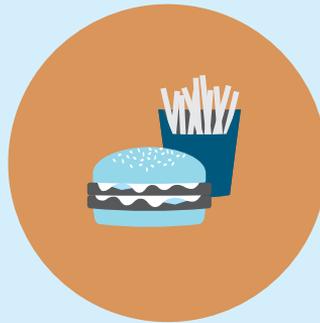


A HEALTHIER LIFE FOR ALL

THE CASE FOR CROSS-GOVERNMENT ACTION



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This essay collection looks at improving various aspects of public health – and at the potentially game-changing social and economic benefits to society of doing so.

It concludes by proposing the need for a paradigm shift in policy, whereby health is seen as a fundamental component of a prosperous and sustainable society and a priority in all policy areas.

**Rt. Hon. Sir Kevin Barron MP, APHG Chair
Baroness Julia Cumberlege, APHG Co-Chair**

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INTRODUCTION



Rt. Hon. Sir Kevin Barron MP and
Baroness Julia Cumberlege

The essays in this collection are written by some of the most distinguished experts in the field of health. They are published jointly by the All-Party Parliamentary Health Group and the Health Foundation. The series explores just how significantly issues such as obesity, alcohol consumption, a sedentary lifestyle and psychological problems are affecting the UK. It is currently estimated that 40% of NHS spending goes towards treating potentially avoidable health conditions. However, even more importantly, these illnesses have a great physical and psychological impact on people's health and wellbeing, and their ability to live fulfilling lives.

Our contributors cover a range of key topics in public health. The first essay, by former Chief Medical Officer Sir Liam Donaldson, sets the scene by providing an overview of the grim toll that preventable ill health is taking on society. The essays then go on to examine different aspects of the public health conundrum, including the continued impact of smoking on personal health, the opportunities and risks associated with e-cigarettes, and the growing health risks associated with alcohol consumption, obesity and sedentary lifestyles. The next essays dig deeper into the underlying causes of poor health and avoidable illness, including mental ill health, in society. They identify highly significant determinants of health and wellbeing, such as physical environment, housing, poverty and employment.

While there is increasing awareness of the causes of avoidable illness, and its impact on both people and health and care services, perhaps a more difficult question to answer is how can policymakers put in place the right conditions and approaches to start to turn things around?

Change can be brought about in a number of ways. Two of our contributors consider this, in part by looking back at what public health regulation has delivered in the past. There is no doubt that regulation has an important role to play in modifying behaviour at the personal level, as we have seen through tobacco control legislation. It can also deliver environmental

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improvement, for example in air quality, with the associated population-wide health benefits. However, it is argued that regulation is only ever going to be part of the answer and that other approaches are required. For example, what strategies to encourage self-care are most effective, and what is the role of education in delivering grassroots behaviour change? Are adequate resources being allocated to public health, with the right structures in place to deliver the improved health outcomes that society so badly needs? And is there sufficient emphasis on health within other policy areas, such as education and housing, which we know greatly contribute to health outcomes?

This collection looks at all these aspects of public health improvement – and at the potential game-changing social and economic benefits to society of doing so. It concludes by proposing the need for a paradigm shift in policy, whereby health is seen as a fundamental component of a prosperous and sustainable society and a priority in all policy areas.

It is clear that improving the overall health of the population is one of policymakers' greatest challenges, and one that cannot be ignored. By bringing together expert views on the key issues and potential solutions to this challenge, these essays provide a good starting point for exploring both the complexities – and great opportunities – associated with ensuring that society enjoys the highest possible levels of physical and psychological health and wellbeing.

Baroness Julia Cumberlege is a Co-Chair of the All-Party Parliamentary Health Group and a Conservative Peer. She was a Minister in the Department of Health from 1992-1997 and has just finished leading a major review of maternity services for NHS England.

THE FORMIDABLE BURDEN OF PREVENTABLE DISEASE FACING THE UK TODAY



Professor Sir Liam Donaldson

Post-Second World War policymakers and planners firmly believed that the demand for services provided by the newly created NHS would fall. It would ultimately become a health maintenance service.

Their thinking was based on the experience of combatting, and bringing under control, the dominant population health problems of the late 19th and early 20th century, almost all of them infectious in origin. Modern sanitation, clean water, better and less crowded housing, improved nutrition, comprehensive childhood vaccination and safer childbirth laid the foundations for late 20th and 21st century populations in the UK living longer than previous generations.

