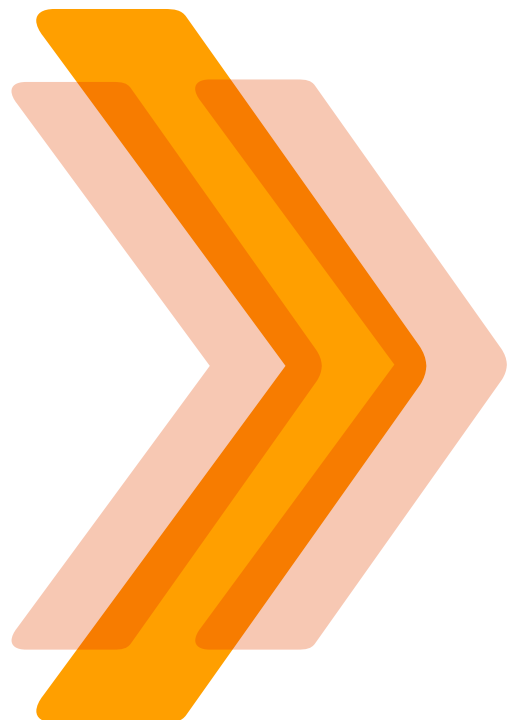


What role do taxes and regulation play in promoting better health?

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Introduction

The use of regulatory and fiscal policy tools in improving public health has long generated heated debate, and is rising up the agenda once more. This briefing aims to contribute to the debate, looking at how a range of policy levers might be used effectively to reduce consumption of tobacco and alcohol, and unhealthy consumption of food and drink, and ultimately improve people's health.

Key messages

- Unhealthy behaviours such as smoking, drinking excess alcohol and unhealthy diets are key drivers of poor health outcomes and have significant consequences for individuals, the NHS, the economy and society. Relying on individual responsibility alone is not enough to change behaviours; there needs to be a stronger focus on creating environments that support people to make healthier choices.
- A range of social, economic and environmental factors mean that unhealthy behaviours often cluster in lower socio-economic groups, fuelling significant health inequalities. Given the magnitude of these inequalities, much more needs to be done if the government wants to improve the health of those with the worst outcomes.
- Fiscal and regulatory policies are important tools for policy-makers to correct harmful market failures. They have a long history of being used to influence behaviour with a view to improving health and, in many cases (for example, measures to cut smoking and reduce the amount of sugar in soft drinks) have been very successful.
- However, debate about these policy levers is often polarised, with some taking the view that fiscal and regulatory interventions are signs of a 'nanny state'. Since 2010, government policy has tended to emphasise the role of individual responsibility and voluntary regulation, although in recent years there has been growing interest in taking a more robust approach, as demonstrated by the introduction of the Soft Drinks Industry Levy (also known as 'the sugar tax') in 2015.

- There is evidence that fiscal and regulatory measures are more popular with the public than is often assumed. Public attitudes also change over time, and governments have a responsibility to shape public opinion where it is holding back health improvements. One successful example is the ban on smoking in public places in England, with public support for the ban increasing significantly over time.
- An evidence-based approach is important to ensure that policies are designed to avoid unintended consequences and perverse incentives. This should include working with industry to understand commercial interests and consider voluntary approaches, although history suggests governments should also be wary of opposition from vested interests.
- Policy-makers need to consider the combination of policies they implement and move away from isolated, single actions towards cross-government and cross-sector approaches. Examples include considering a tax on high fat or sugar products alongside other interventions such as subsidising healthier alternatives (eg, fruit and vegetables).
- The United Kingdom (UK) is an outlier in terms of the relative lack of autonomy and powers granted to local government. Policy-makers should explore the case for giving local government further fiscal and regulatory freedoms to enable them to tackle the specific health challenges their populations face.
- Overall, there is scope for a bolder approach to using regulation and fiscal policy to improve health. This could play a key role in creating a more supportive environment for people to change unhealthy behaviours, for services to address mounting health challenges at a population level, and for the government to tackle widening health inequalities.

The context

England is facing mounting health challenges from a rising incidence of non-communicable diseases driven by unhealthy behaviours such as smoking, drinking excess alcohol and unhealthy diets, as well as environmental factors such as air pollution. In the face of these challenges, governments and policy-makers have a range of policy levers available to them (see [Michie et al 2011](#)), including:

- providing health care or public health services
- providing health information and advice
- using planning and licensing powers to create health-promoting environments
- regulating what people and businesses can do
- using fiscal measures (incentives or disincentives) to change behaviours.

This briefing explores how fiscal and regulatory levers can be used to promote better health in relation to key risk factors – specifically, the consumption of tobacco and alcohol, and unhealthy consumption of food and drink.

While we recognise that environmental factors such as poor air quality also have a detrimental impact on health, an in-depth examination of those factors is beyond the scope of this briefing, although there will be some read-across in terms of using fiscal and regulatory approaches to address market failures.

We examine how fiscal and regulatory levers can be used to correct harmful market failures, and the role those levers can play in helping to create environments in which people find it easier to make healthy choices. We also explore some of the key risks and opportunities associated with the use of these levers, and conclude with some recommendations for policy-makers.

In this briefing we use the following working definitions:

- Fiscal policies for health: the use of taxation, subsidies and pricing policies with the aim of changing behaviours to improve health.
- Regulatory policies for health: the use of rules, standards and requirements (for citizens, consumers and businesses) aimed at changing behaviours to improve health.

The problem

The impact of unhealthy behaviours on health

In England, as in many other high-income countries, non-communicable diseases such as cancers, diabetes and cardiovascular diseases are now the greatest contributors to morbidity and mortality (**Public Health England 2019a**). Unhealthy behaviours such as poor diet, smoking, and excess alcohol consumption are major risk factors for these conditions; combined with people not doing enough physical activity, these factors together accounted for approximately 35 per cent of all deaths in England in 2017 (Institute for Health Metrics and Evaluation (IHME) 2018; **Marteau et al 2018**). These risk factors not only have consequences for the individual (for example, where ill health occurs, it can cause recurrent sick leave, long-term absence from work and, in some cases, early exit from the labour market) but also for the NHS, the economy, and wider society (*see box*).

The impact and cost of unhealthy behaviours (poor diet, smoking, and alcohol consumption)

Poor diet and obesity

- The Health Survey for England found that most adults in England (67 per cent of men and 60 per cent of women) were overweight or obese (NHS Digital 2019a).
- In 2017/18, there were 711,000 hospital admissions in England in which obesity was a factor (NHS Digital 2019c).
- Obesity costs the NHS more than £6 billion per year while the cost to wider society is around £27 billion per year (Public Health England 2017).

Smoking

- In 2018, the proportion of smokers in the United Kingdom was 14.7 per cent (around 7.2 million people) (Office for National Statistics 2019).
- In 2017/18, there were around 490,000 smoking-related hospital admissions in England, with 77,800 deaths attributable to smoking (NHS Digital 2019d).
- The cost of smoking to the NHS is estimated to be £2.5 billion a year, with a total overall cost to the economy of more than £11 billion (Department of Health 2017).

Alcohol

- In 2018, 21 per cent of adults (aged 16+) drank more than the recommended level of 14 units of alcohol per week (NHS Digital 2019b).
- In 2018/19, there were almost 360,000 alcohol-related hospital admissions in England and 5,698 deaths categorised as being directly due to alcohol misuse (NHS Digital 2020).
- The cost of alcohol misuse to society is difficult to quantify, but estimates suggest it could be as high as 1.3 per cent to 2.7 per cent of annual gross domestic product (GDP) (Public Health England 2016).

