-year-olds in 2018.



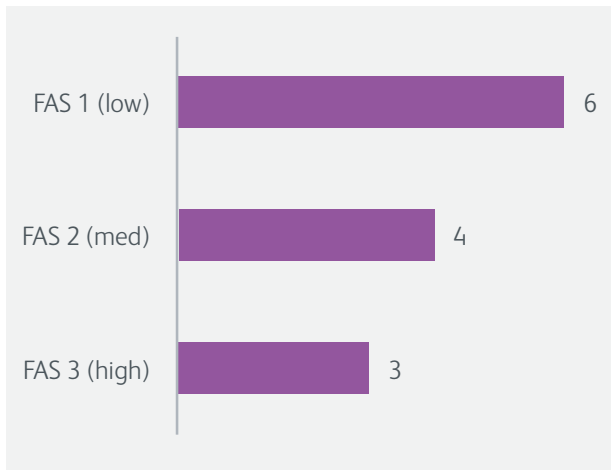
**Fig 4.1 Trends in regular smoking in England from 1982 to 2018 among 15-year-olds, and 11- to 15-year-olds.**

Source: Smoking, Drinking and Drug Use (SDDU) survey<sup>6</sup>

© 2019, Health and Social Care Information Centre. The Health and Social Care Information Centre is a non-departmental body created by statute, also known as NHS Digital.

While this long-term picture in England is positive, there is evidence that declines in young people's smoking might be reaching a plateau in other UK nations. Data from the Scottish Schools Adolescent Lifestyle and Substance Use Survey (SALSUS), which samples 13 and 15-year-olds, indicate that following a similar linear decline in smoking prevalence as occurred in England until 2015, there was no change in smoking prevalence between 2015 and 2018.<sup>8</sup> In Wales, there was again no change in the prevalence of smoking among 11- to 16-year-olds across four School Health Research Network (SHRN) surveys between 2013 and 2019.<sup>9</sup> Differences between these survey findings are likely to arise at least in part from differences in response rate, given that response rates in SDDU (22% in 2018)<sup>6</sup> have declined to a greater extent over time than for SALSUS (52% in 2018)<sup>10</sup> or SHRN (72% in 2019).<sup>11</sup> The most recent rounds of these surveys estimate regular smoking among 15-year-olds at 5% in England,<sup>6</sup> 7% in Scotland<sup>8</sup> and 8% in Wales.<sup>12</sup>

Despite these differences, child smoking uptake in all of these surveys is at its lowest level since measurement began. However, smoking continues to play a role in the inter-generational reproduction of inequalities. Data from Wales in 2019 indicate that young people from the poorest families remain twice as likely to be regular smokers as those from the most affluent families (see Fig 4.2)<sup>12</sup>. Children from poorer families are more likely to live in households and communities in which smoking occurs.<sup>5,13</sup>



**Fig 4.2 Percentage of 11- to 16-year-olds in Wales who are regular smokers, by score on the Family Affluence Scale (FAS): a high score on FAS is indicative of higher family affluence.<sup>12</sup>**

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### 4.3 Drivers of youth smoking

#### 4.3.1 Influence of caregivers and peers

Children who live with smokers are more likely to become smokers themselves.<sup>4,5,14</sup> Data from children in the UK Millennium Cohort Study (MCS), collected at approximately 14 years of age show that risk of ever having smoked increased if caregivers (26% vs. 10.9%) or friends (35.1% vs 4%) smoked. There was an exposure-response association evident for friends' smoking. The behaviour of more popular teens has greater influence on smoking uptake.<sup>15</sup> Peer groups disseminate beliefs about smoking. Ideas which increase the risk of young adult initiation, and which may derive from peer networks or the media, include the belief that smoking can calm someone down when they

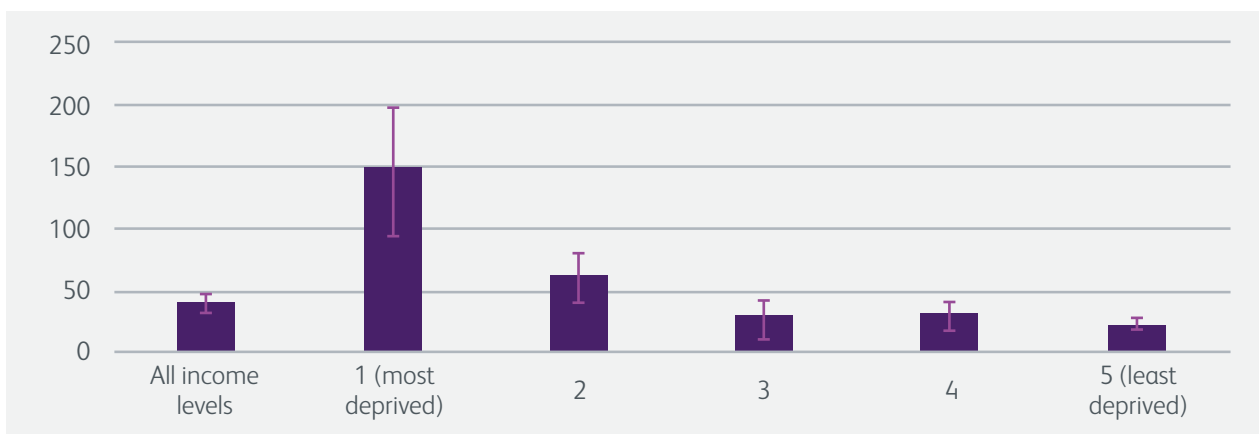
are angry or nervous.<sup>16</sup> In marginalised young people, peers may influence the belief that smoking is an expression of 'control' over the here and now in a multitude of ways, including taking control over an oppressor, controlling the effects of exposure to traumatic or day-to-day stress, and exerting control over the physical body in terms of protecting oneself from violence or defending one's mental health.<sup>17</sup>

#### 4.3.2 Smoking imagery

Most forms of advertising are banned, but tobacco smoking remains prevalent in television programming with little evidence of this having diminished over time in recent years.<sup>18</sup> New media are less effectively regulated and the tobacco industry has made use of this by, for example, paying Instagram influencers to promote their products.<sup>19</sup> A recent review noted that brand pages rarely used age-gating, did not display health warnings, generally posted images of a product alone and often used hashtags unrelated to tobacco.<sup>20</sup> Smoking imagery in the media is reviewed in more detail in chapter 5.

#### 4.3.3 Tobacco vendors

Evidence from Scotland indicates that children in more deprived communities are exposed to several times more tobacco retailing activity than peers in more affluent communities,<sup>21</sup> and has identified positive associations between tobacco outlet density and smoking frequency,<sup>22,23</sup> experimental smoking,<sup>24–26</sup> current smoking<sup>26</sup> and smoking purchases.<sup>27,28</sup> Furthermore, evidence has begun to emerge suggesting that, among non-smoker adolescents, increased tobacco outlet density is related to knowledge of cigarette brands,<sup>29</sup> intention to smoke<sup>30</sup> and susceptibility to future smoking.<sup>28,31</sup> Caryl *et al*,<sup>21</sup> using individual level GPS data of children, concluded that children in more deprived areas had seven times as much exposure to tobacco outlets than those in the most affluent areas (Fig 4.3).



**Fig 4.3 Frequency of exposure to tobacco retailers by income deprivation (mean +/- 95% CIs). GPS data from 1 week, from 692 adolescents (aged 10-11) in Scotland.<sup>21</sup>**

A meta-analysis investigating the relation between tobacco outlet density and smoking concluded that a one-unit increase in tobacco outlet density around adolescents' homes was associated with an 8% increase in the odds of adolescents having smoked in the past month.<sup>32</sup> While the majority of the research to date has been cross-sectional and at risk of confounding from household or peer exposure to tobacco use, longitudinal evidence is beginning to emerge that allows us to draw some conclusions on causality. While not focused on children or adolescents, a recent Scottish study employing longitudinal maternity data was able to track mothers between pregnancies, thus taking account of changing geographies and changing exposures to tobacco retailers.<sup>33</sup> The study identified that across the range of exposure to tobacco outlets, the odds of smoking increased by 67% over time (odds ratio 1.67, 95% CI 1.27 to 2.20). This provides the strongest evidence to date of an association between the availability of tobacco retailers and smoking behaviours.

#### 4.4 How has progress to date in reducing smoking uptake been achieved?

##### 4.4.1 Regulation and legislative action

UK governments, both before and since devolution, have introduced increasingly restrictive regulations for tobacco. These have aimed in part to restrict young people's access and exposure to tobacco, make cigarettes less appealing, and communicate new norms around smoking. Key actions are illustrated in Fig 2.1 (chapter 2). While this relates to England, and much tobacco control action is now devolved, UK nations have maintained substantial alignment in many aspects of tobacco regulation during this period, though with some variation in timing. Disentangling effects of individual policies is challenging, and the effects of individual policy components have most likely been small. However, this suite of action as a whole has likely contributed to the sustained downward observed trajectories in youth smoking observed throughout the beginning of the 21st century.

International literature indicates that reducing the affordability of tobacco via taxation can play an important role in reducing youth smoking uptake.<sup>34</sup> The UK has historically had one of the highest international taxation rates for tobacco,<sup>35</sup> but the prevalence trends discussed above demonstrate little correlation with changes in these rates over the last 30 years. Thus a tobacco duty escalator introduced in the early 1990s which increased duty above inflation by 2.5% was associated with relatively stable smoking rates (see above) while smoking in young people fell during the period from 2001 to 2010 when the

escalator was temporarily suspended<sup>36</sup> (see chapter 7 for further detail). Therefore, either there is a substantial lag in the effect of tax increases or, more likely, other tobacco control measures had a greater effect during this period. These included prohibition of most forms of advertising within the 2002 Tobacco Advertising and Promotion Act,<sup>37</sup> which complemented earlier bans on television and broadcast advertising (introduced in 1965 and 1990 respectively).<sup>38</sup> Smoking in enclosed workplaces was prohibited in Scotland in 2006 and elsewhere in the UK in 2007. While implemented to protect hospitality workers,<sup>39</sup> plans were met with arguments that this would harm children by displacing smoking into the home. However, second-hand smoke exposure, and indeed smoking in the home, declined following smoke-free legislation<sup>40,41</sup> as the idea of smoke-free indoor spaces became accepted. Recent natural experimental evaluations provide some evidence that rates of decline in young people's smoking accelerated following smoke-free legislation,<sup>42</sup> and subsequent changes in age of tobacco sales from 16 to 18 years.<sup>43</sup>

Mandatory pictorial health warnings on cigarette packs have been introduced in the UK, with international evidence suggesting warnings have important impacts on both cessation and uptake.<sup>44</sup> Evidence from Ireland indicates a role for point-of-sale (POS) restrictions in further de-normalising smoking.<sup>45</sup> POS restrictions were introduced in the UK for larger retailers in 2012 and smaller retailers from 2015, with evidence of lowered smoking susceptibility among young never-smokers following the introduction of these restrictions.<sup>46</sup> Laws prohibiting proxy purchasing have sought to further restrict young people's access to tobacco, recognising that while the age of sale had been raised to 18 years, many young people remained able to access tobacco via older friends and peers.<sup>47</sup> From 2015 bans on smoking in cars carrying children were introduced in England and Wales, and the following year in Scotland, with some evidence that young people's exposure to tobacco in cars reduced as a result<sup>48</sup> (see chapter 6, section 6.3.2). Plain packaging was introduced from 2016, alongside Tobacco Products Directive (TPD) regulations. Plain packaging removed a key remaining mechanism for tobacco companies to market their brands, with evidence from Australia indicating that young people rated packaging as less appealing, and were less aware of brand differences, following packaging changes.<sup>49</sup> TPD regulations have banned the sale of menthol cigarettes since May 2020, recognising evidence that menthol cigarettes are appealing to young people.<sup>50</sup>

#### 4.4.2 Education and communication

Alongside policy action, interventions focused on educating young people have played some role in preventing smoking uptake. There is some evidence that communicating the harms of smoking via mass media campaigns, combined with school-based interventions, can make some contribution to reducing uptake, although this evidence is of low certainty.<sup>51</sup> Systematic reviews provide evidence that some school-based interventions, particularly those combining a focus on social competence and social influence, can play a role in preventing smoking uptake.<sup>52</sup> School-based programmes such as the 'A stop smoking in schools trial' (ASSIST)<sup>53</sup> emerged around the turn of the century, and focused on changing norms by identifying influential students and training them in having healthy conversations with peers about smoking. ASSIST led to modest but important effects on reducing uptake in a robust cluster randomised controlled trial (RCT), at a time when smoking rates were high. Data from around this time also indicate that pupils attending schools with stricter policies against smoking were less likely to take up smoking.<sup>54</sup> Hence, education and communication, including via schools, likely played a role in shaping norms at a more micro-level, alongside wider policy action, particularly during a time when smoking uptake was relatively normalised.

#### 4.5 The role of e-cigarettes

Alongside increasing restriction of tobacco, e-cigarettes have emerged in UK markets. While evidence is growing on their usefulness as a cessation aid,<sup>55</sup> much concern has been expressed that their emergence might undo efforts to reduce smoking among young people. There is consistent evidence that tobacco-naïve young people who use an e-cigarette are more likely to go on to smoke,<sup>56</sup> although it remains unclear the extent to which this is a causal connection, reflects common risk factors, or is a combination of the two. Certainly the risk of becoming a smoker following initial e-cigarette use is much lower than the risk of becoming a regular smoker following a single cigarette: a meta-analysis found that two-thirds of people who tried one cigarette went on to temporarily become daily smokers.<sup>57</sup> While young people's e-cigarette use has grown rapidly in the US,<sup>58</sup> regular use in the UK remains rare and limited almost exclusively to smokers.<sup>12,59</sup> Hence, e-cigarettes do not seem to be a major source of nicotine addiction for young people in the UK to date. Indeed, some argue that while e-cigarettes might lead a small number of young people into smoking, for others, they may displace smoking.<sup>60</sup> At the population level, there is evidence from UK<sup>61</sup> and international studies<sup>60</sup> that tobacco use

continued to decline during the emergence of e-cigarettes. There is also evidence that in the UK, young people's experimentation with e-cigarettes has now levelled off, or is falling,<sup>12</sup> with young people describing these as a fad in which interest is diminishing.<sup>62</sup> The TPD introduced a suite of regulations on e-cigarettes in 2016, which included restrictions on marketing and on the devices; the impact of devices on young people's use of e-cigarettes is the subject of ongoing evaluation.<sup>62</sup>

### 4.6 Future directions in reducing young people's uptake of tobacco

#### 4.6.1 Age of sale restrictions

Raising the minimum age of sale from 18 to 21 years to reduce child access to tobacco products could be expected to reduce smoking uptake further.<sup>63,64</sup> In December 2019 the United States raised the minimum legal age of sale (MLSA) of all tobacco products nationally to 21 years.<sup>65</sup> While adolescents who are of legal age are able to purchase tobacco products freely,<sup>66</sup> under-age adolescents often obtain tobacco products either directly or indirectly through proxy purchase by legal-age peers.<sup>5,6</sup> Raising the MLSA will effectively limit both of these mechanisms, first because some young people currently of legal age to purchase tobacco products will no longer legally be able to do so, and second, by increasing the age gap between those who can and cannot legally purchase tobacco products, such as through proxy purchases, and hence reducing those opportunities as legal purchasers will be less likely to be part of the adolescents' social network. Raising the age of sale to 21 years would take legal purchase outside of school age completely.

An evaluation of raising the MLSA in England and Wales from age 16 to 18 in 2007 found there was a threefold drop in prevalence of smoking among 16- and 17-year-olds compared to older adults.<sup>67</sup> Evaluations of MLSA of 21 years have focused on the implementation of laws within US cities and states and have found reductions in smoking among 18- to 20-year-olds.<sup>29,68</sup> Modelling of the impact of MLSA 21 laws has predicted that raising the MLSA would have the largest effect among 15- to 17-year-olds by reducing initiation by approximately 25% and the prevalence of smoking by approximately 12%.<sup>69</sup>

There is widespread public and political support for increasing the MLSA to 21 years. Most smokers and former smokers in England appear to support increasing age of sales to 21 years.<sup>70</sup> There is growing political support for increasing the MLSA for tobacco products, for example among policymakers in Canada and Australia.<sup>71,72</sup>

### 4.6.2 Tobacco retail licensing

Licensing of tobacco retailers supports enforcement of tobacco control legislation through trading standards and the power to ban retailers from selling tobacco where they repeatedly break the law by selling to underage children or young adults. Members of the public are able to verify online whether their local retailer is registered. Spatial interventions have been enacted in Spain, where a minimum distance of 150 m between retailers is required.<sup>73</sup> In the USA some retailers have voluntarily ceased selling tobacco for ethical (health concerns) or for business-related reasons (poor sales or tobacco taxes).<sup>74</sup> Despite what appears to be a political reluctance to reduce the availability of tobacco, research has reported large-scale public acceptance and support for such measures with strong support for retail restrictions around schools.<sup>75,76</sup> In particular, support for retail reduction is strong among adolescents themselves.<sup>77</sup>

### 4.6.3 Dissuasive cigarettes

Health warnings and regulation of tobacco packaging have played an important role in reducing the appeal of cigarettes. However, supply routes for tobacco cigarettes have changed in recent years, with fewer young people in England buying tobacco from shops,<sup>6</sup> and most obtaining cigarettes from peers. Where given individual cigarettes by peers, young people may access cigarettes without seeing them in their packets, removing exposure to dissuasive warnings. Emerging evidence indicates that cigarettes which are themselves unattractively coloured, or include health warnings (eg 'Smoking kills') on the actual stick may reduce the appeal to young non-smokers<sup>78</sup> (see chapter 5, section 5.11).

### 4.6.4 Expansion of smoke-free legislation

This is reviewed fully in chapter 6. Expansion of smoke-free legislation is gaining momentum, particularly in Wales. Legislation will be expanded to a wider range of locations from March 2021, with a particular focus on places where children are likely to encounter smoking.<sup>79</sup>

### 4.6.5 Regulation of smoking imagery

Regulation of smoking imagery within the media may play an important role in further reducing smoking uptake. There is some evidence that using social media influencers to promote smoking cessation may be effective.<sup>80</sup> Regulatory action needs to adapt to these changes to limit young people's exposure to pro-smoking material<sup>81</sup> (see chapter 5).

### 4.6.6 Taxation

Modelling studies also suggest that increasing the UK's tobacco duty escalator to 5% would substantially accelerate the decline in adult smoking,<sup>36</sup> and it is likely that this would occur both via encouraging smokers to quit and limiting uptake in children and young people.

### 4.6.7 E-cigarettes

As described above, the UK has not to date seen substantial regular e-cigarette use among non-smokers but e-cigarettes have contributed to adults stopping smoking and helped to de-normalise tobacco use. Debate regarding e-cigarettes should not dominate discussions on preventing smoking uptake and draw attention from other important actions. Nevertheless, these trends need to be monitored, and the regulatory balance of ensuring e-cigarettes can play a role in supporting smokers to quit while limiting young people's contact with them should be continuously reviewed. Maintaining long-standing survey monitoring tools remains important for informing and evaluating action in relation to both smoking and e-cigarette use among youth.

### 4.6.8 Education and communication

Multi-channel public education campaign models developed at a time when smoking was highly normalised should be tailored to a changed context, in which a minority of young people take up smoking, concentrated in more disadvantaged communities. Research on the aforementioned ASSIST programme in Scotland for example suggests that rather than universal delivery, targeting to areas where smoking remains more normalised may be more efficient.<sup>82</sup>

### 4.6.9 Understanding the broader context of young people's smoking uptake

Smoking forms part of a wider pattern of risk-taking behaviours, which emerge at similar times and for similar reasons during adolescence.<sup>83</sup> Indeed, the 21st century decline in smoking has been mirrored in other behaviours,<sup>84</sup> and perhaps cannot be entirely attributed to actions discussed above, reflecting broader societal changes. Recent signals that declines in young people's tobacco uptake may be beginning to plateau, at least in some parts of the UK, are also mirrored in other risk behaviours.<sup>9</sup>

For cessation, where the goal is behaviour change, specificity of focus is important, as expecting people to change multiple behaviours at once is likely to be counter-productive.<sup>85</sup> This logic does not however necessarily hold for prevention, where the goal is not to change behaviours, but to maintain a *status quo* in which those behaviours are not occurring. There is good evidence that school-



based interventions targeting multiple risk behaviours simultaneously can reduce smoking uptake.<sup>86</sup> Interventions which address multiple goals are likely to be particularly valuable in crowded delivery contexts such as schools, where there is unlikely to be capacity to deliver a separate intervention for each health risk. Indeed, some recent school-based interventions which have shown promise in preventing uptake are not about smoking at all, but address issues such as social relationships in the school environment to reduce bullying, with secondary impacts across a wide range of risk behaviours including smoking, drinking, drug use, as well as mental health.<sup>87</sup>

Further, as described above, children's attitudes and perceptions toward smoking are formed in the contexts in which they live their daily lives. While tobacco has been all but eliminated from many young people's lives, many children, particularly those in poorer communities continue to grow up in environments in which tobacco use and retail is widely observed. Reducing inequalities in young people's smoking uptake will likely require continued efforts to support adult role models in giving up smoking, and to address place-based drivers of these inequalities.<sup>21</sup>

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# 5 Tobacco advertising and promotion

## Key points

- Exposure to tobacco imagery, branded or unbranded, is a cause of smoking uptake and is thus by definition harmful.
- With limited exemptions to allow bona fide news reporting and use of tobacco imagery for health promotion purposes, it is therefore important to end the portrayal of tobacco imagery in any new media content likely to be seen by children, and where portrayal does occur, to take measures to ameliorate the effect through anti-tobacco messaging.

## Recommendations

- Film licensing laws and television broadcasting codes require amendment to ensure the exclusion of all tobacco imagery from new productions that might be seen by children.
- Health messaging is required on all tobacco imagery in existing content and when communicated in the media.
- All new films containing tobacco imagery are classified as unsuitable for viewing by persons aged under 18 years.
- Inclusion of tobacco imagery is prohibited in all new television programming broadcast before the 9pm watershed and in all programming (broadcast or on-demand) likely to be seen by children.
- Any film, television, video-on-demand, and other UK online content such as music videos and print media that contain tobacco imagery is required to display a health warning while such imagery is visible.
- In cinemas, anti-smoking health promotion messages are shown immediately before films containing smoking.
- All forms of tobacco industry sponsorship and advertising, including alibi marketing, are prohibited.
- Exposure to tobacco imagery is included in the definition of online harm used in the forthcoming Online Safety Bill.
- All retail tobacco gantries and cabinets are removed from sight.
- Point-of-sale display legislation is extended to include tobacco paraphernalia such as hand rolling paper.
- Tobacco product imagery is not shown on online sales websites.
- Pack inserts promoting cessation and providing tips and information to support quitting are mandated.
- Cigarette paper, whether manufactured or for hand rolling tobacco, is required to include health warnings, be a dissuasive colour, or both.
- Flavour infusion products are prohibited, and flavour restrictions extended to filters and other tobacco paraphernalia.
- Standardised packaging legislation is extended to include tobacco papers and other smoking paraphernalia.

## 5.1 The evolution of tobacco promotion and its regulation in the UK

Tobacco advertising is a 20th century phenomenon which arose from mass production of branded cigarettes and has evolved into a strategic and sophisticated activity using print, film, radio, TV and most recently online media, complemented by indirect advertising through event sponsorship, brand endorsement, public relations and other marketing activities.<sup>1</sup> Tobacco advertising communicates across the spectrum of potential and current tobacco users, promoting uptake of smoking by young people, sustaining smoking among established smokers, and promoting relapse to smoking among those smokers who have or are trying to quit,<sup>2</sup> and thus undermines the effects of tobacco control policies.

It was only after the discovery of the link between smoking and lung cancer that the promotion of tobacco first began to be challenged. The 1962 RCP report on the harms caused by the UK smoking epidemic<sup>3</sup> highlighted the rapid increase in expenditure on UK television tobacco advertising after commercial television began broadcasting in the UK in 1955 and recommended that television advertising be restricted. This led to the passing of the 1964 Television Act, which prohibited cigarette advertising on UK television from 1965.<sup>4</sup> However, despite calls for more

stringent controls on advertising in subsequent RCP reports, tobacco advertising remained largely self-regulated<sup>5-7</sup> for the next 25 years through a series of voluntary agreements between the government and the tobacco industry, which fought a rear-guard action against effective regulation by voluntarily giving way over some issues while exploiting loopholes in existing agreements. For example, the industry implemented a voluntary ban on cinema advertising in 1986, while rendering the ban on advertising of cigarettes on television ineffectual by vastly expanding sponsorship of televised sporting events.

This period of voluntary self-regulation began to reach its end with the 1990 Broadcasting Act,<sup>8</sup> which prohibited all tobacco advertising on television and radio from 1991 (see Table 5.1 for legislation timeline). During the 1990s the EU then worked to develop a tobacco advertising directive, which in due course was transposed into UK law by the 2002 Tobacco Advertising and Promotion Act.<sup>9</sup> This UK law went further than the directive, which was limited to bans on cross-border advertising, promotion and sponsorship, and over a 4 year period prohibited all forms of advertising other than that at the point of sale, where advertisements were limited in size to that of an A5 sheet of paper, and advertising carried out within the tobacco trade. By prohibiting any advertising whose purpose or

**Table 5.1 Implementation timeline of key UK advertising legislation<sup>15</sup>**

Adapted with permission from Action on Smoking and Health (ASH)

Instrument	Year	Prohibited advertising
Television Act	1965	Television cigarette
Broadcasting Act	1990	All television and radio tobacco
Tobacco Advertising and Promotion Act	2003	Press, billboards, direct marketing, national event sponsorship, product placement
	2004	Point of sale other than single A5 advert
	2005	International event sponsorship, brandsharing
Audiovisual Media Services (Product Placement) Regulations	2010	Further prohibition of product placement in television programmes
Health Act	2011	Vending machine (advertising and sale)
	2012	Point-of-sale advertising and displays in large shops
	2015	Point-of-sale advertising and displays in small shops
Children and Families Act	2016	Branding on packs except for product name in standard type (known as standardised plain packaging)

effect was to promote a tobacco product, the 2002 Act also prohibited paid-for tobacco product placement in films or television programmes, and specific explicit regulations were subsequently applied to television programming in the 2010 Audiovisual Media Services (Product Placement) Regulations.<sup>10</sup>

Branded tobacco packs are themselves advertisements for the brand<sup>11,12</sup> and the 2009 Health Act prohibited all advertising and display of brands at point of sale in large retail outlets from 2012 and small retailers from 2015.<sup>13</sup> The 2009 Act prohibited tobacco vending machines, which also displayed packs and/or pack images and hence themselves functioned as tobacco advertisements, from 2009. Measures to make tobacco packs less appealing began with the inclusion of written health warnings on packs under a voluntary agreement in 1971, and subsequently by a series of laws increasing the size of the warning, mandating the text used, and from 2009 requiring pictorial warnings on the back of packs (see section 3.2). However, the use of tobacco packs to communicate brand imagery and other characteristics persisted until the 2015 Children and Families Act, which required all tobacco products sold in the UK after May 2017 to be packaged in standardised (or plain) packs; standardised packs must be ‘drab brown’, carry large pictorial and written warnings on the main display areas, and be devoid of branding except for a name and descriptor in standardised fonts.<sup>14</sup>

The cumulative effect of this legislation is that the tobacco promotion landscape in the UK is now radically different from that of 50 years ago, with most manifestations of paid tobacco advertising and promotion prohibited and health warnings mandated by law. However, gaps in UK regulation still exist. Corporate advertising (that is, relating to the tobacco company rather than an individual brand or brands), promotion or sponsorship is still legal and is used to campaign against government anti-smoking policies and to promote tobacco industry business practices as ‘socially responsible’. Internet sales of tobacco are still legal, and UK legislation does not prevent tobacco brands from appearing in UK media if not in the form of advertising or paid product placement. The inclusion of unbranded tobacco smoking or other tobacco imagery in the media, exposure to which is also a cause of smoking uptake among children (see section 5.2), is also unregulated. The explosion of social and other online media over the past decade or so, and the continuing 21st century shift in media consumption to online and on-demand sources, have also generated substantial new opportunities for tobacco product promotion, particularly to young people, that are as yet largely unexplored in tobacco control research, and represent a substantial challenge

for regulators. This chapter reviews the evidence on the relation between exposure to media tobacco imagery and smoking behaviour; the regulatory systems that currently apply to different UK media and the extent to which tobacco imagery appears in them; known loopholes in or exemptions to UK legislation that have been used to promote tobacco products or consumption; and recommendations for how the UK regulatory framework could be further enhanced. The chapter also discusses measures that reduce, or could reduce, the appeal of generic or tobacco imagery through the use of health warnings and dissuasive cigarettes.

## 5.2 Effect of media smoking imagery on smoking behaviour

Evidence on the effect of exposure to smoking and other tobacco imagery in media on smoking uptake among children is derived almost exclusively from studies of children’s exposure to smoking in films. This effect was first declared to be causal in 2008 by the US National Cancer Institute, which concluded in a systematic review that the evidence ‘indicates a causal relationship between exposure to movie smoking depictions and youth smoking initiation’.<sup>16</sup> The World Health Organization reached a similar conclusion in 2009,<sup>17</sup> with updates in 2011 and 2015,<sup>18,19</sup> as did the US surgeon general in 2012.<sup>20</sup> A 2014 US surgeon general report clarified that the crucial determinant of this association was the quantity of tobacco imagery, not the context (for example, whether a character who smokes is a positive or negative role model).<sup>21</sup> Since most tobacco imagery in film is unbranded, this effect is likely to be mediated more by social learning<sup>22</sup> than from exposure to specific tobacco brands.

A systematic review and meta-analysis of eight prospective cohort studies of the relation between exposure to smoking in films and smoking among young people published before May 2015 estimated that children in the highest level of exposure had a prospective risk of smoking initiation of 1.46 (95% confidence interval (CI) 1.23 to 1.73) times higher than that of children in the lowest exposure category.<sup>23</sup> We have updated this systematic review for this report, including studies published up to January 2020, and from a meta-analysis of 11 longitudinal studies (eight of which were included in our earlier review<sup>23</sup> and three of which have been published since)<sup>24–26</sup> have estimated the risk of incident smoking to be increased among young people exposed to high levels of tobacco imagery by a ratio of 1.39 (95% CI 1.21 to 1.60).

Other evidence suggests that the effect of film imagery exposure may be greater among children who are



otherwise at relatively low risk of smoking uptake on the grounds of having low levels of sensation-seeking, rebelliousness and risk-taking,<sup>27,28</sup> and having parents who do not smoke.<sup>27,29</sup> The magnitude of the effect of exposure appears to be related to the level of exposure,<sup>27,28</sup> and may be reduced by showing anti-smoking messages before a film that contains smoking.<sup>30–33</sup>

Although research to date has concentrated on studying the effect of exposure to depictions of smoking in films, which is methodologically simpler to quantify and evaluate exposure to than content in television programming, there are no grounds to suspect that the findings from this research do not also apply to smoking imagery in television programmes or other media. It has been demonstrated that higher levels of television viewing in general are associated with an increased risk of smoking uptake,<sup>34,35</sup> but this association has not yet been studied in relation to the level of specific exposure to tobacco imagery. The evidence also supports the conclusion that, for adolescents, there is no safe level of exposure to on-screen smoking.

## 5.3 Smoking in films

### 5.3.1 The US film industry

For much of the 20th century the global film market was dominated by US film companies, and strong financial ties between the tobacco and film industries dating back to at least 1927<sup>36</sup> resulted in tobacco smoking being endemic in the films they produced. For decades the US film industry was dominated by a small number of studios, and tobacco companies made payments and provided supplies of cigarettes to studios and individual actors to generate branded product placement in films and product testimonials by leading actors<sup>36</sup> (see Fig 5.1 and Fig 5.2 for examples). The sponsoring tobacco company also often paid to advertise films featuring their products, or actors endorsing them.<sup>36</sup>

The figure displays three distinct tobacco advertisements for Lucky Strike cigarettes. The first advertisement on the left features a caricature of Al Jolson and includes a testimonial from him: "I light a Lucky and go light on the sweets. That's how I keep in good shape and always feel peppy." It also contains a testimonial from a doctor: "20,029 physicians have stated that Lucky strikes is less irritating to the throat than other cigarettes. Very likely that is due to the process which removes impurities. This same process, maturing, improving and developing the flavor of the world's finest tobaccos. This means that there is a flavor in Lucky's which is a delightful alternative for the things that make you fat. That's why 'It's Toasted' is your assurance that there's real health in Lucky—they're good for you!" The second advertisement in the middle features a portrait of King Vidor and a testimonial: "While directing 'The Big Parade' I had to show my directions to hundreds of film players through the day and never all about us. And through the entire taking of the picture, I smoked 'Lucky Strikes' which seemed to treat my lungs just right. It is wonderful to find a cigarette that relieves your nerves and at the same time insures you against throat irritation—a condition from which film directors are bound to suffer." The third advertisement on the right features a portrait of Betty Compson and a testimonial: "The smile of someone posing before a camera is sometimes great. A few puffs from a good cigarette is the quickest relief. I always have Lucky's on the set. They make, without the slightest doubt, the best." All three advertisements prominently display a pack of Lucky Strike cigarettes and the slogan "It's toasted" with the subtext "No Throat Irritation—No Cough."

Fig 5.1 Examples of tobacco endorsements by film stars and producers.<sup>36</sup>

© Lum et al 2008



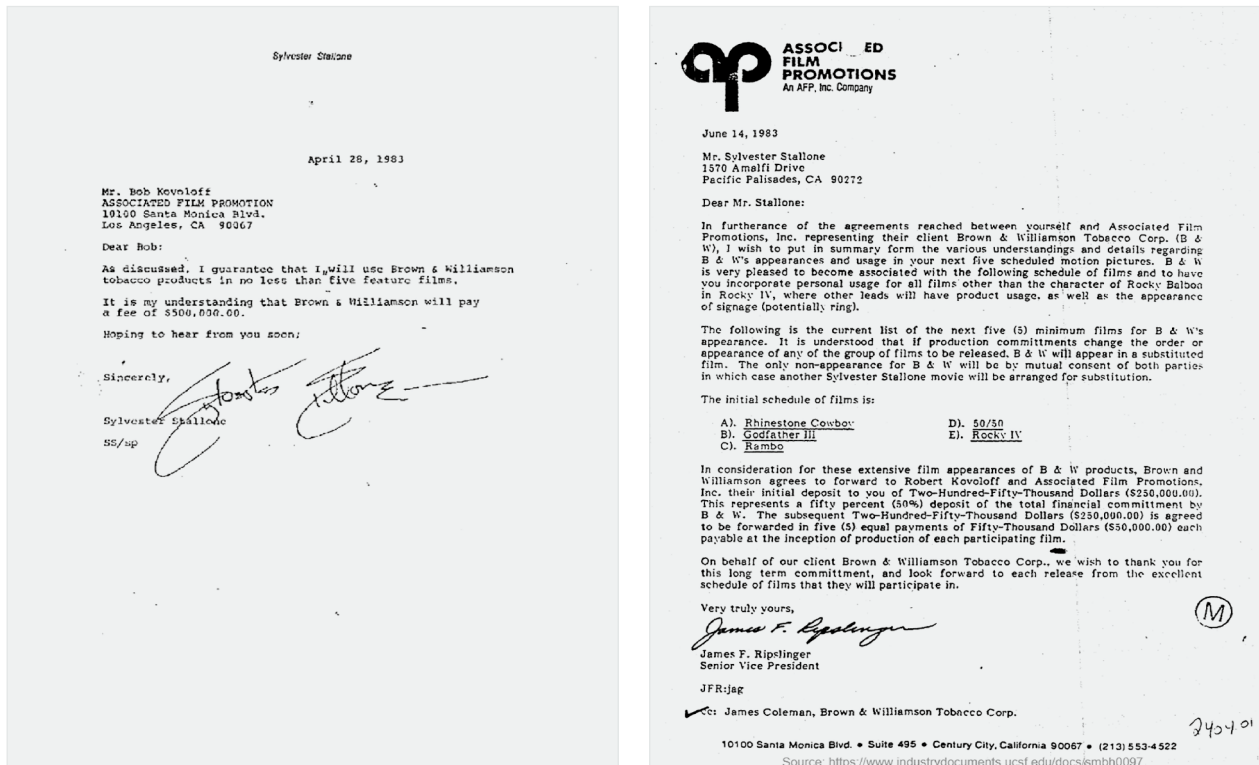
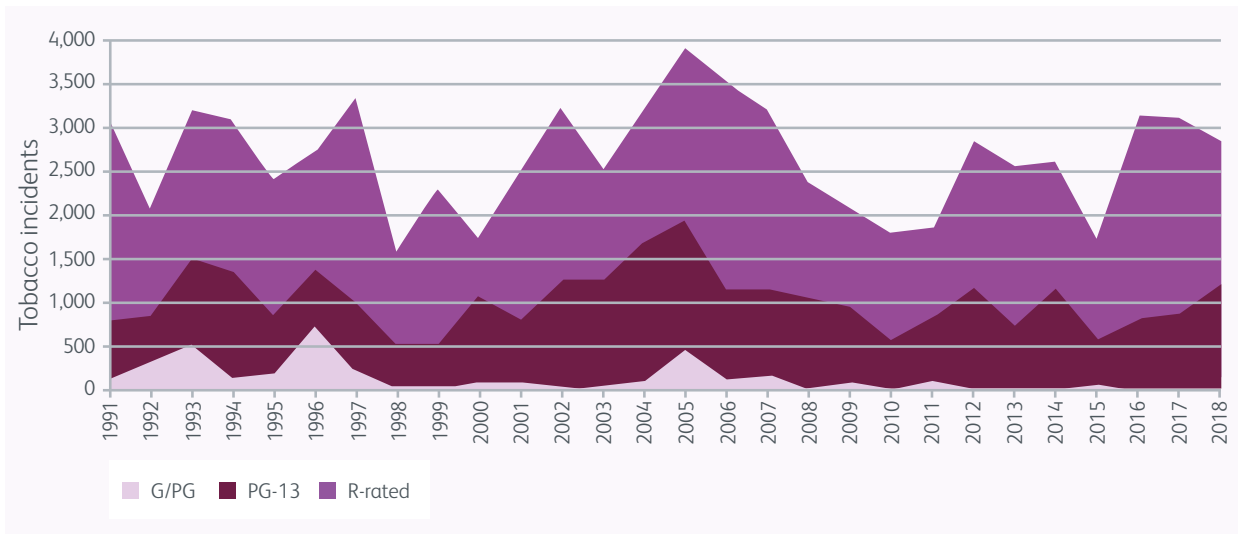


Fig 5.2 Correspondence confirming payment to Sylvester Stallone for tobacco product placement.<sup>37,38</sup>

© Sylvester Stallone, James Ripelinger 1983

Product placement deals continued long after the demise of the Hollywood studio system in the mid-20th century,<sup>39</sup> but for films shown to children should have ended in 1998 when four US tobacco companies (Philip Morris, RJ Reynolds, Brown & Williamson and Lorillard) sharing over 90% of the US market entered into a Master Settlement Agreement (MSA).<sup>40</sup> The MSA specified that no participating manufacturer could make any payment to use, make reference to or use as a prop 'any Tobacco Product, Tobacco Product package, advertisement for a Tobacco Product, or any other item bearing a Brand Name' in films, television shows, theatrical production, videos or video games. The only permitted specified exceptions were if the audience or viewers were in an adult-only facility, the media was not intended for distribution or display to the public or the use was for instructional media concerning non-conventional cigarettes viewed only by smokers who are adults.<sup>40</sup>

Monitoring of tobacco content in US films since 1991 reveals however that the MSA has had little effect on the frequency with which tobacco imagery appears. Data published by the Centers for Disease Control and Prevention documenting the occurrence of incidents of use or implied use of a tobacco product by an actor in all movies among the 10 top-grossing movies in every calendar week of each year demonstrate that while tobacco imagery has become rare in the minority of films rated suitable for viewing by children (those rated General or PG13, see Fig 5.3 legend for details), tobacco content in those rated as suitable for viewing by children aged 13 and over, and those suitable for children aged under 17 if accompanied by a parent or guardian, has fluctuated markedly from year to year but with no clear trend or step change before or after the 1998 Master Settlement Act (Fig 5.3).<sup>41</sup> The adoption of voluntary codes of practice by the six major US film companies that are members of the Motion Picture Association of America (MPAA), the organisation responsible for film age rating, has had a mixed effect: in 2018 there was no tobacco imagery in films rated suitable for children aged under 13 years produced by two film companies (Disney and Viacom), but tobacco appeared in over 35% of equivalent films made by Comcast and Fox.<sup>41</sup>



**Fig 5.3 Tobacco incidents in top-grossing US movies, 1991-2018.<sup>41</sup>**

G = general audience (all ages admitted); PG= parental guidance suggested (some material may not be suitable for children); PG-13 = parents strongly cautioned (some material may be inappropriate for children under 13 years); R = restricted (under 17 years requires accompanying parent or adult guardian)

### 5.3.2 UK films

The UK is home to a successful film industry which has produced some of the highest grossing films of all time. While the 20th century US studio system's financial links with tobacco companies were not widely replicated in the UK, the UK film industry has a history of direct product placement deals with tobacco companies (as for example to include Marlboro branding in the UK-produced 'Superman II', see Fig 5.4 and Fig 5.5) and indirect deals with third party organisations (see Fig 5.6). However, the dominance of the US film industry means that many of the most popular films in the UK are US-made, and therefore that the tobacco content of the most popular films in the UK tends to be a manifestation of US rather than UK policy on the inclusion of tobacco imagery. Data on tobacco content in films popular in the US have been collected for many years and are available online<sup>42</sup> but UK data are far less extensively available. However, interval coding analysis of tobacco use, implied use, tobacco paraphernalia and tobacco branding in the 15 most popular films in the UK each year since 1989 (data from 1989 to 2008 from Lyons *et al*<sup>43</sup> and from 2009 to 2017 by Barker *et al*<sup>44</sup>) reveals a steady decline in tobacco content in the first 3 decades of data, including a markedly lower level of content in 2002 (the year of the Tobacco Advertising and Promotion Act) relative to 2001. There was a marked increase in tobacco content in the years 2011–2014, but levels have since fallen again (Fig 5.7).<sup>44</sup> Between 2009 and 2017, tobacco content occurred in all of the four films in the sample produced solely in the UK, and in 37% of those produced in the US.