These stunning historical public health achievements, however, did not create a land whose citizens were imbued with perfect health, nor free from the tyranny of disease. One set of killers and disablers became, partly, replaced by another. No one truly foresaw the tidal wave of the so-called ‘diseases of civilization’. Today health and care services – and the public expenditure that sustains them – are kept constantly on the brink of crisis by the numbers of people with conditions such as cancer, heart and respiratory disease, stroke, dementia, mental illness and diabetes. The same transition of the disease burden is occurring globally. The World Health Organization estimates that 80% of deaths from non-communicable diseases now occur in low- and middle-income countries.

The overall health of the UK population has improved. For example, Office for National Statistics data show that between 1983 and 2013:

- there was a 13% decline in the number of registered deaths
- there was a 59% reduction in the number of infant deaths for boys, and a 58% reduction for girls

- there was a fall in age-standardised mortality rates for circulatory diseases of 711 deaths per 100,000 men and 450 deaths per 100,000 women
- age-standardised mortality rates for Scotland remained the highest of all the constituent countries over the 30-year period.

Additionally, data show that the majority of deaths now occur among those aged 80 years and over (46% for men and 63% for women). People experience ill health differently in today’s UK. Premature death is still an important feature of some disease states, but living with chronic disease and its accompaniments (prolonged treatment, poor quality of life, incapacity, disability), rather than immediate death, is more typical. Also many more people, particularly those in later life, suffer the consequences of more than one disease simultaneously (so-called multi-morbidity).

A large part of the non-communicable disease burden can be ascribed to a small number of risk factors. A meeting of the UN General Assembly,¹ taking a global perspective on non-communicable diseases, declared that four major behavioural risk factors could be modified by intervention: tobacco use, harmful drinking, unhealthy diet and low physical activity. To these, many would add a further two: high blood pressure and obesity. This necessarily puts the emphasis not on the individual diseases themselves but on the underlying risk factors that contribute to them.

Public health in the UK has a strong tradition of looking even deeper than the risk factors or behaviours that cause illness. The British epidemiologist Geoffrey Rose called this layer of influences ‘the causes of the causes’. Population health is strongly influenced by social circumstances. The chances of being in poor health or of dying prematurely is affected by income,

occupation, environment, upbringing, education, and a range of other social and economic factors, collectively termed the social determinants of health. They vary markedly between the countries and regions of the UK, but also within the same country and even between small areas. They result in substantial variations in health, often referred to as health inequalities.

Three- or four-fold variations in health and mortality between groups in society, often with a north-south gradient, have remained consistent, despite improvements in the overall health of the population evident through the 20th century.²

Infectious diseases have also not gone away. Although mortality from many such diseases has been virtually eliminated – often because of vaccines – others like tuberculosis and hospital-acquired infections have become resurgent. New diseases such as HIV and AIDS have also emerged. Major global threats such as pandemic influenza, SARS, Ebola and the Zika virus have shown their ability to spread death, fear and economic devastation. The threat of untreatable infection because of drug-resistant organisms is testing the ability of politicians and leaders in health and agriculture to take difficult decisions.

Over the last 50 years, most governments have produced at least one public health white paper during their tenure in office.^{3,4,5,6} In earlier times, these were formulated for the UK as a whole, but with the advent of devolved assemblies and parliaments, Wales, Scotland, Northern Ireland and England have each produced their own.^{7,8}

While these policy documents have always analysed the main patterns and time trends in mortality, disease and risk factors, they have tended to differ, sometimes markedly, in a number of respects. These include:

- the extent to which numerical targets were set
- the way that the professional public health workforce was deployed and managed
- whether action was taken across the whole of government or only by the Department of Health
- the approach to industries whose products could harm health (reliance on voluntary agreements versus legislation)

- whether health inequalities were explicitly recognised and addressed.

One of the biggest differences in approach has been political and is polarised between those who seek solutions through strong state and regulatory action and those who believe only in providing information and inviting people to make their own choices and decisions. This argument about individual responsibility usually splits down right-left political lines, but not always. For example, the white paper produced when Barbara Castle was the Labour government's Secretary of State for Health drew back from legislating for compulsory car seatbelts because it was considered too intrusive to personal freedom,⁹ while the current Conservative government has introduced a tax on sugary drinks.¹⁰

The reality is that selective state action and informing the individual must be bedfellows if the formidable burden of preventable disease is to be reduced. The complexity of interconnected influences on health was never better illustrated than by the map of the obesogenic environment (ie one that encourages people to eat unhealthily and not do enough exercise) depicted in the Government Office for Science's Foresight Report.¹¹ To view that and then believe that the answer is simply to advise people to eat less and walk more is not a credible position.