Exposure to these unhealthy behaviours is not spread equally across society, and their consequences drive significant health inequalities. There are stark differences in health outcomes between people from different socio-economic groups – for example, children in the most deprived parts of the country are now twice as likely to be obese as those in the least deprived areas (NHS Digital 2019c). These behaviours also rarely happen in isolation from each other and tend to be found in clusters, with significant co-occurrence of smoking, excessive alcohol consumption, physical inactivity and poor diet among individuals, such that in 2008, 7 in 10 adults in England had two or more of these risk factors (Buck and Frosini 2012), contributing to greater risk of ill health among these individuals. This simultaneous occurrence of unhealthy behaviours or ‘multiple unhealthy risk factors’ (The King’s Fund 2018) also tends to be more common among lower socio-economic groups (Buck and Frosini 2012). This is reflected in outcomes such as life expectancy, where the gap between the most deprived and least deprived areas in England continues to widen (Rayleigh 2019).

Given the magnitude of these challenges, government needs to do much more to address them if it is serious about improving health. Policy-makers have to use the full range of levers available to them, including greater use of fiscal and regulatory levers alongside the provision of health, information and other services, not only to improve population health but also to reduce the ever-increasing demands on NHS services and resources.

Drivers of unhealthy behaviours

While individuals exercise some choice in how they behave, evidence shows that much of people’s health-related behaviour and the resulting risk of ill health is also strongly shaped by the physical, economic, digital, social and commercial environments in which they live (Marteau 2018).

Markets play a key role in shaping these environments. Without appropriate intervention, market failures can occur, leading to inefficient and undesirable outcomes. When it comes to the consumption of tobacco and alcohol and the unhealthy consumption of food and drink, market failures can, if left unchecked, lead to significant harm to health. Fiscal policies and regulation can be powerful tools in addressing market failures and preventing harm (see box).

Examples of consumer market failures in health

- **Negative externalities** – Negative externalities in this context are the wider costs paid by society (and often governments/the public purse) arising from unhealthy behaviours that are not included in the price paid for a product at the point of consumer purchase, manufacture, distribution, or at any other stage.
- **Imperfect and asymmetric information** – Where individuals lack full information about a product, or one group (eg, the manufacturer) has more information about a product than another group (eg, the consumer), negative outcomes can occur. Without full information (for example, about the calorie content in foods or the harms associated with tobacco smoking), individuals may make choices that they otherwise would not. This can be further complicated by marketing information provided direct to consumers.
- **Harm to vulnerable groups** – Traditional economic theory assumes that people act rationally and in their own best interests when buying products. In reality, this assumption does not hold true – especially for children, young people and other vulnerable groups when it comes to products such as junk food, alcohol and tobacco, as they may be less capable of assessing risk and rationalising choices.

However, behaviours are shaped by much more than market failures alone. A growing body of research in behavioural economics indicates that people often do not act in their own rational self-interest (as many market models assume), and can sometimes ignore potentially harmful effects – for example, because they are misinformed, or because they do not fully consider future health consequences due to ‘present focus’ (Allcott *et al* 2019). Social and cultural factors also play a role, with norms impacting people’s behaviours (for example, an increase in negative attitudes towards smoking has coincided with reductions in the rates of people smoking) (NHS Digital 2019d).

Policy-makers can deploy fiscal and regulatory levers in an effort to reshape these environments and counteract negative influences, creating a better balance of available options while still aiming to preserve freedom of choice.

Can fiscal and regulatory levers improve public health?

Regulatory policies have a long history of use by governments to create better health – for example, the Clean Air Act (introduced in 1956) and, more recently, the smoking ban (2007). The use of fiscal policies to improve public health outcomes is a more recent development; while governments across the world have long taxed tobacco and alcohol, this has mainly been as a way of raising revenue. Well-designed fiscal and regulatory policies aimed at promoting health have been highly successful; both the 2007 smoking ban and the 2015 Soft Drinks Industry Levy were cited recently by public health experts as ranking first and second in the ‘greatest 20 public health achievements of the 21st century’ (Royal Society for Public Health 2019). However, the debate around using such policies to promote health has always been charged, from the first steps towards public health regulation in the 1848 Public Health Act (Fee and Brown 2005) to more recent concerns around the Soft Drinks Industry Levy (Snowdon 2018).

Such charged debate can lead to nervousness in government around using these levers, and the previous decade is suggestive of this; although since 2010, governments have made some use of ‘harder’, mandatory approaches, there has been a tendency towards using voluntary measures, such as the Public Health Responsibility Deal (Department of Health and Social Care 2011), introduced by the then Secretary of State, Andrew Lansley, which set out a voluntary approach with industry, aimed at tackling unhealthy behaviours such as excess alcohol consumption and unhealthy diet. However, more recently, there has been growing interest in taking a more robust approach, through policies such as the Soft Drinks Industry Levy as well as those set out in the Green Paper *Advancing our health: prevention in the 2020s* (Cabinet Office and Department of Health and Social Care 2019) and the former Chief Medical Officer’s independent report on childhood obesity (Davies 2019), both of which proposed further use of fiscal and regulatory measures to improve health.

Nevertheless, such approaches remain politically contentious; in 2019, the then Conservative party leadership candidate Boris Johnson suggested undertaking a wide-ranging review of what he has called ‘sin stealth taxes’, based on concerns that they ‘clobber those who can least afford it’ and questions as to whether they ‘actually change behaviour’ (Stewart 2019). The Prime Minister has not referred to the review since taking office, however, and it did not feature as a commitment in his party’s manifesto during the 2019 election campaign.

We now explore how fiscal and regulatory levers can be used to promote better health, with specific examples of their use in a UK context.

Fiscal levers

Fiscal levers for improving health cover a wide range of options and are becoming more popular internationally (**Thow et al 2018**). For governments, these levers are usually either taxation-based policies to discourage unhealthy behaviours or expenditure policies (such as subsidies) to incentivise healthy ones (**Public Health England 2018**). (Pricing regulations, such as minimum unit pricing – while related to these fiscal levers – are considered under the regulatory levers section below.)

Taxation

While raising revenue is often the primary goal of government taxation, using taxes to change behaviour is also now a well-established policy option. In recent years, governments around the world have demonstrated an interest in applying taxes to a broader range of unhealthy products as a way to discourage behaviours that go on to pose a risk to individual health. For example, since 2010, Denmark, Hungary, Finland, France, Mexico and the United Kingdom have introduced new or higher taxes on specific foods or drinks deemed unhealthy (**Wright et al 2017**). The level of tax applied has an impact on the policy's effectiveness (**Wright et al 2017**); however, an analysis of optimum rates is beyond the scope of this briefing.

Most taxation to improve health tends to be applied to goods and services (called 'indirect taxes') rather than on specific individuals, businesses or households ('direct taxes'). Taxes can also be levied at different points in the supply chain. Excise taxes, for example, are applied at the point of manufacture, while value added tax (VAT) is applied at the point of sale. Some products, like tobacco and alcohol, are taxed multiple times, having both an excise tax and VAT applied.