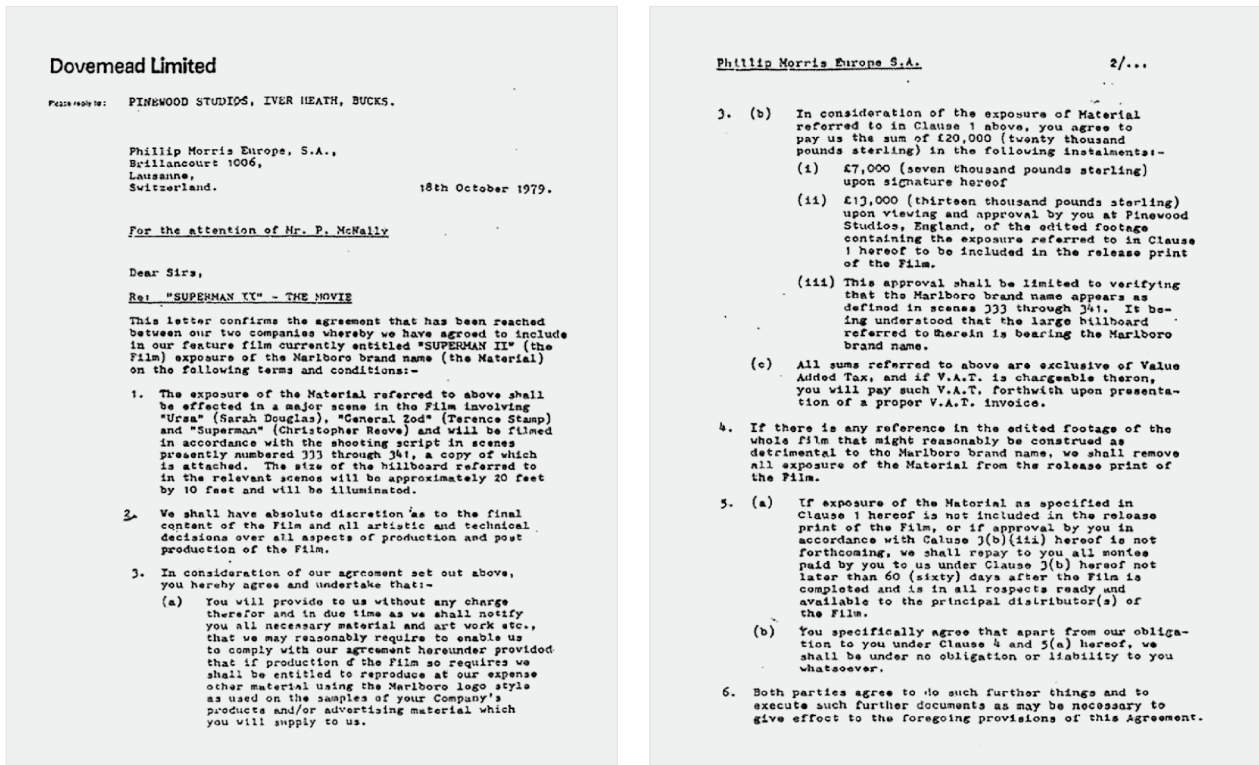


Fig 5.4 1979 agreement to place Marlboro branding in ‘Superman II’.<sup>45</sup>

© Dovehead limited; Philip Morris Europe; Pierre Spengler



Fig 5.5 Example of Marlboro branding in ‘Superman II’.

© Film Company Warner Bros



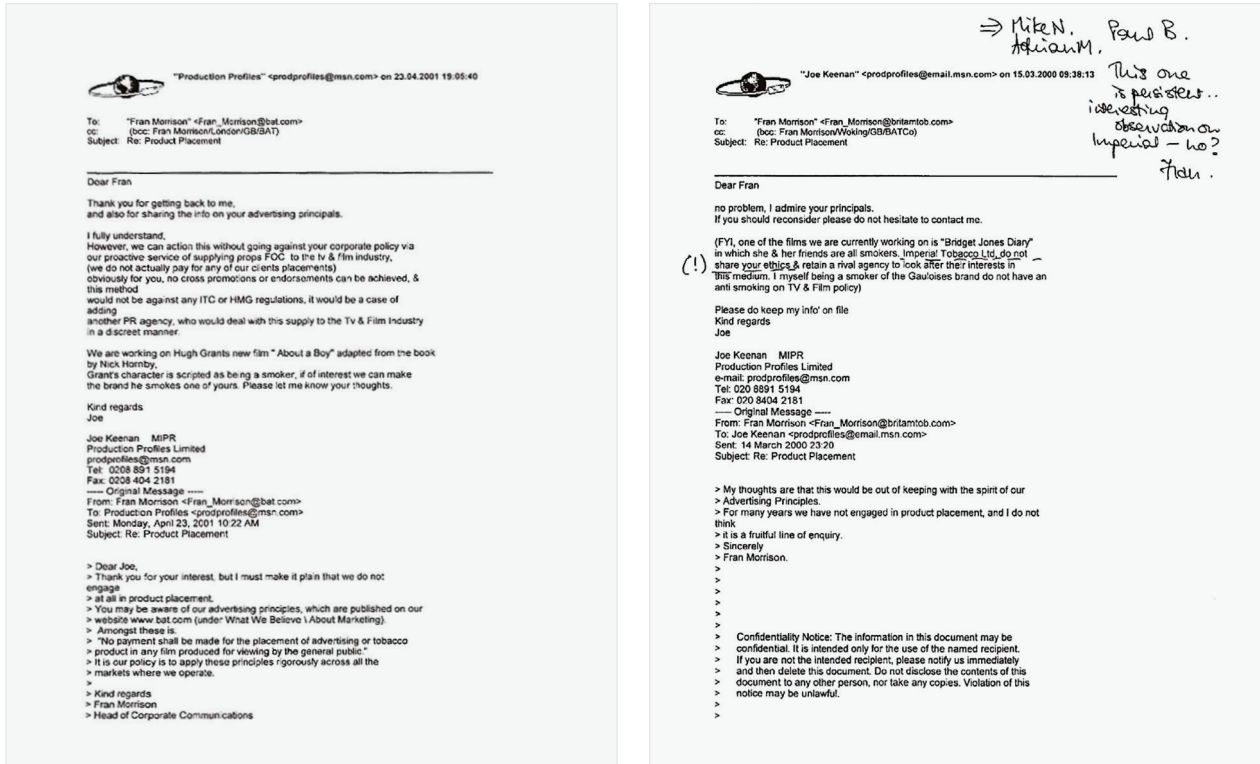


Fig 5.6 Part of e-mail correspondence between Joe Keenan of Production Profiles Limited (a third-party product placement company) and Fran Morrison of British American Tobacco (who rejected the approach) in 2000–2001.<sup>46,47</sup>

© Joe Keenan, Production Profiles Limited

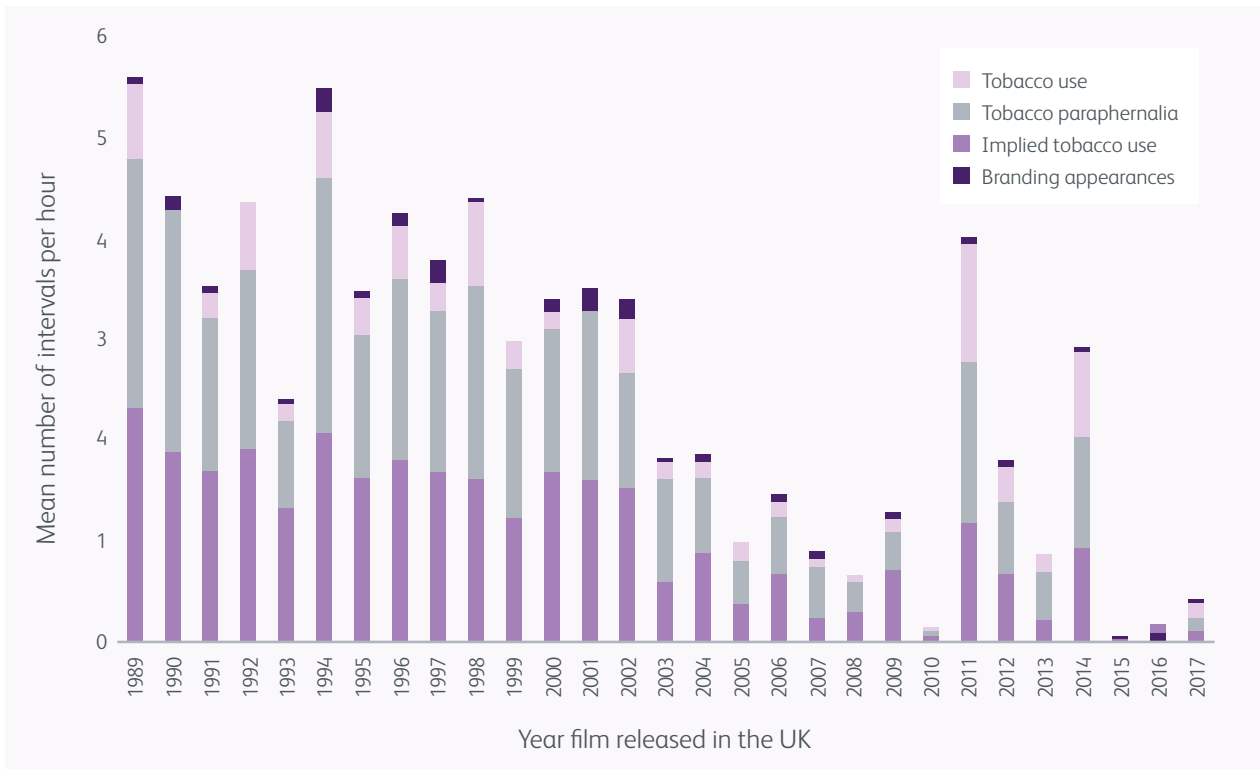


Fig 5.7 Tobacco use, implied use, paraphernalia and branding in the most popular UK films, 1989–2017.<sup>44</sup>

© Barker et al 2020

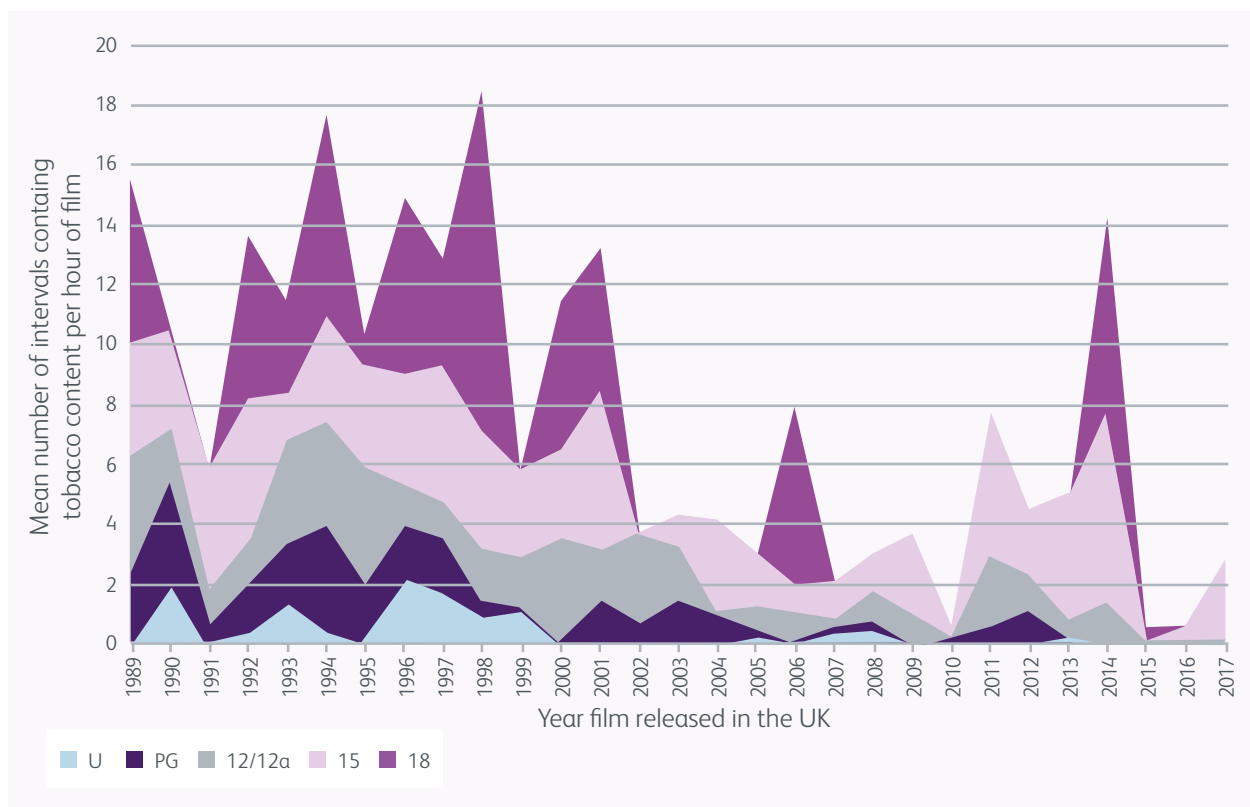
Differences between the US and UK age-rating systems result in UK teenagers being more likely than their US counterparts to be exposed to smoking in films. Table 5.2 compares the age rating categories applied in the USA by the MPAA, and in the UK by the British Board of Film Classification (BBFC) and demonstrates that these rating categories do not map directly onto each other. The practical consequence of this is that many films categorised by the US age-rating system as unsuitable for

unaccompanied teenagers aged below age 17 are rated as suitable for teenagers aged 15 and over in the UK,<sup>48</sup> with similar outcomes also reported in other EU countries.<sup>48</sup> Analysis of tobacco content of popular films by age rating in the UK demonstrates that, in contrast to the US data (Fig 5.3) the majority of tobacco imagery in popular UK films occurs in films rated U, 12a or 15 (Fig 5.8). In the past decade, most tobacco imagery occurred in films rated 15.

**Table 5.2 US and UK film age-rating categories**

US (MPAA) rating	Description	UK (BBFC) rating*	Description
G	All ages admitted	U	Suitable for all ages
PG	Some material may not be suitable for children	PG	Parental guidance
PG-13	Some material may be inappropriate for children under 13	12A	Suitable for 12 years and over
R	Under 17 requires accompanying parent or adult guardian	15	Suitable for 15 years and over
NC-17	No-one 17 and under admitted	18	Suitable only for adults

\*a further category, R-18, applies to adult works shown only in specially licensed premises  
Table adapted with permission from Hanewinkel *et al* 2013



**Fig 5.8 Tobacco content of popular UK films 1989–2017 by BBFC age-rating of film.<sup>44</sup>**

© Barker *et al* 2020

### 5.3.3 Smoking in films from other countries

Although tobacco imagery in films widely seen in the UK is determined predominantly by the content of US and UK-made films, this does not apply in other countries. India has a vibrant film industry responsible for more than one-fifth of global film output<sup>49</sup> and as is the case for the UK and US, smoking imagery is common in these films,<sup>50–53</sup> particularly in those made in local languages.<sup>54</sup> India does however impose remedial measures on films containing tobacco imagery, which include requiring a disclaimer to be shown on screen when tobacco is used (see Fig 5.9 for example) and anti-smoking audio-visual health messages and disclaimers to be shown before and during the film.<sup>55</sup> Compliance with these laws is, however, far from complete.<sup>53,54</sup>



**Fig 5.9** Example of static health warning in India film showing tobacco use.

China and Japan are also among the most productive countries in terms of global film output,<sup>49</sup> but peer-reviewed data on tobacco imagery in films made in these countries are limited. In China however, 26 of the 30 most popular films in 2018 are reported by the China Association on Tobacco Control to include tobacco imagery,<sup>56</sup> while over half of the 10 top-grossing films in Japan in the years 2000–2006 contained smoking scenes.<sup>57</sup>

### 5.3.4 Regulation of smoking content in films shown in the UK

Responsibility for protecting children from exposure to potentially harmful imagery in films shown in UK cinemas lies with local authorities. Cinemas are licensed (in England, under the 2003 Licensing Act) to show films and typically ensure that audiences admitted to film screenings comply with BBFC film ratings. BBFC ratings are however advisory; local authorities can override BBFC ratings if they wish and on rare occasions have done so.

The BBFC (formerly the British Board of Film Censors) has provided age ratings for films shown in the UK for more than a century and is funded to do so by fees paid by film

makers for this service. Detailed BBFC guidance refers to smoking only once, as follows: ‘Where smoking, alcohol abuse or substance misuse feature to a significant extent in works which appeal to children, this will normally be indicated in ratings info.’<sup>58</sup> The guidance goes on to say that classification decisions will also take into account promotion or glamorisation of these activities.<sup>58</sup>

## 5.4 Smoking in UK television and on-demand media

### 5.4.1 Regulation

Unlike films, the inclusion of tobacco imagery in broadcast television in the UK is subject to regulation by the Office of Communications (Ofcom), which requires that ‘material that might seriously impair the physical, mental or moral development of people under eighteen must not be broadcast’.<sup>59</sup> Ofcom further require that broadcasts are scheduled to protect children (defined by Ofcom to be persons aged under 15) from ‘material that is unsuitable for them’<sup>59</sup> by ensuring that such material is broadcast between the hours of 9pm and 5:30am.<sup>59</sup> Specific guidance on tobacco requires that tobacco imagery is not included in programmes ‘made primarily for children unless there is strong editorial justification’; ‘must generally be avoided and in any case must not be condoned, encouraged or glamorised in other programmes broadcast before the watershed unless there is editorial justification’; and ‘must not be condoned, encouraged or glamorised in other programmes likely to be widely seen, heard or accessed by under-eighteens unless there is editorial justification’.<sup>59</sup>

However, viewing patterns are changing rapidly in the UK with video on-demand services, which include broadcast ‘catch-up’ services such as BBC iPlayer, ITV hub and More4, and subscription services such as Netflix and Amazon Prime Video, rapidly becoming the most popular means of consuming broadcast material.<sup>60</sup> Ofcom regulation extends to all on-demand services based in the UK, which comprise the on-demand services of the BBC, ITV and other UK broadcasters, and Amazon Prime Video, but not to services based outside the UK, such as Netflix. The Ofcom code indicates that tobacco imagery should be avoided in on-demand services ‘likely to be accessed by children’.<sup>59</sup>

### 5.4.2 UK broadcast television

An analysis of tobacco imagery in a sample of UK prime time (6pm to 10pm) television broadcasts from 2015 identified tobacco imagery in around one in three broadcast programmes, occurring particularly in animated films, comedies and drama.<sup>61</sup> While most of this imagery occurred after the 9pm watershed, consistent with Ofcom



guidance, and some arose from news items or other factual content, smoking imagery occurred in one-third or more of soap operas, films, chat shows, comedies, dramas and animated programmes shown before the watershed,<sup>61</sup> indicating that neither programme makers nor Ofcom consider smoking imagery to represent a threat to the 'physical, mental or moral development of people under eighteen'.<sup>59</sup> These findings were not appreciably different from those of a similar analysis of television broadcasts in 2010.<sup>62</sup> Films were a common source of imagery in both studies, with actual tobacco use occurring in 59% of prime time films in the 2010 data, and 36% in the 2015 data. Soap operas were also found to be a significant source of tobacco imagery. A content analysis of soap operas broadcast on UK TV before the 9pm watershed ('Eastenders', 'Coronation Street', 'Emmerdale', 'Hollyoaks', 'Neighbours', and 'Home and Away') in the winter of 2018–2019 found that tobacco content (other than no-smoking signs) occurred in 10% of episodes, generating substantial population exposure comprising approximately 70 million tobacco impressions to the UK population, including over 4 million to children.<sup>63</sup>

However, setting aside the fact that television programmes broadcast after 9pm in the interest of protecting children from harmful content can easily be accessed by children via broadcast video on-demand services, the 9pm watershed provides little if any real protection for children old enough to stay awake until after 9pm. The third series of the UK reality television show 'Love Island', which was broadcast at 9pm on 42 successive days in June and July 2017, included tobacco imagery in one in every five broadcast minutes, and consistently featured consumption of an identifiable brand of cigarette (Lucky Strike Double Click).<sup>64</sup> The programme maker (Independent Television, or ITV) described the series as a 'massive success with young audiences, regularly capturing a 56% share of 16–34 viewers' and stated that it was 'full of flirting, jealousy, rejection and romance ... an emotional feast of lust and passion in the sun', thus accepting that the programme is glamorous and seen by younger viewers<sup>64</sup> and thus contravenes the Ofcom Broadcasting Code.<sup>59</sup> The full programme series generated massive audience exposure to tobacco imagery, with a likely total of one billion tobacco impressions delivered to UK audiences, including over 90 million to children aged under 16.<sup>64</sup> These figures do not include on-demand viewing, or impressions delivered by the companion show 'Love Island Aftersun', a weekly review showing highlights from daily broadcasts. Despite the removal of smoking from subsequent series of Love Island, reality TV shows remain a concerning source of tobacco imagery to children and young people. A subsequent

analysis of reality TV programmes broadcast in the UK in the first half of 2018 found that tobacco content occurred in 18% of 112 episodes across 5 programmes ('Celebrity Big Brother', 'Made in Chelsea', 'The Only Way is Essex', 'Geordie Shore' and 'Love Island'), delivering approximately 214 million tobacco impressions to the UK population, including 47 million to children aged under 16.<sup>65</sup>

### 5.4.3 UK video on-demand services

Viewing habits are changing. All of the UK mainstream broadcast channels (BBC1, BBC2, ITV, Channel 4 and Channel 5) now offer online 'catch-up' or on-demand services that allow most programmes to be watched at any time during a period of typically 4 weeks, but sometimes longer, after broadcast. Providers such as Netflix and Amazon Prime Video do not broadcast to a set timetable but simply allow users to watch whatever they choose at any time of day. These video-on-demand services are becoming increasingly popular.<sup>66</sup> Analysis of a sample of five episodes of each of the five highest rated original programme series on Amazon Prime Video and Netflix identified tobacco imagery, most of which was cigarette smoking, in over 70% of episodes.<sup>67</sup> There was no difference between the two services in terms of tobacco content, but the overall content level was higher than that of UK broadcast television programming.<sup>67</sup> Higher levels of tobacco imagery in Netflix than in broadcast and cable television programmes have also been demonstrated in a study of programming in the USA.<sup>68</sup> Video on-demand services have also recently started creating and distributing original films. A content analysis of 22 original movies from Netflix and Amazon Prime Video (11 for each service) released in 2017, carried out for this report, found that tobacco content occurred in 9% of 5-minute intervals across 50% of films overall, with significantly higher tobacco content present in Amazon Prime Video original films.<sup>69</sup>

### 5.4.4 Smoking in other visual media

Smoking imagery is prevalent in a range of other media consumed by children and young adults in the UK, including music videos,<sup>70</sup> video games<sup>71</sup> and magazines aimed at young women.<sup>72</sup> These findings reflect those of studies outside the UK documenting a high prevalence of smoking (and possible product placement) in popular US hip-hop videos,<sup>73</sup> and of an earlier systematic review of smoking in popular video games.<sup>74</sup> The tobacco content in YouTube music videos reaches substantial audiences in the UK, particularly among adolescents.<sup>75</sup> A brief (unpublished) content analysis of the UK top 40 music videos over a 3-month period in 2019, carried out for this report, found that tobacco content occurred in 36% of

videos, a significant increase relative to the 14% in the 2014 analysis.<sup>70</sup>

Music videos hosted by YouTube are not subject to BBFC or Ofcom oversight, and YouTube guidance on harmful or dangerous content does not mention tobacco or smoking.<sup>76</sup> Video games are regulated in the UK by the Video Standards Council, which provides age ratings for games in a system akin to BBFC age rating of films.<sup>77</sup> Games that are deemed to encourage tobacco use, or include advertising encouraging the use of tobacco, are rated as suitable for age 16 and over.<sup>77</sup> Almost all of the popular games that included smoking in a UK study were rated 18.<sup>71</sup> Other than paid-for advertising or product placement, editorial references to tobacco or smoking in magazine content are unregulated in the UK.

#### 5.4.5 Smoking in social media

The media environment available for advertising and promotion has been transformed over the past 2 decades by the rise of social media sites such as Facebook (established in 2004), YouTube (2005), Twitter (2006), Tumblr (2007), a range of messenger services, and more recently by Instagram (2010), Pinterest (2010), Snapchat (2011), TikTok (2017) and others. Social media sites allow users to share content and communicate in online groups and networks, and are used widely across the entire adult population but particularly by younger adults.<sup>78</sup> Social media use is extremely and increasingly common among children, with half of all 10-year olds in the UK in 2019 owning a smartphone and 90% of 5- to 15-year-olds using a smartphone, tablet or computer to access online material.<sup>79</sup> Ofcom estimate that almost half of 12- to 15-year-olds and more than one-third of 8- to 11-year-olds watch online vloggers or influencers and hence are exposed to the products they promote, and that increasingly these are local rather than national or international figures.<sup>79</sup> There is evidence that exposure to tobacco content in social media is associated with an increased risk of smoking uptake<sup>80,81</sup> and clear evidence from outside the UK that tobacco imagery is prevalent on some social media sites,<sup>82–84</sup> including some media co-creation,<sup>85</sup> but data on exposure and the effects of exposure to tobacco imagery in social media in the UK are sparse.

A UK study that measured tobacco imagery in popular YouTube music videos found that tobacco appeared in 22% of all videos, with specific tobacco branding appearing in 4% – Marlboro being the most frequently appearing brand.<sup>70</sup> A separate UK study that estimated exposure to tobacco content in popular YouTube music videos found that an estimated 203 million impressions of tobacco use were delivered to the British population.

Adolescents were exposed to an average of 10.5 tobacco impressions per capita and adults to an average of 2.9 tobacco impressions per capita.<sup>75</sup>

Direct and highly overt online advertising for cigarettes is fairly well captured under current tobacco advertising promotion and sponsorship regulations and online search engine policies. Covert depictions, promotions that cross international borders, exploitation of advertising definition loopholes, and unregulated promotion of both cigarettes and e-cigarettes occurs outside of easily recognisable online banner and video advertisements.<sup>86</sup> For example, in 2018 the US based *Campaign for Tobacco-Free Kids*, found that tobacco companies were advertising cigarettes on social media by paying social media influencers – popular accounts with large online followings – to post images of cigarettes and smoking. The influencers were paid to promote cigarettes online to millions of followers without disclosing a connection to multi-national tobacco companies.<sup>87</sup> In 2019, the UK's Advertising Standards Authority (ASA) ruled that British American Tobacco (BAT) must stop using any public Instagram account to promote e-cigarettes in the UK, including advertisements for Vype, a BAT vaping product.<sup>88</sup>

Regulating the content accessed by all social media users to prevent harm is extremely challenging,<sup>89</sup> and in February 2020 the UK government announced plans to give Ofcom responsibility for regulating online content.<sup>90,91</sup> However, the priority likely to be given to the regulation of tobacco content, in relation to a wide range of other potentially harmful content, is unknown. In 2018, recognising the global challenge of regulating online tobacco promotions, the WHO Framework Convention on Tobacco Control, Conference of the Parties (COP8) established a working group to develop guidelines to address cross-border tobacco promotions and the depiction of tobacco in the entertainment media.<sup>92</sup>

#### 5.5 Alibi marketing

Alibi marketing is a technique used to circumvent advertising restrictions by substituting conventional trademarks or logos with a visual image that the consumer recognises and associates with the brand but is not, either overtly or else on closer inspection, a brand trademark or logo. In the early 2000s, as restrictions on tobacco advertising in Europe and other parts of the world became more stringent, alibis were widely used by tobacco companies sponsoring Formula 1 racing teams, but the practice should have ended, along with all Formula 1 team sponsorship, with the implementation of the EU Tobacco Advertising Directive in 2005.<sup>93</sup>

One company – Philip Morris International – has however maintained its sponsorship of the Scuderia Ferrari team for more than 20 years, at an estimated annual cost of 75 million US dollars in 2019.<sup>94</sup> Although conventional Marlboro logos were removed from Ferrari Formula 1 cars in 2007, the company replaced this traditional Marlboro branding with a barcode design which, from a distance, resembled but was not a Marlboro logo.<sup>95</sup> In response to complaints and adverse media coverage, the alibi barcodes were withdrawn in 2010 but Philip Morris International sponsorship of the team continued. For the Japanese Grand Prix race in October 2018 and in partnership with Philip Morris International, Scuderia Ferrari launched a new ‘Mission Winnow’ livery, featuring the capital letters

M and W in a design reminiscent of Marlboro branding<sup>96</sup> (see Fig 5.10). A version of the livery is also being used on Ducati racing motorcycles, again as a result of Philip Morris International sponsorship.<sup>97</sup> At the time of writing in January 2021 the Mission Winnow logo is the highest placed on the array of corporate partners listed on the Scuderia Ferrari website, and links directly to a page naming Philip Morris International as a ‘title partner’ of the team.<sup>98</sup> Mission Winnow is registered as a tobacco trademark.<sup>94</sup> BAT has also renewed Formula 1 sponsorship of the McLaren team, promoting what is overtly a mission statement (‘A better tomorrow’), which like Mission Winnow is linked to the concept of technological development and new generation tobacco products but is not registered as a tobacco trademark.<sup>94</sup>



Fig 5.10 Scuderia Ferrari Mission Winnow livery announced October 2018.<sup>96</sup>

Mission Winnow is described by Philip Morris as a project developing and testing less harmful alternatives to smoking<sup>99</sup> but the similarity of the livery to Marlboro branding suggests that it is another example of alibi marketing. Although not used in the 2019 British Grand Prix race, the livery has been used in races elsewhere in the world, with imagery from those races freely available on terrestrial television and online. An analysis of Formula One races in the 2018 series broadcast on UK television demonstrated that Mission Winnow imagery occurred frequently after being introduced late in the season when only five more races remained, and even having been present for only part of the season generated an estimated

438 million (95% CI 395 to 481) one-second interval gross impressions to the UK population, including 14 million (95% CI 10.81 to 17.49) to children.<sup>100</sup>

## 5.6 Smoking and the arts

UK law prohibiting sponsorship relates specifically to that intended to promote a tobacco product,<sup>9</sup> and as a result the tobacco industry can continue to promote itself by acting as corporate sponsors. For example, the industry funds some arts organisations, either directly through sponsorship deals or indirectly through corporate memberships and support. These arrangements allow the industry to buy respectability, present themselves as

good corporate citizens, allow their staff to feel that they are part of an organisation that is giving something back to society, and gain access to or initiate exclusive events enabling contact with decision makers and opinion leaders in wider society. The tobacco industry also uses arts and related events as an opportunity to entertain politicians by providing complimentary tickets to events such as opera at Glyndebourne and the Chelsea Flower Show. Recipients of such hospitality have been shown to be more likely to vote against tobacco control legislation such as standardised packaging and the ban on smoking in cars with children present.<sup>101</sup>

The SmokeFreeArts campaign ([www.smokefreearts.wordpress.com](http://www.smokefreearts.wordpress.com)) was established in 2016 in response to the Royal Academy accepting Japan Tobacco International (JTI) as a premier sponsor for its exhibitions. Other organisations accepting sponsorship at the time included the Southbank Centre, the London Philharmonic Orchestra

and the British Museum. The campaign highlighted the fact that tobacco money was mixing with money from other sponsors with strong anti-tobacco positions such as Bloomberg, and that the reputational risk for organisations from accepting tobacco industry funding might jeopardise support from other sources. Following the campaign, which included a letter signed by more than 1,000 healthcare professionals,<sup>102</sup> JTI's exhibition sponsorship arrangement with the Royal Academy was not renewed, though JTI remains a corporate member. The Southbank Centre decided to 'terminate its low level corporate membership contract with JTI early and will not be partnering with tobacco companies in the future'. Other organisations that no longer have such arrangements include the National Theatre and the London Symphony Orchestra. Table 5.3 summarises UK arts organisations with continued tobacco sponsorship, as of December 2019:

**Table 5.3 UK arts organisations accepting tobacco sponsorship according to online sources in December 2019. (Glyndebourne lists corporate sponsorships only in annual reports: most recent 2018)**

Institution	Sponsoring tobacco company	Source
Royal Academy of Arts	JTI premier member BAT associate member	<a href="http://www.royalacademy.org.uk/corporate-support">www.royalacademy.org.uk/corporate-support</a>
London Philharmonic Orchestra	JTI principal partner	<a href="http://www.lpo.org.uk/support/thank-you.html">www.lpo.org.uk/support/thank-you.html</a>
British Museum	JTI corporate supporter	<a href="http://www.britishmuseum.org/support-us/corporate-support/current-corporate-supporters">www.britishmuseum.org/support-us/corporate-support/current-corporate-supporters</a>
Royal Opera House	BAT corporate patron	<a href="http://www.roh.org.uk/support/royal-opera-house-philanthropists-and-sponsors">www.roh.org.uk/support/royal-opera-house-philanthropists-and-sponsors</a>
Glyndebourne (2018 annual report)	JTI corporate supporter	<a href="https://s3-eu-west-1.amazonaws.com/glyndebourne-prod-assets/wp-content/uploads/2019/06/20144115/GLY-Annual-Report-2018_web1906-1.pdf">https://s3-eu-west-1.amazonaws.com/glyndebourne-prod-assets/wp-content/uploads/2019/06/20144115/GLY-Annual-Report-2018_web1906-1.pdf</a>

## 5.7 Point-of-sale advertising

Tobacco products are sold in the UK from a range of bricks-and-mortar and online retailers, but predominantly from small convenience stores and supermarkets, with small retailers taking over half of sales.<sup>103</sup> Until the 2002 Tobacco Advertising and Promotion Act<sup>9</sup> advertising inside and outside these retailers was unrestricted, and tobacco companies frequently provided signage and other display materials to retailers (see Fig 5.11 for example). These practices ended with regulations supporting the 2002 Act introduced in 2004 which limited advertising at the point of sale to a single advertisement no larger than an A5 sheet of paper, of which 30% should be a health warning.<sup>104</sup>

Exemptions were granted for advertising carried out within the tobacco trade and for 'specialist' tobacconists, which were defined as retailers for whom tobacco takings represent more than half of annual turnover.





Fig 5.11 Benson and Hedges retail signage and Embassy window advertising in small retailer, c. 1990.

The 2002 Act and associated regulations did not however restrict the display of packs of cigarettes for sale, which resulted in the use of cigarette packs, and their amalgamation in display gantries which were often provided and managed by tobacco companies, as an advertisement in their own right<sup>105</sup> (Fig 5.12). Aside from communicating brands and prices to established smokers, point-of-sale displays have been shown to prompt impulse purchases by smokers trying to quit or who have quit, and

also attract young people at risk of smoking initiation.<sup>105,106</sup> Tobacco point-of-sale displays also appeared in, and hence advertised, tobacco in television programmes such as the soap opera 'Coronation Street' (Fig 5.13). Point-of-sale displays also enable marketing by price. A study of small retailers in Nottingham in 2010 found that 40% of cigarette and hand rolling tobacco products on display carried a promotional price mark.<sup>107</sup>



Fig 5.12 Examples of point-of-sale displays in small and large retailers. (left image Nottingham 2010,<sup>107</sup> right image c. 2008)<sup>108</sup>

Left image © Spanopoulos et al 2012. Right image used with permission from Action on Smoking and Health (ASH)





**Fig 5.13 Tobacco point-of-sale displays in the prime time television soap opera ‘Coronation Street’ (broadcast in 2010).<sup>62</sup>**

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This new prominence of point-of-sale displays as a means of tobacco advertising and promotion ended with the 2009 Health Act, which required tobacco products to be hidden from view in large retailers (defined as stores with a floor area greater than 280 m<sup>2</sup>) from 2012, and in all other retailers from 2015 (Fig 5.14).<sup>13</sup> The new legislation also ended the allowance of a single A5 advertisement at point of sale, restricted any permanent display of prices

to an A3 sheet carrying only brand names and prices in standard Helvetica font, and removed the exemption allowing specialist tobacconists to display cigarette or hand rolling tobacco advertising.<sup>13</sup> Under this legislation, tobacco products and their prices, or price lists carrying pictures of tobacco products, can only be shown to customers requesting to purchase tobacco and after age verification.<sup>13</sup>



**Fig 5.14 Examples of tobacco retail gantries in large (left) and small (right) retailers after implementation of point-of-sale legislation in 2012 and 2015, respectively.**

Advertising and promotion of tobacco at the point of sale is thus now significantly restricted in the UK. Compliance with the new legislation has been high from the outset,<sup>109</sup> and appears to have resulted in a reduction in brand recognition and susceptibility to smoking among young people in the UK,<sup>110,111</sup> as has been reported elsewhere in the world.<sup>111–113</sup> However, tobacco promotion at the point of sale through other means, such as verbal recommendations by shopkeepers, probably continues.<sup>114</sup> Tobacco products continue to be freely displayed, without age verification,

by online retailers including leading UK supermarkets (Fig 5.15). There is also a concern that the salience of tobacco product cabinets in stores means that the availability of tobacco remains highly visible, particularly in areas of deprivation where tobacco retailers are more prevalent.<sup>115</sup> Point-of-sale legislation also continues to exclude tobacco-related products such as cigarette lighters and paper for hand rolling tobacco, creating an opportunity to promote smoking by displaying these products.



Fig 5.15 Example of online purchase platform of a major UK supermarket (as of 30 April 2021).

## 5.8 Standardised tobacco packaging

Tobacco packaging has been used by the tobacco industry for decades to promote brand names and imagery, appeal to young people through novelty designs and flavours, distract attention from health warnings, and to build and sustain brand equities that help recruit new and sustain brand loyalty among established customers.<sup>11,116–120</sup> Through these mechanisms, cigarette pack branding and design also advertise the product wherever packs are visible, for example in film, television and other media (see sections 5.3 and 5.4). Branding is also crucial to the market segmentation and pricing models used by the tobacco industry to maximise profits,<sup>121</sup> and in particular the use of higher profit margins on premium products to absorb and hence reduce the effect of tax increases on the affordability of brands in the lower end of the tobacco price spectrum, which tend to be favoured by the most price-sensitive smokers<sup>122</sup> (see chapter 7).

In 2015 the UK parliament passed new packaging regulations which introduced standardised ('plain') tobacco packaging in the UK.<sup>123</sup> The main objectives of the legislation were to reduce smoking appeal and uptake among young people, encourage cessation and reduce the risk of relapse after quitting. Alongside a range of measures including minimum pack sizes for cigarettes and hand rolling tobacco (20 cigarettes and 30 g, respectively) and larger, updated pictorial health warnings required by the 2014 EU Tobacco Products Directive,<sup>124</sup> the legislation also included a requirement that all tobacco products released by manufacturers for sale in the UK after 20 May 2016, and all tobacco products sold in the UK after 20 May 2017, were

packaged in dull green standardised packs with the brand name and up to one descriptor presented in a standard font and no superimposed imagery (such as price marks) on the wrappers.<sup>123</sup> During this 1-year implementation period both conventional and standardised packs were thus allowed to be sold in the UK, and the first standardised packs did not appear on the market for several months.<sup>125</sup> However, by the end of May 2017 almost all licit UK tobacco products were sold in plain packs.<sup>125</sup>

Australia was the first country in the world to introduce standardised packaging, doing so in December 2012, and followed in 2017 by the UK and France, in 2018 by New Zealand, Ireland and Norway, and subsequently by many more countries.<sup>126,127</sup> In Australia, the introduction of standardised packaging was associated with: an increase among smokers in the perception of packs as less appealing and the products as less satisfying and of lower quality;<sup>128</sup> increased quitting;<sup>129</sup> an increase in prices paid for tobacco products;<sup>130</sup> and increased use of 'value' (low price) brands.<sup>130</sup>

During the period preceding the introduction of standardised packs in the UK, the tobacco industry introduced several new low price products and product variants, often in packs of less than 20 cigarettes which enabled sale at prices just below perceptual price points, for example £5.99 for 19 instead of £6.30 for 20.<sup>125</sup> The transition over the year from May 2016 to May 2017 to plain packs of at least 20 cigarettes, in conjunction with the introduction of a minimum excise duty in May 2017, was associated with a significant increase in cigarette prices across the spectrum of cigarette brands; a sustained secular decline in cigarette sales;<sup>125,131,12</sup> and switching

by smokers from more to less expensive brands of cigarette.<sup>133</sup> There was an increase in sales of hand rolling tobacco during the transition period, the price of which rose proportionately more than that of manufactured cigarettes but remained less expensive per cigarette than manufactured cigarettes.<sup>134</sup> There was also evidence of switching from tobacco to e-cigarettes.<sup>133</sup> The introduction of plain packaging in the UK has resulted in a marked increase in the proportion of smokers who notice the health warning, and a decrease in the appeal of packs to smokers,<sup>135,136</sup> with similar results reported from New Zealand.<sup>137</sup> In France, plain packaging and larger health warnings have resulted in an increasing perception that smoking is harmful, but without evidence of switching to e-cigarettes.<sup>138</sup>

The tobacco industry responded to legislative requirements by changing brand names and using innovative packaging designs<sup>139</sup> and although young people generally reported that they found standardised packs unappealing, some innovative designs and brand names were perceived positively.<sup>140</sup> This suggests that continued vigilance and further legislative or regulatory measures may be required to combat efforts by the industry to undermine the impact of standardised packs legislation.