Compared to England, the devolved governments in Scotland and Wales have often shown stronger intent to use the power of the state to address risks to health. They have certainly based their policies more firmly on the need to tackle the social determinants of health.

The health of the UK's population has improved greatly in the last 50 years, but the number of people living with the consequences of long-term illnesses, often more than one, has surged. This continues to place enormous pressure on health and care services and on public expenditure. Stark differences in the health of the affluent compared to the socially and economically disadvantaged, strongly tied to the geography of the UK, remain intractable. Solutions are complex to implement, often contentious, and politically challenging. The size of the disease burden, the unequal state of the nation's health, and the need to promote health not just the absence of disease, are today's imperatives.

THE BURDEN OF SMOKING IN THE UK



Professor Robert West

So much has been written on the human and financial cost of smoking tobacco that one might imagine there is nothing more to be said. However, changing context and new information make it worthwhile revisiting the issue fairly regularly. This essay takes a fresh look at some key figures.

Considering, first of all the numbers of premature deaths caused each year by smoking, the headline figure for the UK is 100,000.¹ However, that is not the death toll from current smoking prevalence. Historically, death rates from smoking have lagged approximately 30 years behind prevalence, and prevalence is 54% of what it was 30 years ago (down from 35% to around 19%).² So, based on a simple analysis, the future annual death toll from current smoking prevalence in the UK – a country of 64 million people – is expected to be 54,500. However, there are many complicating factors, including population growth, changes in the demographic profile of the population, and possible changes in the harm caused by smoking arising from product modification. Nevertheless, a broad rule of thumb is that each 1% of smoking prevalence can be expected to result in some 50 premature deaths per million head of population per year, or just over 3,000 deaths in the UK each year.

“Based on a simple analysis, the future annual death toll from current smoking prevalence in the UK – a country of 64 million people – is expected to be 54,500”

The number of premature deaths has limited value as a metric because losing 10 years of life is clearly of greater significance than losing 10 months. Much more important is the number of life years that are lost. We have known for some time that male smokers

lose approximately 10 years of life if they do not stop.³ More recently it has become clear that a similar figure applies to female smokers.⁴ Both of these studies also found that stopping smoking before one’s mid-30s all but eliminated the loss of life expectancy. This leads to the relatively straightforward calculation that for the average smoker, each year of smoking costs around 2–3 months of life expectancy, every month costs around 5–7 days, and every day costs around 5–6 hours. One can put this another way: stopping smoking at any age recovers 2–3 months of life for every year of smoking averted, 5–7 days for every month, and 5–6 hours for every day. In a real sense, therefore, stopping smoking is always urgent but never too late. In fact, in England, for which we have the best data, only a quarter of smokers succeed in stopping before they start to lose life expectancy.⁵ This is despite the fact that most smokers have tried to stop, usually many times, before they reach their mid-30s.

One needs to go beyond years of life, however, to consider wellbeing and quality of life. If the extended years of life of ex-smokers are spent in misery because of poor health or social isolation, the benefit of reducing smoking prevalence is severely weakened. In fact, the opposite appears to be the case.^{6,7} Smokers appear to benefit in terms of both their mental and physical health when they stop, and do not spend more of their extended lives with diseases of old age.⁸ Given that smoking causes a number of debilitating chronic diseases such as blindness, hearing loss and dementia, it is not surprising that the quality of life in old age of never-smokers and ex-smokers is better than for smokers.

Much has been written about the financial cost of smoking to society and this now appears to be an important driver of government policy⁹: the government is looking for a financial ‘return on investment’ for smoking policies and programmes.

Arguably such an approach is unethical, given that it is not applied to the treatment of disease more widely. It would be considered barbaric to decide whether to treat diabetes only if it produced a financial return to the health service or economy, and interventions to prevent or treat addiction to smoking should be no different.

In the past five years, several million smokers have turned to e-cigarettes, either as a temporary aid to smoking cessation, as a long-term substitute for cigarettes or to reduce their cigarette consumption. E-cigarettes are now the most commonly used aid to smoking cessation. Unfortunately, these devices have driven a wedge between sectors of the public health community. Some see them as a Trojan horse by which the tobacco industry can undo decades of tobacco control success, whereas others see them as a potential ‘game-changer’, providing hope for an early end to the tobacco epidemic as smokers switch in their millions to a much less harmful form of nicotine use.