Examples: alcohol and tobacco duty

The United Kingdom applies specific excise taxes on tobacco and alcohol, in part for public health purposes. Many countries worldwide have used excise and related taxes on tobacco and alcohol as part of a suite of policies to reduce smoking and excess drinking. For both alcohol and tobacco, evidence suggests that taxation and pricing policies can be highly effective levers for reducing consumption (**Chaloupka et al 2012; Elder et al 2010**).

Example: the Soft Drinks Industry Levy

Some excise taxes may be applied to specific ingredients to incentivise manufacturers to reformulate their products to be less unhealthy. The UK Soft Drinks Industry Levy is one such example, which resulted in rapid product reformulation: the total sugar content of soft drinks sold in the United Kingdom in 2018 fell by 21.6 per cent compared with pre-levy levels (Public Health England 2019b). The levy also resulted in a large shift in sales towards lower sugar products not eligible for the levy, and a considerable decrease in sales of products that were eligible. Taxes on sugar-sweetened drinks are increasingly being used around the world (Thow *et al* 2018).

Example: VAT and junk food

In the United Kingdom, VAT is applied to many consumer purchases at the point of sale. Most food and drink categories are exempt from the tax but many unhealthy food options are not, including alcohol, confectionery, crisps, and takeaway meals. VAT therefore acts to raise prices on these products and promote healthier options. However, there are a number of exemptions and inconsistencies in the system that limit the effectiveness of this tax. Some stakeholders, including former Chief Medical Officer Sally Davies, have suggested that reform is needed, including a tiered approach to VAT where the unhealthiest products are subject to a higher rate, which could then be used to subsidise healthier alternatives (Davies 2019).

Where do health tax revenues go?

In the United Kingdom, revenues from taxes such as tobacco duty usually go directly into the wider pool of government tax receipts to be used for any public spending. There is the potential for revenues from sin taxes to be hypothecated, earmarking them for spending on specific areas, such as health care or public health services, although internationally this appears to be rare in practice (Cylus *et al* 2018). However, hypothecation of sin taxes has had a place in recent UK policy – Theresa May’s Conservative government committed to using all revenue from the Soft Drinks Industry Levy to fund programmes on improving health and wellbeing for school pupils, saying it would keep funding levels the same even if revenues from the levy declined (HM Treasury 2018). Declining tax revenues in this context are often seen as a good thing, as they indicate that people are adapting their behaviour to avoid the tax and (ideally but not always) moving towards healthier behaviours. While revenue was hypothecated in this way in 2018/19 (Zahawi 2019), it is not clear whether Boris Johnson’s government will continue this approach (Quinn 2019).

Subsidies

While taxation and minimum pricing can raise prices to discourage unhealthy behaviours, subsidies can also be used to reduce prices or offer incentives for healthy behaviours. Governments may offer direct subsidies (such as cash transfers or vouchers) or indirect subsidies in the form of tax relief (such as taxes or tariffs) to achieve their aims. Subsidies are used less widely at scale and the current evidence, while promising, is mainly limited to smaller-scale programmes and modelling (**Public Health England 2018**).

Example: Healthy Start

The Healthy Start scheme aims to improve the health of low-income pregnant women and families with young children receiving benefits and tax credits in the United Kingdom. The scheme distributes vouchers that are only redeemable for healthy foods such as fruit, vegetables and cow's milk, and thus aims to improve family nutrition. Evidence suggests that the scheme is effective in increasing the purchase of fruit and vegetables and in improving the nutritional content of recipients' food shopping (**Griffith et al 2018**).

Regulatory measures

Governments can also improve health by setting requirements or standards that individuals or organisations are expected to adhere to, with the aim of changing environments or behaviours and limiting the opportunity for market failure. Such policies can run a spectrum of enforcement – from voluntary standards (see box) through to carrying the weight of criminal law. These measures can be applied not just to consumers, retailers and manufacturers but also to many other groups, from schools to broadcasters.

Regulating availability

Regulation can be used to change availability of consumer products to shape the environments people make choices in. This can act in two directions: to reduce availability of unhealthy products or ingredients, or increase availability of healthy ones.

Example: alcohol licensing – cumulative impact zones

In England, alcohol retail licensing is devolved to local authorities. While the Licensing Act 2003 restricts options for implementing policy explicitly for population health purposes, local authorities are able to designate ‘cumulative impact zones’ to limit new alcohol retailers in areas with an existing high density and where it threatens wider licensing objectives like maintaining public order. Some evidence has suggested an association between the intensity with which these policies are implemented by a local authority and health outcomes ([de Vocht et al 2016](#)).

Example: mandatory fortification of flour with folic acid

Deficiency in folic acid has been linked to birth defects of the brain, spine or spinal cord known as neural tube defects (NTDs). Countries with mandatory folic acid fortification of flour have seen falls in rates of NTDs of between 16 per cent and 58 per cent ([Department of Health and Social Care et al 2019](#)). The previous government and the devolved administrations recently consulted on similar requirements being introduced in the United Kingdom ([Department of Health and Social Care et al 2019](#)).

Voluntary regulation

Voluntary regulation exists in several forms. First, industry can make unilateral commitments by voluntarily deciding to implement a product standard in response to market or public pressure, without any explicit request from government. Second, voluntary agreements can be formally negotiated between industry and the government. In such cases, industry agrees to undertake some regulation ‘voluntarily’, usually in exchange for some concession granted by the government. Third, a government could develop a voluntary scheme and then seek participation by industry members ([Segerson 1998](#)).

Traffic-light food labelling in the United Kingdom is an example of voluntary regulation initiated by government but developed in collaboration with industry stakeholders, including the British Retail Consortium. The scheme uses red, amber and green colour-coding to indicate the levels of fat, saturated fat, salt and sugars in products to enable consumers to make comparisons between foods at a glance.

Voluntary agreements can sometimes be modestly effective but evidence suggests they are less so than legislation ([Marteau 2011](#)). Some have also criticised voluntary regulation as ‘playing for time’ and ‘tinkering’ by industry, rather than making more impactful changes ([Boseley and Campbell 2013](#)).

Businesses that engage in voluntary schemes can sometimes find themselves at a disadvantage compared to their competitors. In these cases, there can actually be a push from industry for mandatory regulation to ensure a level playing field. For example, in 2016, the government's childhood obesity plan included a commitment to calorie reduction through product reformulation in nine food categories (those that contribute the most sugar to children's diets) on a voluntary basis. Sainsbury's and the British Retail Consortium criticised the plan and called for mandatory targets, demonstrating a misjudgement by government of the leading voices in the food retail industry, which recognised the need for greater regulation. In 2016 it was stated that if sufficient progress had not been made through voluntary regulation by 2020, then the government would 'use other levers to achieve the same aim' (HM Government 2016).

Public Health England's most recent assessment of the voluntary scheme suggests that although progress has been made, industry is not on track to meet the target to reduce the sugar content of products that contribute to children's sugar intake by 20 per cent by 2020 (Public Health England 2019b). As a result, there has been a call for urgent action, including suggestions that a wider range of high-sugar foods should be subject to a levy (Food Standards Scotland 2019).

Regulating marketing

Behaviour is influenced by many different factors, including exposure to marketing. Evidence shows that marketing is effective in influencing the purchase and consumption of products such as high-sugar foods (Public Health England 2015) and tobacco (Henriksen 2012). Regulating marketing – such as deciding who can be marketed to and how – can be used to affect the behaviour of target groups and reduce unhealthy behaviours.