Since standardised packaging has been introduced only recently in other countries, evidence on the effects of this remains sparse. There are, however, some marked differences in the standardised packaging regulations between countries<sup>141</sup> and future research may be able to discern the relative importance of allowing residual freedoms in pack structure, the use of brand descriptors, and other aspects of pack design.<sup>141</sup> The effect of the exemption for cigarette papers, which allows products such as Rizla to be advertised on point-of-sale gantries and to act as a possible alibi for smoking (leading the UK Advertising Standards Authority to recently withdraw a Rizla advert)<sup>142</sup> also needs to be explored.

## 5.9 Pack inserts

Tobacco companies have used cigarette cards, coupons and inserts to promote their brands since the late 19th century.<sup>143</sup> In the UK, cigarette cards were common in the early 20th century and continued to be used sporadically until 2003 when they, and coupons, were banned under the 2002 Tobacco Advertising and Promotion Act. Advertising inserts were used in packs until 2016<sup>144</sup> when they were prohibited alongside the introduction of plain packaging. In January 2019, Philip Morris International ran adverts in newspapers in the UK explaining that their new year's resolution was 'to stop selling cigarettes in the UK',<sup>145</sup> and

that to help meet this goal they would seek approval from the UK government to include inserts with information on quitting and alternatives to smoking inside their packs. One of their objectives was to use these inserts to promote their heated tobacco product IQOS, as they have been doing in European countries which still permit the inclusion of promotional inserts in packs (see Fig 5.16).



Fig 5.16 Examples of European pack inserts promoting IQOS.

While pack inserts are an inexpensive tool for tobacco companies to promote their products, they also offer policy makers the opportunity to promote healthier choices. From 2000, tobacco companies in Canada have been required to include messages encouraging cessation or providing information about the harms of smoking, either via inserts or on the pack interior, to complement the on-pack health warnings.<sup>146</sup> In 2012 these messages were updated, with eight new messages aimed at promoting self-efficacy or response-efficacy, and the inserts featuring coloured graphics rather than just text (Fig 5.17).

A longitudinal evaluation of the 2012 inserts indicates that they were read by over one in four smokers, particularly those intending to quit or having recently tried to quit, and that smokers who read the inserts relatively frequently were more likely to make a quit attempt.<sup>147</sup> Reading inserts significantly increased across waves of the study, with more frequent reading of inserts associated with quit attempts and sustained quitting at follow-up.<sup>148</sup> In a focus group study with smokers in Scotland, the Canadian inserts were viewed favourably, with the positive messaging considered encouraging and informative, and a supplement to the on-pack warnings. The inserts were thought to help smokers think about or question their smoking behaviour or encourage them to stop.<sup>149</sup> In an online survey of young UK adult smokers asked about pack inserts (with an image of an insert used in Canada shown for each question), a majority indicated that they supported the inclusion of



inserts and considered them to be a good way to provide information about quitting, encourage quitting, and help if they decided to quit.<sup>143</sup> The evidence indicates that pack inserts could be used more extensively to encourage cessation.

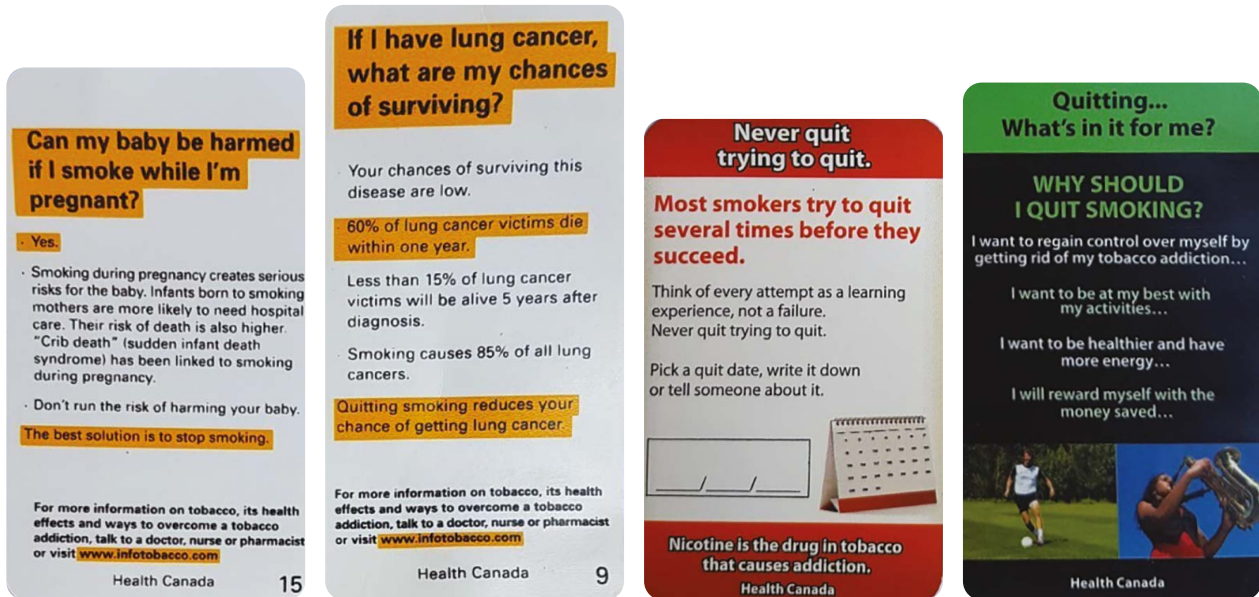


Fig 5.17 Examples of text inserts of the type required in Canada from 2000 (left) and of graphic inserts required from 2012 (right).

## 5.10 Flavours and flavour capsules

Cigarettes and other tobacco products can also be promoted through product innovations. An example is the introduction of capsules in the cigarette filter that can be burst, by firmly pressing the filter, to change the flavour. Capsule cigarettes were introduced in the UK in 2011 using a range of appealing descriptors, such as 'Crushball', 'Choice', 'Click & Roll', 'Click on' and 'Fresh Burst'. There can be as many as three different flavour capsules in the filter, and up to five different flavours in packs of capsule cigarettes, with mint, fruit and beverage flavours the most commonly used.<sup>150</sup> Capsule cigarettes have experienced remarkable global growth and by 2017 had captured one-third of the entire tobacco market in several Latin American countries.<sup>150</sup> The products are highly appealing to young people,<sup>151,152</sup> with key drivers of use being taste, flavour choice, interactivity, pack design, and perceived reduced harm.<sup>152–155</sup> The sale of flavoured cigarettes (including capsules) and hand rolling tobacco has been prohibited in the UK since May 2020.<sup>156</sup> The legislation does not however include other tobacco products such as cigars or cigarillos. Neither does it extend to innovations that can be used to flavour cigarettes, such as flavour sprays or flavour cards (for example, Rizla Flavour Infusions) which are inserted into the pack to flavour the tobacco product.

## 5.11 Dissuasive cigarettes

Individual cigarettes have been used as a marketing medium for many years.<sup>157,158</sup> With a growing number of countries having implemented standardised packaging (15 as of January 2021) and most countries requiring large pictorial warnings on packs, thus diminishing the ability of the pack to create appeal, the cigarette stick has become a key promotional tool for tobacco companies. However, the cigarette stick also offers governments opportunities to discourage smoking. Several concepts of what are often referred to as 'dissuasive cigarettes' have emerged, including cigarettes with a text warning<sup>159–162</sup> or a text warning and symbol (such as a skull and crossbones) on the cigarette paper,<sup>163,164</sup> cigarettes with the minutes of life lost due to smoking down the length of the cigarette paper,<sup>165,166</sup> and unattractively coloured cigarettes.<sup>116,167,168</sup> A warning on each cigarette stick, for instance 'Smoking kills' (see Fig 5.18), has been found to reduce appeal, increase perceptions of harm, and is thought to help deter smoking.<sup>160,169</sup> Similarly, cigarette colour can be manipulated to reduce appeal, with certain colours (dark green, brown, grey) viewed particularly unfavourably, and thought to reduce social acceptability and make smoking appear dirty.<sup>168</sup> Dissuasive cigarettes would also make the image of single cigarettes in the media less attractive.

While no country has implemented dissuasive cigarettes, the measure is being considered by the Canadian, Scottish and UK governments.



**Fig 5.18** Example of ‘dissuasive’ cigarettes.

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# 6 Public space smoking restrictions

## Key points

- Smoke-free policies reduce exposure to tobacco smoke, generate significant health benefits and are supported by the general public.
- There is increasing interest in extending smoke-free policies to unenclosed outdoor areas used by children, such as playgrounds and parks, to reduce exposure to smoking role models.
- Extensions to smoke-free policy generally enjoy strong public support.
- NHS policy and NICE guidance requires outdoor areas of health facilities, particularly hospitals, to be smoke-free but implementation is poor.
- Failure to deliver smoke-free NHS grounds reflects failure to remove smoking shelters and failure to provide adequate cessation services for patients who smoke. This is especially true in mental health settings.
- This has led the Welsh government to introduce, and the Scottish government to consult on, legislation prohibiting smoking in hospital grounds.
- Smoking in the home remains a major source of involuntary exposure to tobacco smoke, particularly in disadvantaged households.
- Electronic cigarettes do not emit smoke and their use in public places does not fall within the remit of smoke-free legislation.

## Recommendations

- Legislation prohibiting smoking in hospital grounds is adopted in England, thus aligning with laws adopted by the devolved nations.
- Hospital tobacco dependence services and smoke-free grounds are monitored by commissioners and regulators to ensure compliance with national policy.
- Smoking in the home is reduced by interventions which target home smoking behaviour, encouraging quitting and/or smoking only outdoors.
- Policies on vaping in indoor and outdoor areas are used to facilitate smoke-free policies, acknowledging that permitting vaping where smoking is prohibited may help indoor and outdoor smoke-free measures to succeed.

### 6.1 Introduction

Comprehensive legislation prohibiting smoking in workplaces and enclosed public places has been in place across the UK for over 13 years, and it is important to remember that before 2007 in the UK, smoking was commonplace in many enclosed public places where we now take clean air for granted. This chapter summarises the history of smoke-free policy in the UK and considers the case for extending rules to prohibit smoking in other environments such as the grounds of healthcare facilities, parks and playgrounds.

### 6.2 The evolution of public and workplace restrictions on smoking in the UK

For much of the second half of the 20th century, smoking in workplaces and in enclosed public places was widespread in the UK. Although the 1974 Health and Safety at Work Act required employers to provide and maintain a safe working environment, protection from tobacco smoke was not generally considered to fall within the remit of the Act. Restrictions on smoking in cinemas, theatres and transport were introduced during the later decades of the 20th century but largely on the grounds of preventing nuisance or fires rather than to protect customers or employees

from the adverse effects of passive smoke exposure on health. Within the UK NHS, smoking indoors continued to be allowed in some general medical inpatient areas at least until the 1980s and in mental health settings for considerably longer, while designated smoking rooms for patients and/or staff continued to be provided in some hospitals well past the turn of the 21st century.<sup>1</sup>

### 6.2.1 General smoke-free legislation

Legislation specifically prohibiting smoking in enclosed public and workplaces was implemented in Scotland in March 2006,<sup>2</sup> in Wales and Northern Ireland in March 2007,<sup>3,4</sup> and in England in July 2007.<sup>5</sup> The primary objective of the legislation was to protect employees and the public from harm arising from involuntary exposure to tobacco smoke, so the legislation did not extend into private homes or vehicles. Each of the UK jurisdictions allowed a limited range of exemptions, primarily for workplaces that were also people's homes or where people were living, such as designated bedrooms in hotels, or in private clubs or prisons. An exemption for performance artists was made in England but not Wales or Scotland. In recognition of the continued widespread practice of smoking indoors in mental health settings, mental health facilities were provided with a further year in which to prepare for and implement the measures.

At the time and since the legislation was introduced, smoking has also been prohibited by local rules or by-laws in areas such as sports stadia and railway stations that are unenclosed, or enclosed to an extent that falls below the threshold for the legislation to apply.

### 6.2.2 Smoking in private vehicles

The UK smoke-free legislation applied to vehicles used in the course of paid or voluntary work to carry members of the public or which were used by more than one person, but did not extend to private vehicles in private use. However, legislation prohibiting smoking in private vehicles carrying children has since been introduced in England and Wales in 2015 and in Scotland in 2016. A consultation on similar legislation was carried out in Northern Ireland in 2017 but at the time of writing no legislation has been implemented.

### 6.2.3 Smoking in prisons

The 2006–7 UK smoke-free legislation<sup>2–5</sup> included exemptions that permitted prisoners to smoke in their cells if occupied singly or with another smoker. Since 2015 however this exemption has progressively been closed in prisons in England, Scotland and Wales, and at the time of writing is in the process of being closed in prisons in Northern Ireland.

## 6.3 Effects of smoke-free policies

### 6.3.1 Public places and workplace policies

The implementation of smoke-free legislation in the UK in 2006–7 proved to be popular and achieved high levels of compliance.<sup>6,7</sup> A 2016 Cochrane review of the effects of public and workplace policies including data published up to February 2015 and involving 77 studies from 21 countries concluded that introducing smoke-free policies reduces exposure to tobacco smoke and generates significant health benefits, particularly by reducing the incidence of acute coronary syndrome and other cardiovascular disease.<sup>8</sup> The review found that evidence of an effect on respiratory and perinatal health was less consistent, and on smoking prevalence and tobacco consumption inconsistent.<sup>8</sup> Evidence from substantive studies and reviews published since the 2016 Cochrane review has further confirmed beneficial effects on cardiovascular disease<sup>9</sup> and identified significant benefits in child health (reductions in preterm births, asthma exacerbations and respiratory infections).<sup>10</sup>

The 2016 Cochrane review also concluded that evidence of an effect of smoke-free legislation on smoking prevalence or tobacco consumption was inconsistent, a finding which contrasts with earlier evidence suggesting that smoke-free policies reduce smoking prevalence (as, for example, reviewed by Hopkins *et al* in 2010<sup>11</sup>). A possible explanation for this discrepancy lies in differences in the context in which smoke-free policies are introduced. For example, when a workplace that has always allowed smoking introduces a smoke-free policy for the first time, this marked change in the working environment stimulates employees who smoke to try to quit.<sup>11</sup> However, by the time smoke-free policies are introduced at national level within the UK and elsewhere, many workplaces and public places have typically already introduced their own smoke-free policies and generated quit attempts, thus reducing the impact of the introduction of national legislation on quit attempts. It is clear however that smoke-free policies reduce harm from tobacco and generate strong public support, and these effects alone are sufficient to justify their use.

### 6.3.2 In private vehicles

A recent evaluation of the 2015 English legislation prohibiting smoking in cars carrying children, using data from nationally representative samples of children aged under 15 collected between 2008 and 2017 reported a secular downward trend in tobacco smoke exposure among children but no evidence of a significant additional effect from the legislation on either children's self-reported tobacco smoke exposure or respiratory health.<sup>12</sup> However,

a more recent study comparing trends in tobacco smoke exposure among children in England and Scotland between 2014 and 2016 also demonstrated downward trends in both countries but with a marked and significant additional fall in exposure among children in England, where legislation was introduced in 2015, that did not occur during the same period in Scotland, where legislation was introduced the following year.<sup>13</sup>

### 6.3.3 In prisons

The introduction of smoke-free policies in prisons in England and Scotland has been shown to have resulted in marked reductions in levels of tobacco smoke in indoor prison environments.<sup>14,15</sup>

Anecdotal reports indicate that when smoking in prison cells was first prohibited and sale of tobacco to prisoners ended, attempts to smuggle tobacco into prisons increased and prisoners without tobacco improvised by making cigarettes from the dried content of used teabags mixed with nicotine paste from Nicotine Replacement Therapy (NRT) patches ('teabacco') hand rolled in paper. However, the subsequent decision to make e-cigarettes available in prisons has helped to reduce these problems.

## 6.4. Smoke-free policies in hospital settings

### 6.4.1 Rationale and policy frameworks

To protect the health of and promote healthy behaviours among people who use or work within their services, hospitals around the world have increasingly implemented, or are implementing, smoke-free policies. Hospitalisation has been described as a 'teachable moment', with systematic reviews<sup>16,17</sup> indicating that offering evidence-based smoking cessation treatment to smokers during a hospital stay can be effective in increasing smoking cessation rates in acute hospitals,<sup>16</sup> more effective as a default or opt-out service<sup>18-19</sup> and may lead to positive smoking-related behaviour change that includes motivation to quit and beliefs about quitting ability in the context of mental health inpatient stays.<sup>17</sup> Acute hospitals in England went smoke-free indoors by law in 2007, while mental health settings were granted an additional year to comply with the new legislation.

The National Institute for Health and Care Excellence (NICE) published guidelines (PH48) for smoke-free secondary care settings including acute, mental health and maternity services<sup>20</sup> in 2013, recommending that these settings be completely smoke-free indoors and outdoors, with no exemptions granted for patients, visitors or staff to smoke anywhere on the premises; and prompt, comprehensive evidence-based treatment to support

smoking cessation or temporary abstinence provided to all patients on and throughout their admission. The 2017 Tobacco Control Plan for England,<sup>21</sup> the 2018 Royal College of Physicians report,<sup>22</sup> and the 2019 NHS Long Term Plan<sup>23</sup> reinforced the content of this guidance. The latter two recommended that comprehensive specialist smoking cessation treatment should be routinely provided on an opt-out basis in all NHS treatment settings to ensure appropriate support of patients who smoke and help address tobacco-related inequalities. However, despite existing legal and policy frameworks, challenges of smoke-free policy implementation and persistent limited compliance with relevant guidelines have been recognised.

### 6.4.2 Smoke-free policies in NHS settings: progress in small steps

A mixed-methods study of all NHS trusts (acute and mental health) undertaken briefly before new indoor smoke-free legislation for acute trusts came into force in 2007 and in advance of ratification in mental health settings, found that virtually all trusts reported having a smoke-free policy at this time, often including outdoor premises. However, despite the existence of formal policies, smoking was found to be highly prevalent, both among patients, visitors and staff.<sup>24</sup>

Almost 10 years later, in 2016, a major audit<sup>25</sup> of smoking cessation policy and practice based on the 2013 NICE guidance for secondary care settings was conducted by the British Thoracic Society (BTS), including 120 acute NHS trusts (146 individual hospital sites) and 14,750 patient records in the UK. It found that approximately 40% of NHS hospital sites still provided designated smoking areas in the grounds, and only 11% of hospitals fully implemented smoke-free grounds. While smoking status was recorded in 73% of patient records, only 28% of patients were asked if they would like to quit, and of those who did, only 20% were referred to an in-house specialist stop smoking advisor. Provision of evidence-based smoking cessation pharmacotherapy (bupropion, varenicline and NRT) was overall judged as poor, and it was highlighted that half of hospital staff were not offered regular smoking cessation training. The audit concluded that 'current adherence to national standards in smoking cessation is woefully lacking' and committed to further work and assessment in this area, which ensued in the second audit, completed in 2019. A similar number of hospital settings (n=123) and patient records (n=13,647) were included, and although results indicated that concerns comparable to those that emerged in the previous audit still existed, some clear progress was identified. For example, fewer trusts (~25%) had designated outdoor smoking areas; more smokers (~50%) were asked if they wanted to quit; availability of pharmacotherapy

was improved (100% of hospitals had NRT on formulary, 50% also offered varenicline on formulary), and more patients (~12%) were referred to a specialist stop smoking advisor in-house. The 2019 audit concluded that, despite signs of improvement, the treatment of smokers in NHS acute settings remains poor with 'considerable work to be done' to improve the situation. This mirrors insights from two surveys conducted by Public Health England (PHE) between 2018 and 2020 in NHS acute trusts, both of which found that, although almost all participating trusts (n=143) reported increasing levels of compliance with NICE PH48 guidelines in their self-reports, nearly one-third (31%) did not enforce complete smoking bans on their sites.<sup>26</sup>

In NHS mental health trusts, the implementation of smoke-free policies had originally been a matter of considerable debate,<sup>27,28</sup> largely due to misconceptions relating to the link between smoking and mental health (see chapter 9). Some types of mental health treatment settings, especially highly secure forensic institutions such as Rampton hospital, achieved completely smoke-free status successfully<sup>29</sup> (despite initial legal challenges<sup>30</sup>) – probably aided by highly secure environments that render regular breaches of smoke-free policy generally difficult. For the vast majority of NHS mental health inpatient settings, the situation is however much more complex than this. Most settings provide treatment to a mix of voluntarily admitted and formally detained patients, with varying degrees of 'leave' from the ward granted as recovery progresses, during which time patients can access cigarettes to bring back on site.

Over the last decade, a number of small UK-based mixed-methods studies in acute adult mental health inpatient settings have indicated that smoke-free policy implementation is progressing slowly, with some clear challenges identified – mostly related to problems with adherence to guidelines.<sup>31–35</sup> A 2019 national survey<sup>36</sup> assessing compliance with NICE guidance PH48<sup>20</sup> in 45 mental health trusts (representing 83% of the 54 mental health trusts with inpatient services in England) highlighted that non-adherence to smoke-free policies was still 'universal', with patients reportedly smoking frequently in bedrooms, ward courtyards or hospital grounds. Over half of trusts reported that staff still accompanied patients on smoking breaks every day (in direct breach of NICE guidelines), and over 80% of trusts indicated that Section 17 of the Mental Health Act 1983 (MHA) (that makes provision for patients detained under the MHA to have authorised leave of absence from hospital) was used to facilitate smoking breaks, contrary to the intended use of this provision in the Mental Health Act. All surveyed trusts reported offering smoking cessation treatment to patients who smoked, with 82% offering two or more NRT varieties

but only 49% stocking varenicline on the formulary. Notably, almost all trusts (91%) permitted patients to use e-cigarettes during their stay, although individual policies on location and products of use varied. The survey report concluded that, despite developing complete smoke-free policies, 'in practice, no mental health trust in England is entirely smokefree',<sup>36</sup> and that delivering smoke-free environments remains a challenge.

Opportunities to promote and support a smoke-free life among a highly disadvantaged group of smokers keep being missed,<sup>37</sup> valuable resource keeps being invested in facilitating smoking,<sup>38</sup> and nicotine withdrawal is likely to be systematically under-recognised and under-treated.<sup>37</sup>

### 6.4.3 Accelerating progress

More than 7 years after NICE published guidance on smoke-free secondary care settings, NHS acute and mental health trusts are still grappling substantially with smoke-free policy implementation, including the provision of adequate support to smokers admitted to hospital. Under the original general smoke-free UK legislation, smoking in outdoor areas on or around NHS facilities has remained legal. In 2020, however, the Welsh government announced new regulations that will prohibit smoking in hospital grounds (and in school grounds and public playgrounds) from March 2021,<sup>39</sup> the Scottish government has reported the results of a consultation on proposals to extend smoke-free laws to NHS grounds,<sup>40</sup> though at the time of writing no legislation has been passed. Northern Ireland has legislation in place requiring smoke-free hospital grounds,<sup>41</sup> although the effectiveness of these laws requires evaluation.

Commonly identified<sup>36,42</sup> 'enablers' of policy implementation include leadership, including senior executive support; buy-in from frontline staff (including 'champions'); adequate staff training and preparation to go smoke-free; a clear, consistent approach to supporting policy adherence; and (more recently) access to electronic cigarettes.<sup>35,36,43</sup> Intervention studies that incorporate these aspects to address implementation problems are emerging, for example in the recent CURE study,<sup>19</sup> which assessed the feasibility, uptake and impact of a hospital-wide opt-out tobacco addiction treatment pathway including post-discharge support. The study found that 22% of the 2,393 patients admitted to the hospital were smoke-free (biochemically verified) at 3 months, a quit success rate that is comparable with national stop smoking services, at a cost of £183 per quitter in line with previous estimates.<sup>22</sup> Effective treatment of tobacco dependency for inpatients, maternity and NHS staff set out in the NHS Long Term Plan, reduces the likelihood of nicotine withdrawal and

supports hospital smoke-free grounds policy. In light of the major gaps that have been identified in national audits and surveys, it would seem prudent to promote evidence-based interventions nationwide with support from NHS commissioners, and ongoing monitoring and evaluation. In addition, gaining further insight into barriers and enablers to smoke-free policy implementation in a variety of health settings, while acknowledging heterogeneities, should be encouraged, and practice-based action plans to address them be developed.

## 6.5 Effectiveness of further restrictions – outdoor public and commercial places and social housing

### 6.5.1 Exposure to ambient tobacco smoke

Article 8 of the Framework Convention on Tobacco Control (FCTC) sets out the need for parties to adopt policies which protect the population from ambient tobacco smoke in indoor environments. Guidelines for implementing Article 8 advise that:

‘The language of the treaty requires protective measures not only in all “indoor” public places, but also in those “other” (that is, outdoor or quasi-outdoor) public places where “appropriate”. In identifying those outdoor and quasi-outdoor public places where legislation is appropriate, Parties should consider the evidence as to the possible health hazards in various settings and should act to adopt the most effective protection against exposure wherever the evidence shows that a hazard exists.’<sup>44</sup>

Evidence on levels of exposure to ambient tobacco smoke in outdoor areas is far more limited than exposure indoors. There is evidence from systematic reviews that in certain circumstances exposure outdoors can reach levels of indoor exposure.<sup>45</sup> One systematic review of studies using particulate matter levels to measure exposure found that mean PM<sub>2.5</sub> concentrations reported for outdoor smoking areas when smokers were present ranged from 8.32 to 124 µg/m<sup>3</sup> at hospitality venues, and 4.60 to 17.80 µg/m<sup>3</sup> at other locations. Mean PM<sub>2.5</sub> concentrations in smoke-free indoor settings near outdoor smoking areas ranged from 4 to 120.51 µg/m<sup>3</sup>. The World Health Organization guideline limit for maximum level of exposure to PM<sub>2.5</sub> in 24 hours is 25 µg/m<sup>3</sup>, a value mirrored by the EU and transposed in UK law.<sup>46,47</sup> Factors that increase levels of exposure to PM<sub>2.5</sub> include the density of smokers, proximity to smokers and enclosure of outdoor areas.<sup>48</sup>

### 6.5.2 Support for smoke-free outdoor policies

Levels of support for smoke-free outdoor policies can be dependent on the location under consideration and who is likely to be exposed. For example, questions asked

on attitudes towards outdoor smoking in the Action on Smoking and Health (ASH)/YouGov GB Smokefree Survey 2017 found greater support for banning smoking in outdoor children’s play areas (82% agreement) than in outdoor public spaces such as parks (56% agreement).<sup>49</sup> Similarly, in Greater Manchester, while 51% of the public who responded to a survey supported making general outdoor events smoke-free, this level of support increased to 83% for outdoor events specifically for children and families. The level of support for smoke-free town centres was lower at 39%.<sup>50</sup>

However, even in locations with higher levels of support, compliance with outdoor smoke-free areas can be limited. A study of a smoke-free park in New Zealand (in which the smoke-free policy was voluntary, not mandatory) found cigarette butts throughout the park.<sup>51</sup> Mandatory smoke-free parks and beaches in Canada have also had evidence through litter collections of continued smoking, although the litter was considerably reduced.<sup>52</sup> This suggests that successfully enforcing any restrictions will involve considerable resource, including training people, such as park staff, in enforcing new policies.

### 6.5.3 Changing behaviour and attitudes

An evidence synthesis by PHE<sup>49</sup> found mixed evidence on whether outdoor smoking bans change smokers’ behaviour. One good quality study found evidence of a reduction in smoking prevalence on university campuses following a ban on smoking outdoors, although the ban was part of a wider set of tobacco control measures.<sup>53</sup> A quasi-experimental study found similar prevalence levels pre- and 12 months post the introduction of a smoke-free campus.<sup>54</sup> The same study found no significant change in the proportion of smokers who planned to quit. However, longitudinal data from Korea found outdoor smoking bans increased the probability of a smoker making a quit attempt by 16%.<sup>55</sup>

Local areas that want to introduce smoke-free outdoor policies should clearly identify the goal of the policy, for example protecting children and adults from exposure to ambient tobacco smoke. Evaluation of such policies could include standardised, controlled studies on levels of exposure to ambient tobacco smoke; changes in attitudes for adult smokers, non-smokers and children; and assessing whether these policies have a positive effect. Investment in these policies by local areas should be considered as part of a comprehensive tobacco control strategy.

### 6.5.4 Social housing

Smoking prevalence is strongly related to housing tenure in the UK, being highest (29.8%) among those who rent from



a local authority or housing association, 22.2% among private renters, and 7.9% among those who own their houses outright (mortgage free).<sup>56</sup>

Adult smoking in the home exposes children to ambient tobacco smoke, and this exposure is greater in young people in lower socio-economic groups. Children exposed to smoke at home are also themselves more likely to take up smoking.<sup>57</sup> The ASH/YouGov Youth Smokefree Survey in 2019, found that 6% of 11- to 18-year-olds in ABC1 (non-manual occupation) socio-economic grade lived in a home where people were allowed to smoke. This increased to 11% for young people from C2DE (manual occupation) families.<sup>58</sup> Additional harms from smoking in the home include fires: while smoking related materials caused 8.5% of accidental fires, they caused 36% of accidental fire-related deaths.<sup>59</sup> Working with fire services represents an opportunity to reduce entirely preventable smoking-related deaths. Sustained collaboration with local housing providers offers the prospect of engaging with smokers about their behaviour, protecting children from ambient tobacco smoke and supporting quit attempts:

#### a. Smoking cessation

There have been smoking cessation projects targeted at people in social housing. Salford's 'Swap to Stop' offered free e-cigarettes and liquids for 4 weeks to smokers through social housing providers, on the condition of receiving behavioural smoking cessation support. The project achieved a 62% 4-week quit success rate, with 69% of service users at the start of the programme coming from the most deprived decile.<sup>60</sup> In a UK randomised controlled trial among deprived communities in Nottingham and Nottinghamshire, NRT with behavioural support was provided by a smoke-free homes advisor together with feedback on home air quality; in comparison to the control group, the intervention group had an increase in quit attempts, reduced adult cigarette consumption, reduced indoor PM<sub>2.5</sub> levels above 25 µg/m<sup>3</sup> and reduced child salivary cotinine concentrations.<sup>61</sup> A study from the USA which offered intensive cessation support with social housing residents trained as smoking cessation advisors was found to be effective, with an intervention comprising multiple visits and motivational interviewing achieving double the quit rate of a control intervention involving printed literature and a single visit from a trained peer health advocate.<sup>62</sup>

#### b. Communications campaigns

Communications campaigns can encourage smokers who do not want to stop smoking to smoke outside instead of inside their home. Campaigns such as 'Secondhand smoke

is poison' run by Fresh in north-east England,<sup>63</sup> or 'Take it right outside' by the NHS in Scotland,<sup>64</sup> focus on the harms of ambient tobacco smoke to children and encourage adults to smoke outside the home. There are indications of health benefits from these campaigns. An analysis of children's admissions to hospital for asthma found an association between the 'Take it right outside' campaign and lower levels of admission in under 5-year-olds.<sup>65</sup>

Interventions targeting either smoking in the home or social housing using community-based approaches have some evidence of effectiveness. These approaches could be used to address health inequalities caused by smoking and exposure to ambient tobacco smoke.

## 6.6 Use of vaping in public places to facilitate smoking bans

Allowing vaping in areas where smoking is prohibited may prevent former smokers who vape from relapsing to smoking and current smokers unable or unwilling to quit smoking to abstain from smoking. The health risk to bystanders from such policies is likely to be low, e-cigarette aerosol generates levels of particulate matter, carbon monoxide and black carbon orders of magnitude lower than for cigarette smoke.<sup>66–69</sup>

### 6.6.1 Vaping in indoor public places

Authors have sought to clarify the policy objectives relating to vaping bans.<sup>70,71</sup> Most commonly, the objective of indoor vaping bans is expressed as ancillary to smoke-free places but in some cases, reducing vaping appears to be considered a goal in itself, possibly due to confusion on the role of nicotine, vaping and its effectiveness in treating tobacco dependency (see section 9.5).

While vaping may cause nuisance or offence to others, these issues may be more appropriately dealt with by non-statutory measures.<sup>72</sup> Vapers who have switched from smoking completely might be at greater risk of relapse to smoking if they are required to join smokers outdoors whenever they want to vape.<sup>71</sup>

### 6.6.2 Vaping in outdoor public places

Outdoor vaping bans can conflate smoking and vaping and in doing so risk public confusion.<sup>70</sup> Harms from outdoor exposure to e-cigarette vapour have yet to be demonstrated and it seems unlikely that the use of e-cigarettes would have a measurable impact on outdoor air quality.

Maintaining the distinction between smoking and vaping offers several public health opportunities. Where customers and employees can vape in the grounds (but must leave

the grounds to smoke) switching to reduced risk alternatives is encouraged. Conversely, because e-cigarettes generally deliver lower and slower doses of nicotine,<sup>73</sup> where smokers and vapers alike must leave the building and its grounds, the balance may advantage smoking. At the very least, treating smokers and vapers alike seems unlikely to reinforce a vaper's identity as distinct from any previous identity as a smoker.

Permitting vaping in outdoor areas where smoking is prohibited makes a clear distinction between these two activities each with very different health implications for both the user and the bystander. At the same time, it creates a situation where smokers are 'nudged' into replacing smoking with a far less harmful activity and it protects ex-smokers who have quit smoking from the risks of exposure to smoke and relapse to smoking.

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# 7 Economics of tobacco

## Key points

- > Tobacco's addictive properties mean that established smokers are dependent on tobacco, which influences their response to tobacco price increases.
- > The price elasticity of demand describes the percentage change in quantity demanded for a given percentage change in price.
- > Demand for tobacco products is inelastic, so tobacco tax increases tend to reduce consumption while also increasing tobacco tax revenue.
- > Prevalence elasticity, which describes the change in prevalence in response to a price change, is estimated to be around half of the overall price elasticity.
- > A sustained policy of reducing affordability of tobacco by increasing taxes above inflation was implemented by the UK government in 1990 and enhanced through the introduction of an annual tobacco tax escalator in 1993.
- > The tobacco industry uses a wide range of actions to mitigate the effectiveness of government tax policies in order to protect its profitable market position.
- > When the price of factory-made cigarettes increases, many smokers downtrade either to budget cigarettes or to hand rolling tobacco, demonstrating that these products are substitutes.
- > Increasing specific tobacco taxes reduces the differentials that encourage downtrading, whereas increasing ad valorem taxes tends to amplify them.
- > The level of taxation on smoking-related products should directly correspond to the health risks associated with use of that product.
- > Smoking rates are highest among the populations that can least afford it, substantially exacerbating poverty.
- > Making smoking obsolete would release a substantial proportion of the budget in households in the most disadvantaged communities, representing a highly targeted tax cut for some of the most deprived families.

## Recommendations

- > Ad valorem taxes on tobacco are abandoned.
- > Taxation of factory-made cigarettes is changed to be 100% specific to minimise price differences between different market segments.
- > The minimum excise tax is regularly increased to raise the cost of the cheapest factory-made cigarettes.
- > Tobacco product affordability is reduced by large, annual, above-inflation tax increases on all tobacco products that are translated immediately into retail prices with consideration given to applying more radical increases aiming, for example, to double the price of cigarettes over a 5-year period.
- > Tax on hand rolling tobacco is increased to ensure that within 5 years, the tax paid per cigarette containing the typical weight of tobacco used is equivalent to that on factory-made cigarettes.
- > Tax loopholes are closed to ensure cigarillos are taxed in the same way as factory-made cigarettes.
- > Measures to reduce tobacco companies' ability to undermine tobacco tax policy are adopted, including limiting the number of times per year the industry can change its prices to once or twice; restricting the quantity of new brands and brand variants into the market; and maintaining and reinforcing existing measures to reduce the size of the illicit tobacco market.
- > VAT on electronic cigarettes is reduced to 5%.
- > VAT on nicotine replacement therapy is reduced to zero.

## 7.1 Introduction

In addition to harms to the health and wellbeing of smokers and their families, smoking generates a significant financial burden on wider society through health and social care costs, and through reductions in productivity. In 2018 alone, smoking in England was estimated to have cost society at least £12.5 billion, comprising £2.4 billion in NHS treatment costs; £8.9 billion in lost productivity caused by early deaths, absenteeism and smoking breaks at work;



£880 million in social care costs arising from additional social care needs due to disease and disability caused by smoking; and £325 million arising from the cost of fires caused by smoking.<sup>1</sup>

These wider societal financial burdens are reduced when smoking prevalence falls. Decreasing the affordability of tobacco through above-inflation tax rises has been shown to be highly effective in reducing smoking prevalence<sup>2</sup> and has the further benefit of increasing government revenues.<sup>3</sup> Since young people may be even more sensitive to tobacco price increases than adults, price increases are an effective means of reducing smoking uptake as well as increasing quitting among established smokers.<sup>2</sup>

Tobacco tax increases can also reduce socio-economic inequalities in tobacco use because poorer smokers are more sensitive to price rises than the general population.<sup>2,4,5</sup> However, disadvantaged smokers who do not quit in response to tax increases bear a disproportionate share of the tobacco tax burden, due to the greater concentration of smoking among these groups.<sup>6</sup> The positive health impact of tobacco taxes is greater when supported by comprehensive tobacco control strategies,<sup>3</sup> and for ethical reasons it is essential that tax increases are introduced in conjunction with support to help people quit smoking.

## 7.2 The price elasticity of demand for tobacco products

### 7.2.1 An overview

It is a well-known economic concept that, for most goods, if the price of the product increases, demand for that product will decrease. This process is quantified as the price elasticity of demand, which is the percentage change in quantity demanded in relation to a given percentage change in price. For example, if a 10% increase in price results in a 5% fall in the quantity demanded, then the price elasticity of demand is -0.5. Demand for a product is said to be 'elastic' if the absolute value of the price elasticity of demand is greater than 1, 'unit elastic' if it is equal to 1, and 'inelastic' if it is less than 1. Price elasticity has important implications for consumer behaviour, spending and tax revenue.

Tobacco's addictive properties mean that established smokers are typically dependent on tobacco and therefore relatively likely to continue purchasing the product even when prices rise. Price elasticity of demand for factory-made cigarettes is generally estimated to be around -0.5.<sup>7</sup> Price elasticity of demand for other tobacco products, such as hand rolling tobacco, has been much less extensively studied, but has been estimated to be similar to that for factory-made cigarettes.<sup>7</sup> Because demand for tobacco products is inelastic, tobacco tax increases tend to reduce

consumption while also increasing tobacco tax revenue. To be effective, tobacco tax increases must decrease the affordability of tobacco, such that prices increase relative to consumer income.

The price elasticity of demand for tobacco captures the combined effect of lower levels of consumption among individuals who continue to use tobacco, and that of lower prevalence arising from reduced uptake and increased quitting. The prevalence elasticity (also referred to as the participation elasticity), which estimates the change in prevalence in response to a price change, is important for tobacco because reducing consumption alone is not an effective way to improve public health; improving public health requires people to quit or not take up smoking. Prevalence elasticity is estimated to be around half of the overall price elasticity.<sup>8</sup>

Price elasticities can be calculated as either 'own-price' or 'cross-price' elasticities of demand. Own-price elasticities show the percentage change in quantity of a product (product X) demanded for a percentage change in the price of product X, as in the examples above. Cross-price elasticities show the percentage change in quantity of product X demanded for a percentage change in the price of product Y. For most goods, including tobacco, own-price elasticities are negative, whereas cross-price elasticities can either be positive or negative. If a cross-price elasticity of demand is negative, meaning that an increase in the price of product X results in a decrease in demand for product Y, then the products are 'complements'. Conversely, if a cross-price elasticity of demand is positive, meaning that an increase in the price of product X results in an increase in demand for product Y, then the products are 'substitutes'. In the case of tobacco, studies may assess the own-price elasticity for tobacco products as a whole or a particular type of tobacco product (such as manufactured cigarettes), and/or the cross-price elasticity of demand between different tobacco products, such as factory-made cigarettes and hand rolling tobacco.

Products can have different price elasticities depending on whether the elasticity is calculated for the short run (generally the first 1–2 years following a tax increase) or the long run (the period after which consumers fully adjust to the changes).<sup>7</sup> This is because some factors might be fixed in the short run but more variable in the long run. In the case of tobacco, addiction means that in the short run, smokers are likely to be less responsive to price. In the long run, smokers are expected to reduce their consumption further, and price increases make it less likely that non-smokers will take up smoking, hence the long-run price elasticity is roughly double the short-run price elasticity.<sup>7</sup>

### 7.2.2 International and UK estimates of the price elasticity of demand for tobacco products

A significant body of evidence on the price elasticity of demand for cigarettes is available across both high- and low-income countries. Reviews of these studies typically find that smoking is responsive to tobacco price but inelastic (a change in price causes a smaller percentage change in demand), with estimates of own-price elasticities of demand falling between -0.2 and -0.6 for adults in high-income<sup>7</sup> and -0.2 to -0.8 in low-income countries, with most estimates in the region of -0.5.<sup>7</sup>

There are few recent peer-reviewed studies of price elasticity of demand for tobacco in the UK. A study by Duffy in 2003 estimated a long-run price elasticity of demand for tobacco of -0.4 for the period 1963–96, which is consistent with commonly reported estimates.<sup>7,9</sup> In a separate study, Duffy compared elasticity estimates using data adjusted and non-adjusted for smuggling in the UK and found the elasticity was reduced when smuggling was taken into account.<sup>10</sup> This distinction is important, because studies which do not account for illicit tobacco consumption do not capture the full effect of price changes on tobacco consumption, as they do not reflect the fact that some smokers respond to price increases by switching to illicit tobacco. In the same study, the estimated price elasticity of total demand for tobacco – including illicit tobacco – changed from -0.4 in 1963 to -0.8 in the 1990s. By contrast, Mazzocchi, in a study covering 1963–2003, found that tobacco consumption in the UK became less price elastic over time, although the nature of the data used in the study was not clear.<sup>11</sup>

In addition to these peer-reviewed studies, the UK government has produced estimates of the price elasticity of demand for tobacco based on duty-paid tobacco. A model covering the years 1963 to 1998 found an own-price elasticity for tobacco in the region of -0.25.<sup>12</sup> A subsequent study estimated the own-price elasticity for duty-paid cigarettes at -1.26, while the own-price elasticity for tobacco products as a whole (including the illicit and cross-border market, and including cigarettes and hand rolling tobacco) was -0.72.<sup>13</sup> The higher elasticity for cigarettes alone most likely reflects the fact that when the price of factory-made cigarettes increases, many smokers switch to cheaper tobacco products such as hand rolling tobacco.