Recent comprehensive reviews by Public Health England In England and the Royal College of Physicians have concluded that while research is still in its very early days, e-cigarettes under an appropriate regulation regime may have an important role to play in reducing smoking prevalence as they are popular, substantially safer than smoking, and when used as a cessation aid they appear to be at least as effective as licensed nicotine products.^{11,12} While these reports have been widely endorsed, they have been opposed by some public health figures who work mainly in other areas. At a population level, in England at least, as e-cigarettes have become more popular, smoking cessation rates have also increased though obviously we do not know whether the two are causally connected.¹⁰

E-CIGARETTES: SAFE AND EFFECTIVE, OR A TROJAN HORSE FOR THE TOBACCO INDUSTRY?



Professor Martin McKee

Australia leads the world in tobacco control. They've implemented standardised packaging which, contrary to tobacco industry claims,¹ has driven smoking rates down.² They've raised taxes, making Australian cigarettes among the most expensive in the world. And they've achieved all of this without recourse to e-cigarettes, a product that has dominated debate on tobacco control in England. Bizarrely, some tobacco control advocates even argue for engagement with the tobacco industry, implicitly accepting the latter's argument that they are part of the solution rather than the cause of the problem.

So what do we really know about e-cigarettes?

Firstly, are they safe? We don't know. There has been a significant increase in the number of products on the market, including both the devices used to heat the fluid and the nicotine-containing liquid itself. So far, both have been unregulated, a situation fortunately addressed with the implementation of the EU Tobacco Products Directive. The Directive is consistent with guidance from the World Health Organization, leading health organisations internationally³ and a major systematic review. The review highlighted concerns about the lack of evidence on the long-term effects of inhaling – as opposed to ingesting – flavourings, many of which contain carcinogens, and the inhalation of metals from heating elements.⁴ It further highlighted evidence that nicotine is much more harmful than previously believed for the adolescent brain⁵ and the spread of cancer.⁶

Yet a highly controversial report commissioned by Public Health England concluded that e-cigarettes are '95% safer' than conventional cigarettes.⁷ Although most researchers accept that they are likely to be somewhat safer, the precision of this estimate is remarkable. It is worth noting that it came from a

discussion among individuals, many of whom are on record as being supporters of e-cigarettes.⁸ The concerns about the process by which this figure was reached are substantial,⁹ with some of those involved, although not mentioned in the report, having previous links to the tobacco industry.¹⁰ A subsequent review by two leading toxicologists argued that the omission of key sources of evidence from the Public Health England report was 'completely inexcusable'.¹¹

The second question is whether e-cigarettes actually help people to quit. The emphasis should be on quitting rather than cutting down, given the evidence that complete cessation is necessary to achieve long-term health benefits. Supporters of e-cigarettes point to a Cochrane Review,¹² even though only two of the studies included compared e-cigarettes with and without nicotine, rather than comparing them with patches or other cessation techniques. Even so, it concluded that the overall quality of the evidence that they helped people to stop smoking was low.

In marked contrast, a major systematic review published by *The Lancet* looked at the effectiveness of e-cigarettes as quitting aids in real-life settings.¹³ Thirty-eight studies were included, with the review finding that those who use e-cigarettes were 28% less likely to quit than those who did not use them. The authors undertook extensive additional analyses looking for any circumstances in which quit rates might increase, but found none. This would explain the interest of the tobacco industry in promoting these products and is consistent with other evidence that reducing the nicotine content of cigarettes may be an effective means of promoting smoking cessation.¹⁴

"E-cigarettes, in effect, allow smokers to maintain their addiction."

E-cigarettes, meanwhile, in effect allow smokers to maintain their addiction. It is possible that this could explain the recent slowing in the rate of decline in smoking in the UK.

There are many other concerns about e-cigarettes, including the way in which the tobacco industry is employing imagery almost identical to that used previously to promote conventional cigarettes, as well as evidence from the US and elsewhere that they are being marketed to children.

Obviously, it is possible that in the future, evidence may emerge suggesting that e-cigarettes are safe and effective. However, it is striking that, as the evidence accumulates, concern is growing about the safety of e-cigarettes, their effectiveness in reducing smoking prevalence, and, above all, the role being played by the tobacco industry in promoting their use. Indeed, these factors influenced proposals by the Food and Drug Administration to introduce strict regulations on the manufacturing, sale and marketing of e-cigarettes in the US. The Australian experience shows what can be done with population-level methods that are tried and tested. There seems no good reason to take a leap in the dark.