Example: junk food advertising ban on public transport

In February 2019, Transport for London (TfL) implemented a ban on advertising 'junk foods' across the city's public transport network in an effort to help tackle London's growing childhood obesity issue (Greater London Authority (GLA) 2018). The recent Chief Medical Officer's report on childhood obesity has suggested going further, phasing out marketing, advertising and sponsorship of junk foods across all platforms at any major public venue or publicly funded event, and on any public sector-owned advertising site (Davies 2019).

Example: advertising restrictions on TV and online for products high in fat, sugar and salt

In 2019, ministers announced that they intended to consult on extending limitations on promotion of foods high in fat, salt or sugar by creating a 9.00pm watershed for advertising such products on television, web streaming services and social media (**Department of Health and Social Care and Department for Digital, Culture, Media and Sport 2019**).

Regulating for provision of information and warnings

Behaviours and choices are guided by available information and how it is conveyed. Regulatory policy measures can ensure that people have access to the information they need to make healthier choices, as well as providing warnings or other prompts to avoid higher-risk behaviour.

Example: front-of-package food labelling

Front-of-package (FOP) food labelling provides accessible information on nutritional content to help guide individuals' choices. Other nations have had success with other types of FOP labelling such as the black and white stop sign warning used in Chile since 2016 (**Reyes et al 2019**).

Regulating environments

A person's health can be impacted by the environment in which they live and work. Air pollution, the existence of green spaces, and access to affordable healthy food products are just some of the factors that can determine health status (**Naylor 2019**). Policy-makers can ensure that social environments promote health through regulation.

Example: planning permissions for hot-food takeaways

The London Borough of Waltham Forest was the first of a number of local government areas to refuse planning permission to new hot-food takeaways if they are 400 metres or less from a school, youth facility or park. These locally enacted regulatory policies aim to limit the opportunities that young people have to eat 'fast food', thus hoping to reduce childhood obesity (**Local Government Association (LGA) 2016b**).

Health can also be influenced both by a person's own behaviours and the behaviours of others. Policy-makers can regulate to control and limit harmful behaviours to protect the health of others and create healthier environments.

Example: the ban on smoking in enclosed public spaces

The ban on smoking in enclosed public spaces was implemented in England in 2007 to protect the health of non-smokers. Results included immediate reductions in hospital admissions for asthma among children (Millett *et al* 2013) and adults (Sims *et al* 2013), corroborating strong international evidence on health outcomes from smoking bans (Frazer *et al* 2016).

Regulating price

Product pricing can also be regulated, acting in a similar way to fiscal levers to create lower or higher prices to either encourage or deter consumers when making purchasing decisions. While fiscal levers like excise taxes may enable manufacturers, retailers and others to absorb additional costs or savings so that these do not impact consumers, price regulation ensures that changes impact directly on the retail price, influencing consumer decisions at the point of sale.

Example: minimum unit pricing for alcohol

Minimum unit pricing for alcohol in Scotland came into force in May 2018 to reduce the affordability of certain types of alcohol, particularly high-strength, low-price products that tend to be consumed more by problem drinkers (Black *et al* 2011). The policy has led to a reduction in weekly purchases of alcohol per adult per household, with the greatest reduction in purchases being in the top fifth of alcohol-purchasing households (ie, the highest consumers) (O'Donnell *et al* 2019).

Policy considerations

As the examples illustrate, there is evidence that tax and regulatory policies – when designed and implemented well – can be highly effective in improving health. However, unless they are well researched and designed, they can have unintended consequences. Good policy-making, whatever its rationale and intended outcomes, should seek to understand and mitigate these consequences.

Good policy-making and delivery is particularly important for taxation and regulation. While taxation can have a positive impact on growth by removing certain market failures and improving economic efficiency, it can also have a negative impact by creating compliance costs to industry and undesirable market distortions or unintended consequences ([Frontier Economics 2012](#)). Similarly, increasing taxes on goods can lead to reduced consumer spending and decreased business revenue. Those distortions and consequences could have long-term implications for public health by reducing the opportunity for economic growth (for example). It is therefore essential that policy-makers are clear about which market failures they are addressing and design policies accordingly. Lack of action to address market failures can have a negative impact on health, but so can poorly designed policies.

Thinking about the principles of good policy-making and implementation is particularly important now that the United Kingdom has left the European Union (EU). Until now, when developing tax and regulatory policies to improve health, UK policy-makers have had to work within both UK and EU legal frameworks. Now the UK is no longer a member of the European Union, there may be more opportunities in this regard. However, much remains unknown about the direction the United Kingdom will take in future, and much depends on the future choices and priorities of government and policy-makers when negotiating trade deals.

We now identify some of the various issues policy-makers should consider on their journey from designing fiscal and regulatory policies to implementing them. This includes who should be targeted and by which level of government, how policies might work in practice, and common risks and criticisms of these approaches – including the difficulty of demonstrating effectiveness (see box). There is also a discussion of the public and industry acceptability of such policies, as well as how their impact can be measured.

Judging the effectiveness of fiscal and regulatory policies when seeking to improve health

Public health problems are complex and multifactorial. This can make it difficult to demonstrate the effectiveness of specific interventions, including those involving fiscal or regulatory measures aimed at improving health. Most models for demonstrating effectiveness operate on the assumption that the policy intervention will lead to a change in behaviour, either among individuals or within a market for goods such as tobacco or alcohol. The eventual health outcomes from these changes are difficult to measure. Evidence for tax and regulatory policies tends to rely on association to demonstrate effectiveness. While direct causal links between policy and health outcomes cannot easily be made, the weight of evidence from multiple sources showing a strong correlation between a policy action and health outcome can provide a large degree of confidence. Systematic reviews of the health effectiveness of smoking bans is one example of where a clear case can be made on these grounds (Frazer et al 2016). Markers of changed behaviours such as declining tax revenues or altered purchasing habits are often used as proxy measures.

Measuring impact is especially difficult in the context of preventive policies where the health outcomes and benefits may only become apparent some years or even decades after a policy is implemented. The application of taxes in other spheres of public health, beyond limiting tobacco and alcohol consumption, is a relatively recent practice, so evidence of impact is only beginning to emerge.

When thinking about these policies, governments have to weigh up the totality of the available evidence, taking into account the strength of the linking assumptions being made, the international consensus around the policy, and the difficulty of producing definitive evidence in this area.

Why targeting is crucial

Clarity about who is being targeted by an intervention is crucial to its effectiveness. When deciding which new policies are needed, policy-makers should identify the problem to be tackled and the particular group or population impacted by it. Policies can be quite specific – for example, taxation on specific goods that are causing harm among certain groups (such as high-sugar drinks and young people); or they can be much broader in their reach – for example, banning smoking in public places, which targets the whole population.

How different demographic groups respond to tax or changes in the price of products can vary significantly, depending on numerous factors, including access to information about the potential harm associated with a product, or a person's level of education, income, age and gender. People might respond by changing their purchasing habits or just spending more in order to accommodate the tax, depending on the price elasticity of the product.

Price elasticity refers to the change in demand for a product as a result of a change in its price. As discussed, some groups of consumers are more sensitive to changes in price than others. For example, evidence suggests that health improvements associated with tobacco taxation are greatest in low-income households, where the highest levels of pre-tax consumption are seen. The sensitivity of lower-income groups to price increases and the corresponding changes in level of consumption lead to the greatest decrease in unhealthy choices, and therefore the greatest health improvements (**Gruber and Koszegi 2004**). On the other hand, high-income groups are more able to accommodate price increases by spending more.