In 2010, the UK government combined national household expenditure data with cigarette prices provided by tobacco manufacturers, quarterly from 1982 to 2009, to estimate the long-run price elasticity of demand of duty-paid cigarettes at -1.05.<sup>14</sup> A recent update using the same methodology estimated price elasticity of demand at

-1.19 (confidence interval -1.07 to -1.30). A study published by Deloitte in 2019, using data from the Living Costs and Food Survey, found a price elasticity of demand of -1.32 for factory-made cigarettes and -0.57 for hand rolling tobacco.<sup>15</sup> Younger adults and people with lower incomes are generally more responsive to price, indicating that tax increases may be particularly effective for reducing smoking in these populations,<sup>8</sup> though these effects are undermined by the opportunity to downtrade to hand rolling tobacco, substitute with illicit tobacco, and by tobacco industry pricing strategies which undermine the effect of tax rises (see sections 7.3 and 7.4).<sup>16</sup>

There is evidence that large unexpected tax increases allow less opportunity for the tobacco industry to manipulate prices to minimise the effects of price increases on consumption, and hence lead to a larger reduction in tobacco use than an equivalent rise applied via a series of expected smaller increases.<sup>17</sup> Evidence from Australia, which implemented a sudden 25% tobacco tax increase in 2010 and a pre-announced series of four 12.5% annual tobacco tax increases (well above the magnitude of typical tobacco tax increases in the UK – see Table 7.1) demonstrates that large tax increases can have an immediate discernible impact on prevalence, and that this effect may be higher in low socio-economic status (SES) groups.<sup>18</sup> This study, although unable to provide a definitive head-to-head comparison, also found that substantial staged increases may be more effective than one-off large increases in achieving sustained reductions in prevalence. However, the immediate regressive financial effects of large unexpected prices on low SES smokers who cannot quit are inevitably more severe. There is also evidence from Australia that smoking rates in low SES groups can rebound following initial reductions in response to large price increases, demonstrating the need to assess the longer term effects of such price rises and the importance of interventions to minimise relapse among low SES smokers.<sup>19</sup> Overall therefore, the optimal size and frequency for tobacco tax increases is unclear, and is likely to vary across different contexts; however, implementing tax increases of a magnitude which reduce the affordability of tobacco has been consistently shown to be effective.

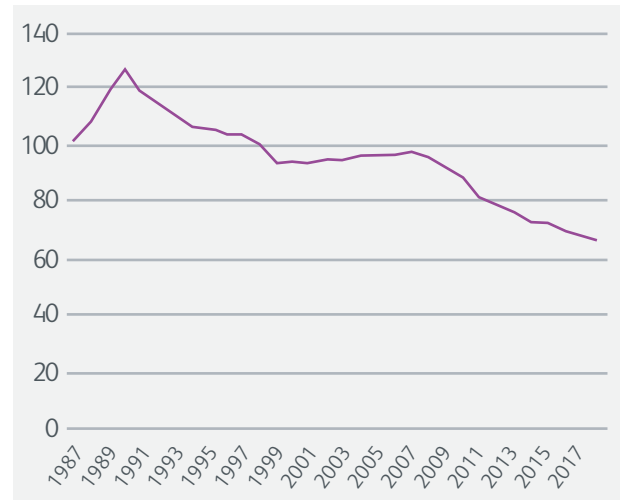
### 7.2.3 Tobacco price and substitution effects

Understanding the cross-price elasticity of demand for tobacco products is key to the effective implementation of tobacco tax increases, due to the potential for tobacco users to switch to cheaper products, rather than quit, if cheaper products are available. Relatively few studies have assessed the cross-price elasticity of demand for tobacco products; however, existing evidence indicates that in

high-income countries tobacco products are generally substitutes for each other.<sup>8</sup> Tobacco taxes should therefore be structured to minimise the price differential between manufactured cigarettes and hand rolling tobacco and hence minimise downtrading to cheaper hand rolling tobacco. In the UK, the price of hand rolling tobacco, when measured in terms of price per cigarette, has tended to be much lower than the price of manufactured cigarettes, and may explain the increase in hand rolling tobacco use as a proportion of tobacco use over time.<sup>16,20</sup> As described in section 7.3, the UK government has taken steps in recent years to reduce the price differentials between cigarettes and hand rolling tobacco, by implementing tax increases for hand rolling tobacco over and above those for manufactured cigarettes, but significant price differences remain and need to be eradicated.

### 7.3 Historic overview of tobacco prices and affordability in the UK

Immediately after the Second World War, a majority of tobacco consumed in the UK was imported from the USA. In 1947, when a balance of trade crisis created a risk that the UK would run out of dollars, the UK chancellor increased tobacco tax by 50% in the March Budget to reduce consumption and hence the need for US tobacco imports. Tobacco consumption fell by a half in the month immediately after the Budget, compared with the monthly average in the previous financial year. Although there was a rebound in consumption, consumption was still 20% below pre-April levels in August, and a significant reduction was sustained; between 1945–6 and 1949–50, tobacco consumption fell by 18.5%.<sup>21</sup> Despite this fall in consumption, tax receipts from tobacco increased by 27% in the year following the tax increase.<sup>21</sup> Despite the success of this tax increase in both reducing consumption and increasing tax revenue, tobacco taxes were not increased significantly again until the 1970s. As a result, as incomes rose, tobacco became more affordable, reaching a peak in the late 1980s (Fig 7.1).



**Fig 7.1 Affordability of tobacco index\*, UK, 1987–2018 (base = 1987).<sup>22</sup>**

\*The affordability of tobacco index shows the relative affordability of tobacco by comparing the relative changes in the price of tobacco with changes in disposable income per capita over the same period. If the affordability index is above 100, then tobacco is relatively more affordable than in January 1987.<sup>22</sup>

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In the 1990s the UK government implemented a sustained policy of reducing the affordability of tobacco by increasing taxes above inflation with the intention of both increasing government revenues and reducing tobacco consumption and smoking prevalence.<sup>23</sup> This was done through the introduction of an annual tobacco tax escalator, initially set at 3% above inflation in 1993,<sup>24</sup> and increased to 5% in 1997<sup>25</sup> (see Table 7.1).

**Table 7.1 Timeline of tobacco tax increases for manufactured cigarettes and hand rolling tobacco (HRT) in the UK**

Years	Tobacco tax increases
1989	Spring: No increase (RPI increased by 7.8%)
1990	Spring: 10% (RPI=9.5%)
1991	Spring: 15% (RPI=5.9%)
1992	Spring: 10% (RPI=3.7%)
1993	Spring: 6% (RPI=1.6%) Autumn: 7.3%. Plus committed to introduce an annual tobacco tax escalator of a minimum of 3% above projected RPI
1994	Autumn: 7.3% (RPI=2.4%)
1995	Autumn: 3% above projected RPI for cigarettes, tax on HRT frozen (RPI=3.5%)
1996	Autumn: 3% above projected RPI for cigarettes, increase at projected RPI for HRT
1997–98	Commitment to annual tobacco tax escalator 5% above projected RPI. Took effect in December 1997 and December 1998.
1999	Spring: 5% above projected RPI for cigarettes, no increase for HRT (RPI=1.5%)
2000	Spring: Escalator abolished. Tobacco tax increased by 5% above projected RPI
2001–08	Spring: annual increases in line with projected RPI
2009	Spring: 2% increase (NB RPI=-0.5% so effective increase of 2.5%)
2010	Spring: 1% above projected RPI with commitment to escalator of 2% above RPI for all tobacco products for remainder of the parliament (2011–15)
2011	Spring: 2% above projected RPI plus additional 10% increase on HRT
2012–13	Spring: 2% above projected RPI
2014	Spring: 2% above projected RPI with commitment to continue tax escalator for the subsequent parliament from 2015–20
2015	Spring: 2% above projected RPI
2016	Spring: 2% above projected RPI with additional 3% for HRT
2017	Spring: 2% above projected RPI 20 May 2017: Introduction of MET of £268.63 per 1,000 cigarettes, setting a floor below which taxes cannot fall (see section 1.2.1). Autumn: one-off additional 1% for HRT. MET set at £280 per 1,000 cigarettes A commitment to a 2% above projected RPI annual escalator for all tobacco products for remainder of current parliament (up until 2022)
2018	Autumn: 2% above projected RPI with an additional 1% for HRT
2019	No Budget
2020	Spring: 2% above projected RPI for all tobacco products until the end of this Parliament (2019–23). The rate on HRT increased by an additional 4% Autumn: 2% above projected RPI for all tobacco products plus an additional 4% for HRT

HRT = hand rolling tobacco; RPI = Retail Prices Index; MET = minimum excise tax

The tobacco industry response to this policy was to facilitate a rapid increase in the illicit tobacco trade<sup>26–28</sup> developing a parallel market which sustained its profits while at the same time arguing that tax increases had caused the increase in illicit trade. This strategy had been successfully used in other countries where taxes were increased significantly above inflation, such as Canada and Sweden, to persuade governments to cut tobacco taxes.<sup>29</sup> However, such reductions were shown to be followed by an increase in smoking, while the illicit trade did not decline.<sup>29</sup>

The UK government instead commissioned an independent review of illicit trade in the UK,<sup>30</sup> which was estimated in 2000 to have a market share of 20% for manufactured cigarettes, over 60% for hand rolling tobacco, and to be rising.<sup>31</sup> Concluding that illicit trade arose from insufficient enforcement rather than high taxes, the government launched a far-reaching anti-illicit strategy, stating that ‘The Government is determined that criminal activity will not undermine its policies to improve the nation’s health.’ The government’s tax gap estimates indicate that during the first 10 years of the illicit tobacco strategy, from 2000–01 to 2009–10, the illicit market share for cigarettes nearly halved. The illicit market share for hand rolling tobacco fell less consistently, but dropped from 61% to 44% (central estimates) during the same period.<sup>32</sup>

Between 2001 and 2008 the escalator was discontinued, so that tobacco taxes increased only in line with inflation during this period. Tobacco taxes were increased above inflation in 2009 and an escalator of 2% above inflation was reintroduced for factory-made cigarettes, and greater ad hoc increases for hand rolling tobacco, from 2010 (see Table 7.1). This measure came with a commitment for this to be sustained for the parliament, which has been renewed for the current parliament (2019–23).

Government tax policy has not been completely successful in reducing the affordability of tobacco, due to loopholes in tax structures described in section 7.4 below which have allowed the industry to take advantage of the tax system and given smokers the opportunity to downtrade to cheaper manufactured and hand rolling tobacco products instead of quitting. Furthermore, although the illicit market share for both cigarettes and hand rolling tobacco has reduced in recent years, illicit tobacco continues to account for a significant proportion of the markets, especially for hand rolling tobacco (33% in 2018/19; 8% for factory-made cigarettes).<sup>33</sup> Additional measures have been taken in recent years to reduce access to cheaper tobacco. These include a minimum excise tax for cigarettes introduced in 2017 which reduced the differential price advantage of low-cost economy brand cigarettes (see section 7.4);

additional hand rolling tobacco tax increases to reduce the price differential between hand rolling tobacco and manufactured cigarettes; and the introduction of minimum pack sizes to increase the minimum purchase price of tobacco products, particularly for hand rolling tobacco. Furthermore, Brexit has ended the import of cheap EU duty paid tobacco.<sup>34</sup>

## 7.4 Tobacco industry tactics to mitigate tax rises

### 7.4.1 Summary of industry tactics

The tobacco industry has been shown to take a range of actions to protect its profitable market position by mitigating the effectiveness of government tax policies.<sup>35</sup> A number of these are now prevented or minimised in the UK as a result of standardised packaging legislation and the introduction of the minimum excise tax, but the wider strategies comprise:

- > **Raising concerns that illicit tobacco use will rise if taxes increase:**<sup>36</sup> Evidence suggests that with robust customs and excise systems, higher taxes are not linked to illicit (non duty paid) tobacco.<sup>37</sup>
- > **Facilitating the illicit tobacco market:** A variety of data sources have demonstrated that the single largest component of the illicit tobacco market in the UK and globally is tobacco industry illicit, comprising smuggled non-UK duty-paid products from lower-taxation markets and UK brands on which duty has not been paid.<sup>38</sup> Weak tobacco industry-created ‘track-and-trace’ tobacco supply chain monitoring systems are promoted to undermine efforts to curb the illicit market.<sup>39,40</sup>
- > **Stockpiling/forestalling** products prior to a tax rise so retailers can use existing lower taxed stocks to sell at lower prices, potentially for many months.<sup>35,41</sup>
- > **Lobbying for predictable tax changes:** Predictability in a tax regime is viewed as being ‘good for business’<sup>42</sup> providing the opportunity for the maximum utilisation of tax-undermining measures. The tobacco industry therefore lobbies for small regular tax increases rather than large and unexpected increases, and then looks to deploy the tactics outlined in this chapter.
- > **Price smoothing:** Instead of passing higher tobacco tax to consumers in the form of a single price change when the tax increase is implemented, price changes are introduced gradually, with several smaller increases giving smokers time to get used to changes.<sup>20,35</sup> For example, after the March 2012 duty increase, one Pall Mall variant from British American Tobacco (BAT) increased by 7p in April, 6p in May, 12p in August, and 14p in September (Nielsen data, authors’ own analysis). Furthermore, when



tax changes are expected, prices can be increased in anticipation of, as well as following, a tax rise.<sup>20</sup> This was illustrated when the minimum excise tax, which was designed to prevent the tobacco industry from selling very cheap cigarettes, was announced in March 2017, and the prices of the cheapest packs rose gradually from the announcement rather than occurring at the time of the implementation in May. A typical cheap [anonymous] brand variant's prices increased from £7.05 in February 2017 by 14p in both March and April, and by 8p in both May and June, to £7.49, rather than suddenly increasing by 44p in May. (Nielsen data, authors' own analysis).

- **Over- and under-shifting tax increases:** Instead of passing on tobacco tax increases uniformly, the tobacco industry varies price increases by brand segment. Accordingly, the most expensive ('premium') brands face larger and quicker price increases that soon exceed the tax increase, while economy brands face slower and more gradual price increases. This approach leads to larger profits from consumers who are relatively insensitive to price, but cushions the impact on those that are more sensitive to reduce the likelihood that they will quit.<sup>20</sup> In April 2013, after tax changes, Imperial Brands' premium Embassy Number 1 brand increased in price by 27p, more than double the increase in any other month, whereas one of their cheapest brands, Carlton Superkings, did not increase in price until July and then only by 5p (Nielsen data, authors' own analysis).
- **Increasing market segmentation through brand/brand variant proliferation:** Cheaper brands of manufactured cigarettes and hand rolling tobacco, and hand rolling tobacco versions of existing factory-made cigarette brands, have also been introduced to offer smokers cheaper options without the need to leave familiar brands.<sup>43</sup> For example, Benson and Hedges (from Japan Tobacco) not only offer the traditional Gold premium variant, but also newer mid-priced (Silver) and cheap (Blue) factory-made variants, and Benson and Hedges Silver hand rolling tobacco. This creates a growing range of different variants of the same brand positioned at different price points in the market, helping to retain price-sensitive existing smokers and attract new ones.
- **Introduction of increased value hand rolling tobacco 'combipacks':** Bundled products that include filters and papers as well as tobacco are sold at a cheaper price than if each was bought separately. For example, in November 2019 a 30 g pack of Amber Leaf (from Japan Tobacco) was retailing at £13.89, while the combipack version with the same amount of tobacco and 50 papers was only 10p more expensive when a pack of 50 papers

alone cost 28p. A large number of papers/filters are generally included in combipacks, which provides smokers with the ability to roll slimmer cigarettes so that each is even cheaper.<sup>44</sup> For example, the 30 g combipacks of Riverstone were launched in 2019 with 60 papers and filters.<sup>43</sup>

- **'Premiumisation':** Premiumisation involves the introduction of new brand variants and gimmicks such as a 'crushball' (the ability to crush the filter to release a menthol flavour), filter changes, packaging innovations such as bevelled edges, and other features designed to suggest a more premium product appearance.<sup>45</sup> The majority of these variants are no longer legal in the UK, due to standardised packaging regulations and the Tobacco and Related Products Regulations which implemented the EU Tobacco Products Directive.<sup>46,47</sup> Sometimes these have been introduced in order to minimise the impact on smoker behaviour of increasingly higher prices arising from both taxes and industry profit-seeking.<sup>20</sup> For example, Imperial Brands stated that premium-like features were being introduced into a cheaper brand (John Player and Sons) 2 months after the November 2017 tax rise so that smokers would feel they gained something for the higher retail price; these features included 'filters designed to be more durable, deliver a smoother taste and create less smoke', while also retaining the post-tax rise selling price of £8.30 per pack.<sup>48</sup>
- **Shrinkflation:** Higher tobacco prices are disguised by shrinking pack sizes rather than changing the pack purchase price. Reducing pack sizes from 20 cigarettes, to 19, 18, and even 17,<sup>49</sup> means the pack purchase price does not need to increase despite higher taxes, as the higher price per cigarette is disguised by smokers not being required to pay a higher price for their usual packet of cigarettes. When, for example, 19-stick packs of Benson and Hedges Blue arrived on the market in July 2014 they were priced at £6.47, which was the same as the 20-stick pack. Minimum pack size legislation in the UK implemented in 2017 means that this strategy is no longer legal in the UK.
- **Identify weaknesses and inconsistencies:** To keep tobacco products more affordable and appealing, weaknesses in the taxation system and other regulations are identified and exploited. Examples of this behaviour include selling tobacco for hand-rolled cigarettes as lower taxed pipe tobacco,<sup>50</sup> and launching a cigarillo version of Sterling Cigarettes, as cigarillos are subject to lower taxes per stick (and can also be sold in colourfully branded packs of 10 with menthol flavour, all of which are now banned for cigarettes).<sup>51</sup> Most recently, new forms of

filters, papers and packaging were introduced to blunt the impact of the May 2020 menthol ban.<sup>52,53</sup>

Since tobacco taxation is essentially a price-based strategy, the tobacco industry response to taxation forms part of its wider pricing strategy in the marketplace (which will also be affected by a number of things beyond taxation). The tactics mentioned above are therefore utilised holistically rather than just for taxation in isolation, and in conjunction with wider price related tactics including:

➤ **Increasing retail prices in line with affordability:**

When household income levels are increasing, tobacco can become more affordable even as tobacco taxation increases. The industry has been found to consider tobacco affordability when setting its retail prices in the absence of tax changes, both overall and in regards to different brands/brand variants.<sup>54</sup>

➤ **Price-marked packaging:** To make sure that manufacturers rather than retailers set the price of tobacco products, a recommended retail price is printed on tobacco packaging, thereby making it difficult for retailers to increase their prices and profit margins. This practice retains price sensitive smokers in the market.<sup>35</sup> However, standardised tobacco packaging legislation now prevents this in the UK.

➤ **Streamlining the supply chain to increase profit in an environment of taxes taking up more of the stick price:** Reducing the number of parent brands and creating global brands with huge sales (for example, the Rothmans brand, which grew from 12 to 58 billion sticks between 2012 and 2017) enables manufacturers to depress costs, amplify pricing power, and create resilience to regulation.<sup>55</sup> Moreover, tobacco farming and manufacturing has moved to countries where costs and taxes are lower,<sup>56,57</sup> allowing tobacco companies to lower their costs of product, thereby removing some of the corporate need for industry-created price rises. Furthermore, production in foreign locations allows the industry to more easily facilitate the illicit market.<sup>40</sup>

### 7.4.2 Measures which have addressed the actions of the tobacco industry

The collective impact of all of these industry pricing strategies has been to significantly broaden the price range of tobacco products in the marketplace, which helps the industry both to maximise profits and keep tobacco within the reach of price-conscious smokers. To address the actions of the tobacco industry, academics and advocacy organisations have worked to provide evidence on industry actions to governments at the UK, EU, and global level to encourage the implementation of

measures to reduce the use of these strategies. These have included the UK anti-smuggling strategy;<sup>58</sup> increases in minimum tax rates on tobacco products and reductions in the differential between manufactured cigarettes and hand rolling tobacco in the EU; and the development of the WHO Illicit Trade Protocol which sets out a range of measures to combat the illicit tobacco trade. Other measures that have countered industry pricing tactics in the UK include the implementation of the minimum excise tax, the introduction of standardised packaging and minimum pack sizes. While the UK has now left the EU, the relevant EU directives have been transposed into UK law, often with additional restrictions (such as standardised packaging) included. These rules are required to undergo post-implementation reviews, and so there is the potential for taking regulations further in the future.

### 7.5 Future directions for tobacco price and taxation policy

Despite the implementation of a range of measures to reduce the tobacco industry's use of pricing strategies in the UK, the industry is generally still free to price its products as it sees fit and to introduce as many brands/brand variants as it wishes. Further measures are therefore needed to address such behaviour and hence ensure the full benefits of tobacco taxation are realised. Limiting the frequency with which the industry can change its prices to once or twice per year would make it difficult for the industry to introduce tax-induced price increases gradually, or to differentially over- and under-shift tax increases between market segments.<sup>20</sup> This could be implemented as part of the product notifications under the Tobacco and Related Products Regulations (TRPR), which currently require tobacco manufacturers to report to Public Health England, annually and for every product and product variant they sell, an extensive range of data (see chapter 8).<sup>47</sup> Furthermore, restricting the introduction of new brands and limiting existing brands to a small number of variants would also be a useful addition, as it would make it more difficult for the industry to support smokers downtrading to cheaper products instead of quitting.<sup>21</sup>

The structure of tobacco taxes could also be revised to maximise their effectiveness, especially in light of the UK leaving the EU and the opportunities this presents for policy changes.<sup>34</sup> At present, the factory-made cigarette tax excise comprises a mix of specific taxes – which are applied as a fixed amount of tax payable on each unit sold – and ad valorem taxes – where tax is paid as a percentage of the pack price. Changing taxation of factory-made cigarettes to be 100% specific would minimise price differences between different market segments.<sup>59</sup> In addition, regular

updates to the minimum excise tax introduced in 2017 should help to raise the cost of the cheapest factory-made cigarettes. Furthermore, the yearly tax escalator that commits to increasing tobacco taxes by 2% above inflation should be revised to allow more substantial annual above-inflation specific tax increases to reduce the affordability of all tobacco products.

Hand rolling tobacco presents a cheap route for tobacco consumption,<sup>60</sup> in part because it is significantly under-taxed relative to factory-made cigarettes.<sup>44</sup> Significant increases in hand rolling tobacco taxation, over and above those implemented for factory-made cigarettes, would close this price gap, thereby encouraging quitting in place of downtrading. This strategy may be more effective if rolling papers and filters were also to be subject to new tobacco-related taxation (and indeed wider tobacco-related regulation), as that would further increase the cost of each hand-rolled cigarette. Indeed, since such products have recently been used to help the industry bypass the ban on menthol characterising flavour, all such tobacco accessories should be classed as tobacco products so that they are subject to all tobacco regulations.

Finally, since the industry uses the illicit trade to argue against tobacco taxes, it is important that firm policy action is taken to continue to reduce the illicit share of the market. The introduction of duty-free sales in place of unlimited imports of cheap duty-paid products from the EU as a result of the UK leaving the EU is likely to help, but more needs to be done. Illicit tobacco continues to undermine the effectiveness of tobacco tax policies in the UK, and is associated with significant revenue losses. In addition to maintaining and reinforcing existing measures, a key priority is to improve control of the illicit supply chain, as stipulated by the WHO Illicit Trade Protocol.<sup>38</sup>

## 7.6 Taxation and price elasticity of smoking cessation medication, non-tobacco nicotine consumer products and heated tobacco products

It has been argued that to minimise harm to health from the use of nicotine, the level of taxation on nicotine-containing products should directly correspond to the health risks associated with use of that product.<sup>61</sup> At present, nicotine products in the UK are subjected to a range of tax systems, as described below.

### 7.6.1 Taxation and the price of smoking cessation medication in the UK

In the UK, the NHS provides smokers who are trying to quit smoking with nicotine replacement therapy (NRT), bupropion or varenicline by prescription. In England,

smokers are usually required to pay a fixed charge for each prescription item unless exempted on the basis of age or low income. In Scotland, Wales and Northern Ireland all stop smoking medication prescriptions are free. NRT can also be purchased over the counter (OTC). OTC NRT is subject to a reduced rate of value added tax (VAT) of 5%.

The price elasticity of demand for NRT has not been investigated in detail, and no UK estimates are available. Based on US data, the own-price elasticity of demand for NRT has been estimated to be in the region of -2.3 to -2.5, suggesting that decreases in the price of NRT would lead to substantial increases in per capita sales of NRT products.<sup>62</sup> A more recent study has estimated a more conservative own-price elasticity of -1.4 for NRT gum and lozenges, and -1 for patches; however, this still reflects that NRT demand is highly sensitive to price.<sup>63</sup> A study from the USA estimates that the price elasticity of demand for NRT with respect to the price of cigarettes is in the region of 0.8, suggesting that increases in the price of cigarettes would lead to substantial increases in per capita sales of NRT products.<sup>62</sup>

Given that only a small proportion of smokers who make a quit attempt access stop smoking services or receive cessation support in primary or secondary care, most people who use smoking cessation medication will pay for over-the-counter NRT.<sup>64</sup> Recent estimates suggest that exclusive NRT users in England spend less than half as much money on these products than exclusive smokers spend on tobacco.<sup>65</sup> NRT use in Britain has been overtaken by e-cigarette use in recent years, and e-cigarette prices may be more significant in influencing tobacco use than that of pharmacotherapies.<sup>66</sup>

### 7.6.2 Taxation and price of non-tobacco nicotine consumer products in the UK

E-cigarettes and e-liquids are not tobacco products and so are exempt from tobacco excise duties in the UK, but are subject to the standard 20% rate of VAT. This means that e-cigarette use is less costly than smoking, although this depends on the type of product purchased and patterns of use.<sup>65,67</sup>

There have been limited studies to date of the price elasticity of demand for e-cigarettes. A particular challenge to such studies is the capture of data on the full e-cigarette market for a particular jurisdiction, given that e-cigarettes are sold in a wide range of outlets including specialist vape shops, which are not typically captured in commercial sales data. A systematic review of studies up to 2017 identified four studies reporting own-price elasticity of demand, with a median of -1.8.<sup>68</sup> This suggests that price rises of e-cigarettes have a larger impact on e-cigarette consumption than price rises of cigarettes do for cigarette

consumption (-0.4). Across the same four studies the cross-price elasticity of demand for e-cigarettes with respect to combustible cigarettes was 1.2, implying that e-cigarettes and cigarettes are substitutes. One of the included studies included data for the UK, but these were pooled with data from other countries.<sup>69</sup> There is a need for UK-specific evidence on this issue; however, overall, existing studies suggest that continued tobacco price increases will support switching to e-cigarettes, and that lower e-cigarette prices will encourage e-cigarette use. A reduction in level of VAT on e-cigarettes could be used to reduce e-cigarette prices.

### 7.6.3 Taxation of heated tobacco products

Unlike e-cigarettes, heated tobacco products (HTPs, also known as 'heat-not-burn' products) contain tobacco which when used is 'heated without reaching ignition to produce an emission containing nicotine and other chemicals'.<sup>70</sup> The tobacco industry claims that such products are less harmful than combustible tobacco products, though these claims are as yet not fully supported by independent evidence. In the UK, where few HTPs are currently available and the prevalence of HTP use is low, HTPs are currently in their own excise tax bracket, taxed by weight at the same level as hand rolling tobacco. When the relative harms of HTPs are more clearly understood, tax structures for HTPs should be reviewed and revised accordingly.

## 7.7 A smoke-free dividend

In the prevention green paper *Advancing our health: prevention in the 2020s* the government set out the ambition of making smoked tobacco obsolete by 2030.<sup>71</sup> This presents a major opportunity, not only to improve health and to reduce health inequalities but also to improve the finances of the UK's most disadvantaged families and its most deprived communities.

Smoking rates are highest among the population groups that can least afford to smoke (see chapter 2) and it is estimated that over 1 million people, including over a quarter of a million children, live in poverty as a result of the cost of smoking to the family budget.<sup>72</sup> Furthermore, this spending is not useful to the local economy as almost all of the money spent on tobacco is transferred to the Treasury in the form of duties, to manufacturers as profits, or to criminals through the illicit trade in tobacco products. It has been estimated that typically only around 7% of the revenue from the sale from licit tobacco products is retained by retailers.<sup>73</sup> This suggests that if smoking were to become obsolete, at least 93% of current spending on tobacco would be redistributed back into local communities. We refer to this redistribution as the 'smoke-free dividend'.

The Smoking Toolkit Study (STS) estimates that in 2018

average weekly expenditure per smoker in England was over £23.<sup>64</sup> Extrapolating this to the total population of adult smokers in England in 2018 (6.4 million, estimated using smoking prevalence calculated from the Annual Population Survey applied to ONS mid-year population estimates)<sup>74</sup> would suggest a total annual tobacco spend in England of close to £8 billion, and hence a smoke-free dividend of over £7 billion. However, these self-reported spending data are a significant underestimate since the total collected by the government in tobacco duty alone in 2018/19 was £9.29 billion.<sup>75</sup> This indicates that smokers significantly underestimate the proportion of income that they spend on tobacco products and therefore that these figures underestimate the extent to which smoking reduces the resources they have left to spend on other goods.

The harms of tobacco use are typically framed in terms of its health consequences and economic costs both in healthcare and wider productivity. There is, however, another dimension to this, which arises from the concentration of smoking among the country's poorest communities. Ending smoking is not only a powerful measure to reduce health inequalities but, because smoking is so concentrated among the most disadvantaged in society, would also represent a highly targeted tax cut which directly benefits the country's most deprived families and depressed economies. Although it is not known how funds diverted away from tobacco spending would be reallocated, reducing tobacco use would free up a substantial proportion of the budget in the most disadvantaged communities, leaving those families in greater charge of how they spend their share of the smoke-free dividend. Although there are ethical challenges associated with viewing expenditure on tobacco as an unnecessary exacerbation of poverty which could be mitigated by alternative spending decisions, there is no safe level of smoking,<sup>76</sup> and most smokers state that they would prefer not to continue smoking. Furthermore, because almost all the money spent on tobacco flows directly out of the local economy, it places an additional burden on the community. This supports the argument that the government should do more to protect people from tobacco addiction, particularly in low-income communities.

Highlighting the financial burden of tobacco use on households and communities may appear to be at odds with recommendations to reduce affordability as a means of reducing tobacco consumption. However, as described above, low socio-economic groups are most responsive to tobacco price increases. As highlighted in chapter 2, for smokers who continue to smoke following tax increases, however, it is essential that additional support to quit tobacco use is provided. Making smoking obsolete would



act as a highly targeted tax cut reaching precisely our most deprived families and communities making a material difference to household finances and local economies.

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# 8 Tobacco content, nicotine products and regulation

## Key points

- > The range of tobacco and nicotine products available to consumers has expanded substantially over the past 60 years.
- > The lethal nature of combusted tobacco products has not changed, with alterations in cigarette design and tar content to date predominantly representing a misleading distraction.
- > There is no safe level of combusted tobacco use.
- > The use of filter vents generates misleadingly low tar and nicotine emissions when cigarettes are machine-smoked, and should be prohibited.
- > Mandating lower maximum standard tar, nicotine, and carbon monoxide yields may make cigarettes less desirable and encourage smoking cessation or the use of less hazardous nicotine delivery systems.
- > The relative harms or benefits of heated tobacco products in relation to combusted tobacco are yet to be determined.
- > There remain approximately twice as many smokers as vapers in the UK and fewer than half of all smokers believe, correctly, that vaping is less harmful than smoking.
- > Oral tobacco products that are not intended to be chewed are prohibited in the UK and all EU countries except for Sweden, where snus remains legal, is widely used, and has contributed to the low prevalence of tobacco smoking there.
- > Reduced ignition propensity cigarettes have had little measured impact on cigarette-related fires and fatalities and more effective design and testing requirements should be evaluated and introduced.

## Recommendations

- > The toxicology of novel tobacco products is independently verified.
- > A review of the regulation of e-cigarettes in the UK is undertaken to assess the extent to which the regulations support switching from smoking, while limiting appeal to and use by youth, and the extent to which the current regulations ensure products on the market are safe.

### 8.1 Introduction

Combustible tobacco products have been meticulously designed and promoted by the tobacco industry to encourage uptake and maximise addiction while minimising the impact of regulatory requirements. In this chapter we review the constituent components of combustible tobacco and other nicotine products, and their regulation.

### 8.2 Components, design, and use of tobacco products

#### 8.2.1 Cigarettes

The modern mass-manufactured cigarette is engineered to optimise delivery of nicotine to the smoker by tobacco combustion.<sup>1-4</sup> The burning cone of a cigarette generates temperatures of up to 900°C, creating conditions for complex combustion and pyrolysis reactions that generate an inhalable aerosol (smoke) containing nicotine.<sup>3,5</sup> Cigarette emissions are typically measured using a smoking machine which captures these aerosol components on a filter pad. The total mass captured is termed the total particulate matter, and when nicotine and water are removed from this, the residual is termed 'tar'. The gaseous phase of smoke that passes through the pad can also be collected and analysed for additional components such as carbon monoxide. To date, analysis of tar and gaseous components of tobacco smoke has identified over 7,000 constituents<sup>5</sup> which can be divided into three classes: 1) constituents of the tobacco itself; 2) compounds that are added to the product during manufacture; 3) constituents created by combustion and/or pyrolysis of the cigarette.<sup>6</sup>

Prominent examples of compounds in these three categories are listed in Table 8.1.

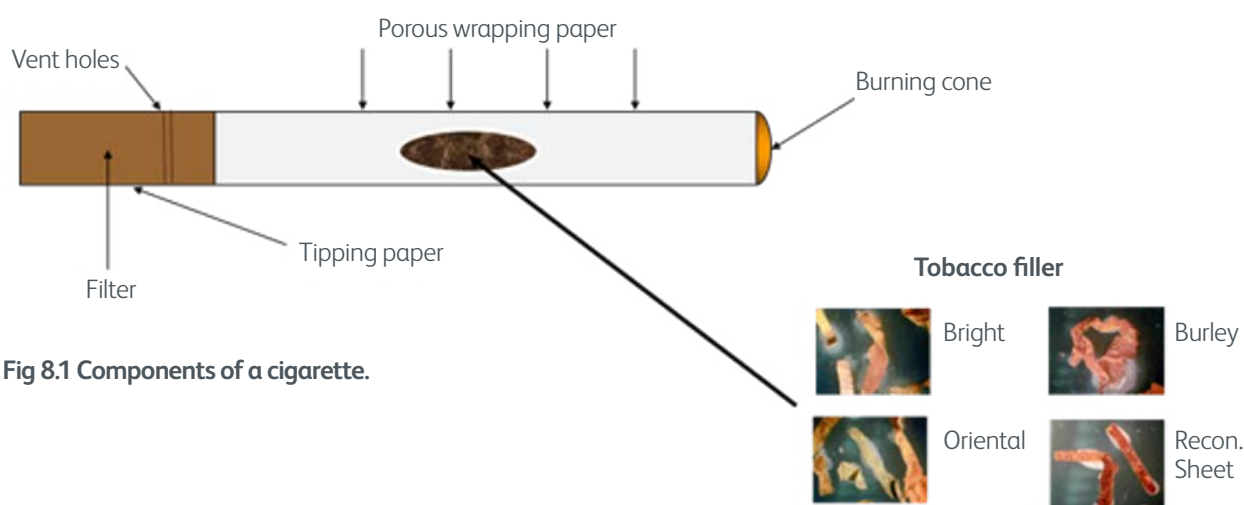
**Table 8.1** Classes of compounds in cigarettes and prominent examples in each class

Constituent of tobacco	Constituents created by combustion/pyrolysis	Additives
Nicotine	Polycyclic aromatic hydrocarbons (benzo[a]pyrene phenanthrene)	Menthol
Minor tobacco alkaloids (nornicotine, anatabine, anabasine)	Vinyl chloride	Humectants (glycerol, propylene glycol)
Tobacco-specific nitrosamines (nicotine-derived nitrosamine ketone (NNK), N-Nitrosornicotine (NNN))	Formaldehyde	Ammonium compounds
Arsenic	Acetaldehyde	Cocoa
Heavy metals (lead, cadmium, nickel)	1,3-Butadiene	Liquorice
	Benzene	Sweeteners (molasses, sorbitol)
	Acrolein	

Researchers have identified components of cigarette smoke thought to represent a risk to health, often relying on carcinogenic potency indices and relative concentrations in smoke.<sup>7,8</sup> In these analyses *N*-nitrosamines, benzene, 1,3-Butadiene and cadmium often rank highly. However, it is also important to measure the exposure of smokers to these components<sup>9–11</sup> and the development of modern mass spectrometry methods has allowed for the measurement of multiple metabolites of tobacco smoke compounds in human biospecimens.<sup>12–14</sup>

A contemporary manufactured cigarette typically comprises a tobacco filler, paper wrapper and (usually) a filter attached to the tobacco rod using tipping paper (Fig 8.1).<sup>2,4</sup> The tobacco filler, typically 0.5 to 1 g per cigarette, can be made from a number of tobacco types. In the UK, Canada and

Australia cigarette tobacco is primarily flue-cured (Virginia, or golden) tobacco while in the USA and many other markets it is typically a blend of flue-cured, burley, and oriental tobaccos. Blends may also include reconstituted sheet tobacco, which is made from leftover tobacco pieces, or expanded ('puffed') tobacco that contributes to lower rod density. The wrapping paper is typically engineered to a certain porosity (amount of airflow) to maintain a consistent burn rate. The filter is most commonly cellulose acetate fibres arranged to balance trapping ability with airflow to maintain an acceptable resistance to draw across the whole cigarette. Many filters employ tip ventilation to dilute the smoke (explained in greater detail in section 8.3 below), and in some markets (such as Japan), the filter may also contain activated charcoal.



**Fig 8.1** Components of a cigarette.

Roll-your-own (RYO) and make-your-own (MYO) cigarettes require the smoker to assemble the cigarette components bought either separately, typically as loose tobacco and cigarette paper (RYO) or as part of a packaged kit including pre-fabricated filter tubes which, when assembled, more closely resemble manufactured cigarettes (MYO). In both cases the constituent products typically attract lower tax rates than manufactured cigarettes, and hence reduce the cost of smoking (see chapter 7). However, in relation to the range of toxins to which smokers are exposed there

are few substantive differences between manufactured and RYO/MYO products, and little evidence of differences in health risk.<sup>15</sup> Table 8.2 describes mean values and standard deviation observed for key design characteristics for leading brands in the USA, UK, Canada, and Australia in 2008<sup>16</sup> and demonstrates that for comparable bands of tar cigarette designs are fairly consistent across countries, and that ventilation tends to increase with decreasing tar band, whereas other features tend to be more stable.