“There are many other concerns about e-cigarettes, including the way that the tobacco industry is employing imagery... as well as evidence from the US and elsewhere that they are being marketed to children.”

HARM FROM ALCOHOL: THE SOLUTIONS ARE THERE BUT NOT THE WILL TO IMPLEMENT THEM



Professor Sir Ian Gilmore

Alcohol is a global public health challenge where action lags way behind the evidence.^{1,2} In the UK, progress has been overshadowed by successes in tobacco control policy. Of course the policy aims are different – moderation of alcohol consumption versus eradication of tobacco – but there is another fundamental difference. Most smokers would like to quit, but most of us who drink are quite happy, thank you – the problem for us is ‘other people’, alcoholics and rowdy teenagers in the street. Alcohol is our favourite drug and we like it. We feel relaxed and sociable when we drink it and most people do not run into overt problems. However, because of the ubiquity of consumption (85% of the adult population), a large portion of the burden falls on apparently moderate drinkers; for example, through the increased risk of developing several common cancers. We should continue pursuing earlier diagnoses of those with alcohol problems and providing support for the 1.5 million dependent drinkers in the UK. However, as in many other areas of public health, we need to take a population-level approach to shift the whole consumption curve downwards to reap the maximum benefit to our nation’s health.

“We need to take a population-level approach to shift the whole [alcohol] consumption curve downwards to reap the maximum benefit to our nation’s health.”

There has been a quite remarkable increase in alcohol consumption of almost 50% in the last three decades, with a concomitant threefold rise in alcohol-related deaths.³ The UK government’s own figures for 2014 put the annual cost of alcohol at £21bn – more than

1% of GDP. Of this, £3.5bn was the direct burden on the NHS. Meanwhile, the Organisation for Economic Co-operation and Development quoted the most recent systematic review’s estimate of costs amounting to 2.6% of GDP in high-income countries. Of course costs to the UK government have to be offset against the £10.5bn income from excise duty, but there is little doubt that, overall, the taxpayer is the loser.

The reasons for rising consumption are complex and globalisation has brought about a convergence of drinking habits. Countries with traditionally heavy consumption levels like France and Spain have reduced their per capita consumption, while the UK and Brazil, Russia, India and China (BRIC countries) have been increasing theirs.^{4,5}

These gross trends have offered some fascinating insights into the possible impact of various policies. In the 1980s the then-USSR was in the grip of an alcohol epidemic. President Gorbachev used tough measures to crack down on the country’s alcohol problem and all-cause male mortality fell within a year. But under the liberal government of Yeltsin that followed, consumption rose again and the health gains were soon lost. In the UK, an annual escalator 2% above inflation was placed on alcohol duty in 2008, coinciding with a global economic downturn and a resurgence of austerity, and within a year there was a drop in alcohol-related deaths for the first time. With some economic improvement and recent abandonment of the duty escalator, mortality is predicted to rise again.³

In the research evidence, the impact of affordability comes out, again and again, as the most important driver of consumption and harm.² While it is easy to point to an individual country where alcohol is cheaper yet harm is falling (for example France), the real-life examples of the impact of price modulation are

persuasive. In addition to the examples above, price was increased in several Canadian provinces through a form of minimum pricing, and the improvements in illness, death and alcohol-related crime were dramatic. The arguments surrounding the potential impact of a minimum unit price (MUP – 8g of alcohol) in the UK continue, fuelled largely by the drinks industry’s legal challenge in the Scottish and European courts to legislation brought forward in Scotland. However, research by the University of Sheffield has discredited criticisms that a MUP would disadvantage the less affluent moderate drinker or have no effect on the heaviest, dependent drinkers.

“The impact of affordability comes out again and again as the most important driver of consumption and harm.”

Two other dramatic changes in our relationship with alcohol have been its availability and marketing. Just 20 years ago it would have been inconceivable to stop at a petrol station at 2am to buy a bottle of whisky or wine. Recent measures like early morning restriction orders and late night levies – put in place to empower local authorities – have failed due to local challenges by powerful business interests. The rejuvenation of inner city areas has been fuelled by the night-time economy, which has in turn been fuelled by drink.

Marketing has also become more pervasive and persuasive, nuanced towards segments of society, such as women and the young, that are seen as new or expanding markets. Drinks manufacturers have been among the first to harness the power of the internet and social media. The same companies have filled the space left by the tobacco industry in sports and music sponsorship. There are visual cues linking alcohol to

sport for all to see (particularly children) several times a minute during televised major sports events.⁶ In the face of these pressures, it is hard to see how we can reshape society so that alcohol is not ‘the norm’ in social situations.