However, some groups are not as sensitive to price changes of certain products, regardless of their income. For example, heavy drinkers are unlikely to change their alcohol consumption in response to a price change (**Gallet 2007**). In cases where price elasticity is low and demand does not change, the increased revenue generated from the price increase can be used to fund public health interventions or services that facilitate other healthy behaviours (**Public Health England 2018**). On the other hand, although this provides some latent health benefit, a focus on prevention would suggest that if price elasticity for a product is low, taxation may not be the most appropriate solution, and an alternative intervention might be more effective in changing behaviour among the target group.

Regressive effect of taxation

Often the people who experience the worst health outcomes are people from the most deprived communities and lowest income groups (**The Marmot Team 2010**). A common criticism raised against the use of some public health taxes is that they can be regressive and therefore unfair, disproportionately impacting on lower-income individuals by restricting freedoms and exacerbating inequalities. However, some have argued that this is justified, as lower-income individuals are often overrepresented among consumers of harmful products, for example tobacco (**Office for National Statistics 2019**).

Arguably, the 'regressive' effect of taxes for public health can be attenuated if they are more effective at changing behaviour in low-income households than in high-income households (**Sassi et al 2018**). It follows that the extent to which a tax is regressive in practice, depends on how price elastic the demand for the taxed product is.

In some cases, the effects of fiscal and regulatory policies across groups can be comprehensive and thus more equitable – for example, where regulation results in a change to the wider environment. The 2007 ban on smoking in enclosed public places demonstrated these far-reaching effects: a study of hospital data from Liverpool found that since the smoking ban was introduced, there had been a dramatic reduction in admissions for myocardial infarction, with the benefits apparent across the socio-economic spectrum. This example shows how using a population-level policy, which reaches a broader segment of society and requires less individual agency,¹ can have more equitable effects across social groups. (For a further discussion of individual agency, see pp 20–23).

The different impact of policies on different groups has often been deployed as an argument against using fiscal and regulatory policies to improve health on the grounds that they may be 'blunt instruments'. However, if these instruments are tailored to the population groups with which they are most likely to be effective, they can have positive results among the target group(s).

1. Agency can be defined as the capacity of individuals to act independently and to make their own free choices outside of structural constraints (**Campbell 2009**).

Should policies be implemented at the national or local level?

In the United Kingdom, many regulatory policy measures aimed at improving health are implemented at a national level. However, local government also has a number of its own health duties and powers that span a range of areas (eg, providing smoking cessation services, pursuing water fluoridation, ensuring food quality standards, and controlling alcohol licensing all fall under the remit of local government). With an increased focus on place-based health and the ongoing devolution agenda in England, there has been increasing attention paid to the possibilities of new powers (or indeed greater use of existing powers) for local government to promote health (Naylor and Buck 2018). This introduces greater scope for regulatory policy measures to be tailored and enacted at the local level to better address local needs and support the work of local systems.

There are several benefits of enacting these regulatory powers at local levels. First, it can provide policy-makers with opportunities to achieve change or at least make progress locally when progress at a national level is not possible due to parliamentary gridlock or wider political resistance. It can also be simpler and quicker to implement policies at the local rather than the national level, and once a policy has been proven to have a positive impact locally, it can then be scaled up at a regional and national level.

In some cases, the public health problem that needs to be solved may not always be a national one; it may be specific to certain localities or groups, as discussed earlier. It may therefore be more appropriate to target specific local areas, as opposed to introducing blanket national policies that may not be appropriate for all areas.

Policy-makers need to consider the benefits and drawbacks of implementing regulatory policies for health for different groups at different levels of place and government to find the most effective point of delivery. Careful planning and modelling of impact should be used to identify the most appropriate level at which to implement policies.

The role of local authorities: is the balance of power between national and local levels right?

While local government already has some powers to improve citizens' wellbeing – for example, local authorities are able to limit planning applications for betting shops, place restrictions on alcohol licensing, and refuse planning applications for fast-food outlets – it also faces limitations, particularly around citing health as a justification for using some of its powers. One example of this relates to alcohol licensing. Local authorities are required to take four objectives into account when considering alcohol license applications – the prevention of crime and disorder, the prevention of public nuisance, public safety and the protection of children from harm. However, there is no explicit objective relating to public health, prompting calls from a range of organisations including the British Medical Association ([British Medical Association 2017](#)) for licensing legislation to be amended to introduce a fifth licensing objective around public health, as is already the case in Scotland. Further, a survey of Directors of Public Health in England conducted by the Local Government Association found that 89 per cent of those who responded supported the introduction of a public health licensing objective ([Local Government Association 2016a](#)).

In relation to fiscal powers, when compared to other countries, it is evident that the tax system in England is highly centralised, and limits the powers and autonomy of local authorities to set new taxes ([Naylor and Buck 2018](#)). In the face of such limitations, some local authorities have worked creatively to implement improvements, in particular by pursuing voluntary approaches. One example is the 'Reducing the strength' campaign, pioneered in Suffolk and Portsmouth, which was designed to tackle the problems associated with street drinking by removing from sale low-price, high-strength alcohol products through voluntary agreements with local retailers ([Local Government Association 2016b](#)).

Despite local authorities finding work-arounds within the status quo, many feel that local government needs to be granted more powers so that they have greater opportunities to tackle public health issues and priorities within their local communities. For example, in its 2016 inquiry into childhood obesity, the House of Commons Health Committee called for local government to be given greater powers so that they could more effectively tackle the challenges presented by high levels of obesity ([House of Commons Health Committee 2015](#)).

The United Kingdom is an outlier in terms of the relative lack of autonomy and powers granted to local government by national government ([Naylor and Buck 2018](#)). Policy-makers should explore the case for giving local government further fiscal and regulatory freedoms to enable them to tackle the specific health challenges their populations face.