**Table 8.2 Key design characteristics for leading brands in the USA, UK, Canada, and Australia in 2008<sup>16</sup>**

Country	Yield category (mg 'tar')	Ventilation (%)	Circumference (mm)	Tobacco weight (mg)	Filter length (mm)	Filter weight (mg)	Rod density (mg/cc)	Filter density (mg/cc)
USA	11+	19.1 (10.6)	23.8 (0.5)	694.2 (77.9)	22.8 (3.3)	131.6 (18.8)	254.4 (20.7)	128.2 (11.0)
	7–10	34.7 (9.4)	23.9 (0.4)	640.7 (101.2)	25.3 (2.4)	146.4 (11.8)	249.2 (25.2)	128.3 (9.7)
	3–6	55.3 (4.5)	23.7 (0.5)	612.1 (45.9)	26.3 (2.5)	156.7 (11.6)	241.8 (17.9)	133.9 (7.7)
Canada	11+	16.0 (12.7)	24.7 (0.4)	731.5 (31.2)	20.0 (0.3)	110.7 (5.9)	236.7 (7.2)	114.1 (7.4)
	7–10	41.6 (7.9)	24.7 (0.4)	702.7 (51.3)	21.1 (1.97)	116.9 (7.6)	230.3 (12.0)	114.6 (7.7)
	3–6	63.0 (4.0)	25.1 (0.2)	689.7 (38.3)	21.6 (2.5)	123.5 (13.3)	221.6 (13.5)	114.2 (13.6)
	1–2	79.4 (4.8)	25.0 (0.3)	654.0 (33.1)	21.4 (2.9)	126.5 (11.7)	212.5 (13.0)	119.8 (12.5)
Australia	11+	17.3 (10.7)	24.4 (0.3)	629.5 (62.8)	21.3 (1.9)	116.6 (16.3)	212.8 (16.3)	115.4 (10.2)
	7–10	38.3 (5.7)	24.4 (0.3)	617.3 (75.5)	25.1 (9.6)	125.4 (21.1)	213.8 (11.9)	111.4 (17.4)
	3–6	56.5 (6.4)	24.3 (0.5)	545.9 (50.4)	25.9 (3.0)	146.5 (21.1)	202.7 (21.3)	120.8 (9.5)
	1–2	75.98 (5.9)	24.2 (0.3)	524.9 (34.6)	26.7 (0.2)	154.0 (3.0)	198.8 (11.3)	123.7 (3.9)
UK	7–10	30.1 (9.7)	23.7 (0.6)	684.7 (60.3)	22.7 (2.8)	131.3 (15.7)	238.7 (14.2)	129.6 (10.5)
	3–6	48.7 (7.4)	24.0 (0.6)	625.8 (39.7)	22.7 (2.8)	132.6 (21.7)	224.3 (11.3)	127.7 (12.5)
	1–2	79.1 (5.4)	23.6 (0.7)	633.7 (19.9)	20.6 (1.2)	119.6 (8.2)	232.6 (16.8)	131.8 (6.1)

Data used with permission from O'Connor *et al* 2008



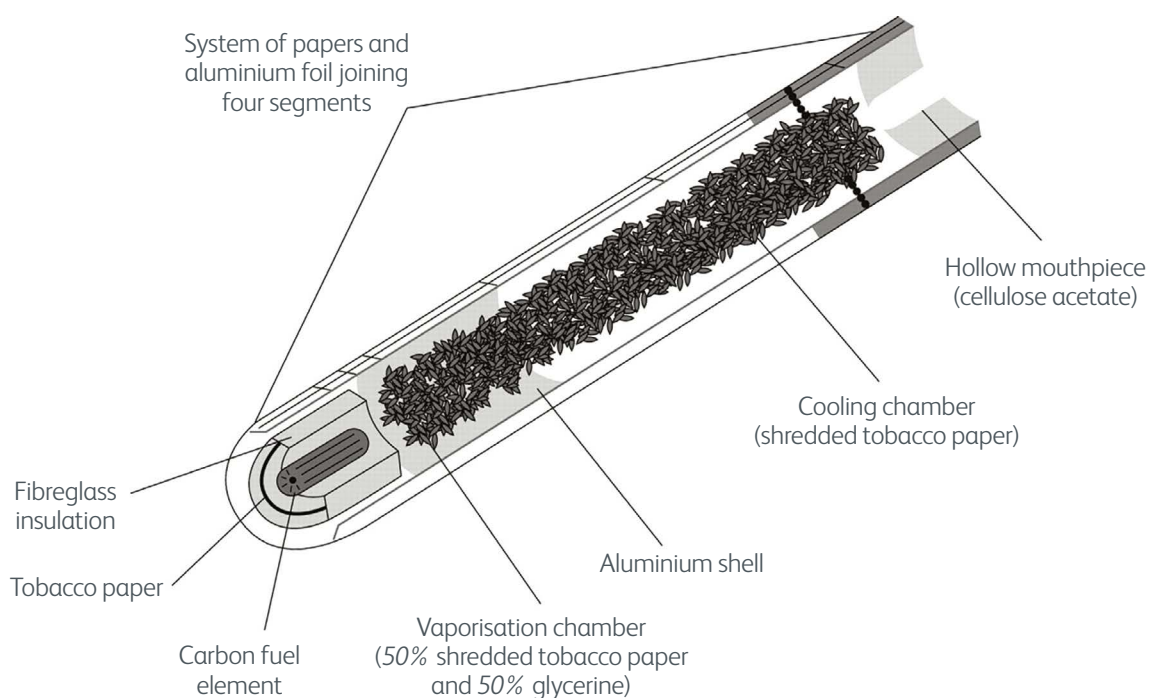
### 8.2.2 Other tobacco products

Filtered cigars (sometimes called small or little cigars) resemble and include similar design elements to manufactured cigarettes, including filter ventilation in some cases.<sup>17–19</sup> The main distinguishing feature is a wrapper that contains tobacco elements, which in most jurisdictions allows them to be classified as cigars. Cigarillos are smaller-sized cigars, often flavoured, and some include wooden or plastic mouthpieces. Cigar smoke emissions are similar to those of cigarettes, and cigar smokers share many biomarkers of exposure with cigarette smokers.<sup>20–22</sup>

Hookah, also known as shisha, narghile or waterpipe, is a form of tobacco smoking common in North Africa and the Eastern Mediterranean that has become increasingly popular in Europe and North America, particularly among young people.<sup>23–25</sup> Hookah smoking typically involves heating a moist tobacco mixture with charcoal, and drawing the smoke through a hose connected to a vessel containing water. The smoke bubbles through the water chamber before reaching the user. The tobacco mixtures employed for hookah are often highly flavoured and contain high levels of humectants (eg glycerine).<sup>26,27</sup> Toxicant levels in hookah smoke are broadly similar to those from cigarettes<sup>28–31</sup> with the exception of higher levels of carbon monoxide arising from the charcoal used to heat the tobacco.<sup>26,32</sup>

Over the past 40 years tobacco manufacturers have proffered many technological innovations purported to reduce exposure to toxicants and/or the health risks arising from smoking. The first of these was the filter itself, though long-term evidence suggests that there has not been a reduction in smoking-attributable cancer risk commensurate with the scale of filter adoption in the market.<sup>33–36</sup> A second was the attempt to develop less hazardous substitutes for neat tobacco, with the development of ‘new smoking material’ (trademarked *Cytrel*) in the UK, and in the USA, a National Cancer Institute programme to develop a less hazardous cigarette. More radical design changes emerged in the USA in the 1980s and 1990s, including products such as Premier, Eclipse and Accord which heated rather than burnt tobacco, and products with selective reductions in contents/emissions (Advance, Omni, Quest). The 2001 and 2011 US Institute of Medicine monographs offer more detailed history of these products.<sup>37,38</sup> The heated tobacco concept has recently evolved into currently available products such as IQOS, glo, TEEPS and PloomTech. A core idea of heated tobacco products is to aerosolise nicotine without combustion, thus reducing the toxicant load.<sup>39</sup> Like Eclipse, TEEPS uses an integrated carbon rod heating element to heat the tobacco, while IQOS and glo use an external electrical heating device into which specially designed cigarettes are inserted.<sup>40</sup> Examples of these two basic heated tobacco product (HTP) designs are shown in Fig 8.2.

#### 1. Eclipse nicotine delivery system<sup>41</sup>

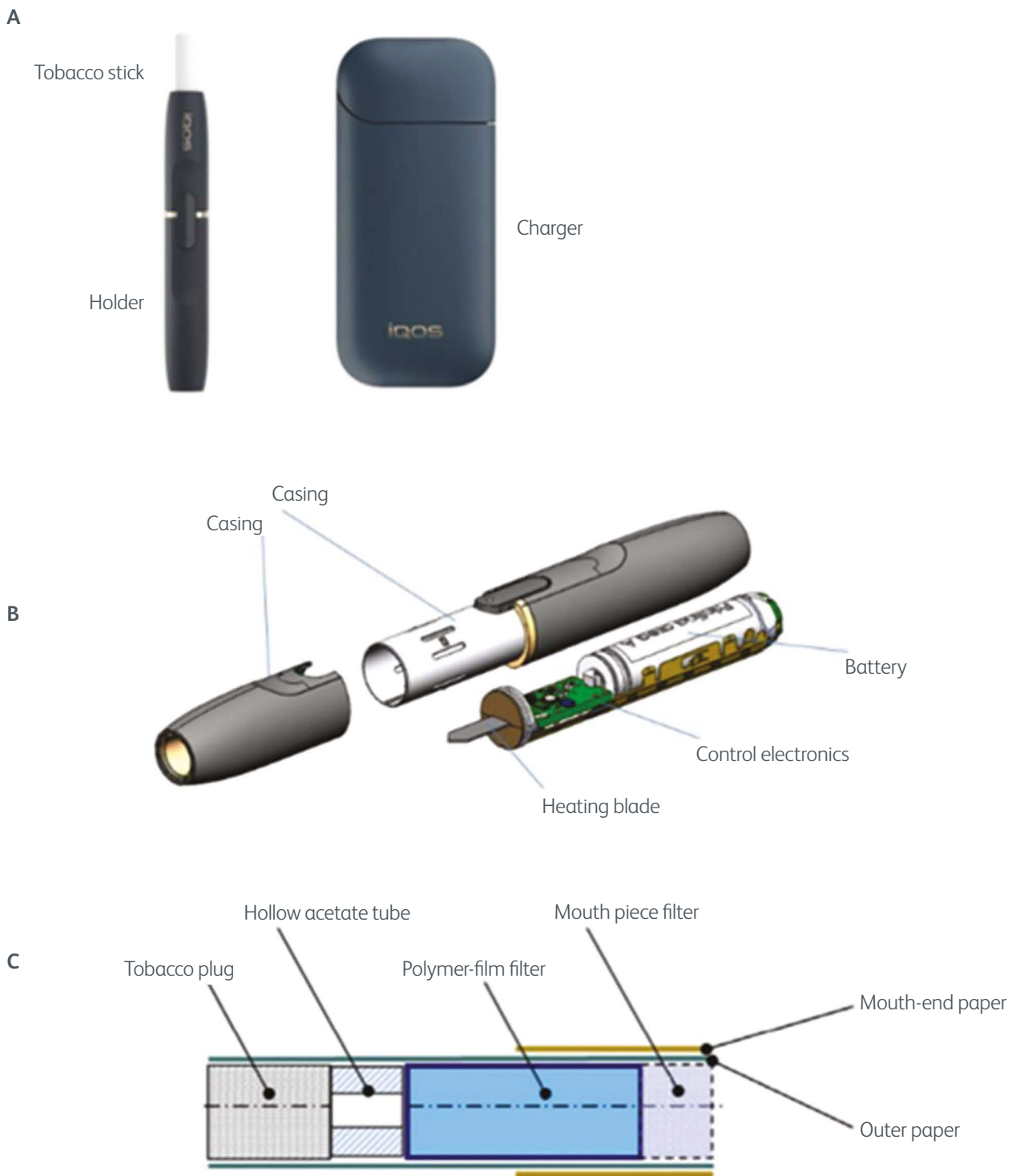


## 2. IQOS

(A) IQOS charger, holder and HeetStick (tobacco stick)

(B) Schematic drawing of holder

(C) Schematic of HeetStick tobacco stick<sup>42</sup>



**Fig 8.2 Examples of heated tobacco products.**

© Slade *et al* 2002 (1) and © Glantz 2018 (2)

### 8.3 Filter ventilation on tobacco cigarettes

Filter ventilation, which dilutes the smoke drawn through the filter with air drawn in through pores in the filter paper, was first used in US cigarette brands in the 1960s.<sup>1,2</sup> Filter ventilation reduces tar emissions measured by machine-smoking, and became a critical design feature of filter cigarettes in the later decades of the 20th century when governments began to encourage the use of cigarettes which delivered lower levels of tar measured by this method.<sup>1-4</sup> Although there are other design features that can reduce smoke emissions, filter ventilation has arguably the most important effect,<sup>1-3,5,6</sup> and has become by far the most dominant design feature for reducing mainstream smoke emissions in cigarettes.<sup>3,4</sup>

Filter ventilation reduces emissions primarily by dilution but also slows the passage of smoke as it passes through the filter thereby increasing filter effectiveness and reducing the temperature at which smoke is produced.<sup>3,26</sup> Discrete ventilation holes or porosity along the length of a cigarette also make the first puffs of a cigarette taste milder and weaker, and the smoke from ventilated filter cigarettes is often also perceived by smokers to be milder, and hence inferred to be less harmful.<sup>1,3,14-16</sup> However, as the cigarette burns down, these ventilation effects are diminished. Researchers at British American Tobacco also documented that stronger puffing by the smoker would decrease the air-dilution effect from filter vents but increase the air-dilution effect from paper porosity,<sup>8</sup> noting that ‘cigarettes in which the degree of ventilation decreases with increasing flow rate (filter tip ventilation) would be preferred to cigarettes in which the degree of ventilation increases’.<sup>8</sup> Hence, during the late 20th century, average machine-smoked ‘tar’ levels of cigarettes dropped substantially,<sup>4,3</sup> but it also became clear that in practice, the ability of smokers to reduce these ventilation effects negated any potential or expected reduction in harm.<sup>1,44-46</sup>

### 8.4 Labelling – tar, nicotine and carbon monoxide (TNCO) levels

Comparisons of brands in relation to their ‘tar’ levels became a marketing strategy through the 1940s and 1950s, and were used to imply higher or lower health risks. By the 1960s, smoking machine testing became standardised with the implementation of the US Federal Trade Commission (FTC) method (later adopted by other governments and eventually the International Standardisation Organisation), which prescribed a specific puffing regimen (35 mL puff, 2-second duration, 60-second interval) and stopping point (overwrap + 3 mm).<sup>47</sup> This approach incentivised manufacturers to design cigarettes

to perform well in machine-smoking tests while allowing for ‘elastic’ delivery for the user. This began the era of so-called ‘light/mild’ cigarettes, which held particular appeal for women and health-concerned smokers. From the 1980s it became recognised in the scientific community that filter ventilation could be problematic<sup>48,49</sup> and later work showed that smokers could compensate for the machine-measured reductions in ‘tar’ and nicotine in ventilated cigarette smoke by taking larger puffs, smoking more of the cigarette, smoking more cigarettes, or blocking filter vents with lips or fingers.<sup>50</sup> By the early 2000s it was clear that ‘light’ and similar descriptors were inherently misleading,<sup>1,51</sup> and these have since been widely prohibited through the Framework Convention on Tobacco Control (FCTC) (Article 11), lawsuits, and country regulators. In 2008, the FTC disavowed its testing method as inherently misleading. However, vestiges of the prior thinking remain in the European Union Tobacco Products Directive (EU TPD) ‘10-1-10’ ratio (maximum level of 10 mg tar, 1 mg nicotine, and 10 mg CO) requirements,<sup>52</sup> and similar ‘tar’ caps in other countries. Misleading descriptors such as ‘light’ have been replaced in many instances with other terms and/or colour coding, but even after removal of misleading product descriptors, misconceptions that low tar cigarettes represent a lower health hazard persist, possibly because filter ventilation still distinguishes brands.<sup>53-55</sup> Plain or standardised packaging has been introduced in many countries in part to address these lingering problems, though others have suggested more radical options such as design standards for cigarettes which prohibit filter ventilation.<sup>50,56</sup> It has also been proposed that a lower standard maximum-yield threshold of 5 mg tar, 0.5 mg nicotine, and 5 mg CO should be established, so that such lower-yield cigarettes would be less susceptible to compensatory smoking behaviors.<sup>2</sup> The banning of filter vents, along with lower maximum standard tar, nicotine, and carbon monoxide yields, would likely make cigarettes less desirable, and might encourage smoking cessation or the use of less-hazardous nicotine delivery systems.<sup>33</sup> Banning filter vents could also increase the use of other design features such as decreased tobacco weight or higher filter efficiency that may be less consumer acceptable and/or less prone to compensatory smoking.

### 8.5 Reporting requirements on the tobacco industry

Access to tobacco company data on product ingredients, emissions and toxicity are required to facilitate monitoring and research. This is a particular priority for novel tobacco products, which are receiving significant tobacco industry investment,<sup>57</sup> but the health harms of which are relatively unclear.<sup>58,59</sup>

Since May 2016 tobacco companies have been required to notify Public Health England (PHE) of all tobacco products to be sold in the UK. Notification was a requirement of the EU Tobacco Products Directive (2014/40/EU) (TPD),<sup>52,60</sup> and this requirement has been maintained following the Brexit transition period. The notification process requires companies to report annually to PHE an extensive range of data for each product they sell. This requirement includes the physical characteristics of tobacco products and their filters; ingredients, flavours and other additives used; nicotine, tar, carbon monoxide and other emissions; emission toxicity data; sales volumes and other marketing data.<sup>61</sup> In May 2020 a ban on characterising flavours, such as menthol, in cigarettes and hand rolling tobacco came into effect in the UK. In addition, every brand of cigarette is tested for tar, nicotine and carbon monoxide (TNCO) six times per year at an independent lab contracted by PHE and paid for by the industry. Prior to January 2021 all notifications were made via the EU's notification portal; since January 2021 notifications for products intended for sale in Great Britain are made via a domestic tobacco notification system. Products intended for sale in Northern Ireland continue to be notified to the EU system.

Manufacturers of e-cigarettes and e-liquids are also required to report data including ingredients, emissions, toxicology, nicotine dose and uptake and sales volumes to the Medicines and Healthcare products Regulatory Agency (MHRA),<sup>61</sup> and as for tobacco products, notification of products intended for sale in Great Britain is now via a domestic system. These data provide a potentially powerful resource from which to monitor the characteristics of the many thousands of tobacco products and electronic nicotine delivery systems on the market. However, recent research using the submissions data on vaping products up to October 2017<sup>62</sup> indicates that the reporting of these data is unstandardised and that the data require extensive cleaning and anonymisation before they can be used, thus reducing their utility. Standardising data collection and making data made available for research in a format which reduces the time needed for data management will facilitate and increase confidence in future analysis. Given that data on the ingredients and emissions of vaping products and toxicological information are not available from other sources, these should be a priority. Providing data such as sales volumes, prices and other marketing data would facilitate policy evaluation and market analysis.

In addition, there is a need for independent verification of the toxicology of novel tobacco products. As mentioned above, many tobacco companies are currently investing significantly in these products, and they are consistently marketed as a less harmful alternative to combustible

tobacco. However, relatively little is known about the health consequences of novel tobacco products, and much of the current evidence is based on tobacco company-funded research.<sup>63</sup> In contrast to cigarettes, however, there is currently no independent testing or verification of novel tobacco products. One approach to rectifying this problem would be to amend Statutory Instrument 507, which sets out the UK regulations for the implementation of the TPD, to require the notification fee for novel tobacco products paid by manufacturers be set at a level sufficient to meet the full cost of the development of standardised methods and the independent verification of the manufacturers' toxicological claims.<sup>39,64</sup>

## 8.6 Nicotine product regulation

Nicotine-containing products range in purity and health risk, with cigarettes and other smoked tobacco products at one extreme and medicinal nicotine at the other. Within this spectrum of risk lie a host of other products including smokeless tobacco (such as snuff and chewing tobacco), heated tobacco products and electronic cigarettes. Nicotine products continue to be regulated inconsistently and disproportionately in relation to their risk in the UK, under a number of consumer and medicines laws, including: the European Union Tobacco and Related Products Regulation (EU TRPR)<sup>61</sup> which sets out product regulations that apply to sale and promotion, product content reporting, packaging, tracking and tracing, and safety and quality requirements of cigarettes, hand rolling tobacco, pipe tobacco, cigars, smokeless tobacco, electronic cigarettes and herbal products for smoking; the General Product Safety Regulations 2005<sup>65</sup> that regulate non-nicotine containing electronic cigarettes; and the regulations of the MHRA, that regulate nicotine containing medicinal products.<sup>66</sup>

A rational approach to regulating nicotine products would aim to minimise the uptake of nicotine use among non-users, particularly children; promote complete cessation of nicotine use among current users wherever possible; and encourage as many current smokers as possible who choose or otherwise fail to stop using nicotine to reduce harm by switching from smoked tobacco to less hazardous products.<sup>67–69</sup> The RCP has long argued that achieving this would be enabled by integrating the regulation of all nicotine products into a comprehensive regulatory framework which applies market controls on these products in proportion to their hazard to consumers. The following discussion of approaches to regulating different nicotine product types relates primarily to the UK but applies in principle to most rich countries.

### 8.6.1. Smoked tobacco

Use of tobacco products originated in the Americas and predates historical records, but the global uptake of tobacco use dates back to the 16th century, and of manufactured cigarettes to the late 19th century.<sup>70</sup> While there can be little doubt that if smoked tobacco products were to be introduced as a new product in any country with functional consumer protection laws today they would be immediately prohibited, consumer laws have in practice been applied retroactively to conventional tobacco products and, with the exception of Bhutan, where production and sale of tobacco were banned in 2010,<sup>71</sup> have stopped short of prohibition. Most countries do now have at least some regulatory controls on the promotion, sale or consumption of tobacco,<sup>72</sup> but continue to allow this highly hazardous product to be sold and consumed.

In the UK, current regulations have a number of gaps allowing manufacturers to adapt products to encourage consumption, including: the use of colour descriptors to convey misleading risk messages and product characteristics; flavoured filters and card inserts marketed to circumvent flavour bans;<sup>73,74</sup> and exemptions for cigarillos from regulations requiring standardised packaging, minimum pack sizes and the ban on characterising flavours.<sup>75,76</sup> Regulations to close these loopholes should be implemented following the example of countries outside of the EU.<sup>77</sup> Additional regulation where there is evidence of benefit<sup>78</sup> include a larger size of graphic health warnings to cover 85% of the front and back of packs,<sup>79</sup> maximum and minimum pack sizes,<sup>80</sup> use of 'dissuasive' cigarettes that carry health warnings on individual cigarettes<sup>81,82</sup> and the use of government-mandated information and advice on quitting and switching to less harmful nicotine products.<sup>83</sup>

### 8.6.2 Medicinal nicotine

At the other end of the nicotine product regulatory spectrum, medicinal nicotine products (typically termed nicotine replacement therapy, or NRT) such as transdermal patches, gum, sprays and others are, in most countries, regulated as medicines. Although also derived from tobacco, the nicotine in these products has been distilled to achieve high levels of purity and pose little by way of health hazard.<sup>84</sup> Although initially available only on prescription, regulation of these products has relaxed significantly in the UK and elsewhere, such that in the UK they can now be bought over the counter (though not by children under 12 years of age) and used without medical supervision. Advertising medicinal nicotine products is permitted within limits,<sup>85,86</sup> and advertisements are allowed to include claims of efficacy in helping smokers to quit.<sup>86</sup> Medicinal nicotine is subject to a reduced level of UK sales tax (5%, rather

than the standard 20%), but the costs arising from meeting medicines manufacturing and supply standards, and perhaps also the pricing structures adopted by the pharmaceutical industry, result in medicinal nicotine retail prices that are high in relation to tobacco or unlicensed products.

### 8.6.3 Smokeless tobacco

Smokeless tobacco products such as nasal snuff, chewing tobacco and Swedish snus provide nicotine by absorption through the oral or nasal mucosa and are typically much less hazardous than smoked tobacco, but are also appreciably more hazardous than medicinal nicotine.<sup>87</sup> In the UK and most EU countries, nasal snuff and chewing tobacco are little used and are allowed to be sold under similar regulations to smoked tobacco,<sup>61</sup> though in the UK these products are not subject to standardised packaging regulations.<sup>88</sup> Oral tobacco products that are not intended to be chewed are, however, prohibited in the UK<sup>89</sup> and indeed in all EU countries except for Sweden, where snus remains legal, is widely used, and has contributed to the low prevalence of tobacco smoking there.<sup>68,69,87</sup>

### 8.6.4 Heated tobacco products

Although the heated tobacco products (HTP) launched in the later part of the 20th century and described above were not commercially successful,<sup>63</sup> the new generation of HTP which include IQOS (made by Philip Morris), Ploom (Japan Tobacco), iFUSE (British American Tobacco) and Pulze (Imperial Brands) have to varying degrees proved more commercially viable, with IQOS in particular achieving significant market penetration in Japan.<sup>90</sup> Although much of the available data on HTP emissions and exposure arises from tobacco industry sources and are therefore of questionable reliability, these products appear to generate lower levels of exposure than conventional smoked tobacco products to the extent that their use is likely to be appreciably less hazardous than smoking, though the magnitude of this risk reduction remains uncertain and they are designed to be as addictive as smoking.<sup>63,91,92</sup> HTP products are regulated in much the same way as smoked tobacco products in the UK, although they are exempt from standardised packaging regulations.

### 8.6.5 E-cigarettes

E-cigarettes generate nicotine for inhalation by vaporising nicotine solutions rather than by burning tobacco. Although the vapour they produce typically contains propylene glycol, flavours and the pyrolysis products generated when these components are heated, e-cigarettes are widely (though far from universally) accepted to offer a means to consume inhaled nicotine at substantially reduced risk relative to tobacco smoking.<sup>69,93–95</sup> E-cigarettes are the most



widely used source of nicotine other than smoked tobacco in the UK,<sup>96</sup> have been demonstrated to be effective quitting aids<sup>97,98</sup> and therefore offer significant potential as a tobacco harm reduction product,<sup>69,93</sup> and their use for tobacco harm reduction has been endorsed by a wide range of medical organisations.<sup>99</sup> Although a successful application for a medicines authorisation has been made for at least one e-cigarette product,<sup>100</sup> no medically licensed e-cigarette has yet come to market. Without a medicines licence, e-cigarettes cannot be advertised as a means to quit smoking.

Regulatory approaches to e-cigarettes vary substantially between countries, but in the UK they are regulated differently from tobacco in several ways, including exemption from smoke-free laws (though informal restrictions on use indoors are commonplace) and from standardised packaging, point-of-sale display restrictions and others.<sup>62</sup> Advertising is, however, tightly restricted, in particular prohibiting any claim of efficacy in helping smokers to quit smoking.<sup>101</sup> Regulations of e-cigarettes also include the size of tank or refill containers, limits on nicotine content to no more than 20 mg/ml and warnings on packs.

### 8.6.6 Other non-tobacco nicotine consumer products

In addition to electronic cigarettes, other unlicensed non-tobacco products, such as oral pouches containing flavoured nicotine, have been or remain available through bricks-and-mortar or online suppliers as consumer products in the UK. None has to date proved as commercially successful as e-cigarettes.

### 8.6.7 Rationalising nicotine regulation in the UK

Nicotine regulation in the UK has evolved piecemeal as the range of nicotine products has grown, and it is overseen by a range of different laws and regulators with inevitable anomalies. However, over recent years regulations on the highest risk product, smoked tobacco, have become more stringent, and those on the lowest risk product, NRT, have been relaxed to allow wider sale and access. Having initially considered imposing medicines regulation on e-cigarettes,<sup>102</sup> UK regulators have succeeded in creating a regulatory niche for e-cigarettes that has allowed widespread access and affordability, and indeed product innovation and widespread use. However, there remain approximately twice as many smokers as vapers in the UK<sup>103–105</sup> indicating that more could be done to encourage smokers to shift to less harmful products, and the finding that fewer than half of all smokers believe that vaping is less harmful than smoking<sup>105</sup> identifies one key area in which regulation could change for the better.

Current regulations permit health claims to be made only for products with a medicines licence. While necessary to protect the public from unsubstantiated health claims across a wide potential range of non-medicinal products, in a context in which the default for smokers is to continue to use a far more hazardous combustible tobacco product, this restriction is probably counter-productive to public health. The continued absence of a commercially available licensed e-cigarette in the UK some 13 years after the products first appeared on the UK market is evidence in itself that the licensing process has not been a commercially attractive prospect for e-cigarette manufacturers. There remains a case, therefore, to make nicotine products an exception and allow health-based promotion of products for which a rational basis for reduced harm can be established.

A review of the regulation of e-cigarettes in the UK should be undertaken to assess the extent to which the regulations support switching from smoking including nicotine concentrations and the use of flavourings, while limiting appeal to, and use by youth through improved regulations on packaging, labelling and promotions,<sup>101,106,107</sup> and review the extent to which the current regulations ensure products on the market are safe.

The 'e-cigarette or vaping product use-associated lung injury' (EVALI) outbreak in the USA<sup>108</sup> caused by the use of a toxic additive, vitamin E acetate, which is prohibited by the EU TPD, supports the need to maintain monitoring and regulations for non-nicotine containing e-cigarette products to prevent such occurrences in the UK.

### 8.6.8 Denicotinised cigarettes

In March 2018 the US Food and Drug Agency (FDA) issued an advanced notice proposing a new approach to tobacco product regulation based on reducing the nicotine content of combustible cigarettes to minimally or non-addictive levels.<sup>109,110</sup> The logic of the measure is to make cigarettes non-addictive to new users, and unsatisfying to existing users, thus discouraging smoking uptake and promoting cessation or a switch to less harmful sources of nicotine among existing smokers.<sup>109</sup>

While it is plausible that young people who experiment with a non-addictive product are unlikely to become long-term users, the argument that reducing nicotine will cause smokers to quit is less compelling. In clinical trials of smokers who consent to use denicotinised cigarettes there is indeed evidence that reducing nicotine levels below 95% promotes quitting,<sup>111</sup> but whether this would apply to the general population of smokers if such very low nicotine levels were imposed across the board, is far less clear. While

likely to help some smokers to quit smoking completely, the withdrawal of conventional cigarettes may also generate a substantial illicit market in these products. Even if this can be managed successfully in the USA, it is also questionable whether denicotinisation would succeed in countries with more porous borders. Whether denicotinisation will work therefore remains to be seen.

### 8.7 'Fire safer' cigarettes

One of the less widely publicised means by which cigarettes harm health is through their inherent fire risk.<sup>112,113</sup>

Cigarettes have historically been a leading cause of fires, and in particular fatal fires, in residential or commercial buildings. Gunja *et al* showed that product liability fears appeared to suppress the introduction of technology to reduce fire ignition risk that had existed for decades.<sup>114</sup>

To reduce the risk of fires started by cigarettes, various bodies have investigated and proposed cigarette 'fire safety' standards. The principle is consistent with the harm reduction paradigm – reducing morbidity and mortality associated with smoking by changing the product even as smokers continue smoking.<sup>38</sup> New York (NY) State in 2004 became the first locality in the world to mandate fire safety standards for cigarettes. In 2011 the UK introduced a similar standard for reduced ignition propensity (RIP) cigarettes as part of EU-wide regulations.<sup>115</sup> The EU standard for RIP cigarettes<sup>116</sup> allows for a fail rate of up to 25% over 40 tests. Analysis of Swedish data pre- and post-implementation of the standard in 2011 found no statistically significant intervention effects on residential fires, fatal residential fires, residential fires where smoking was a known cause, or fatal residential fires where smoking was a known cause.<sup>117</sup> In the UK too it does not appear to have had a significant impact,<sup>118</sup> since fire safer cigarettes continue to be involved in fire deaths.<sup>119</sup> The test to meet the EU standard is an ISO standard<sup>120</sup> but the pass rate was set by the EU. Reducing the fail rate to no more than 5% over 40 tests has been suggested by fire authorities<sup>119</sup> to improve the likelihood of preventing cigarette-related fires.

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# 9 Treatment of tobacco addiction

## Key points

- > It is essential that smokers who contemplate or make a quit attempt are able easily to access the best evidence-based support and treatment to quit.
- > Opt-out treatment of tobacco dependency more than doubles quit rates in hospitals.
- > Financial incentives improve quit rates in pregnancy.
- > Patients with serious mental health disorders are more likely to quit with tailored treatment.
- > LGBT people are more likely than heterosexual people to smoke and face multiple barriers to smoking cessation.
- > Treatment of tobacco dependency in primary care is poor and represents a significant opportunity for intervention to improve health and reduce demand on NHS services.
- > E-cigarettes are an effective treatment for tobacco dependency.

## Recommendations

- > The NHS provides opt-out tobacco dependency treatment to all smokers at any point of contact with the NHS.
- > Financial incentives are provided in maternal smoking cessation pathways.
- > Patients with serious mental illness are offered tailored treatment for tobacco dependency.
- > Better access and services are provided for the LGBT community who are tobacco dependent.
- > Primary care practitioners treat tobacco dependency, supported by a reform to the system that rewards treatment and enhanced training in primary care.
- > E-cigarettes are included in standard protocols to treat tobacco dependency.

### 9.1 Introduction

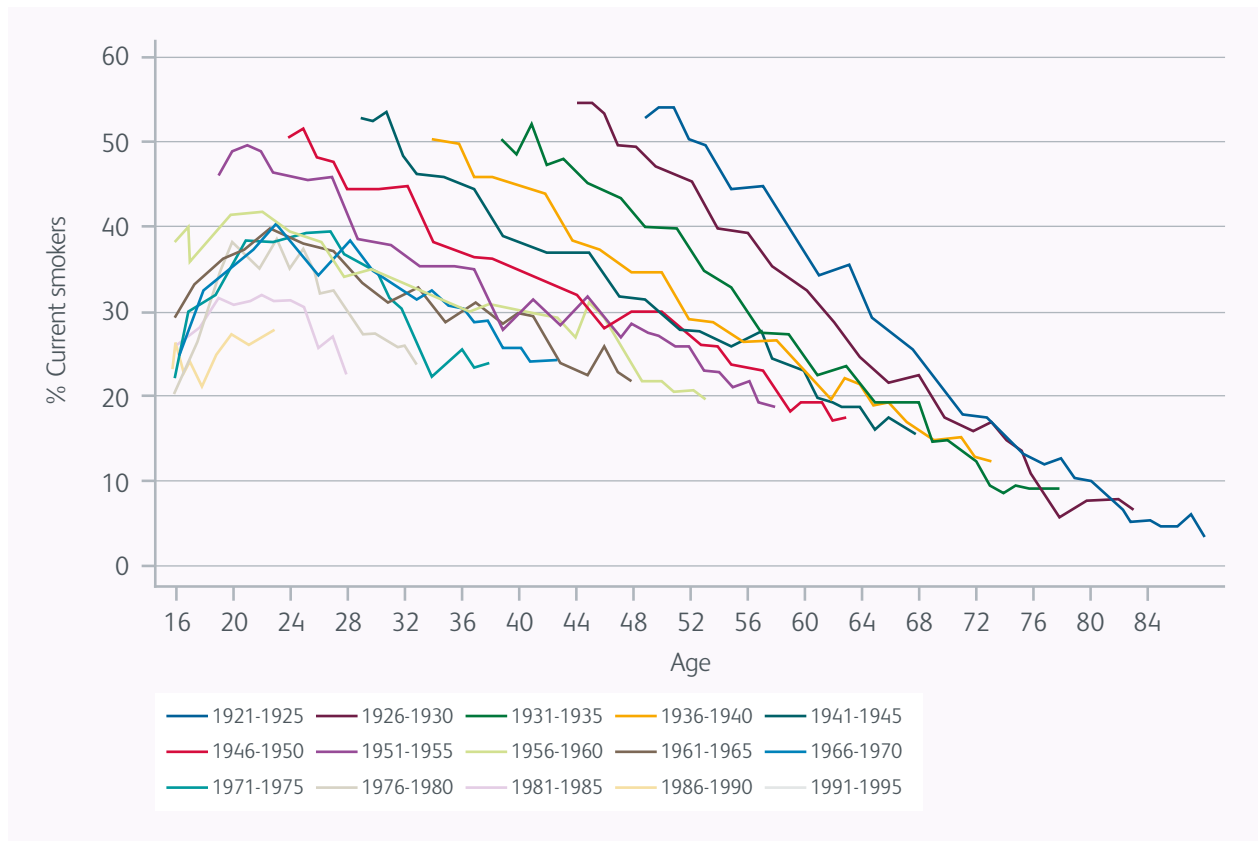
Treatment of tobacco dependency is recognised as one of the pillars of tobacco control.<sup>1</sup> However, despite tobacco use being prevalent in the UK for hundreds of years, effective treatments being available for over 30 years and government funding of stop smoking services for the past 20 years, uptake and provision of these treatments across the NHS remains poor. In this chapter we will review the core elements of tobacco addiction and treatment, and consider the opportunities to treat tobacco dependency in the NHS.

### 9.2 The cycle of addiction in a smoker

Addictive behaviours such as cigarette smoking are best understood as a chronic relapsing brain disease – a brain disease because drugs such as nicotine change brain structure and function; chronic, because they are characterised by compulsive drug-seeking that persists over time despite harmful consequences; and relapsing because the majority of those who attempt to quit revert to drug use within 12 months.<sup>2</sup>

There are numerous non-biological factors that contribute to whether people start to smoke, whether they progress to daily smoking, how heavily they smoke, and how difficult they find it to stop smoking. It is no longer contentious that cigarette smoking is addictive, but the drivers of cigarette smoking are complex and may have changed considerably over the past century and since the harms of smoking became known in the 1950s.

Young people typically experiment with their first cigarette in adolescence, and few first try a cigarette after the age of 20.<sup>2</sup> Therefore, most smokers begin smoking in adolescence or early adulthood. However, smoking initiation among young people has been declining over time. The data shown in Fig 9.1 clearly demonstrate that the majority (although not all) of the reduction in smoking prevalence in the UK over the past 50 years is attributable to fewer people starting over time.<sup>3</sup>



**Fig 9.1 Smoking in UK by age and birth cohort (1972–2011).<sup>3</sup>**

Figure 9.1, taken from an earlier RCP report,<sup>3</sup> shows that rates of smoking uptake among young people has gradually decreased over time, with people born before the 1970s being more likely to be smokers in late adolescence and early adulthood than those born after the 1970s. In Fig 9.1, the proportion of current smokers at age 18 is approximately 35% among those born between 1961 and 1965, but only around 20% among those born between 1991 and 1995. In contrast, the decline in smoking prevalence with age is similar across all birth cohorts, suggesting little improvement in rates of quitting over time.<sup>3</sup> (These data only extend to 2011, and therefore do not capture recent changes, such as the growth in popularity of e-cigarettes.)

Nicotine has been widely acknowledged to be the primary addictive constituent of tobacco since the first evidence that rodents would preferentially self-administer nicotine emerged in the 1970s.<sup>4</sup> The addictive properties of nicotine are enhanced by the presence of other tobacco constituents (principally monoamine oxidase inhibitors), and by delivery through inhalation which results in delivery of nicotine to the brain within 10 to 15 seconds – faster than the delivery of intravenously injected heroin.<sup>3,4</sup>

Nicotine is metabolised very rapidly, meaning that after even a short period of abstinence from smoking, for example on waking after sleep, a regular smoker will have very low levels of circulating nicotine, and therefore be nicotine deprived and in withdrawal. The time between

waking up and smoking the first cigarette of the day therefore provides information as to the degree of dependence of an individual, as it captures the degree of urgency with which a nicotine-deprived smoker needs to smoke (in other words, the severity of withdrawal).

The first cigarette is therefore typically viewed by a dependent smoker as the 'best' cigarette of the day, as it leads to the release of the neurotransmitter dopamine to a greater degree than subsequent cigarettes.<sup>5</sup> Over the course of the day, nicotine continues to be cleared rapidly, so the smoker needs to smoke frequently to maintain background levels of circulating nicotine and to stave off withdrawal symptoms. On sleeping, nicotine clears almost entirely from the body, as described above, and the cycle repeats. This illustrates the close degree of biological control that nicotine exerts over behaviour in regular smokers – in other words, dependent smokers smoke (largely) for the nicotine.<sup>5</sup>

The rapid delivery of nicotine to the brain when smoking a cigarette results in an acute spike in nicotine levels, which leads to strong associations being formed between the psychoactive effects of the drug and other cues present at the time, such as the sight of others smoking or other sensory aspects of smoking. These cues, over time, become triggers of drug-seeking behaviour themselves, and can precipitate relapse among abstinent smokers even after several months or years of abstinence.<sup>5</sup>

Smoking therefore follows a second order schedule of reinforcement.<sup>6</sup> Initially, smoking a cigarette is reinforced by dopamine release, particularly in regions of the brain (eg the nucleus accumbens and ventral tegmental area) related to reward. Release of dopamine in these regions facilitates the establishment of associations with other cues present at the time, such as the smell and taste of smoke.

These cues become conditioned reinforcers. Over time, only the first cigarette of the day (when circulating levels of nicotine are low) leads to the release of dopamine, while subsequent cigarettes do not (due to higher circulating levels of nicotine). However, smoking-related cues, as conditioned reinforcers, continue to drive behaviour even when smoking a cigarette does not lead to dopamine release (eg subsequent cigarettes over the course of a day).<sup>5</sup>

This is important for two reasons. First, the release of dopamine in the nucleus accumbens and ventral tegmental area is a common feature of many addictive drugs, including heroin, cocaine, alcohol, opiates and amphetamine, as well as nicotine. Second, second-order schedules of reinforcement (illustrated in the case of smoking in Fig 9.2) result in a very high rate of responding for the drug when conditioned stimuli such as smoking cues are presented.<sup>5</sup>

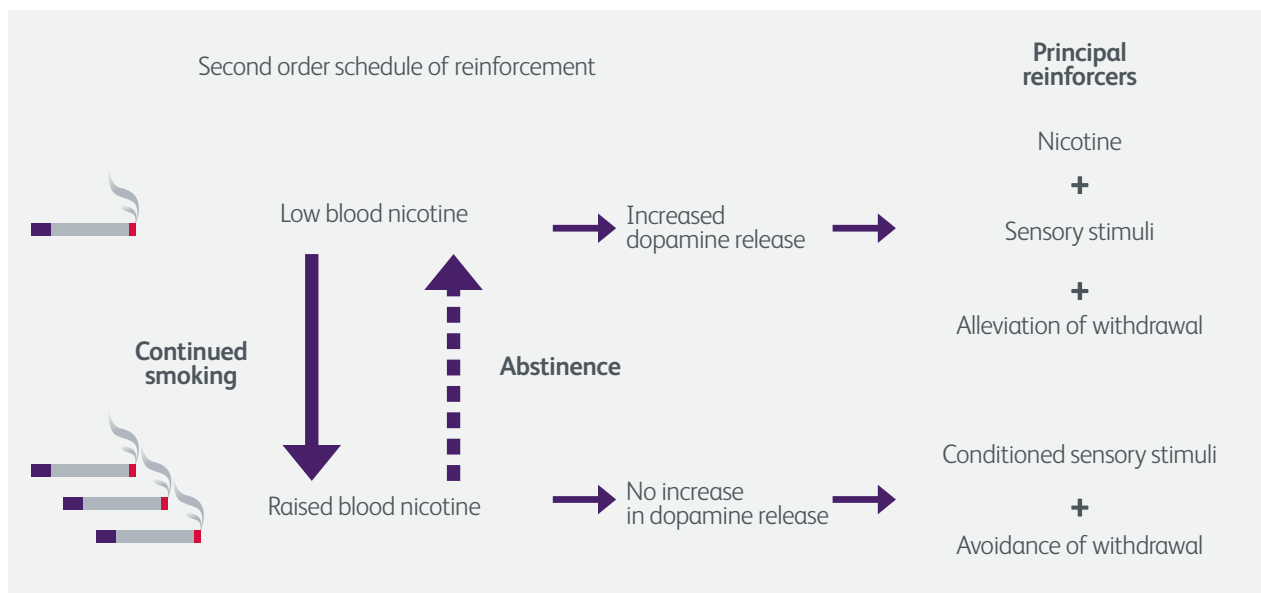
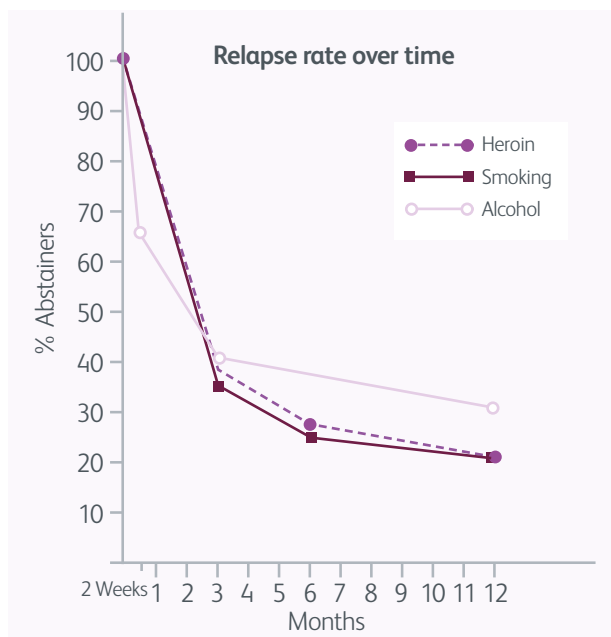


Fig 9.2 Smoking as a second order schedule of reinforcement.

This understanding of the mechanism of addiction informs its assessment. Tobacco dependence and associated constructs such as craving are typically measured via self-reported behaviour. For example, the widely-used Fagerström Test of Nicotine Dependence (FTND) contains a number of items that are scored and summed to give a total score, with higher scores reflecting higher levels of dependence.<sup>7</sup> The single item on the FTND that captures the most variance in total score is the first – how soon after waking the respondent smokes their first cigarette of the day.<sup>8</sup> In other words, the sooner after waking the respondent smokes their first cigarette, the more likely they are to be dependent.

This understanding of the mechanisms of nicotine dependence also explains, in part, the popularity of e-cigarettes. Unlike pharmaceutical nicotine replacement products, e-cigarettes, particularly later-generation devices deliver nicotine rapidly in a manner more similar to a cigarette.<sup>9</sup> They also come closer to mimicking some of the conditioned stimuli associated with smoking, for example the hand-to-mouth motion and the sensation of inhalation.

Relapse to smoking following abstinence is high, again in common with other addictive drugs (relapse rates for smoking, alcohol and heroin are shown in Fig 9.3).<sup>6</sup> This is partly due to the intensity of the withdrawal syndrome associated with abstinence, and partly to the ability of conditioned stimuli, such as being in a place where the individual previously smoked, or seeing someone else smoke a cigarette, to continue to elicit drug-seeking behaviour even after several months or even years of abstinence.<sup>5</sup>



**Fig 9.3 Relapse rates over time for heroin, smoking and alcohol.** Source: Hunt *et al* (1971), cited in Schindler<sup>6</sup>

There is therefore a complex interplay of biological and non-biological factors that influence smoking behaviour. In the short-term, behavioural support can enhance motivation to stop smoking, minimise motivation to return to smoking once an attempt to stop has been made, and help prevent any motivation to smoke translating into action.<sup>10</sup> This is most effective when combined with one or more pharmacotherapies.

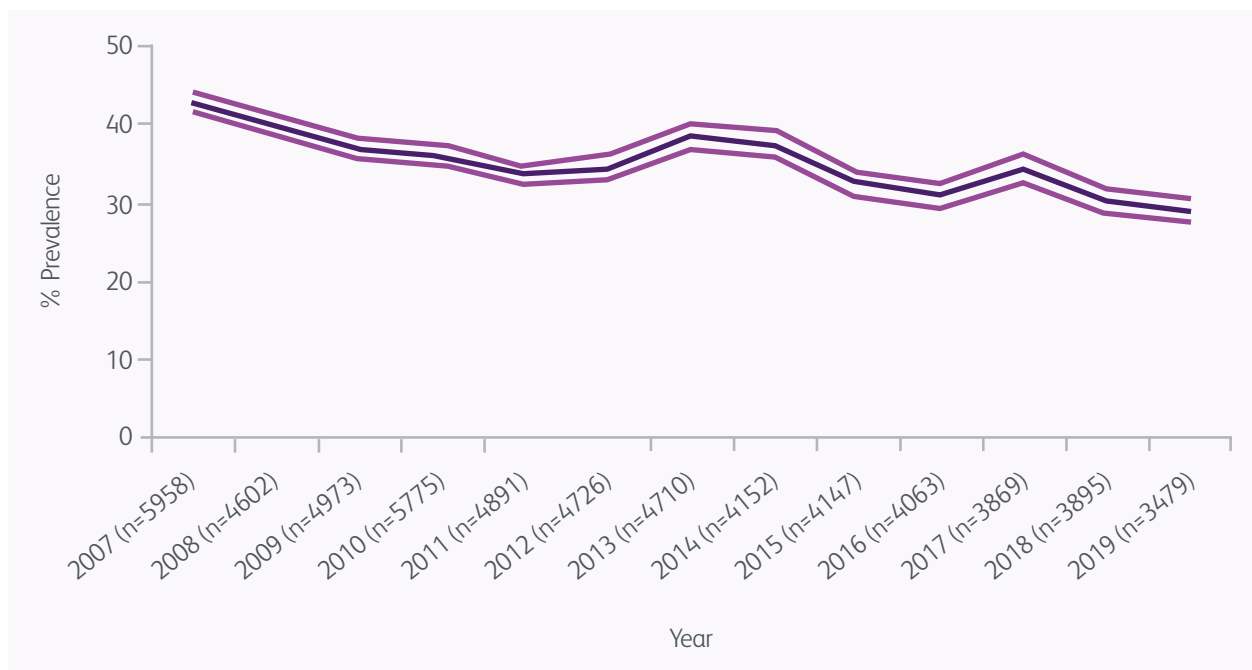
However, while many effective treatments for smoking cessation exist (including pharmacological treatments and behavioural support), the persistence of conditioned associations means that cues to smoking can trigger cravings and relapse many years after stopping smoking. Relapse prevention over the longer-term is therefore challenging, and this contributes to declining rates of sustained abstinence over time. For this reason, many tobacco control policies focus on reducing the availability and visibility of smoking, to reduce these cues and de-normalise smoking.

### 9.3 Triggering quit attempts

For most people who smoke, quitting involves i) making a serious attempt to avoid smoking permanently and ii) successfully overcoming powerful urges to smoke over the subsequent days, weeks and even years that follow. The initiation of the attempt and the success once initiated are distinct processes, and are associated with different smoker and sociodemographic characteristics, and subject to policy and environmental influences. The following section focuses on quit attempts.

#### 9.3.1 Trends in quit attempts in England

At a population level, the rate at which the 6.9 million people in the UK who smoke<sup>11</sup> quit smoking is a key influence on smoking prevalence. The proportion of those who have smoked and made a quit attempt in the past year in England has declined from 42.5% in 2007 to less than 30% during 2018 and 2019 (Fig 9.4). The decline has been non-linear, with variation during this period at the annual and especially monthly level, although a marked rise of around 20% has been observed in quit attempts in 2020, most likely influenced by health concerns related to the COVID-19 pandemic.<sup>12</sup>



**Fig 9.4 Proportion of quit attempts (and 95CIs) among past-year smokers in England between January 2007 and December 2019.**

Data from the Smoking Toolkit Study used with permission

### 9.3.2 Influences on quit attempts at the population level

A recent time-series analysis attempted to quantify population-level associations between changes in the rate of monthly quit attempts and both smoker characteristics and a variety of tobacco control interventions between 2007 and 2017 in England, using aggregated data from more than 50,000 past-year smokers.<sup>13</sup> Increases in the prevalence of high motivation to quit (smokers reporting wanting to stop smoking and intending to in the next 3 months) were associated with higher prevalence of attempts to quit smoking, while an increase in the mean age of smokers was associated with lower prevalence of quit attempts. The introduction of the partial point-of-sale tobacco display ban in 2012 appeared to have a temporary positive impact (a higher prevalence of quit attempts). A key implication is the need for intervention or policy to stimulate quit attempts in older smokers.

In other analyses and evaluations, exposure to mass media campaigns and social marketing campaigns (see section 3.3) have been consistently associated with population quit attempts.<sup>14–18</sup> For example, since 2012, there has been an annual ‘Stoptober’ mass media campaign for collective smoking cessation in England during the month of October. Between 2012 and 2017 there was an increase in past-month quit attempts during October compared with

other months, which was not evident during the preceding 2007–2011 period. The increase varied from year to year, and importantly appears to have been greater when the campaign budget was higher, increasing the ‘dose’ of marketing to which individual smokers were likely to have been exposed.<sup>19</sup>

The rise in the use of e-cigarettes in England has been cited as a possible explanation for the national decline in quit attempts, with the suggestion that the wide availability of e-cigarettes has re-normalised smoking and depressed cessation.<sup>20,21</sup> However, a closer inspection reveals that trajectories for quit attempts and the use of e-cigarettes are quite different, with e-cigarettes becoming especially popular around 2013 when quit attempts appeared to rebound temporarily (see Fig 9.4). Formal time-series analysis has found no evidence of a clear association between e-cigarette use and prevalence of quit attempts, suggesting their rise in popularity has not undermined attempts to stop.<sup>22</sup>

More recently, there has been urgent attention given to the possible impact of the COVID-19 pandemic on smoking. COVID-19 is a respiratory disease that has caused a significant global socio-economic shock. It may have stimulated quit attempts by providing a teachable moment that increases the salience of smoking-associated health risks. Early evidence from England suggests that the



onset of the first COVID-19 lockdown in March 2020 was associated with increases in the rate of quit attempts and cessation among past-year smokers.<sup>23</sup>

### 9.3.3 Influences on quit attempts at the individual level

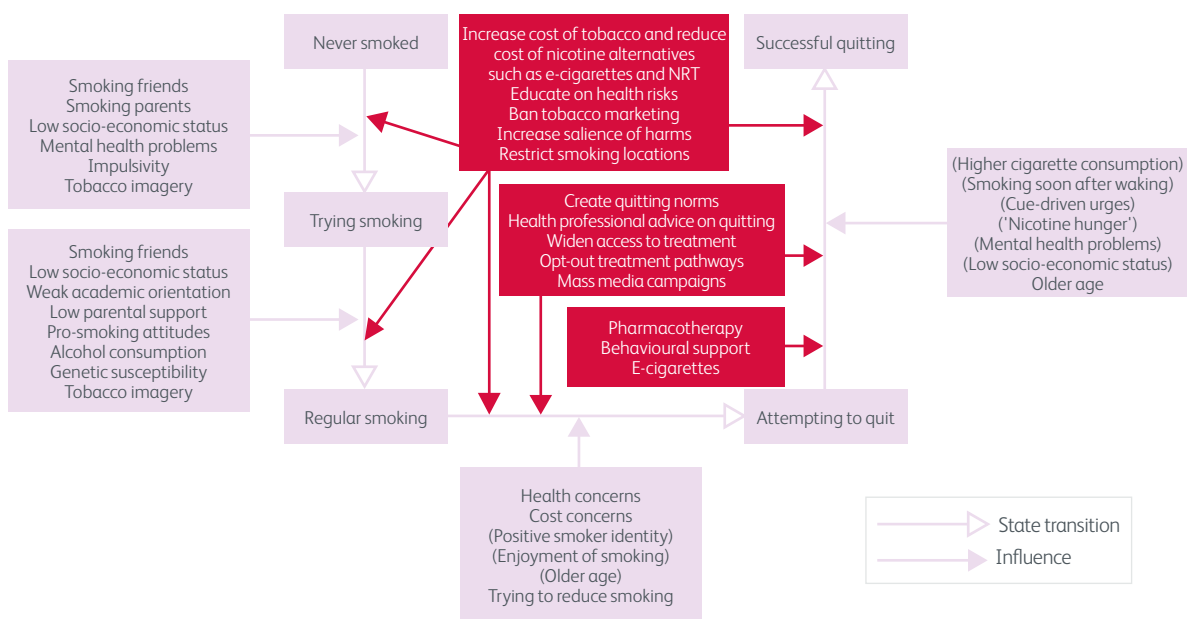
In England, the five most commonly cited triggers among people who have smoked in the past year and attempted to stop are advice from a health professional, concern about future health problems, a decision that smoking was too expensive, comment by a close social connection and current health problems.<sup>24</sup> Quit attempts prompted by health professional advice appear to be more likely to involve gradual reduction and use of treatments. Those prompted by health concerns and cost appear more likely to succeed.<sup>24</sup>

Brief advice from a GP increases quit attempts compared with minimal or no intervention.<sup>25</sup> The nature of the advice affects the likelihood of triggering a quit attempt: GPs are more effective in promoting quit attempts by opportunistically offering support to all smokers, rather than raising the topic but only offering advice and assistance to those who express an interest.<sup>26</sup> There is evidence that advice without offer of support appears only to be associated with increased odds of making a quit attempt in smokers with greater socio-economic disadvantage.<sup>27</sup>

### 9.3.4 Policy priorities to increase quit attempts

Increasingly, there is welcome recognition that public health strategies need more focus on the population-level, or an upstream approach.<sup>28</sup> However, an oversimplified argument which pitches upstream approaches against so-called individual-level or downstream approaches, or systems science against behavioural science should be avoided,<sup>29,30</sup> as to do so may undermine individual agency and be interpreted as a reason for cutting funding from highly successful individual-level support services. Instead, an ambitious agenda is required that aims to influence multiple levels of the system.

It is well understood that smoking prevalence is influenced by a large combination of general and specific biological, social and psychological factors interacting with current opportunities afforded by the social and physical environment. Figure 9.5 describes state transitions between never smoking, trying smoking, regular smoking, attempting to quit and ultimately successful quitting.<sup>31</sup> It is not a systems map but illustrates the wide range of influences on these transitions, and, in red, how different interventions simultaneously impact on several parts of the model. For example, increases in the cost of smoking create barriers to both experimentation and progression to regular smoking, and trigger quit attempts for a large proportion of people and remain a widely cited motive during the course of a quit attempt for maintaining resolve.



**Fig 9.5 Factors associated with transitions between smoking status** (parentheses indicate negative associations). The red boxes and red arrows illustrate how different interventions have simultaneously impacted on several different transitions.<sup>31</sup>

Based on an original figure © West 2017. Published by Informa UK Limited, trading as Taylor & Francis Group. Adapted with additional material.

Influencing the transitions between smoking status makes the case for policy to prioritise a comprehensive and dynamic approach which explicitly aims to simultaneously i) motivate quit attempts, ii) improve quit success and iii) reduce uptake. A comprehensive approach is evidence-based, appreciates contributions from both behavioural and systems science, and is likely to go beyond additive effects, and to benefit instead from complex and unexpected synergies and feedback.<sup>32</sup> We know that for many existing policies, such as mass media campaigns, provision of smoking cessation support and age restrictions, that greater evidence-based implementation produces larger effects.<sup>33</sup>

## 9.4 Treatment of tobacco dependency in healthcare

NHS healthcare in England is split into acute care, primary care, mental health and maternity services, while public health functions are led by local government. The responsibility for some public health functions may alter with the abolition of Public Health England in 2021. Each of these services represents a unique opportunity to treat a tobacco dependency that needs to be aligned with the needs of service users. In January 2019, the NHS Long Term Plan (NHS LTP) announced an ambition to treat tobacco dependency in acute care and mental health inpatients and maternity services on an opt-out basis by 2023–24, the treatment of ‘high risk groups’ with mental health disorder in outpatient settings; and treatment for NHS staff who smoke. The investment in treating NHS patients for tobacco dependency is in addition to ongoing local government funding of tobacco control and smoking cessation services.<sup>34</sup>

### 9.4.1 Treatment in hospitals

Acute care hospital trusts provide a highly concentrated population of smokers due to smoking related illnesses, with people who smoke over 30% more likely to be admitted than non-smokers.<sup>35</sup> Despite the declining smoking prevalence in the general population, sequential national audits of smoking in hospital admissions in 2016 and 2019 show a persistently high prevalence of smokers in acute hospital admissions in the UK at 25% and 24% respectively.<sup>36,37</sup>

There is growing evidence that hospital-based interventions provide highly cost-effective outcomes. The Ottawa Model of Smoking Cessation (OMSC) provides an exemplar of hospital-based tobacco addiction treatment demonstrating immediate benefits for smokers that stop smoking at the point of a hospital admission.<sup>38</sup> The OMSC consists of systematic screening of hospital admissions to

identify current smokers, and an opt-out bedside review with a trained practitioner who completes a standardised assessment form, recommends pharmacotherapy for the inpatient stay and post-discharge based on a standardised protocol, provides brief counselling and registers the patient with an automated voice recognition follow-up service. This follow-up service provides 8 phone calls over 6 months, with relapse or low motivation triggering a telephone call from a trained practitioner for further support. In the Ottawa study a control group of 641 inpatient smokers recruited prior to implementation of the OMSC were compared to an intervention group of 726 inpatient smokers that were treated by the OMSC pathway following implementation (after the first 2 months of implementation). The study reported a reduction in readmission rates from 38.4% to 26.7% and a halving of 12-month mortality from 11.4% to 5.4% in the intervention group compared with the control group. Using the risk reductions seen in the Ottawa study, it is estimated that implementing a comprehensive opt-out tobacco addiction treatment service across NHS secondary care in England, would save the NHS approximately £60 million within 1 year.<sup>39</sup> Individual localities have also estimated the impact on their local healthcare system to support the piloting and commissioning of such services. In one study, applying the risk reduction seen in the OMSC study to the city of Manchester would result in an additional 3,503 patients successfully stopping smoking per year, 1,171 readmissions prevented, and 601 lives saved per year. For Manchester the estimated healthcare cost savings were £1,884,139 per year, and numbers needed to treat (NNT) were nine patients to prevent one admission and 17 patients to prevent one death at 1 year.<sup>40</sup>

The CURE project (conversation, understand, replace, expert and evidence-based treatments) in Manchester is the first reported evaluation of the feasibility, uptake and impact of a comprehensive smoking ascertainment and treatment pilot, based on the Ottawa model, in a UK acute medical treatment setting.<sup>41</sup> This 6-month pilot at a single acute hospital demonstrated that introducing the CURE model of systematic stop smoking support is feasible, with 92% of adult admissions screened for smoking status and 2,393 smokers identified, of whom 96% were provided with brief advice and 66% prescribed cessation pharmacotherapy. A significant component of pharmacotherapy was prescribed by frontline clinicians utilising a standardised prescribing protocol. Inpatient counselling and behavioural interventions with a specialist cessation practitioner were completed by 61%; 49% completed follow up at 4 weeks and 33% at 12 weeks. The intention to treat quit rate at 12 weeks was 22% (Table 9.1) at a cost of £183 per quit.

**Table 9.1 Uptake and impact of the CURE pilot intervention during inpatient admission and follow-up after discharge**

\*Quit rate in those patients completing the follow-up assessment and smoking status recorded

\*\*Quit rate as a proportion of all smokers admitted during the pilot assuming all lost to follow-up have relapsed/continued to smoke (intention to treat basis)

	Total number	% of all smokers	Number of quits	Quit rate* (% with FU data)	Quit rate** (% of all smokers)
All smokers	2,393	100%	-	-	-
Completion of inpatient CURE assessment and treatment	1,450	61%	-	-	-
Completion of 2-week follow up post-discharge	1,105	46%	-	-	-
Completion of 4-week follow up post-discharge	1,179	49%	495	42%	21%
Completion of 12-week follow up post-discharge	800	33%	525	66%	22%

This quit rate suggests that if implemented nationally, this service model could generate more than 200,000 successful quits among the more than one million smokers admitted to hospitals in England each year.<sup>35</sup> This represents a highly cost-effective intervention and a significant return on investment. The RCP estimated that implementing comprehensive opt-out tobacco addiction

treatment services across NHS secondary care would save the NHS approximately £60 million within 1 year,<sup>39</sup> but this estimate was based on uptake of treatment by 27% of smokers. In the CURE pilot 61% engaged with the service suggesting the NHS savings may be substantially higher. The uptake and intention to treat quit rate in the CURE pilot compares favourably to published data (Table 9.2).

**Table 9.2 Summary of published outcomes for hospital-based tobacco addiction treatment services**

	Provision of brief advice	Stop smoking medications uptake	Inpatient specialist support uptake	Follow up post-discharge	Quit rate (intention to treat)
Ottawa <sup>42</sup> n=4,617 Smokers 908 (20%)	Not provided	Not provided	Not provided	28% at 6 months	10% at 6 months
South Carolina <sup>43</sup> n=42,061 Smokers 8423 (20%)	Not provided	Not provided	18%	28% at 4 weeks	13.5% (30 days)
Nottingham <sup>44</sup> (RCT) 1,072 smokers 493 randomised	Not provided	50%	70%	31%	38% at 4 weeks 19% at 6 months
CURE Project – Manchester <sup>41</sup> n=14,690 2,393 smokers (18%)	96%	66%	61%	49% at 4 weeks 33% at 12 weeks	22% at 12 weeks

### 9.4.2 Treating pregnant women who smoke

In addition to harming women, smoking in pregnancy is associated with increased risks of miscarriage, stillbirth, prematurity, low birth weight (LBW), perinatal, neonatal and sudden infant death, and poorer infant cognition and behavioural outcomes.<sup>45–47</sup> Children who live with parents who smoke are much more likely to become smokers themselves<sup>48,49</sup> and when women stop smoking in pregnancy this reduces the incidence of low birth weight births and neonatal special care admissions.<sup>50</sup> Smoking in pregnancy is costly for the NHS; on average, until 5 years of age, children born to women who smoke cost the NHS an extra £222 each (95% CI £17.78–425.83), a UK total of £23.3 million (95% CI £1.9–44.7 million).<sup>51</sup> Hence, permanent cessation by pregnant women benefits them, their offspring and families and wider society.

Smoking in pregnancy is also a major international public health problem, with prevalence ranging from 13% to 25% in high-income countries<sup>52–55</sup> and a similar epidemic is developing in low- and middle-income countries.<sup>56</sup> In England in 2017/8, 11% of women smoked at childbirth with rates highest in economically deprived areas (the highest being Blackpool at 26%), and in England and Wales around 94,600 fetuses are exposed to smoking in pregnancy annually.<sup>57</sup> Pregnancy is probably the most motivational life event for encouraging people to try stopping smoking; 57% of women who smoked either just before or in early pregnancy make a spontaneous quit attempt and by the end of pregnancy around 40% have stopped.<sup>58</sup> Unfortunately, many quitters relapse after their child is born; by 3 months approximately 25% of spontaneous quitters re-start smoking<sup>58</sup> and by 6 months, even 46% of those who stopped smoking in pregnancy after using cessation support will re-start.<sup>59</sup> Health systems, therefore, need both to capitalise on pregnant women's motivation to quit by supporting as many as possible to succeed, and to prevent smoking relapse after childbirth.

Offering help to pregnant women who smoke is crucially important. In the UK, 2010 NICE guidance PH26,<sup>60</sup> which is currently being updated, recommends three key principles in treating pregnant women who smoke:

- > engagement – of all pregnant women to identify those who smoke
- > referral – as a default for all women identified as smoking
- > support – for those referred who accept this.

More recently, in 2018 the National Centre for Smoking Cessation Training, which is responsible for the quality of

smoking cessation support provided in the UK, published the Standard Treatment Programme for Smoking in Pregnancy (STP).<sup>61</sup> This clearly delineates how NHS providers should support pregnant women who smoke; 'standard treatment' begins in antenatal care settings when health professionals *engage* with all pregnant women by asking them to provide exhaled carbon monoxide (CO) readings. For this, pregnant women blow into a CO monitor and those who have readings of greater than 4ppm are *referred* for smoking cessation *support* unless they specifically decline. Some women who do not smoke may still have high expired air CO concentrations; such women are unlikely to accept referral for stop smoking support and sensitive discussion of potential environmental sources of CO such as car or boiler exhaust fumes is important. 'Opt-out' referrals are readily accepted by women undergoing antenatal care<sup>62</sup> and double the proportions of pregnant women who receive cessation support<sup>63</sup> and quit smoking.<sup>63,64</sup>

Both NICE<sup>60</sup> and the 2017 Tobacco Control Plan for England<sup>65</sup> recommend that 'opt-out' referrals are offered to all women who attend for antenatal care. Ideally, this approach should be sensitively applied at all antenatal care pathway appointments because, women's interest in cessation support persists throughout pregnancy<sup>66</sup> and even very organised, early pregnancy referral processes may fail to refer substantial numbers of women.<sup>63</sup> 'Opt-out' referrals for smoking cessation support are a key feature of the NHS 'Saving Babies' Lives' care bundle for preventing stillbirth,<sup>67</sup> which defines components of standard antenatal care required to reduce stillbirth rates. Smoking in pregnancy is strongly associated with stillbirth<sup>68</sup> so, using a systematic approach to identify women who smoke and to support them in stopping is vital to this process. Implementation of this care bundle throughout England is estimated to have prevented 600 stillbirths annually.<sup>69</sup>

After successful referral, concerns for the safety of medicines in pregnancy limit pregnant women's available treatment options to behavioural support (counselling-based interventions);<sup>50</sup> nicotine replacement therapy (NRT);<sup>70</sup> self-help<sup>71</sup> and cessation-contingent financial incentives.<sup>50</sup> Of these, intensive behavioural support has the strongest evidence base (from 54 randomised controlled trials (RCTs)) and increases smoking cessation in late pregnancy compared with usual care (average risk ratio (RR) 1.44, 95% confidence interval (CI) 1.19 to 1.73).<sup>50</sup> NRT also seems effective; from nine RCTs in 2,336 women there is low-certainty evidence that NRT increases the likelihood of smoking abstinence in later pregnancy (RR 1.37, 95% CI 1.08 to 1.74).<sup>70</sup> Twelve trials of self-help interventions suggest a pooled odds ratio in favour of

these promoting cessation of 1.83 (95% CI 1.23-2.73). However, to use self-help effectively requires motivation so, these interventions may not be appropriate for all women. Cessation-contingent financial incentives are a promising approach,<sup>50</sup> these can help non-pregnant smokers to quit<sup>72</sup> and there is high quality evidence that they are effective in pregnancy.<sup>50</sup> However, one RCT has investigated the impact of incentives as an adjunct to usual care, as these might be used in everyday clinical practice.<sup>73</sup> This study recorded an unusually large intervention effect; 13.9% higher quit rates in women offered incentives and the relative risk of not smoking at the end of pregnancy was 2.63 (95% CI 1.73 to 4.01). It was conducted in a single stop smoking service and an ongoing trial is attempting to replicate findings in multiple settings.<sup>74</sup>

Clearly, optimal management of smoking in pregnancy relies on the NHS making effective cessation treatments accessible to pregnant women. Historically, NHS funds were specifically hypothecated to help pregnant women to stop smoking and in 2011, 79% (121/152) of English NHS primary care trusts reported commissioning cessation support specifically for pregnant women.<sup>75</sup> In 2013, protection for smoking cessation budgets ended when local authorities (LAs) assumed public health responsibilities and LAs began commissioning cessation support in the context of substantial austerity. In 2015, only 47.3% (72/152) of LAs reported providing stop smoking support for pregnant women.<sup>76</sup> This decline in available support for pregnant women is likely to be the key factor underpinning a 57% reduction in the number of pregnant women in England who stop smoking with stop smoking services (SSS) support annually, from 6,857 in 2011/2 to 3,887 in 2018/9. However, the 2019 NHS Long Term Plan promises smoking cessation support for all pregnant women,<sup>77</sup> so a proliferation of NHS-provided cessation support is likely. It is vital for public health that both NHS and local authority SSS are sufficiently maintained and all pregnant women who need or want cessation support can receive this.

### 9.4.3 Treating smoking in people with mental illness

#### 9.4.3.1 Smoking and mental illness: the need for effective interventions

Smoking is a major contributor to health inequalities and disparities in life expectancy between people with and without a mental health condition.<sup>78</sup> An estimated 12 years of life lost prematurely for women and 16 years for men have been attributed to the consequences of smoking in people with a mental health condition.<sup>79</sup> The links between smoking and mental illness are complex and include neurobiological, psychosocial and genetic factors, not all of which are understood in their entirety.<sup>80</sup>

Smoking prevalence and heaviness of tobacco dependency are markedly higher in people with a mental illness than in those without,<sup>78</sup> and although evidence from a UK population-level study<sup>79</sup> indicates a downward trend in prevalence over the last decades (from 44.6% in 1993 to 34.1% in 2014 in people with a mental health condition, compared to 29.3% to 19.6% in those without), smoking rates remain approximately 50% higher in this group than in the general population. In those with severe mental illness (SMI), such as schizophrenia, smoking prevalence can reach over 70%.<sup>81</sup> In view of major and increasing tobacco-related inequalities, the urgency to provide and promote effective interventions to treat smoking in people with a mental health condition has been recognised in UK national policies and guidelines.<sup>78,82-84</sup> This subchapter summarises the evidence relating to safe and effective smoking cessation interventions for people with a mental health condition and briefly discusses common barriers to addressing smoking in mental health settings.

#### 9.4.3.2 Treating tobacco dependency in people with a mental health condition: perceptions vs evidence

Due to the historic smoking culture in mental health disorders<sup>85</sup> and other complexities involved in the links between smoking and mental illness, there are common and persistent misconceptions that people with a mental health condition 'don't want to quit smoking', that evidence-based smoking cessation treatments used in the general population 'do not work' for them, or indeed that stopping smoking 'exacerbates mental health conditions'.<sup>78,85,86</sup> None of these perceptions is supported by the evidence.

A 2017 systematic review<sup>87</sup> of 26 trials of pharmacological and behavioural interventions for smoking cessation for people with SMI concluded that, in line with an earlier systematic review,<sup>88</sup> people with SMI can successfully quit smoking using the same interventions (NRT, bupropion and varenicline, combined with behavioural support) shown to be effective for the general population. Although it was acknowledged that smoking cessation studies in this population were sometimes underpowered and generally had a high or unclear risk of bias, it was evident that people with SMI are willing and able to quit smoking. A lack of research on electronic cigarettes for smoking cessation, shown to be effective in the general population<sup>89</sup> and identified as promising for people with a mental health condition,<sup>90</sup> was identified. Findings from this systematic review are in line with results from a subsequent large randomised controlled trial evaluating the neuropsychiatric safety and efficacy of varenicline, bupropion and nicotine patches,<sup>91</sup> which included over 8,144 participants with



and without common mental health conditions (eg depression, anxiety) and SMI in 16 countries and 140 study centres. The trial demonstrated that varenicline was more effective than placebo, nicotine patch, and bupropion in helping smokers quit in both study groups. Comparison of treatment efficacy was reported not to differ statistically between mental health and non-mental health cohorts. An analysis of population-level trends of smoking and quitting behaviours in the UK<sup>79</sup> supports the above findings, albeit limited to common mental health conditions. It included several waves of population sample survey data, ranging from 7,402 to 10,108 participants per wave. Although the odds of successful smoking cessation were significantly lower among people with any mental health condition in unadjusted analysis, the association was no longer significant after adjustment for heavy smoking (0.82, 95% CI 0.55 to 1.22,  $p=0.317$ ). Importantly, people with a common mental health condition were found to be more likely to report a desire to quit smoking than those without.

Varenicline, bupropion and NRT are safe for people with a mental health condition.<sup>87,91</sup> This counters perceptions which are being actively discouraged by the Royal College of Psychiatrists<sup>90</sup> but are still persistent, that varenicline may be contraindicated in this group. Furthermore, in the systematic review studies participants' mental health condition did not worsen following smoking cessation,<sup>87</sup> as is still commonly assumed to occur. In view of the continuing reluctance of mental health professionals to address smoking in their patients<sup>92,93</sup> often because of concerns over safety, this is an important finding. In fact, a systematic review and meta-analysis of longitudinal studies of smoking cessation in healthy and clinical populations concluded that smoking cessation is associated with reduced depression, anxiety and stress, and improved positive mood and quality of life compared with continuing smoking,<sup>94</sup> while a Mendelian randomisation study (a research method that provides evidence about putative causal relations between modifiable risk factors and disease, using genetic variants as natural experiments) found evidence that smoking can be causally involved in the development of depression or schizophrenia.<sup>95</sup> A Cochrane review<sup>96</sup> to investigate the association between smoking cessation and subsequent mental health outcome using secondary analysis of trial data is underway.

#### *9.4.3.3 Tailoring smoking cessation interventions for people with SMI*

Notwithstanding the evidence that smoking cessation treatments recommended for the general population work and should be routinely provided for people with a mental health condition,<sup>83</sup> recommendations for developing

tailored interventions that address particular needs in this population, especially those with SMI, exist.<sup>84</sup> There is evidence from a prospective cohort study<sup>97</sup> using data from 654 general practices in England from 2006 onwards that smoking cessation prescribing for patients with mental health conditions may be declining, and it is recognised that people with SMI are less likely than people without to access local Stop Smoking Services.<sup>98,99</sup> Qualitative evidence<sup>100</sup> indicates that these services can be perceived to be inappropriate by people with SMI, who often do not feel adequately supported by smoking cessation advisors without mental health training. Another important aspect in considering the need for tailored smoking cessation interventions for people with SMI is the need to adjust the dosage of certain antipsychotic medications (eg clozapine) following cessation,<sup>78</sup> as drug metabolism decelerates when people quit, which can result in toxic blood levels of certain medications<sup>101</sup> and requires monitoring. The evidence related to the development and evaluation of bespoke smoking cessation interventions for people with SMI is still developing.

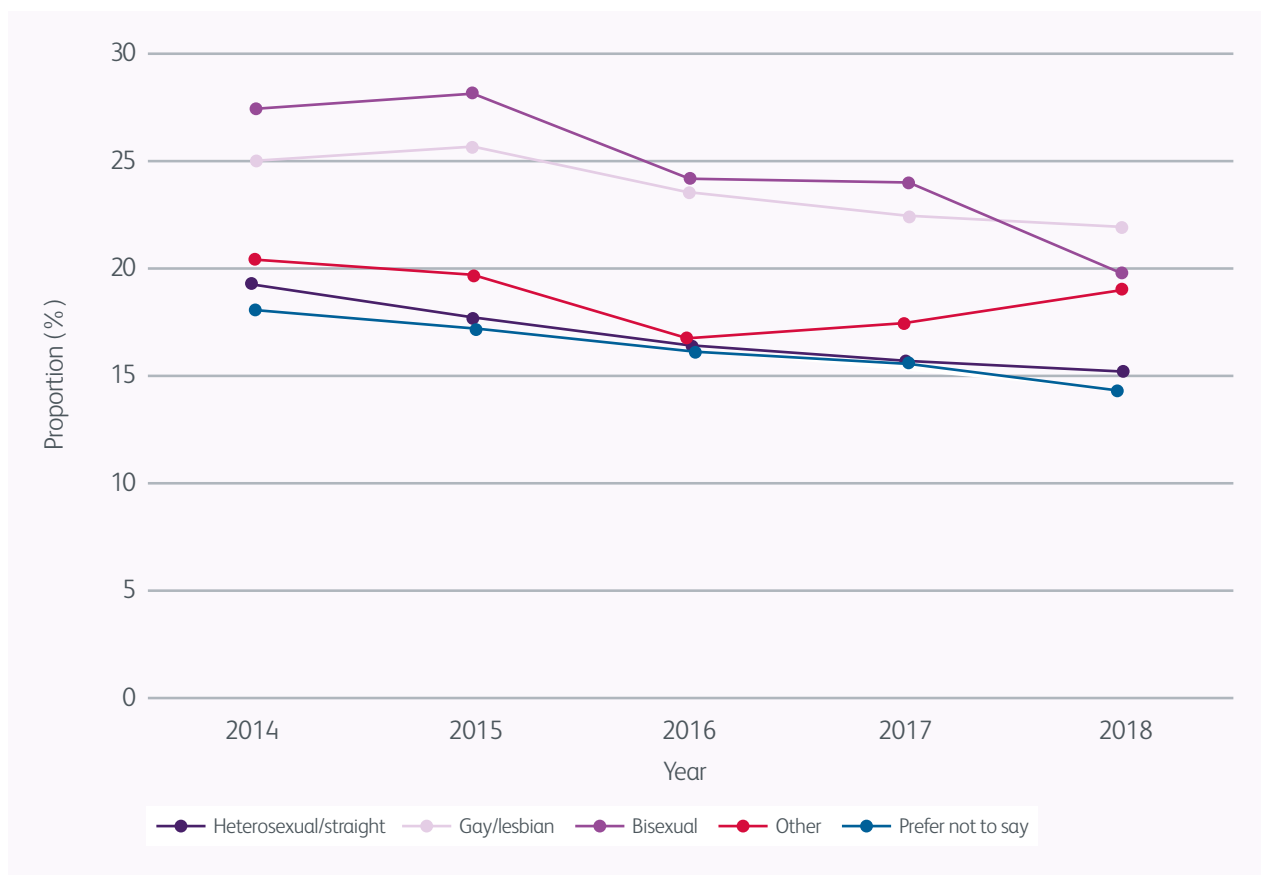
In the UK, the SCIMITAR+ trial<sup>102</sup> included 526 patients with a documented diagnosis of schizophrenia, delusional or psychotic disorder and randomised them to a bespoke smoking cessation intervention for people with mental illness or usual care. The intervention was based on standard pharmacological and behavioural smoking cessation support, as recommended by the National Centre for Smoking Cessation and Training (NCSCT), and delivered by smoking cessation practitioners with mental health backgrounds. Adaptations to cater for the needs of people with SMI included making several assessments before setting a quit date, offering nicotine replacement before setting a quit date (ie, 'cut down to quit'), recognising the purpose of smoking in the context of a person's mental illness, providing home visits, providing additional face-to-face support after an unsuccessful quit attempt or relapse, and informing the primary care physician and psychiatrist of a successful quit attempt, such that they could review doses of antipsychotic medication if metabolism changed following cessation. Results demonstrated notably higher levels of engagement with the bespoke intervention than with usual care. The proportion of participants who quit at 6 months was significantly higher in the intervention group than in the usual care group (32 [14%] of 226 vs 14 [6%] of 217; odds ratio (OR) 2.4, 95% CI 1.2 to 4.6;  $p=0.010$ ), though at 12 months this difference was not significant (34 [15%] of 223 vs 22 [10%] of 219; OR 1.6, 95% CI 0.9 to 2.9;  $p=0.10$ ). Health economic analyses showed that the intervention was cost-effective.<sup>103</sup> The authors concluded that the SCIMITAR+ intervention could serve as a model

of bespoke smoking cessation support for people with SMI and acknowledge that further research to address the lack of long term effectiveness should be undertaken.

Important steps to ensure that smokers with a mental health condition are appropriately supported in the future have been taken, both in terms of national policies (see also chapter 6.4) and emerging research. Recognising and effectively tackling barriers, including prevailing misconceptions by health professionals and gaps in the evidence (eg further tailoring of behavioural intervention content relevant to SMI and smoking; electronic cigarettes for smoking cessation in SMI; relapse prevention), will be crucial to ensuring further progress. This is particularly pertinent in light of the COVID-19 pandemic, as having a SMI presents a risk factor for experiencing a new set of emerging inequalities in addition to existing ones,<sup>104</sup> including those related to COVID-19 and smoking.<sup>105,106</sup>

#### 9.4.5 Smoking among the lesbian, gay, bisexual, and transgender community

In the UK, smoking prevalence is higher among lesbian, gay, and bisexual people (LGB) than in the general population. The most recent available data from the Annual Population Survey<sup>107</sup> indicate that smoking prevalence in England in 2018 was around 1.4 times higher among people who identified as gay or lesbian (21.9%) and 1.3 times higher among those who identified as bisexual (19.7%) than in heterosexual people (15.2%) (Fig 9.6).



**Fig 9.6 Current smoking prevalence in adults (18+ years) in England by sexual orientation, 2014-2018.**<sup>107</sup>

© Annual Population Survey

There are currently limited data (particularly in the UK) on smoking prevalence in trans and non-binary people. This failing should improve in the future: there is a project to harmonise and improve data collection on sex, gender identity and sexual orientation across government statistical services in the UK ahead of the 2021 census.<sup>108,109</sup> The data that do exist suggest that these groups are also more likely to smoke than cisgender people.<sup>110,111</sup> On this basis, NICE guidelines published in 2018 identified lesbian, gay, bisexual and transgender (LGBT) people as a priority for smoking cessation initiatives and services.<sup>112</sup>

Recent evidence<sup>113–115</sup> has shown a narrowing in the smoking prevalence gap between the general population and some (but not all) LGB groups. However, this has not consistently been observed across surveys.<sup>116</sup> While LGB people are more likely than heterosexual people to smoke, both groups appear to be equally motivated to stop smoking or likely to make a quit attempt<sup>113</sup> and differences in smoking rates may in part be due to other sociodemographic confounders associated with sexual orientation/gender identity.<sup>115</sup>

#### 9.4.5.1 Barriers to cessation

There are several factors that may contribute to higher smoking prevalence and make cessation more difficult among sexual minority groups.