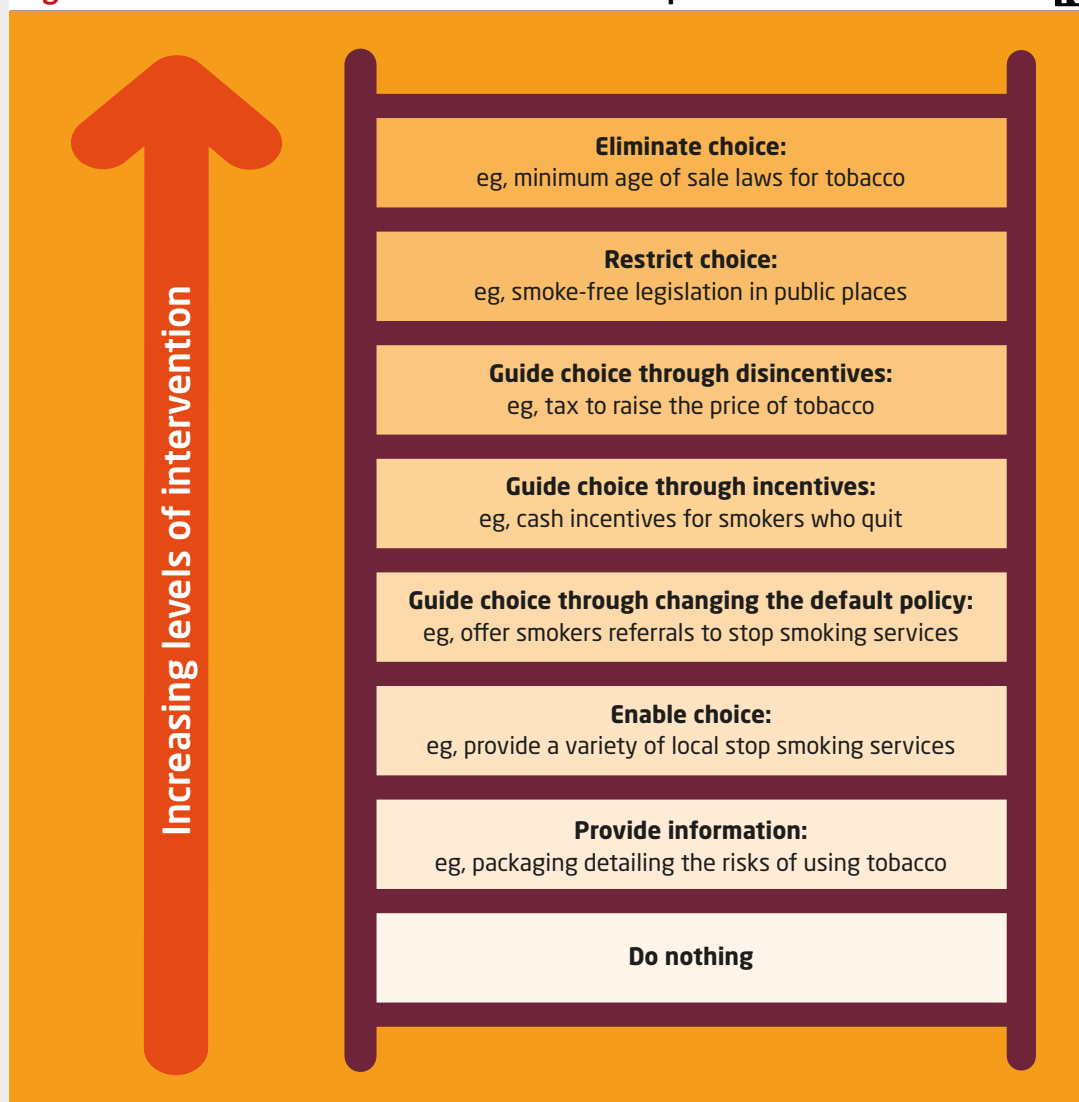
The role of personal agency in the effectiveness of fiscal and regulatory policies

Where policy interventions require a high level of agency, the burden is put on the individual; conversely, where there are low-agency requirements, benefits occur without individuals bearing the responsibility for taking action ([Adams et al 2016](#)). For example, in the United Kingdom, in accordance with The Bread and Flour Regulations 1998, all commercial wheat flour is fortified with calcium, iron, thiamin and niacin; this represents a low-agency population intervention, where individuals need only continue to consume products made with commercial wheat flour to benefit.

The spectrum of policy levers

Fiscal and regulatory levers to promote health fall on a spectrum of interventions, ranging from high to low coercion by the state. Frameworks like the Nuffield Council on Bioethics' intervention ladder provide a useful way of thinking about these policy levers: with each rung on the ladder, there is increasing intrusiveness and a general decrease in the personal agency required for the intervention to be effective.

Figure 1 Nuffield intervention ladder with examples



Source: Adapted from Nuffield Council on Bioethics (2007)

The type of intervention used depends on a number of different factors, including the degree of harm a product poses to health, the effect on markets, and the nature of the population being targeted, for example, if it includes vulnerable consumers. Stronger justifications are needed for interventions higher up the ladder.

Agency plays a crucial role in how fiscal policies work. Although, according to the Nuffield intervention ladder (see Figure 1), taxation is considered to be a more intrusive policy lever, people can still respond to a new tax in various ways, including reducing the unhealthy behaviour being taxed or avoiding the tax by switching to a (more or less healthy) alternative. How an individual responds to the intervention is determined by many factors, including the price elasticity of the product being taxed (as discussed earlier).

Through well-designed interventions, fiscal policies can limit the role of agency by managing demand. Cross-price elasticities measure the responsiveness of demand for other products when the price of a particular product is increased. For example, if a price increase is placed on a specific high-sugar yoghurt drink (X), demand for an alternative 'substitute' product (Y) might increase as a result. To take advantage of this shift in demand, taxation can be implemented alongside other interventions to ensure it is shifted in a health-promoting direction – ie, towards a healthy (as opposed to even more unhealthy) substitute. This might be achieved through subsidies for healthy alternatives, to shift demand from taxed products toward specific healthy options.

In the case of regulatory mechanisms, where they require a high level of agency, those who are able and motivated to engage with the intervention due to social, cultural or educational advantage, are more likely to benefit. However, evidence suggests that high-agency interventions can reinforce, or even exacerbate, existing inequalities in health (Adams *et al* 2016). Providing information and warnings, for example, often require a high level of individual agency to assimilate the information and then make a healthy decision. Front-of-package (FOP) labelling is one such example, providing nutritional information about food products with the aim of alerting customers to so-called 'vice products'. However, there is evidence to suggest that FOP labels can actually lead customers to misinterpret the 'healthiness' of unhealthy products (see box).

Front-of-package labelling

The evidence for the effectiveness of front-of-package labelling as a method for changing consumer perceptions and behaviours around food products is widely contested. First, front-of-package labelling may draw attention away from the nutritional facts panel, which contains the full details of a product's nutritional information. Second, although there is evidence that front-of-package labelling may raise awareness of healthier options, their effect on influencing people's choices is unclear (Ikonen *et al* 2019). Third, where front-of-package labelling includes an 'interpretive nutrient-specific health claim', there is also an increased risk of misinterpreting the health messaging. Such health claims involve simplified nutrient-specific text (eg, '4 per cent fat!') on the front packaging, intended to encourage and enable consumers to make healthier choices. However, these labels can be misleading, as foods may display a low-fat percentage without showing the high-sugar content on the same front-of-package label. Where consumers use positive information about a specific nutrient as a basis of inference about a product's overall healthiness, this is referred to as the 'halo' effect (Ikonen *et al* 2019).

When this misinformation is considered in the context of evidence that front-of-package labels can also be difficult to understand, there is a potential inequity in their negative effects, between consumers with more or less health knowledge, more or less healthy behaviours, and higher or lower incomes (Hawkes *et al* 2015). Where regulations for mandatory food labelling are put in place, there need to be adequate guidelines to prevent misleading labels from giving 'vice products' apparent health status.

The level of agency required should be used by policy-makers as a means of tailoring tax and regulation to be most effective across all social groups. Less-intrusive options and social 'nudges' can be effective, but expert opinion suggests that to have any chance of working, lighter options, such as voluntary action, must be backed up with strong, swift and credible threats of regulation (Buck 2016). More intrusive approaches may be needed where the potential for harm is much greater or where individual choice bias and habitual behaviour mean there is more resistance to change. With the risks of smoking, poor diet and alcohol misuse being so high, interventions higher up the ladder are often necessary, especially as low-intrusion policies that require individual choice (such as information provision only) have often the least impact at a population level (Davies 2018).

It is also important to consider the cumulative effect of policies; numerous less-intrusive options may prevent the need for large tax restrictions on a single product, while combinations of different approaches may provide the best outcomes.