##### 9.4.5.1.1 Discrimination and mental health

Many smokers mistakenly believe that smoking helps to relieve stress and report smoking as a means of coping with high levels of stress.<sup>117,118</sup> For some LGBT people, smoking may be a mechanism for coping with ‘minority stress’ caused by exposure to prejudice, discrimination, harassment, and victimisation.<sup>119,120</sup> Homophobia, biphobia, and transphobia remain prevalent in schools, the workplace, and healthcare services. Quitting smoking may be more difficult, or less of a priority, for LGBT people in this context.

LGBT people are disproportionately more likely to experience poor mental health due to social pressures and prejudices.<sup>121</sup> Smoking prevalence among the general population with common mental health conditions remains around 50% higher than among those without, despite their higher desire to quit.<sup>122</sup>

##### 9.4.5.1.2 Social influence

Smoking is a socially contagious behaviour and is initiated and maintained through social networks.<sup>123</sup> For many LGBT people, safe places for social gathering have traditionally been bars and similar establishments where there is a culture of smoking.<sup>124</sup> Because of this, the introduction of smoke-free legislation in 2007 may have

had a disproportionate benefit for this group, resulting in a decrease in smoking disparities.<sup>113</sup> However, given the high levels of social exclusion experienced by sexual minority groups, it is also plausible that smoking persists due to fear of exclusion from the social group if the behaviour stopped.<sup>125,126</sup>

##### 9.4.5.1.3 Industry interference

LGBT smoking has been encouraged by decades of targeted marketing from the tobacco industry, with companies investing heavily in the promotion and depiction of smoking in LGBT media. Other techniques have included sponsorship of pride events, silencing boycotts with large pay-outs, and giving away free cigarettes in LGBT venues.<sup>127,128</sup>

##### 9.4.5.1.4 Intersectionality with other high-risk smoking groups

Those who identify as LGBT are also more likely to belong to other groups with higher smoking rates. As mentioned above, LGBT people are more likely than heterosexual or cisgender people to have mental health problems. They are also more likely to be single,<sup>129</sup> socio-economically disadvantaged,<sup>130</sup> and more likely to experience homelessness,<sup>131</sup> all of which are associated with higher smoking prevalence.

##### 9.4.5.1.5 Engagement in other health-harming behaviours

LGBT people are also more likely than non-LGBT people to engage in other health-risk behaviours associated with increased risk of smoking, including excessive alcohol use and dependence on controlled substances.<sup>115,132</sup> There is evidence these behaviours are linked to use of LGBT social spaces,<sup>133</sup> echoing the importance of social influence outlined above.

##### 9.4.5.1.6 Difficulty accessing services

LGBT people also face problems accessing health services. In January 2016, a report by the Women and Equalities Select Committee into ‘transgender equality’ concluded that ‘the NHS is letting down trans people’, noting a number of areas such as a lack of staff training around gender identity and a failure to combat transphobia.<sup>134</sup> This sentiment is echoed throughout LGBT patient experience research which has repeatedly identified sexual orientation as a reason for delaying access to services.<sup>121</sup>

GP advice to quit smoking is received by more than half of smokers visiting their practice in the past year and motivates quit attempts.<sup>135</sup> Behavioural support can increase the likelihood that a quit attempt will be successful,<sup>136,137</sup> so it is vital that LGBT people feel able to access GP and stop smoking services and feel supported when they do so. The evidence suggests however that among LGBT people this is not always the case.<sup>121</sup>

Coming out to healthcare professionals appears to be beneficial. One in five LGBT people is not 'out' to any healthcare professional about their sexual orientation when seeking general medical care.<sup>121</sup> Across all primary care services, the needs of LGBT people are more likely to be met when they disclose their sexual orientation and/or trans status to their healthcare professionals.<sup>138</sup>

However, the 2017 LGBT Patient Survey found that only 53% of LGB people had a positive response to disclosing their sexual orientation, while only 44% of trans people had a positive response to disclosing their trans status, to a healthcare professional.<sup>138</sup> A substantial minority (18%) of trans people report avoiding medical treatment due to fears of insensitivity, misgendering (being referred to as the incorrect gender), and discrimination.<sup>139</sup>

### 9.4.5.2 Strategies for boosting quit rates

#### 9.4.5.2.1 Making services welcoming for LGBT people

When a service is designed for everyone, it does not necessarily cater to the specific needs of every user group. As such, services for all smokers may not appeal to LGBT smokers. Discrimination or a lack of understanding of LGBT issues could prevent a smoker from accessing or returning to a service.

It is likely that most LGBT people do not need an LGBT-specific smoking cessation service. Rather, they need the mainstream service to be a safe place for them to be themselves, without fear of discrimination, being misgendered, or having to explain or justify their identity. This potential can be reduced by having staff trained in LGBT awareness and providing visible signs of LGBT acceptance within services and more broadly in campaigns and health initiatives.

There are many simple steps that can be taken to make a service visibly LGBT friendly:

- displaying LGBT posters and literature in GP receptions, pharmacies, etc
- healthcare professionals wearing rainbow lanyards
- appropriate posters signposting to LGBT support (as you would for carers, or people with mental health conditions)
- including LGBT people in campaign communications
- amending registration and health forms to ask appropriately about sex, gender, and sexual orientation
- for events, providing labels that give people the chance to share their preferred pronouns (she/her, he/him, they/them) alongside their name.

It is also important to create an accepting atmosphere by ensuring that staff have a relaxed and welcoming attitude and avoid assumptions that everyone is heterosexual or cisgender (eg assuming that all service users will have opposite-sex partners). These simple steps to inclusion can act as marks of acceptance, improve engagement with services, and boost confidence in service users by breaking down perceived barriers.<sup>140</sup>

#### 9.4.5.2.2 Engaging in LGBT outreach activities

Above and beyond making services LGBT friendly, there are other things that can be done to proactively target LGBT smokers and offer them the support they need to quit. These include working with local LGBT organisations to reach the local LGBT community, and working with the local LGBT community to embed smoke-free spaces in events and festivals (eg prides) and recruit LGBT people to stop smoking services. A recent publication by Action on Smoking and Health<sup>141</sup> provides examples of good practice at a local level. For instance, Greater Manchester has engaged with local tobacco alliances and tobacco control teams to ensure LGBT inequality is a standing item on their agendas to raise awareness among policymakers and promote action. Another region, Calderdale, working as part of Yorkshire Smokefree, has developed a relationship with a charity that supports local LGBT people to improve co-production and knowledge exchange. Examples of their activity include training designated charity staff as stop smoking advisors and the charity supporting national stop smoking campaigns (eg 'No Smoking Day' and 'Stoptober') to extend the reach of stop smoking support to communities who may not access, or look for information about, generic stop smoking services.

#### 9.4.5.2.3 Regular monitoring of smoking and quit advice in LGBT-focused healthcare provision

Healthcare services that serve members of the LGBT community (eg LGBT health centres, HIV clinics) should monitor service users' smoking status and be able to direct smokers to appropriate cessation support. Training healthcare professionals working in these settings to deliver brief advice on smoking could provide an effective, time- and resource-efficient intervention<sup>142</sup> to LGBT smokers who may not otherwise seek professional support for quitting.

#### 9.4.5.2.4 Sexual orientation and trans status monitoring

In terms of evaluation, evidence on the LGBT population has traditionally been limited by a lack of routine monitoring of sexual orientation in public services.<sup>143</sup> The Sexual Orientation Monitoring Information Standard provides a standardised format for recording the sexual orientation of patients/service users.<sup>144</sup> Monitoring sexual

orientation and trans status is important because it enables health and social care bodies to understand the needs of the local population better and target services more effectively and efficiently. There is a lack of evidence about the needs and experiences of LGBT people in general, and of trans people in particular.

Monitoring, correctly implemented, is the best way to address this lack of evidence and ensure LGBT people's needs and experiences are heard. Monitoring also gives the patient or service user a safe and familiar way to disclose their identity. At present, other characteristics such as age, ethnicity, and marital status are monitored routinely. Additional questions around sexual orientation and trans status can be easily integrated into existing demographic forms for the purpose of compliance with the Equality Act 2010 and the Public Sector Equality Duty.

#### 9.4.5.3 Special considerations for subgroups of LGBT people who smoke

In providing cessation support to LGBT smokers, certain considerations may be relevant for women, trans people, and people living with HIV.

##### 9.4.5.3.1 Women

There is some evidence that differences in health-risk behaviour between sexual minority and heterosexual people are more pronounced in women than men,<sup>115,145</sup> which suggests that other gender-specific influences may be implicated. It may be an expression of gender non-conformity for some LGB women looking to break the stereotype that women are less likely to smoke than men.<sup>146</sup> It may also reflect the fact that LGB women are more likely than men to experience multiple forms of minority stress,<sup>147</sup> which may increase their propensity to engage in risky health behaviours as a coping mechanism. Gender-specific tailoring of health messages could help to reduce smoking disparities between LGB men and women.

##### 9.4.5.3.2 Trans people

Self-identification is all that is required to be trans, but many trans people also seek hormone replacement therapy (HRT) as part of their transition process. For these people, smoking cessation is particularly important because concurrent smoking and hormone use generates substantial health risks.<sup>148</sup> In the case of trans women taking HRT, tobacco use may also reduce the efficacy of their treatment. Trans people wishing to undergo gender affirming surgery should also be aware of the significant risks of smoking during and after any surgery. In general, smokers are 30% more likely to die after any surgery and more likely to experience major complications such as wound infection<sup>149</sup> and cardiovascular events.<sup>150</sup> Preoperative

smoking cessation interventions can improve short-term cessation and lead to significant health benefits.<sup>151</sup>

##### 9.4.5.3.3 People living with HIV

Gay, bisexual, and other men who have sex with men are the population most affected by HIV. There are higher levels of smoking among people with HIV than in the general population.<sup>152</sup> With modern anti-viral treatment regimes, smoking has a much greater impact on life expectancy than HIV infection – but the two conditions combine to threaten the health of HIV positive smokers.<sup>153</sup> Caution should be taken when prescribing bupropion (Zyban) to someone on anti-HIV drugs due to the way the two drugs interact.<sup>154</sup> Anti-HIV drugs can reduce the level of bupropion in the blood and may require a much higher dosage to be effective; NICE guidance is to start bupropion at the recommended dose and titrate as required.<sup>155</sup>

## 9.5 Primary care

Almost all clinicians will see patients who smoke under their care, and current national guidelines recommend that clinicians make brief opportunistic interventions to promote smoking cessation.<sup>156,157</sup> Patients rarely ask clinicians directly for help to stop smoking; rather, clinicians raise this, typically at the end of a consultation, where they opportunistically offer advice or help to stop smoking. All clinicians are advised to do this, however, GPs in particular are often seen as best placed as they typically have credibility and are well trusted by patients.

### 9.5.1 Evidence for the effectiveness of opportunistic brief interventions

The Cochrane review, *Physician advice for smoking cessation*, grades the evidence as strong that physicians can support people to stop smoking – patients who receive advice of some form are more likely to stop smoking than those who receive no such advice.<sup>158</sup> People who stop smoking are at substantially lower risks of heart disease in the short term and other diseases over the longer term<sup>159</sup> and therefore the costs of GP time spent on advice are outweighed by the savings that accrue in reduced healthcare costs in the medium and long term.<sup>160</sup> Thus, it would be rational for any clinician heeding this evidence to undertake opportunistic interventions to support smoking cessation on every possible occasion. Clinicians do not do so, however.

A systematic review aimed to determine what clinicians should do during a brief opportunistic intervention by reviewing all the opportunistic interventions in the Cochrane review described above.<sup>26</sup> Some trials randomised participants to advice to stop smoking or advice to stop smoking plus offering support in achieving abstinence.



Offering support led to more participants attempting to stop, implying that simply offering support is a motivational strategy in itself. Since then, UK policy has adopted an approach to opportunistic interventions known as the 3As—ask, advise, act. In consultation recordings, however, there were no interventions that resembled this sequence.<sup>161</sup>

### 9.5.2 The frequency and content of opportunistic brief interventions

One common source of data on the occurrence of brief interventions is to ask practitioners about what they do, how often, and what the prompts are to act or factors that demotivate clinicians from doing so. Cancer Research UK (CRUK) commissioned such a survey in 2017, including 1,000 GPs and 1,000 practice nurses.<sup>162</sup> Responses between the two groups were similar. UK guidance for making brief interventions focuses on three actions: asking about smoking status, advising on the best way to quit smoking, and acting on the response, for example by prescribing or offering to refer the patient to a stop smoking service. A total of 84% of clinicians reported asking people ‘frequently’ or ‘always’ about their smoking. A further 87% reported that they advised people about smoking frequently or always, while 64% acted frequently or always by offering a referral or prescribing medication. Self-reported adherence to

guidelines may overestimate the true frequency with which clinicians deliver brief interventions.

Another data source comes from asking people who smoke how often GPs speak to them about smoking. The best data for this comes from the Smoking Toolkit Study (STS), conducted in England.<sup>12</sup> Around 30% of smokers report receiving any kind of advice on smoking, 20% are offered any kind of support, 10% offered referral to the stop smoking services, with 5% offered prescription medication and only a small number advised to use an e-cigarette.<sup>27</sup> The prevalence has not changed much over time (Fig 9.7). A prior report from the STS suggests the rate of intervention has been much the same since 2010. In the STS, around two-thirds of people that smoke reported visiting the GP each year, thus less than half of everyone who smokes and visits a GP receives any advice on smoking. On average, people make about five visits a year to their GP.<sup>163</sup> This would imply that GPs offer smoking advice on about one in 10 consultations with people that smoke. It is plausible that patients forget receiving advice, so this may underestimate the frequency, however CRUK and STS data suggest there is a large gap between practitioner and patient recall of being offered opportunistic brief interventions.

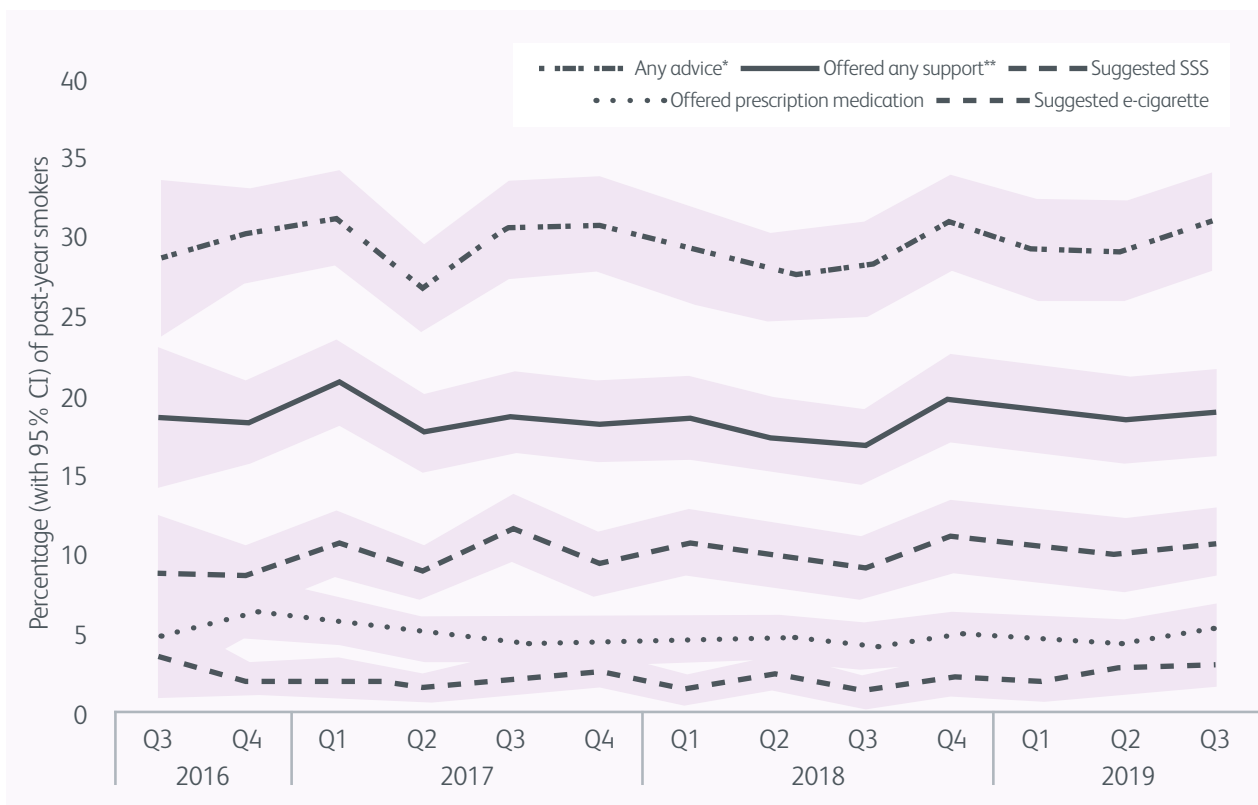


Fig 9.7 Prevalence of receipt of GP advice and support on smoking by past-year smokers in England (2016–2019).<sup>27</sup>

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Another method to estimate the frequency of advice, and probably the most accurate, is to record consultations. In a currently unpublished study, Wheat and colleagues examined recorded consultations from the 'One in a million' study and the 'Harnessing resources from the internet to maximise outcomes from GP consultations (HaRI)' study, which recorded consultations completely unrelated to smoking.<sup>164,165</sup> Five-hundred and nineteen adults were included in the study and the true prevalence of smoking among these participants was unknown. Smoking was discussed in 31 consultations. Assuming a smoking prevalence of just under 20%, that represents 30% of consultations with people who smoke. Typically, smoking was raised in the history section of the consultation when it was epidemiologically relevant. Doctors advised patients about their smoking in 9% of consultations with people who smoked and offered some kind of support to stop smoking in 18% of consultations.

Although these methods of estimating the prevalence of brief interventions differ, they imply that brief interventions are a lot less frequent than guidelines and policy suggests they should be. Moreover, there is no evidence that the policy initiatives in the past 10 years have had any impact on the frequency of brief interventions.

These reports as well as the international literature paint a consistent picture of what clinicians do when they discuss smoking in consultations. The CRUK survey documented high rates of recording smoking status. The consultation recordings show that this occurs most commonly in the diagnostic portion of the consultation, when GPs were trying to understand the cause of a patient's symptoms. If doctors intervene beyond that, the most common thing that they do is advise a person to stop smoking, with 89% saying they do this frequently or always. Advising on ways to quit smoking was reported by clinicians less frequently, with 79% discussing the benefits of the stop smoking service and 53% advising about medication. Consultation recordings, however, show that doctors' most common action beyond asking about smoking status is advising about the smoking status. Both the survey of doctors, patients, and consultation recordings show that actively offering support to the patient is much less frequent. In fact, the consultation recordings showed not a single incidence of a clear unambiguous offer of support to quit smoking, with most offers being made 'in theory'.

Dealing with whatever factors are holding doctors back from offering support will be key to improving take-up of cessation support. GPs often express negativity towards smoking cessation, with common explanations of their reluctance that it takes too long, it does not work, and creates conflict

with patients.<sup>166</sup> However, such negativity is likely to belie deeper feelings about what medicine is, the professional identity of doctors, and the place of preventative medicine within that.<sup>167,168</sup> This is not easy to address, but one study found that GPs who saw themselves as part of a public health system seemed more engaged with this kind of work.<sup>169</sup>

Randomised trials show clearly that connecting people to behavioural support rather than leaving them to seek it out is many times more effective.<sup>170-172</sup> Optimising GP systems so that this can be done quickly and easily would greatly improve the uptake of smoking cessation support.

### 9.5.3 Policies to increase the frequency and type of brief opportunistic interventions given by GPs

#### 9.5.3.1 Quality and Outcomes Framework

The main policy interventions in England and Wales supporting implementation are guidelines from NICE (or SIGN in Scotland) and a pay for performance scheme called the Quality and Outcomes Framework (QoF). The current QoF rewards GPs financially for offering 'support and treatment' to every patient that smokes, at least once every 2 years, and offering support and treatment every year to people with a specified set of common smoking-related illnesses (except smoking-related cancers), and people with serious mental illness at least once a year.

The specification of the QoF changed in 2012 to encourage clinicians to offer referral and medication, rather than simply offering unspecified 'advice' on smoking. Moreover, 2012 saw the extension of the QoF incentives to everyone who smokes rather than only those with smoking-related conditions, increasing the proportion of adults covered from around 20% to 100%. A paper examined the impact of this change, which was unexpectedly modest.<sup>173</sup> According to GP records, the proportion of people advised to quit smoking showed a 20% (CI 8% to 31%) increase, offers of referrals to stop smoking services increased by 39% (CI 15% to 62%), and prescriptions of cessation medication decreased by -8% (CI -21% to +6%).<sup>173</sup> One explanation for this disappointing impact lay in the detail of the change in QoF. GPs are rewarded by entering certain specified codes into a template. One of these, 'smoking advice', was in place prior to 2012 and not removed on re-specifying the activity as 'support and medication' allowing GPs to claim the payments by offering this unspecified advice. In addition, some practices claim the payments by writing to or texting their patients, rather than offering in-person support. This is unlikely to be as effective, as offering support in-person can lead to high take up.

The system that rewards treatment and enhanced training in primary care could be optimised to ensure

that payments are made only as a result of face-to-face encounters and remove codes that allow doctors to offer general advice to stop smoking. Instead, doctors should be rewarded for offering support and medication, as intended.

### 9.5.3.2 Systematic treatment of tobacco dependency in general practice

In 2020, Cancer Research UK published a report<sup>174</sup> of modelling to show the potential for health improvement that would follow improved frequency and quality of brief opportunistic interventions. The modelling used the Lumen microsimulation model, which creates a virtual population of 'people' who then 'age' each year. Their baseline smoking status can change because a 'person' can quit, relapse, or start smoking for the first time. Moreover, a 'person' can develop one of 19 of the most common smoking-related diseases or die of an unrelated cause. The probability of developing a smoking-related disease was obviously dependent on current smoking status, using epidemiological data for the probabilities of these events occurring.

In the baseline scenario, the modellers examined current trends of smoking by simply continuing the past year's smoking prevalence. The projection showed that smoking prevalence would reach 5.8% by 2039, which implies missing the government target for a smoke-free England (<5% prevalence by 2030).

The team then examined the effect of upgrading the frequency and effectiveness of brief interventions given in primary care using three different scenarios. All assumed that GPs intervened at least once a year with everyone who attended an appointment who smoked. (About 75% of the population see the GP at least once). One scenario assumed that GPs referred people to the stop smoking service, a second that they prescribed medication, and a third that they did both.

The modelling suggested that improving frequency and quality of brief interventions would have important effects on smoking prevalence. Compared with the baseline scenario where the prevalence was 8.7% in 2030, supporting referral would reduce this to 6.4%, prescribing alone would reduce the prevalence to 6.7%, and doing both to 6.2%. The latter scenario would reduce the incidence of serious smoking-related disease by 15% and premature deaths by 16% over the next 20 years compared with the baseline. This would reduce costs of delivering primary care for people with these smoking-related diseases by 8% and reduce hospital admissions by 19%. Overall, these reduced incidence rates would save 16% of the NHS spend on smoking-related disease. This amounts to around 0.4% of the total NHS budget annually, which would be saved by increasing the frequency and quality of brief interventions.

## 9.6 The role of e-cigarettes and heated tobacco products

### 9.6.1 E-cigarettes

E-cigarettes consist of a battery-powered element which heats an e-liquid to produce an aerosol, commonly referred to as a vapour. E-liquids contain glycerine and/or propylene glycol, water, flavours and frequently nicotine. Initially this nicotine was present in freebase form but nicotine salt e-cigarettes have become more popular since emerging on the US market in 2015 with the discovery that the addition of benzoic acid to freebase nicotine reduces the irritant effects of nicotine in the upper airways thus enabling inhalation of higher nicotine content products.<sup>175</sup> E-cigarettes were initially designed to resemble tobacco cigarettes but have evolved and now there is a plethora of different sizes and shapes (such as memory sticks, pens, pebbles, metal boxes) including one-time use disposable products, reusable, rechargeable kits with replaceable cartridges or pods, or refillable open tanks or pods which can sometimes be customised, for example so that consumers can change the power. The different devices vary in the speed and dose of nicotine delivery and users of some models, particularly experienced users, can achieve similar blood nicotine levels to smoking.<sup>176,177</sup>

E-liquids are typically heated at temperatures of 40–180°C compared with 900°C for combustible cigarettes.<sup>178</sup> As e-cigarette vapour does not involve combustion, experts generally agree that they provide a less harmful source of nicotine than burning tobacco.<sup>3,179–180</sup>

In England, e-cigarettes increased in popularity between 2011 and 2014 but use subsequently plateaued with around 6% of adults in England and 5% of 11- to 18-year-olds reporting current vaping in 2019.<sup>181</sup> There are two routes to market: consumer and medicinal. All available e-cigarettes in the UK are currently consumer products and although one product (e-Voke) was licensed as a medicine,<sup>182</sup> it was never brought to market. E-cigarette regulations introduced as a result of the Revised European Union Tobacco Products Directive<sup>183</sup> were translated into UK law under the Tobacco and Related Products Regulations 2016<sup>184</sup> and are overseen by the Medicines and Healthcare Products Regulatory Agency (MHRA). These regulations stipulate that nicotine e-cigarettes are notified to the MHRA prior to being marketed, and cover minimum standards for safety and quality, maximum capacities and nicotine strength limits, information provision, and a prohibition of all broadcast and cross-border advertising. There is a mandatory 30% sized health warning on all nicotine-containing e-cigarettes and refill containers which reads 'This product contains nicotine

which is a highly addictive substance'. Other legislation prohibits e-cigarette sales to those under 18 years old, and there is also an Advertising Code governing the content of e-cigarette advertisements.<sup>185</sup> The Code covers a range of issues and applies to e-cigarettes that do or do not contain nicotine, including ensuring *inter alia* that: marketing communications are socially responsible; content is not associated with, or could promote, tobacco products; non-nicotine users or non-smokers are not encouraged to use the products; and the marketing does not appeal to young people. Health claims on advertisements are permitted but only if supported by robust evidence that the product in question possesses the advertised health benefit – to our knowledge, to date, no such health claims have been made.<sup>181</sup> Non-nicotine e-cigarettes are regulated under General Product Safety Regulations 2005.<sup>186</sup>

E-cigarettes have caused controversy, with the main contested areas being: long-term health effects given they have only been marketed for 15 years; that they may attract young people to take up nicotine or smoking (see chapter 4); the motives and role of the tobacco industry in the e-cigarette market; the extent to which they help smokers to stop smoking, particularly given many smokers vape alongside continued smoking; and whether they encourage ex-smokers to continue using nicotine rather than stopping smoking and nicotine use altogether.

In relation to smoking uptake, prospective studies have found that using e-cigarettes is associated with an increased risk of tobacco smoking<sup>187</sup> but a recent systematic review indicated that this evidence was limited by publication bias, high attrition and inadequate adjustment for potential confounders.<sup>188</sup> This relationship could therefore be due to common liabilities rather than so-called 'gateway' theories where the use of one drug delivery device leads to another. In support of this, studies have also shown that smoking can lead to e-cigarette uptake.<sup>189</sup> Given the difficulty of controlling for all common liabilities, studies have used other methods to assess the likelihood of a gateway effect. For example, a study of the National Youth Tobacco Survey (NYTS) of US high school students using matched controls suggested that from 2014 to 2017, e-cigarettes may have actually acted as a gateway out of smoking rather than a gateway to smoking.<sup>190</sup> This would be consistent with the decline in cigarette smoking over this period while e-cigarette use was increasing. In relation to concerns about e-cigarettes leading to nicotine uptake among tobacco-naïve users, a further analysis of the NYTS from 2017 to 2019 reported that among e-cigarette users who had never used any tobacco products, frequent use and dependence on e-cigarettes, and hence nicotine dependence, were rare.<sup>191</sup>

E-cigarettes emerged from outside the tobacco industry but in recent years tobacco companies have been investing in vaping products, both through acquisition and developing their own products.<sup>192</sup> The tobacco industry has a long history of deception with regard to their products and their impact,<sup>193</sup> which has brought into question their motives in the e-cigarette market. Some companies have declared that they have entered the e-cigarette market so that smokers can switch to them and reduce their harms from tobacco.<sup>194</sup> However, the same companies continue to contest regulations for cigarettes.<sup>195</sup>

There have been several systematic reviews of e-cigarettes for smoking cessation and their findings vary depending on the included studies, their participants, products used, outcomes, follow-up periods, how missing data are handled and how the studies were synthesised.<sup>180</sup> Given Cochrane's robust methodologies including efforts to minimise bias,<sup>196</sup> the Cochrane review of e-cigarettes and smoking cessation, which was last updated in 2020,<sup>197</sup> is summarised here. To be included in the Cochrane review, a minimum of 6 months follow up was required but otherwise included studies varied due to different types of e-cigarettes used, whether smokers were motivated or unmotivated to quit and the extent of behavioural support offered. Fifty studies were included overall (35 new studies since their 2016 review<sup>197</sup>). There was moderate-certainty evidence, using the GRADE system<sup>198</sup>, from three RCTs including 1,498 participants, that quit rates were higher in people randomised to nicotine vaping products compared with people randomised to nicotine replacement therapy (risk ratio (RR) 1.69, 95% CI 1.25 to 2.27). There was also moderate-certainty evidence from three RCTs, including 802 participants that quit rates were higher in people randomised to nicotine vaping products compared with non-nicotine vaping products (RR 1.71, 95% CI 1.00 to 2.92). There was very low-certainty evidence from four RCTs, including 2,312 participants, that quit rates were higher in people randomised to nicotine vaping products compared to behavioural or no support (RR 2.50, 95% CI 1.24 to 5.04).

Head-to-head trials of different e-cigarette devices or the same devices with different nicotine levels or delivery systems (eg tanks vs disposables, or nicotine salts vs freebase nicotine) have not been carried out. However, observational studies have suggested tanks may be more effective for smoking cessation.<sup>199,200</sup>

Support for e-cigarettes being effective for stopping smoking also comes from observational studies in England. A recent time series analysis of population data from 2007 to 2018 indicated that greater use of e-cigarettes

was associated with higher success of quit attempts.<sup>201</sup> For every 1% increase in the mean point prevalence of e-cigarettes, the mean point prevalence of successful quit attempts increased by 0.106% (95% CI 0.011, 0.201,  $p=0.029$ ). A further time series analysis of the Smoking Toolkit Study from 2007 to 2017 similarly found that changes in the prevalence of e-cigarette use in England have been positively associated with overall quit rates and quit success rates but not clearly associated with the prevalence of quit attempts and cigarette consumption. The latter study concluded that just over 50,000 additional smokers were no longer smoking as a consequence of e-cigarette use in a quit attempt in 2017.<sup>202</sup>

Given concerns about dual use,<sup>203</sup> two cohort studies in England have examined this using the Smoking Toolkit Study data with 6<sup>204</sup> and 12<sup>205</sup> month follow-up periods over 2014–2016 and 2015–2018 respectively. The first found reductions in cigarette consumption, significantly lower quit attempts but no difference in use of evidence-based support when making quit attempts among dual users with e-cigarettes compared with dual users with NRT.<sup>204</sup> The second observed higher quit attempts but no difference in success rates among dual users of e-cigarettes compared with exclusive smokers, whereas differences in quit attempts and success were inconclusive across dual users of e-cigarettes compared with dual users of NRT.<sup>205</sup>

With regard to ex-smokers, there is some evidence from the UK RCT in stop smoking services that ex-smokers continue to vape for longer periods than ex-smokers who used NRT to stop, although advice given to recent ex-smokers is to use e-cigarettes while there is a danger of relapse.<sup>206</sup> A cross-sectional study in the UK, Canada, USA and Australia found that former smokers who vaped reported higher dependence on smoking both before and after stopping, yet they had greater confidence in staying quit.<sup>207</sup> A unique role of e-cigarettes in preventing relapse is emerging from UK qualitative research.<sup>208,209</sup>

E-cigarettes could be especially helpful for groups in society where smoking is particularly prevalent or dangerous, such as people with mental health problems and pregnant women. A recent systematic review of vaping among people with mental health conditions included 31 studies (three from England and 28 from outside of the UK). However, the review identified<sup>181</sup> no published RCTs evaluating vaping products for smoking cessation among smokers with mental health conditions. A secondary analysis of one trial that included a sample of people with a mental health condition and four single-group pre-post studies were assessed; in four of these five studies participants were not motivated to stop. Complete

abstinence from smoking was achieved by 7–14% of participants between 4 weeks and 12 months follow up across the studies. A nationally representative study carried out in England since this review found no difference between the use of e-cigarettes during a quit attempt among those with and without mental health conditions and the use of e-cigarettes was similarly successful.<sup>210</sup> The review also identified 17 studies that reported vaping prevalence in people with mental health conditions outside the UK, with rates of current vaping ranging from 3–20% among people with mental health conditions in five nationally representative population samples; the authors reported that these high rates of vaping likely reflected the high prevalence of smoking in this group. More research is needed in this area.

A recent review of e-cigarettes in pregnant women<sup>181</sup> included 27 studies (6 from the UK and 21 non-UK). There was a lack of evidence on the prevalence of vaping during pregnancy in England, although pregnant women who vape were likely to do so to stop smoking and vaping was rare among those who had not smoked. A prospective observational study published after the review found that the birthweight of infants born to exclusive e-cigarette users was similar to that of non-smokers.<sup>211</sup>

### 9.6.2 Heated tobacco products

A new generation of heated tobacco products (HTPs) produced by the tobacco industry entered the market in 2014; prototypical HTPs had been introduced in the 1980s but did not achieve commercial success. These products differ from tobacco cigarettes in that they contain tobacco but rather than the tobacco being ignited, it is heated and thermal decomposition produces an aerosol which contains nicotine (see chapter 8). There are several different types of HTP, with slightly different mechanisms of action, most commonly: IQOS (Philip Morris International) and glo (British American Tobacco (BAT)) both of which heat tobacco sticks to produce the aerosol; and iFuse (BAT) and Ploom Tech (Japan Tobacco International) that heat an e-liquid to produce an aerosol which then passes over tobacco. Temperatures for heating range depending on the mechanism of action from 50–350°C.<sup>212</sup> Given these temperatures are still lower than those required to burn tobacco, it seems likely that HTPs will be less harmful than smoking.<sup>213</sup> In 2020, the US Food and Drug Administration (FDA) stated that switching completely from tobacco cigarette smoking to IQOS specifically reduced exposure to harmful or potentially harmful chemicals, but not that IQOS use reduced the risks of tobacco-related diseases or reduced harm relative to continued tobacco cigarette smoking.<sup>214,215</sup> However, little is known about



how easily smokers find it to switch completely to HTPs, with no evidence from RCTs carried out by independent researchers.<sup>213</sup> RCTs comparing the effectiveness of HTPs vs e-cigarettes are also warranted.

IQOS is the most widely available HTP, being marketed in over 50 countries<sup>216,217</sup> and was introduced in the UK in 2016, although use of IQOS in the UK remains low.<sup>181</sup> However, in other countries HTP use quickly became popular. For example in Japan, IQOS was introduced in 2016 and captured 15.5% of the tobacco market over the subsequent 3 years.<sup>218</sup> Cigarette consumption and sales have declined significantly suggesting some switching, although the extent to which IQOS and other HTP have substituted completely for cigarettes (rather than cigarette smokers using IQOS as well) is not known.<sup>219</sup>

In the UK, IQOS and other HTPs are regulated by Public Health England as specified in the Tobacco and Related Products Regulations 2016.<sup>184</sup> Advertising is allowed for the IQOS device but not the tobacco sticks, and similar to e-cigarettes 30% text health warnings were required for the packs of tobacco sticks, although the warning differs, stating 'This tobacco product damages your health and is addictive'. Unlike e-cigarettes which are taxed as a consumer product and hence subject to Value Added Tax (currently 20%), following a consultation a separate tax category was set for HTPs.<sup>220</sup> Initially (July 2019), the tax rate was matched with that for hand rolled tobacco, but annual tax increases will be smaller to create a differential over time.<sup>221</sup>

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# 10 Tobacco industry tactics to undermine tobacco control

## Key points

- > Tobacco industry interference in tobacco control has been identified as the greatest obstacle to the implementation of evidence-based measures to reduce tobacco use.
- > Tobacco companies employ a range of tactics to attempt to eliminate or limit the impact of tobacco control policies on their business including delaying, weakening, foreclosing, circumventing, avoiding, or overturning the proposed policy.
- > The key tactics used by the tobacco industry are information management, coalition management, influencing policy through lobbying, and litigation.
- > The government 'Better Regulation' requirement that stakeholders are consulted and involved in an impact assessment of proposed public health policies enables corporate influence over public health policy and can be exploited by the tobacco industry.
- > Rigorous adherence to Article 5.3 of the Framework Convention on Tobacco Control across the whole of government is more important than ever.

## Recommendations

- > The tobacco industry is excluded from all policymaking across government, from meeting with government officials and elected representatives, from making gifts or payments in kind and from any activity likely to or with the potential to promote tobacco use.
- > Minutes and all related documentation arising from meetings of national and local government services with the tobacco industry and with stakeholders linked to the industry are immediately published online.
- > A lobbying register is established for the disclosure of any and all funding sources of individuals or organisations lobbying government on tobacco control.
- > Contributions (monetary or otherwise) from the tobacco industry or tobacco-industry funded third party organisations to political parties, government officials at all levels and All-Party Parliamentary Groups are prohibited.
- > Tobacco companies are statutorily required to provide information to government on their political activities and associated expenditure including the names of organisations they fund.
- > A tax or levy on tobacco companies is introduced to fund independent tobacco control research, including independent testing of tobacco industry product contents and emissions.
- > Measures are put in place to mitigate tobacco industry tactics on 'Better Regulation' including; full disclosure of conflicts of interests; exclusion of submissions and organisations if rules are broken; and the Regulatory Policy Committee (which plays a key role in approving impact assessments) being subject to the Freedom of Information Act.

## 10.1 Introduction

Implementation of effective tobacco control policies has major financial implications for the tobacco industry, which over many years has employed a range of tactics to attempt to eliminate or limit the impact of tobacco control policies on their business. Tobacco industry interference in tobacco control has been identified as the greatest obstacle to the implementation of evidence-based measures to reduce tobacco use.<sup>1</sup> In this chapter, tobacco industry tactics to undermine tobacco control will be reviewed before discussing the current and future challenges posed by the tobacco industry to the UK.

## 10.2 Tobacco industry interference in UK tobacco control

Historically, tobacco companies have enjoyed considerable influence over public policy-making in the UK and elsewhere, often resulting in a largely self-regulatory approach to tobacco control.<sup>2,3</sup> However, by the late 1990s, research on tobacco-related documents began to weaken the tobacco industry's status as a political insider. For example, the 1999 House of Commons Health Committee enquiry into the tobacco industry and the 2000 Department of Trade and Industry investigation into the involvement of British American Tobacco (BAT) in cigarette smuggling both deepened distrust of the industry.<sup>2,3</sup> This paved the way for an increase in statutory regulation in the UK and globally.

The UK is a signatory to the first global health treaty, the Framework Convention on Tobacco Control (FCTC), which includes a commitment to protect health policy from the commercial and vested interests of the tobacco industry.<sup>4</sup> The impact of tobacco industry interference in tobacco control is specifically reflected in the development of Article 5.3 of the FCTC.<sup>5</sup> This article, arguably the most unique feature of the FCTC, seeks to prevent the inappropriate influence of the tobacco industry on policy, stating: 'in setting and implementing their public health policies ... Parties shall act to protect these policies from commercial and other vested interests of the tobacco industry'.<sup>5</sup>

The UK has successfully implemented and enforced comprehensive tobacco policies and is consistently highly rated globally for its implementation of the FCTC and as having the most robust tobacco-control policies in Europe.<sup>6,7</sup> In the first Global Tobacco Industry Interference Index, which assessed how well governments in 33 countries during the period January 2017–December 2018 implemented Article 5.3, the UK scored the highest of the 33 countries surveyed.<sup>8</sup>

Strengths of the UK system included:

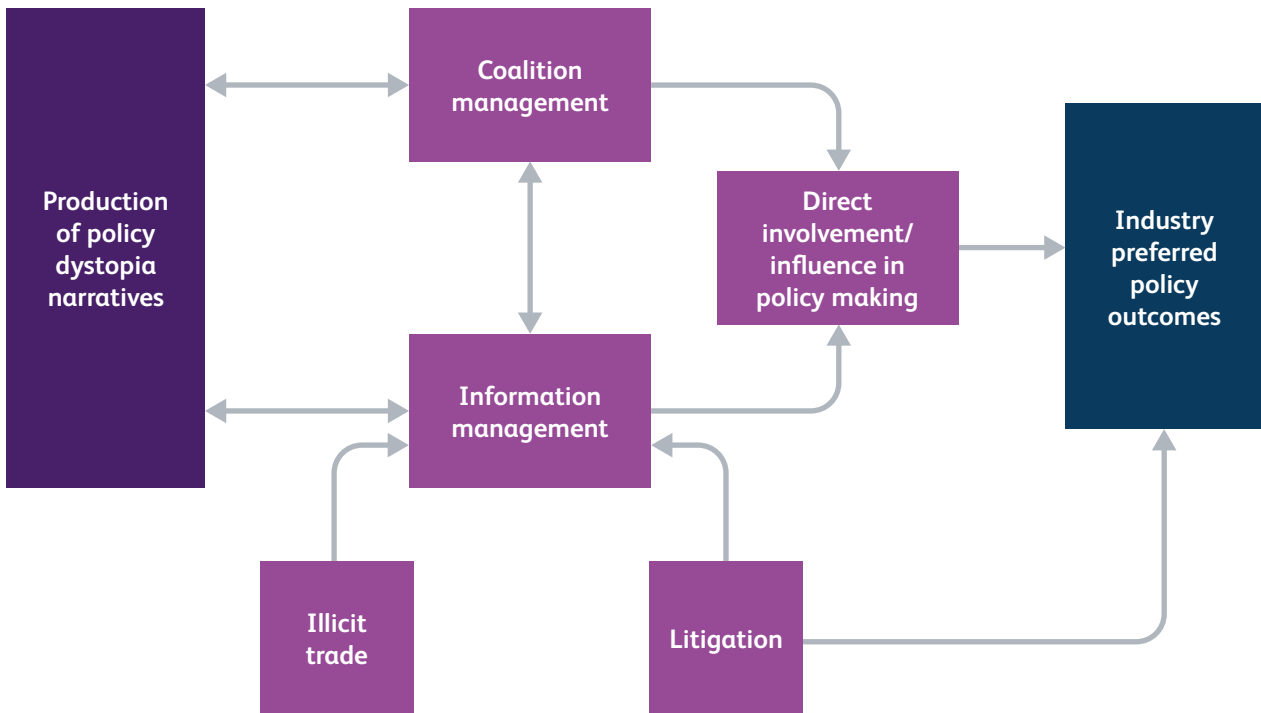
- > excluding the tobacco industry from the government bodies that set public health policy and from the FCTC Conference of the Parties delegations
- > requiring the government to publish information on meetings with the industry
- > guidelines stipulating that Foreign and Commonwealth Office (FCO) officials must not engage on behalf of the industry.