Potential negative consequences of policies

As well as considering how policy mechanisms work, it is also important for policy-makers to understand some of the unintended consequences of fiscal and regulatory interventions, and how these might be mitigated.

Unintended consequences and perverse incentives

One criticism of fiscal and regulatory policies is that they can at times be blunt instruments, based on behavioural assumptions that don't take account of how individuals might actually respond to interventions. For example, if taxes are applied to a high-fat product, the intention is that they will discourage people from purchasing and consuming that product. However, if the public absorbs the costs by making savings elsewhere in their budgets, or switches to an alternative high-fat product, the effectiveness of the policy is undermined.

Depending on how they are designed, fiscal interventions can also have other unintended consequences, such as incentivising new unhealthy behaviours to substitute the original behaviour. As people move away from a taxed product or group of products, they might shift some of their demand to alternative groups of products, substituting the unhealthy nutrient being targeted with another unhealthy nutrient. For example, some studies suggest that introducing a direct tax on a whole category of products with a high content of saturated fats can reduce consumption of those products, but does not always result in improved health outcomes because some people replace those high-fat products with high-salt products (Mytton *et al* 2007). This risk can be mitigated by introducing other interventions alongside the tax, such as measures (including subsidies) that seek to increase the availability of healthier options – eg, fruit and vegetables (Cobiac *et al* 2017). Combining policies in this way can help to reduce potential unintended consequences.

Regulation can also result in perverse incentives. For example, where regulation limits the availability of a product through prohibition, this can result in persisting demand being met via the black market.

Policy-makers need to consider using a combination of policies as they move away from isolated, single actions towards cross-government and cross-sector approaches that reinforce and complement each other when targeting different groups. Examples of this include considering tax alongside other interventions like subsidising healthier alternatives, or combining a tax on a vice product with regulatory measures limiting where it can be bought and consumed (as is the case for tobacco).

Success on smoking

The United Kingdom is currently a world leader in international rankings for effective tobacco control policy (**World Health Organization 2019**). The approaches it has taken to reduce smoking rates over the past 15 years provide a good example of how a combination of fiscal, regulatory and other policies (including the provision of state-funded smoking cessation services) can be effective. Between 2006 and 2018, the percentage of those aged 16 and over who smoked cigarettes fell significantly, from 22 per cent to 16.6 per cent (**Office for National Statistics 2019**).

Missed health benefits

While the examples given have concentrated on limiting consumption of unhealthy products, not all 'vice' items should be targeted with the same approach. For example, while it is understood that tobacco has no health benefits and consumption of high-sugar drinks may be known to cause obesity and other diseases, some high-sugar drinks like fruit juice or milky drinks can provide useful nutrition and calorie intake.

As part of the sugary drinks levy, Theresa May's Conservative government brought forward primary legislation that excludes drinks containing at least 75 per cent milk or yoghurt. There have been concerns that the presence of high levels of added sugars must be balanced against the positive nutritional properties that milk brings as part of a balanced diet (**HM Revenue & Customs and HM Treasury 2016**) and that taxing them could reduce access to useful nutrients, particularly for those groups where adequate energy and nutritional intake is limited due to food poverty. Not everyone agrees, however; some doctors have called for the levy to be extended to cover other products such as caffeinated drinks, milkshakes and fruit smoothies (**Royal College of Physicians of Edinburgh 2019**).

The fact that in some cases even unhealthy foods provide nutritional benefit and can therefore be consumed as part of a healthy, balanced diet means that governments have to think much more carefully about how to incentivise healthy behaviours; it is not as simple as banning products or taxing them to such an extent that consumption is pushed down to zero. In many cases, interventions should aim to moderate or balance food consumption. Some products are not intrinsically 'unhealthy', but eaten in excess, they can have negative health consequences.

Different policy approaches are needed for products with no health benefits (eg, tobacco) and those where there are both benefits and risks to consumption. In the case of taxing and regulating food and drink in particular, a balance needs to be found where consumption is moderated, is not causing poor health at a population level, and yet is also not priced or controlled in such a way that it prevents some groups from getting the nourishment they require, as well as the potential pleasure that can be derived from eating and drinking. Further, policies should balance the need to prevent over-consumption while recognising that some people consume these products in moderation as part of a balanced diet. Striking the right balance in relation to the consumption of food and drink is hugely challenging but can be achieved by combining a range of policy levers that shift consumption in the right direction while avoiding blanket bans.

The acceptability and deliverability of policies to industry and the public

Industry

The commercial acceptability of policy interventions is a key consideration for policy-makers. The beverage, food and sugar industries have actively lobbied against recent efforts by governments to introduce diet-related taxation on foods and beverages (see, for example, [Bødker et al 2015](#)). Changes to price structures, and to how products can be sold and advertised, can have an impact on manufacturers and retailers of those products. Often, this is due to the success of the policy mechanism in action – for example, regulating availability through setting ingredient limits such as salt reduction targets. Other times, these impacts can be perceived to have unintended or unfairly distributed consequences – for example, necessitating changing recipes to such an extent that they are no longer deliverable from the manufacturer's perspective.

For policies to be successful, policy-makers should listen to legitimate concerns from industry and seek to find a compromise position, where possible. However, it should also be recognised that industry objectives are not always aligned with public health objectives, and vested interests can sometimes be at play; if not appropriately governed and restricted, the activities of national and global corporations can have 'severe and deleterious' effects on population health through the promotion of harmful behaviours such as smoking and excess alcohol consumption ([Davies 2018](#)). Furthermore, a common characteristic of market economies is the tendency of corporations not to bear the costs of the adverse impacts of their products on population health, instead allowing the burden to fall on taxpayers and the public services they fund – particularly the NHS, social care and public health services. Harmful products such as tobacco are sold at artificially low prices that do not reflect

the full cost to society. New regulation on pricing might be one way to ensure that these costs are carried by industry, rather than by the public, in the form of harm (Davies 2018).

At the intersection of industry deliverability and public acceptability is the role manufacturers can play in absorbing tax rather than passing the burden on to consumers in the form of higher prices. Food manufacturers can reformulate their products to reduce or even eliminate diet-related taxation. The Soft Drinks Industry Levy offers a good example of businesses responding proactively to government intervention (in this case, taxation) to manage impact. With the main goal of the levy being to promote reformulation of products, policy-makers worked closely with businesses to implement the policy in a way that sought to achieve the desired outcome of reduced sugar consumption. For example, by providing a long lead time before introduction, manufacturers were given an opportunity to change recipes and avoid the tax.

Policy-makers should find ways to work with industry in order to facilitate their co-operation with the implementation of fiscal and regulatory policies. Working with industry can help governments to understand commercial interests and navigate opposition. Where there is clear evidence that robust intervention is necessary, such as mandatory regulation, this should not be avoided in favour of voluntary standards. By providing evidence about the true, rather than perceived, implications for businesses, as well as working collaboratively during the policy design and implementation process, policies are more likely to be deliverable from an industry perspective, as well being beneficial to public health.

Public

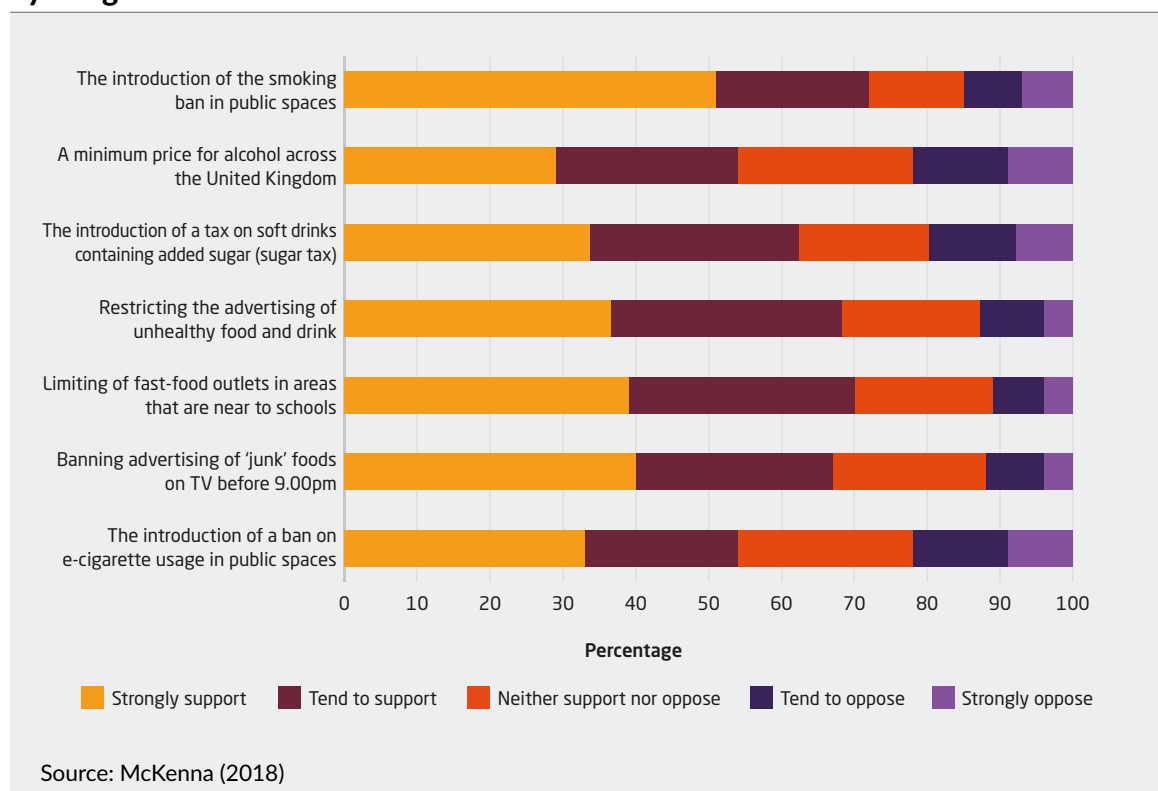
Public acceptability is another important consideration when using fiscal and regulatory levers to improve health. Politicians can often be reluctant to advocate policies that they think will meet with public opposition and may be characterised as the 'nanny state' interfering in people's lives.

There is an important distinction to be made between the general concept of government intervention in people's lives and support for specific policies. Research by The King's Fund in 2017 found that while there was often public mistrust of a 'nanny state', people tended to support specific government interventions such as the smoking ban (Burkitt *et al* 2018).

It is also important to consider what level of government intervention is being discussed. Ipsos MORI research (Branson *et al* 2012) found that support for different interventions decreases as the ‘force’ of the intervention increases. Public support for policies to improve health is often strongest for those that are the least intrusive, such as providing information on health risks, but which also happen to be the least effective (Diepeveen *et al* 2013), as they require the highest levels of personal agency to have an effect. The acceptability of policies among different groups also varies depending on demographics such as age or educational attainment (Diepeveen).

That being said, support for greater use of fiscal and regulatory policies is also often higher than might be assumed – for example, 81 per cent of people support making healthy food and drinks cheaper than healthier ones as a way of curbing childhood obesity (Davies 2019). Polling conducted by Ipsos MORI for The King’s Fund in 2018 showed majority support for all of the interventions tested (including introducing a minimum unit price for alcohol and limiting fast-food outlets near schools), albeit with higher levels of support for some measures than others (McKenna 2018).

Figure 2 Views on support for or opposition to public health interventions by the government



Who or what is being targeted by an intervention also influences its public acceptability. For example, measures aimed at protecting children and those policies that target businesses rather than individuals are among the most popular with the public ([Diepeveen et al 2013](#)).

Attitudes do, however, change, and ideas that are met with considerable resistance when first mooted often become widely accepted over time. In 1990, for instance, only 27 per cent of people in England supported a smoking ban in pubs; by the time the ban on smoking in enclosed public places was put in place in 2007, this had risen to 46 per cent ([Park et al 2010](#)). Looking at the acceptability of the ban overall, more recent data² suggests support has increased since it was put in place. In 2007, public support for the ban was at 78 per cent, rising to 83 per cent by 2017. More specifically, support among smokers had risen from 40 per cent to 55 per cent over the same period ([Action on Smoking and Health 2017](#)). There are also lessons to be learnt from previous initiatives about how and why public acceptability changes over time.

Emerging evidence suggests that providing information to the public on the effectiveness of some policies and the ineffectiveness of others may have an effect on shifting opinion ([Reynolds et al 2020](#)). However, the public is often exposed to conflicting messages from commercial campaigns and interest groups that create and shape debate around these policies, which can be difficult to absorb, even when backed with considerable evidence. More research is needed to understand how best to make the case for these types of interventions. While policy-makers need to consider public opinion, acting decisively on the evidence is key to tackling current health challenges and is, in itself, a route to demonstrating benefit and changing public acceptability. Public opinion can be followed but also shaped; to do this requires leadership and courage from politicians and policy-makers alike.

2. It should be noted that the data reported here is from two separate questions on different surveys, and as such can neither be interpreted as longitudinal nor repeated cross-sectional data. The first is taken from the Scottish Social Attitudes survey (conducted by ScotCen) investigating views of the smoking ban in pubs. The second was conducted by YouGov as part of Action on Smoking and Health (ASH) Smokefree England surveys.

Conclusion

Non-communicable diseases are a major health challenge and behavioural risk factors, including poor diet, smoking and excess alcohol consumption, need to be better addressed by policy-makers. While traditional policy approaches tend to see these issues as being about individual responsibility and choice, evidence suggests that much of our behaviour is also strongly shaped by our environment (Naylor and Buck 2018). To respond effectively to meet these challenges, there is a real need to use policy levers that rely less on personal agency and act at a population level. Fiscal and regulatory levers are among the most promising options for changing behaviour through rebalancing our physical, commercial, social, digital and economic environments to promote healthier choices. Interventions making use of well-designed fiscal policies can moderate over-consumption of unhealthy products and encourage people to choose healthier ones. Well-designed regulatory interventions can limit choice by changing the types of product available and where people can buy them from, specifying the circumstances within which products can be consumed, as well as how they are labelled or advertised, and what they cost. These types of intervention can be used in combination to greatest effect.

This briefing has explored the use of these interventions in some detail, outlining some key considerations for policy-makers when designing and implementing them. Who interventions are targeted at, what level of government they are implemented at, their possible negative consequences, and acceptability to industry and the public can all have a bearing on their effectiveness.

Policy-makers must consider these policy levers as potentially effective means of reducing consumption of harmful products and thus limiting their negative impact on health. Fiscal and regulatory policies can be highly effective when used in combination and alongside other complementary policies. These policies are essential tools for government if it is to make headway in addressing today's health challenges and their consequences for individuals, the NHS and society.

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