However, subsequent research found evidence that more tobacco industry attempts to interfere in policymaking were made in 2019 than in the previous year, and that the UK's position had fallen to fourth among the now 57 countries participating.<sup>9</sup> Examples of industry interference included:

- > industry representatives, or organisations affiliated to the industry, participating in informal parliamentary groups
- > industry promoting its Comprehensive Spending Review activity among parliamentarians using informal parliamentary groups and direct lobbying
- > individual backbench parliamentarians in England and the devolved administrations attending industry social functions.

Successful implementation of Article 5.3 remains challenging in the UK and globally with the tobacco industry continuously adapting to its changing circumstances, in both structure and function. Over recent decades, significant progress has been made in understanding and exposing the corporate political activities of the tobacco industry.<sup>10–12</sup> The industry typically produces dystopian narratives that proposed policies will not work and would instead have several undesirable social and economic effects, aiming to convince policymakers to decide in its interest, which can mean defeating, delaying, weakening, foreclosing, overturning or avoiding the proposed policy.<sup>12</sup> This work, based on two systematic reviews, showed that to construct and disseminate these narratives three key strategies are commonly used: coalition management, information management, and direct involvement in decision-making, such as lobbying, as well as two subsidiary strategies: illicit trade, and litigation which feed into information management by increasing the credibility of the industry's misleading messages; litigation also directly impacts policy outcomes by stopping policy adoption or implementation (Fig 10.1).<sup>12</sup>





**Fig 10.1 Arguments and techniques used by the Tobacco industry: overview of the Policy Dystopia Model.<sup>12</sup>**

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To illustrate the tobacco industries' use of these strategies in the UK we focus on a case study of standardised tobacco packaging, one of the most significant policy threats to the tobacco industry in recent years which came into force in the UK on 20 May 2016.<sup>13</sup>

### 10.2.1 Case study: standardised packaging

Plain, or standardised packaging as it is formally known, refers to a policy which mandates the removal of all brand images, colours, and messages from tobacco products. Tobacco products are instead packaged in the same size, shape, style and colour with all brand names and variants in the same typeface and font size.<sup>14</sup> The objective, as set out in the Framework Convention on Tobacco Control, is to reduce the attractiveness of tobacco products, increase the effectiveness of health warnings, reduce the use of design techniques that could mislead consumers and reduce the chance of non-smokers starting to smoke.<sup>15</sup>

Australia was the first country in the world to introduce plain packaging for tobacco products in December 2012, and the UK government became the second to pass such legislation.<sup>13,16</sup> The UK government raised the possibility of plain packaging in 2008 and in 2010 made a firmer commitment to consult on the proposal,<sup>17,18</sup> with the legislation finally being approved in March 2015. The time period from proposal of the legislation to its approval

provided the tobacco industry with time to formulate and test arguments on how to oppose such proposals and implement a well-financed, well-thought-out and hostile plan to frustrate the legislation which it has gone on to implement elsewhere.<sup>19</sup>

#### 10.2.1.1 Information management

The oldest arguments were that the proposals were against the law. In 2008, in response to the initial UK plans, BAT argued that the government's power to introduce plain packaging was constrained by law, including the European Convention on Human Rights and the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights.<sup>20</sup>

The argument that standardised packaging legislation breached intellectual property (IP) rights was continued despite the industry having been given a legal opinion in the 1990s that IP laws gave it no protection.<sup>21</sup> Although the argument that requiring standardised packaging infringed international trade agreements was not thrown out by the World Trade Organization (WTO) until 2020, expert legal opinion from 2012 had already shown this to be a frivolous complaint.<sup>22</sup>

Aside from trying to undermine the legal foundation for the proposals, and despite clear evidence that marketing promotes tobacco use and that the pack was now the key form of marketing available to the tobacco industry, the industry argued there was simply no credible evidence the legislation would work. Alex Parsons from Imperial Tobacco told the BBC in 2011: 'Quite frankly, it is a preposterous notion'.<sup>23</sup> The managing director of Japan Tobacco International (JTI) in the same year said: 'Put simply, this will not work. We hope common sense will prevail'.<sup>24</sup> The secretary general of the industry trade association, the Tobacco Manufacturers' Association, asserted: 'There is no reliable evidence plain packaging will reduce rates of youth smoking'.<sup>25</sup>

To support its argument that there was 'no evidence' that standardised packaging would be effective, the industry created its own evidence against the measure. It commissioned reports from legal firms and academics to critique the evidence base for the proposals, but which largely misrepresented and attempted to discredit the independent evidence which backed these proposals.<sup>26,27</sup> For example, the industry argued that evidence would be insufficient to introduce a policy unless there was evidence of a reduction in smoking directly attributable to plain packaging, which was neither feasible nor appropriate as observational evidence could not be obtained without the policy first being introduced.<sup>28,29</sup> The use of independent organisations to produce reports favourable to industry positions is a well-established information management tactic and, in this example, BAT commissioned Deloitte to produce a report which apparently showed that legislation in Australia had been ineffective.<sup>30,31</sup> While a subsequent independent review of the report found the methodology to be weak and containing several important errors, the sound bite the report gave to tobacco companies was immediate.<sup>30</sup> In a study of opposition to standardised tobacco packaging during the 3-year period 1 January 2011 to 31 December 2013 (including the Department of Health consultation on standardised packaging for tobacco products in 2012), 50 out of 57 publicly available research reports used to oppose plain packs could be linked to the industry.<sup>32</sup> The reports were widely cited in industry submissions to the policy consultation, and were amplified by the many organisations the industry funded to make its arguments more palatable (see coalition management).<sup>32,33</sup>

The industry also tried to argue that not only was the proposal unlawful and doomed to fail, but also that package branding was not that important.

Philip Morris' submission to the 2012 UK consultation stated that: 'There is overwhelming evidence which demonstrates that brands and packaging have nothing to do with why young people begin smoking'.<sup>34</sup> It went on to say that it could not be demonstrated that packaging has any effect on the decision to smoke.<sup>34</sup>

There are numerous internal industry documents which suggest otherwise. One Rothmans document from 1982 stated that the company was very aware that every customer carried its logo on the package with them all the time.<sup>35</sup> The document went on to say 'That package comes out many times a day, and every time it is seen makes a personal comment about the person who carries and shows it'.<sup>35</sup>

The industry also made baseless claims that other countries had either dropped the idea of standardised packaging or that it wasn't working.<sup>14,36</sup> For example, a national account manager for BAT UK described the company's surprise at the government's proposal for plain packaging of tobacco products, 'especially given that a number of governments around the world, including Canada, have already looked closely at this measure and have decided it wouldn't work'.<sup>14,36</sup>

Indeed, the industry argued at one point that the UK had dropped the idea once already, which was false.<sup>14</sup>

#### 10.2.1.2 Illicit trade

A particularly fruitful argument the industry used, again underpinned by an information management strategy to support its case, was that the UK plans for standardised packaging would lead to an increase in smuggling. This drew upon the idea that plain packs would be easier to counterfeit and so the phrase 'a counterfeiters' charter' was born and much reproduced.<sup>37</sup> This led to the argument that standardised packaging would be a boon for criminals. The next step in this narrative was that these would not be ordinary criminals but terrorists, and hence that plain packaging would help to fuel international terrorism. Thus in May 2012, Imperial CEO Alison Cooper said: 'Do we really want to hand business like this to gangs in Eastern Europe funding crime and even, in some cases, terrorists?'.<sup>38</sup> This led to a story in *The Sun*, the UK's biggest selling newspaper at the time, which argued that 'groups who benefit from such trade include al-Qaeda and Hezbollah'.<sup>38</sup> There was and is no independent evidence that plain packaging increases illicit trade, crime or terrorism.<sup>39</sup>

The scaremongering on illicit trade found a fertile audience in the retail sector who feared further pressure on revenues and already tight profit margins.<sup>40,41</sup> The industry also advanced, among complaints about a ‘nanny state’, the ‘slippery slope’ argument whereby it suggested that if plain packaging plans were not opposed, then other more draconian measures would be introduced.<sup>42</sup> Michael Prideaux, BAT’s communications director said in 2012: ‘There is a feeling among the general public that the theft of trademarks is a step too far in terms of tobacco regulation. Who will be next? I think the libertarian argument resonates among people who wouldn’t normally take notice of what the tobacco industry say’.<sup>43</sup> The unfounded claim of trademark theft is also woven in here.

All this occurred despite evidence of tobacco industry involvement in tobacco smuggling.<sup>44,45</sup> It was underpinned and supported by the tobacco industry’s manipulation of data on smuggling to exaggerate the scale of the problem and scaremonger.<sup>3</sup> The industry fed its misleading claims and data on the illicit trade into its consultation responses

and ensured they were widely disseminated in the press, in both instances attempting to give the impression that such data and claims were independent.<sup>3,46,47</sup>

10.2.1.3 Coalition management

The industry often uses other organisations or individuals that it funds to make its arguments more palatable and credible, to echo its arguments, and to act as media spokespeople and give the false impression of widespread opposition to the policy.<sup>32</sup> In addition to the 12 tobacco or packaging companies involved in opposing standardised packaging, research identified 109 organisations opposing standardised packs, 82 (75%) of which had financial links with tobacco industry companies and 20 (18%) of which had non-financial links (Fig 10.2). These organisations included smokers’ rights groups, public relations and

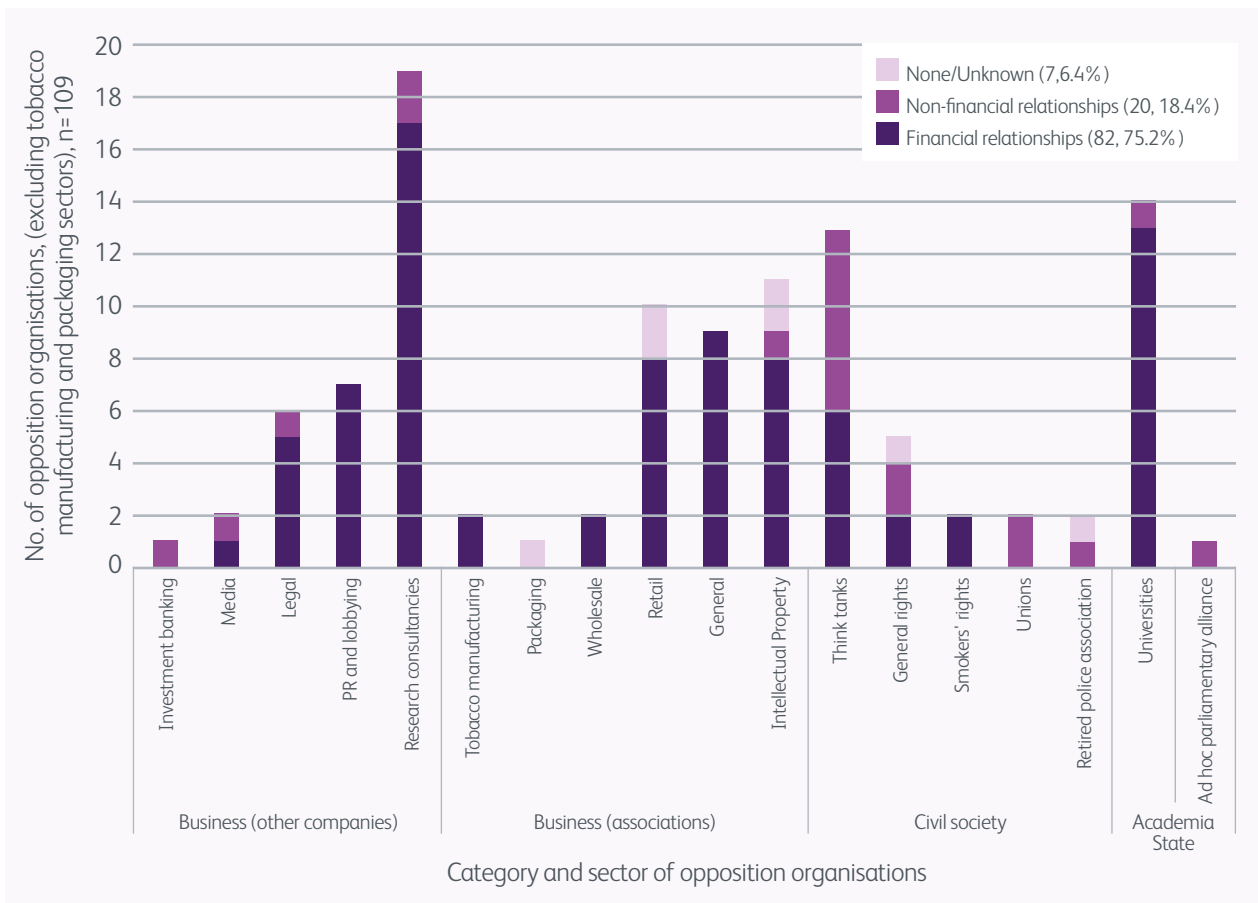


Fig 10.2 Number, sector and relationship with TTCs of organisations opposing, or facilitating opposition to, standardised packaging in the UK 2011–2013 (excludes tobacco manufacturing, packaging and design companies), n=109. PR, public relations; TTC, transnational tobacco company.<sup>32</sup>

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lobbying firms, business associations, universities, law firms, research consultancies and retail associations. Their links with the industry were however rarely transparent.<sup>32</sup>

The tactic of funding and mobilising third parties and front groups – whose links to industry are generally hidden – to present the tobacco industry's case, is a direct response by the tobacco industry to Article 5.3 of the FCTC. The industry used a very similar approach in opposing revisions to the EU Tobacco Products Directive where its leaked documents describe third party involvement as 'key to success' and identify 'indirect engagement' as a priority over direct engagement.<sup>48</sup>

'Better Regulation' is a system of governance which requires, *inter alia*, that stakeholders, particularly economic stakeholders, are consulted during the development of a policy and an impact assessment of the proposed policy is carried out in part informed by evidence stakeholders can submit.<sup>49,50</sup> The tobacco industry and its allies helped implement Better Regulation in the mid-1990s, predicting that it would make it harder for governments to enact public health policies.<sup>27,51</sup> During the government consultation on standardised packaging, the tobacco industry, operating in part via its third parties, took direct advantage of Better Regulation and ensured the government consultation was flooded with responses and that such responses promoted the misleading evidence it had commissioned, while failing to declare its links to that evidence and the third parties involved.<sup>3,27,46,52,53</sup>

#### 10.2.1.4 Direct influence on policymaking

In addition to the largely covert influence on standardised packaging legislation outlined above, the industry has also engaged in overt lobbying.

In 2010 the Labour government was replaced by a coalition of Conservative and Liberal Democrats. Prime minister David Cameron, along with several senior colleagues, were close to lobbyist Lynton Crosby who has long represented tobacco interests.<sup>54,55</sup> In 2012, the UK branch of Crosby's consultancy firm started a contract with Philip Morris International (PMI), around the same time Crosby became the Conservative party's election campaign strategist and a month later he chaired a meeting in which members of the tobacco industry discussed strategies to block the government's plain packaging plan.<sup>55-57</sup> In the same year, Forest (Freedom Organisation for the Right to Enjoy Smoking Tobacco), which receives almost all of its funding from the four major tobacco companies, launched the 'Hands Off Our Packs!' (HOOPs) campaign to 'give opponents of plain packaging of tobacco a chance to have their say'.<sup>58,59</sup> At the close of the first UK public consultation

on plain packaging, Forest announced that 235,000 people had signed an anti-plain packaging petition.<sup>60</sup> However, questions have been raised regarding the legitimacy of the signatures, with the Department of Health highlighting evidence of falsification.<sup>61</sup> JTI launched its own campaign which included advertisements in leading broadsheet newspapers questioning the evidence underpinning the proposed regulation, the allegedly detrimental effects of the policy in facilitating illicit trade, and unintended impacts on small businesses.<sup>62,63</sup> These were timed to coincide with political party conferences in the autumn of 2012.<sup>62,64</sup> Imperial Tobacco also attempted to influence the views of MPs by buying an advert on the cover of *The House* (a political magazine delivered directly to MPs and civil servants each week) which mimicked a warning message on tobacco packets and read 'WARNING Plain Packaging: Bad for Business Good for Criminals' but did not declare that it was an advert paid for by Imperial Tobacco.<sup>19,65</sup>

Having carried out a consultation, the government – apparently influenced by industry arguments that there was insufficient evidence for plain packaging – announced that it would wait and see what the situation in Australia suggested, supporting the tobacco industry's hopes of delaying and undermining legislative proposals. At the end of November 2013, the government announced that it had reversed its decision and would again consider the introduction of standardised packaging, commissioning a review to look into the relevant evidence (the Chantler review).<sup>66</sup> The Chantler review found it 'highly likely that standardised packaging would serve to reduce the rate of children taking up smoking and implausible that it would increase the consumption of tobacco'.<sup>66</sup> After backbench peers, supported by Action on Smoking and Health (ASH) and the Smokefree Action Coalition, tabled an amendment to the Children and Families Bill to introduce standardised packaging, and recognising the amendments had sufficient parliamentary support to pass, the government adopted the amendments as its own, and in the summer of 2014 announced a second consultation with draft regulations.<sup>14,66</sup> Recognising another opportunity to lobby MPs, Forest launched a follow up campaign called 'No, Prime Minister'.<sup>67</sup> This campaign invited its followers to send a pre-written email both to their local MPs and the then prime minister David Cameron, to 'make your feelings against plain packaging known' and the campaign was advertised in *The House* magazine and a range of politically orientated websites and blogs.<sup>67-69</sup> Despite this opposition, in January 2015 the government announced that it would offer a free vote on the proposals and the bill was passed in March 2015.<sup>13</sup>

### 10.2.1.5 Litigation

Two months after the legislation was passed, PMI, BAT and JTI filed lawsuits against the government alleging, among other things, breach of international trademark rules as well as UK and EU law. Once again evidence documenting the industry's disinformation strategy provided pivotal in the dismissal of these lawsuits, with the judge concluding that the industry's evidence 'does not accord with internationally recognised best practice' (para 374) and 'I am of the conclusion that, measured against internationally accepted research and evidence standards, that evidence, as a generality, was materially below par (para 404)'.<sup>70</sup> In short, in addition to the active advocacy campaign in parliament by ASH and the Smokefree Action Coalition, vital evidence on the impact of plain packaging, the effective and timely documentation of the tobacco industry's misconduct and disinformation played a key role in ensuring plain packaging legislation was both passed and upheld.

## 10.3 Undermining UK tobacco control policy: current and future concerns

Despite the increased understanding of the narratives and strategies used by the tobacco industry, continued vigilance is required by governments as well as an active civil society to expose and counter industry interference in tobacco control. Here we give examples and a more detailed case study of how the tobacco industry continues to undermine tobacco control policies and illustrate some of the current challenges in the UK.

Given the EU's historical involvement in the supply, taxation and regulation of tobacco products in the UK, Brexit is likely to have an impact on both tobacco control and potentially on tobacco industry interference.<sup>71,72</sup> EU rules relevant to tobacco control are incorporated into UK law and will continue to apply to the UK after Brexit. However, there is a risk that without the regular EU timetable for reviewing and updating tobacco control legislation, progress in the UK may become more subject to changing political priorities with the potential for tobacco control to fall down the agenda.<sup>71</sup> This risk is reinforced by previous efforts of tobacco companies and their allies to create opposition to EU regulations, including those within the EU Tobacco Products Directive (TPD), and calls for aspects of legislation to be repealed.<sup>73,74</sup> Furthermore, several high-profile members of the current UK government have links to the tobacco industry and tobacco industry-funded think

tanks such as the Institute of Economic Affairs,<sup>9</sup> suggesting that the government may not be pro-active in working to introduce stronger tobacco control regulation.

### 10.3.1 Undermining tobacco taxes with industry pricing and profitability

Increasing tobacco taxes above inflation and combatting illicit trade are core tobacco control strategies in the UK,<sup>45</sup> together they reduce the affordability of tobacco and have driven down smoking prevalence for over 20 years while also reducing inequalities.<sup>75-77</sup> The public health benefits of tobacco taxes can be increased further if the revenues they generate are reinvested into wider tobacco control strategies aimed at reducing smoking prevalence and uptake.<sup>78,79</sup> While tobacco taxes have been broadly successful in the UK, their impact has been undermined by the tobacco industry's gaming of the tax system via its pricing tactics and tax avoidance strategies.<sup>80,81</sup> These are described in detail in chapter 7 but are further explored in the context of this chapter.

Tobacco companies have employed a range of pricing strategies to minimise the impact of tobacco taxes on tobacco sales, including undershifting taxes (absorbing the tax increase) on its cheapest products, overshifting taxes (increasing its prices above the tax increase) on more expensive products in order to maximise profits, and smoothing price increases throughout the year to prevent sudden large increases in price that might otherwise help stimulate quitting<sup>80,82</sup> (see chapter 7). In the UK a combination of both under- and overshifting and market segmentation has pushed more smokers towards cheaper tobacco products, which in turn appears to reduce their chance of successfully quitting.<sup>81,83-86</sup> Government responses to these tobacco industry tactics have had an impact. For example, the introduction of the minimum excise tax in 2017 in response to the growing gap between cheap and expensive cigarettes was associated with significant decline in sales and in tobacco industry revenues.<sup>87</sup> However, tobacco companies continue to undermine these measures by overshifting tax increases at different rates across the product range to keep the cheapest tobacco cheaper relative to the more expensive products; hand rolled tobacco remains significantly cheaper than cigarettes.<sup>88</sup> This highlights the need for continued strengthening of tax structures to counter tobacco industry interference in this crucial tobacco control measure.

Despite having some of the highest tobacco taxes in the world, there remains a considerable deficit between the economic cost of smoking to the UK economy and the money raised from excise duties. For example, in 2017 the Department of Health estimated that the cost of



smoking to the economy was in excess of £11 billion per year in England (England accounts for 84% of the total UK population), including £5.3 billion to employers, £2.5 billion to the NHS and £4.1 billion to the wider economy, while excise duty from the sale of tobacco products across the UK raised £9.5 billion, a deficit of over £1.5 billion.<sup>89,90</sup> This imbalance is particularly shocking given that, despite their immense profitability, tobacco companies successfully employ a range of tax avoidance strategies in the UK.<sup>91</sup>

The very low rates of UK corporation tax paid by tobacco companies is a key example. The tobacco industry is estimated to make in the region of £1.5 billion in profits per year, but Imperial Tobacco, BAT, and Gallaher (a subsidiary of JTI), representing the majority of the market share, collectively paid just £83.6 million in corporation tax in 2016.<sup>79,90,92</sup> Furthermore, using group relief (the ability to offset losses made by one subsidiary against profits made by another) the UK subsidiaries of Imperial Tobacco and BAT – both headquartered in the UK – lowered their UK corporate tax burden by a joint total of £2.5 billion between 2010 and 2019.<sup>91</sup> This stands in stark contrast to far larger reported sums paid by the same tobacco companies in domestic tax in other countries and overseas profit taxes, suggesting that the UK could generate considerable government revenue from a more appropriate corporation tax surcharge on profits.<sup>79,90</sup> This in turn could be used to support tobacco control efforts including cessation services and mass media campaigns and contribute to offsetting the economic cost of smoking to the UK economy.

### 10.3.2 Next generation products: (re)opening doors for the tobacco industry

New consumer tobacco and nicotine products, including e-cigarettes and heated tobacco products, generally known as next generation products (NGPs), have emerged on the market. A key current and future area of concern is the tobacco industry's use of novel NGPs as an opportunity to re-engage with policymakers, which has the potential to undermine the political consensus that has characterised the tobacco control movement and been central to its success.<sup>93,94</sup>

In the most recent Global Tobacco Industry Interference Index the majority of the incidents of tobacco industry interference in the UK related to NGPs.<sup>9</sup> Many of the longstanding techniques used by tobacco companies to attempt to engage decision-makers in a dialogue are being used, but this time in relation to NGPs. For example, in 2017, 2018 and 2019 PMI had a promotional stand at the Conservative party conference that showcased its heated tobacco product IQOS and Juul, partly owned by the cigarette manufacturer Altria, held two closed events

for MPs and their special advisers at the same conference, and sponsored panels at Labour and Conservative party events.<sup>95–97</sup> More recently, in July 2019, a UK MP invited



**Fig 10.3 Invitation to Philip Morris International's summer drop in event at the House of Commons.<sup>98</sup>**

Used with permission from Stopping Tobacco Organizations and Products (STOP)

fellow members to a PMI event to 'discover smoking statistics for your constituency and how together we can deliver a smoke-free future' (Fig 10.3).<sup>98</sup>

Between 2015 and 2019 the UK Vaping Industry Association (UKVIA) contributed 'benefits in kind' of between £66,000 and £74,000 to the All-Party Parliamentary Group (APPG) for Vaping (previously the APPG for E-cigarettes), which also housed the APPG's secretariat.<sup>99,100</sup> UKVIA's members include tobacco companies JTI, Imperial Brands, PMI, and BAT.<sup>99</sup> The APPG for Vaping's membership includes MPs and lords from both leading political parties, and in 2019 BAT reportedly used an APPG meeting to promote initiatives relating to their NGPs and as an opportunity to suggest that the Department of Health should engage more with the industry.<sup>101,102</sup>

While most forms of tobacco advertising and promotion in the UK are banned, tobacco companies are continuously innovative in their marketing methods which poses a challenge to these bans (see chapter 5). For example, tobacco companies increasingly use brand websites, many of which offer their products for sale directly to consumers, and social media platforms like Instagram, Twitter and Facebook as marketing tools to bypass advertising bans globally.<sup>103–106</sup> A recent example of this was highlighted by the UK Advertising Standards Authority (ASA) 2019 investigation of BAT's use of social media platforms following complaints that BAT's posts were designed to maximise exposure of their products to children,

teenagers and non-nicotine users in contravention of UK advertising regulations.<sup>107,108</sup> In December 2019, the ASA ruled against British American Tobacco and in a follow-up statement, Facebook and Instagram announced that branded content that promotes goods such as tobacco products ‘will not be allowed’.<sup>109,110</sup>

### 10.3.3 Case study: the EU/UK flavourings ban

Flavoured tobacco is used to increase the attractiveness and palatability of tobacco smoke.<sup>111</sup> Menthol is the most widely used flavour, being used in an estimated 21% of the UK market with approximately 6 billion menthol cigarettes sold in the UK in 2018.<sup>112</sup> Regulation of flavours is recommended by the WHO FCTC on the grounds that menthol cigarettes generate higher levels of nicotine dependence, greater difficulty in quitting and create misleading perceptions of reduced harm,<sup>113–116</sup> and evidence that the industry has manipulated the menthol content of cigarettes to promote initiation and sustain use.<sup>111</sup>

In 2014 a ban on the sale of cigarettes with a characterising flavour, including menthol, was introduced as part of the revised European Tobacco Products Directive (EU TPD) which was written into UK law and came into force in May 2016.<sup>117</sup> An independent survey in 2018 suggested that up to 17.5% of menthol smokers in England intended to quit (and others to cut back) after the menthol ban was implemented.<sup>118</sup> This would equate to an approximate 3% reduction of the total cigarette market in the UK with sales volumes reduced by approximately 1 billion sticks per year – a major threat to tobacco companies’ revenues.<sup>119</sup> Moreover, menthol tobacco products are used disproportionately more by younger age groups, with evidence suggesting that these products promote experimentation and hence indicating that the ban threatens the recruitment of the new generation of smokers central to the tobacco industry business model.<sup>116,120</sup>

Leaked PMI documents revealed their opposition to ‘ingredients bans’ generally and their identification of the European menthol ban as a key threat to business, and laid out plans for opposition of the EU TPD.<sup>121</sup> A range of tobacco industry tactics, along the lines outlined in this chapter, were employed to delay and weaken the TPD.<sup>48,122,123</sup> Amid this opposition from the tobacco industry, and similar to the one-year ‘sell-through period’ the industry was granted when standardised packaging was introduced into the UK, manufacturers and retailers were granted a 4-year transition period ostensibly to prepare for the ban on menthol cigarettes with implementation postponed to 2020.<sup>117,124</sup> This delay gave the tobacco industry time to implement a revised strategy around menthol, particularly in countries like the UK with a high menthol market share, to take advantage of the delay to

boost sales; develop new tobacco products and accessories to circumvent the law; and to capitalise on the upcoming ban to promote other tobacco products.

#### 10.3.3.1 Boosting sales during the phase-out period

The 4 years of delay between introduction of the TPD and implementation of the flavourings ban was designated a ‘phase-out period’ by the European Commission. However, data on menthol and capsule cigarette sales show a steep increase in the menthol/capsule median market share in the UK from 14% in 2014 to 21% in 2018.<sup>125</sup> This equates to approximately double and quadruple the EU median market share in 2014 and 2018, respectively.<sup>125</sup> Tobacco companies encouraged retailers to sell menthol cigarettes right up to the point of implementation with PMI releasing statements on plans for ‘buy back’ schemes while BAT and JTI offered a potential ‘stock swap’.<sup>126,127</sup> This suggests that the tobacco industry’s strategy was to use the ‘phase-out period’ to achieve the opposite, aiming to prolong and increase menthol sales.<sup>128,129</sup>

As late as May 2020, tobacco companies and their front groups were reported to be lobbying for further postponement of the ban in the EU, including the tobacco industry front group Forest EU which had previously described the ban as an ‘unwarranted attack on consumer choice that will do little to deter children from smoking’.<sup>130</sup> While these attempts were not successful at the EU level, there is concern that the tobacco industry may exploit the UK exit from the EU to roll back the flavourings ban after the transition period.<sup>131,132</sup>

#### 10.3.3.2 Circumvention through product innovation

The tobacco industry has a long history of attempting to bypass product restrictions<sup>80,133</sup> and has attempted to do so in relation to the flavourings ban by exploiting the fact that the legislation applies only to cigarettes and hand rolling tobacco, leaving cigars, cigarillos and pipe tobacco exempt.<sup>134–137</sup>

- JTI launched a 10 pack of cigarillos with menthol capsules in the 6 months leading up to the ban.<sup>138</sup> These cigarillos closely resemble cigarettes, were launched under JTI’s popular Stirling cigarette brand, and were promoted to retailers as a way to circumvent the menthol ban.<sup>111,137</sup> Cigarillos offered further advantages to tobacco companies due to them being subject to lower taxes and not covered by legislation on branding or minimum pack size under UK standardised packs legislation.<sup>134</sup> The cigarillos were therefore legally allowed to be sold in packs of 10, making them approximately half the price of the cheapest cigarette packs on the UK market. Euromonitor international data covering the period

between introduction of the TPD and implementation of associated UK law suggests a growth in sales of cigarillos, reversing a previous downward trend.<sup>13</sup>

- Imperial Tobacco followed suit by adding a similarly priced 10-pack of menthol crushball cigarillos under its JPS Players range. Imperial's UK market manager said that this product would: 'help bridge the gap left by the ban'.<sup>111,139</sup>
- BAT, JTI, PMI and Imperial all developed new or variation cigarette ranges designed as alternative products for menthol users and promoted as 'for adult smokers who previously preferred menthol', 'menthol reimaged', 'the Marlboro menthol blend – without methylation', and to 'cater for their menthol and crushball customers', respectively.<sup>140–143</sup> Tobacco companies had between them created 29 new product lines to replace menthol products due to be banned.<sup>111</sup>
- Tobacco accessories are also excluded from the current TPD regulations when they are not sold within the same packaging as tobacco or cigarettes.<sup>134,135</sup> Imperial Tobacco launched menthol and capsule roll-your-own (RYO) filter tips and 'menthol chill', which could encourage menthol cigarette smokers to switch to RYO rather than quit.<sup>144,145</sup> Most recently, their launch of 'menthol chill' and 'fresh mint' 'flavour infusion cards' allow users a menthol flavour if inserted into factory-made cigarettes or packs of hand rolling tobacco.<sup>146</sup>

In short, therefore, each tobacco company has sought to circumvent and undermine the menthol ban, using approaches that vary according to company market share and product range. It appears the ultimate intention is to minimise any public health benefit of the ban through quitting and reduced uptake and instead use it as an opportunity to maximise sales by encouraging switching to and uptake of their alternative menthol products.

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# 11 Ethical aspects of tobacco control

## Key points

- > If it is accepted that tobacco products are harmful and addictive and it would be best if they were not manufactured, sold and consumed at all, this gives us a basis for evaluating any policy which seeks to reduce tobacco consumption and tobacco-related harm, and improve the regulation of tobacco products and markets.
- > The first step in any argument about tobacco control always focuses on the autonomy of the consumer of the tobacco product.
- > The key features of an autonomy-first approach are to ensure that people have the information they need to make informed decisions and that they are supported in the exercise of their autonomy.
- > Accurate information is not generally known by consumers about how harmful, or how addictive, tobacco products are, or how dangerous they are to third parties.
- > In a market for an *addictive* product in which information is supplied in inaccurate and misleading ways it is arguable that the choice to smoke is framed in such a way as to make that choice presumptively *unfree*.
- > Justice is another crucial ethical principle. It is harmful and unjust for the poorest and most vulnerable members of our communities to be most at risk of smoking-related illness; and it is the easiest element in such inequalities to remedy.
- > Tobacco is a product unlike any other, and the usual arguments about consumer choice and the freedom of citizens to enjoy their pleasures freely without undue interference from the state do not apply.

## Recommendations

- > The kinds of information and messaging which the tobacco industry may use are controlled, such as regulation of tobacco use in film and television.
- > The range of signalling to users is widened to include price (taxation both to discourage purchase and signal health risk), incentives to quit (money and other payments to quit or discourage uptake of smoking) and incorporation of smoking health advice in general health consultations.
- > There is a focus on reducing the uptake of smoking, and supporting and encouraging existing smokers to quit, as this is practical and ethical.

### 11.1 Introduction

The ethical case for tobacco control has been made in successive reports from the RCP Tobacco Advisory Group, focusing on specific issues of smoking in public places, smoking and children, smoking and mental health, and nicotine harm reduction as a clinical and public health strategy.

The central ethical issue is that tobacco products, however consumed, are directly hazardous to the consumer's health, and that smoking tobacco is hazardous to those around the primary consumer. Not only are these products hazardous to health, they are addictive. These two factors would be the foundation of strong arguments for prohibiting the manufacture and sale of such products, were they newly introduced to the market. Measures short of prohibition have had significant success over the years, but as outlined in chapter 10, at every stage the tobacco industry has sought to disrupt, discredit and undermine public health efforts to reduce uptake of smoking, assist smokers in quitting, and promote smoke-free public places.

So, if it is accepted that given the nature of tobacco products as harmful and addictive it would be best if they were not manufactured, sold and consumed at all, this gives us a basis for evaluating any policy which seeks to reduce tobacco consumption and tobacco-related harm, and improve the regulation of tobacco products and markets. Here we consider the general ethical principles for a systematic approach to making smoking obsolete.

## 11.2 Autonomy

The first step in any argument about tobacco control always focuses on the autonomy of the consumer of the tobacco product. Historically the aim has been to persuade current or potential users of tobacco products that it is unwise and unsafe to use these products, and to stop doing so as soon and as effectively as possible. This involves provision of clear, accurate information about the effects of tobacco products on users and those around them. Such information has become more detailed in content and sophisticated in presentation over the years, as research has established the harms of these products, their addictive nature, the health inequalities they enhance, and the deceitful and evasive practices of the tobacco industry. Initially, such information was provided in a media space in which, ironically, public health messages competed for attention with tobacco product marketing through advertisements, branding, product placement and so forth. Given the scale and sophistication of tobacco marketing, the countermeasures against public health messaging deployed by the industry, the cultural prevalence of smoking and the addictive nature of the product, public health messaging could only do so much. Numerous steps have been taken over the years to equalise the terms of this competition, and indeed to enable public health information to dominate. But public health campaigns, supported by clinical interventions when health professionals are in contact with patients and by campaigns in schools, are limited in efficacy while they take place in a cultural context in which the *meaning* of smoking is changing only slowly. For instance, while smoking retains a certain glamour or signals rebellion and resistance to social groups for whom this matters (particularly young people), messages about health and harm may fail to land, or be rejected for the very same reason they might be thought persuasive: 'Dangerous and disobedient? Yes please!'

At this stage in the history of tobacco, it is probably true that everyone knows that tobacco products are harmful. However, it is not generally known how harmful, or how addictive, these products are, or how dangerous they are to third parties. And to some extent it is possible that the rapid acceptance in the market of e-cigarettes and vaping products have muddied the waters, by confusing people about the relative safety of different products. Information-led approaches are therefore still important, and still sit comfortably with an autonomy-first approach. There are two key factors involved. First, to ensure that people have the information they need to make informed decisions and second, that they are supported in the exercise of their autonomy. This means ensuring that people genuinely can exercise choice, rather than be under

peer pressure to smoke, be misled about the relative risks, or find that the default in a social situation is to explain why they are *not* smoking rather than why they are. An analogy here is with a consent-first approach in sex education: much sexual health-related harm can be removed or mitigated by ensuring that consent is overt, free and explicit as the norm.

The autonomy-first approach in tobacco control does raise the question of whether this means there can be a free choice *to smoke*. The industry and its supporters are very keen on arguing that there can, and up to a point, this may be so. But only up to a point. In a market for an *addictive* product in which information is supplied in inaccurate and misleading ways (for instance through attractive branding, or cultural signalling about a purported association between smoking and sexiness), it is arguable that the choice to smoke is framed in such a way as to make that choice presumptively *unfree*. This suggests that two broad approaches may legitimately be tried: one is to control the kinds of information and messaging which the industry and retailers may use (advertising bans and plain packaging are only the start, and other measures such as regulation of tobacco use in film and television are reasonable and proportionate steps). The other is to widen the range of signalling to users beyond express public health messaging to include price (taxation both to discourage purchase and signal health risk), incentives to quit (money and other payments to quit or discourage uptake of smoking) and incorporation of smoking health advice in general health consultation (eg in routine GP or midwife consultations).

## 11.3 Justice

Should we go beyond this autonomy-first approach?

We consider that the answer to this is yes. Other ethical principles are relevant here. The first is justice: noting that smoking prevalence is growing most rapidly internationally in low- and middle-income countries (LMICs), and domestically, that smoking prevalence is strongly inversely correlated with income (and social class), there is a direct link between inequality in smoking prevalence and inequality in health. It is harmful and unjust for the poorest and most vulnerable members of our communities to be most at risk of smoking-related illness; and it is the easiest element in such inequalities to remedy.

The Cape Town Declaration on Human Rights asserts that the manufacture, marketing and sale of tobacco are incompatible with the human right to health. The ecological burdens are borne by LMICs while the profits accrue in the rich world. Almost 90% of all tobacco production is concentrated in the developing world. Tobacco transnationals based in high-income countries are

literally and metaphorically burning the resources and the future of the most vulnerable people on our planet.<sup>1–4</sup>

International measures, such as the Framework Convention on Tobacco Control, do exist, but it is essential that governments show the will to abide by their legal commitments under the convention, and to use diplomatic, trade and legal measures to encourage others to do so. Central to this is to press governments to recognise that health is at the heart of all policy issues, from defence to trade to economic development to culture. It is important to break the argument that while health matters, economic development matters more, and that international trade rules and development policy could permit or even encourage investment in or protection of tobacco farming, processing and manufacture. Countries with significant tobacco farming or manufacture economies should be encouraged and assisted to shift to the farming and production of alternative products.

In the short term, while making smoking obsolete would be difficult and will require public and political support, a vision which guides a strategy toward these goals is feasible. A focus on reducing uptake of smoking, and supporting and encouraging quitting among existing smokers, is practical and ethical. Tobacco is a product unlike any other, and the usual arguments about consumer choice and the freedom of citizens to enjoy their pleasures freely without undue interference from the state do not apply *both* because tobacco products are harmful and addictive *and* because the industry has demonstrated itself incapable of acting honestly and responsibly, repeatedly and worldwide.

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Royal College of Physicians  
11 St Andrews Place  
Regent's Park  
London NW1 4LE

[www.rcplondon.ac.uk](http://www.rcplondon.ac.uk)



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