Public health practitioners know only too well the gap between providing information to people and behaviour change, and it is wrong to assume that such change can be brought about only by means of public information and awareness. There is a moral obligation to inform and advise the public – as is the intention of the new UK chief medical officers’ drinking guidelines⁷ – but there is also much that can be done (and more quickly) through attention to the evidence on price, marketing and availability.^{1,2}

There is broad majority public support for measures such as MUP and lowering drink-driving limits. We need to give our legislators the courage and support to act to improve the nation’s health without spoiling all the fun.

OBESITY: ONE OF THE GREATEST HEALTH CHALLENGES OF THE 21ST CENTURY



Professor Russell Viner

The rising tide of obesity in the UK is sowing a new health burden of heart disease, diabetes and cancer in our population. The rise of these non-communicable diseases runs counter to the overall improvements we have seen in our population's health, and threatens to halt or even reverse gains in life expectancy for the next generation.

“The rising tide of obesity in the UK is sowing a new health burden of heart disease, diabetes and cancer in our population.”

Obesity is a major causative factor in the two main killers of our population, heart disease and cancer. Rising obesity levels have the potential to wipe out the gains we've made against these diseases through reducing tobacco use. Obesity also leads to diabetes, joint problems and poor mental health and it will soon outstrip alcohol as the leading cause of cirrhosis and liver failure in the UK.

The figures are stark. A quarter of the population (24% of men and 27% of women) are now categorised as obese (with a BMI of 30kg/m² or over) in the UK – among the highest levels of obesity in the EU. Among our children, a third of 10- to 11-year-olds and over a fifth of 4- to 5-year-olds are overweight or obese. Future trends are even more alarming: while there is some evidence that the upwards trends in childhood obesity may be slowing, estimates suggest that by 2050 obesity will affect 60% of adult men and 50% of adult women.¹

The real costs of obesity are immense. Globally, obesity now matches armed conflict in terms of the total dollar cost to humanity (estimated to be \$2 trillion). In the UK, the McKinsey Global Institute estimated that

obesity leads to an economic loss of more than £70bn per year (approximately 3% of GDP) and that modern economies are now spending up to 7% of their total health care budget on obesity.² Halting this rising tide of costs and human misery requires an understanding of the causes of obesity and determined political will to act across government.

The causes of obesity appear deceptively simple. At the most basic level, we now eat more calories than we burn off, with these excess calories stored around our bodies as body fat. But the solutions are far from simple. The very dramatic changes to our lives over the past 30 years – our working, activity and leisure patterns, our food supply, and the growth of screen-based lifestyles – all work to drive us towards calorie excess.

Storing body fat during times of plenty is part of our biological heritage. However when food is always plentiful, particularly low-cost, high-sugar and high-fat foods that override and circumvent our appetite control systems, our biological programming makes us inherently vulnerable to weight gain.³ It is therefore foolish to see obesity as a 'lifestyle' disease for which personal choices about food and exercise are to blame. The obesogenic environment of our modern age is so powerful that people who are highly effective and self-controlled in many areas of their life can struggle to control their weight (for example obesity levels among men and women in public life are quite high). This is also particularly true for the more deprived in society, who can find it impossible to make healthy choices for themselves and their children.

Further complicating matters, human genetics is producing magnifying effects across generations. Nutrition quality and stress levels during early life biologically 'programme' our weight in later

life. Children born to mothers who are obese are more likely to become obese later in childhood and adulthood, while those who are obese in childhood are over five times more likely to become obese in adulthood.⁴ This must focus us on preventing childhood obesity.⁵

of Health and the NHS bear much of the cost of obesity, the levers to implement these policies lie almost entirely in the hands of other departments. Coordinated cross-government action must surmount the concerns of individual departments to enable an effective strategy to combat the obesity problem.

“It is foolish... to see obesity as a ‘lifestyle’ disease for which personal choices about food and exercise are to blame. The obesogenic environment of our modern age is so powerful.”

“A coordinated systemic portfolio of initiatives across government departments, delivered at scale, is the only way we can conceivably address this wicked problem.”

In terms of taking action, there is increasing recognition that there are no simple fixes in the fight against obesity and that no magic bullet will appear. The current approaches of exhorting and educating individuals and companies to change their behaviour are demonstrably ineffective⁵, while using the NHS to fix the consequences of obesity is expensive and unsustainable. A coordinated systemic portfolio of initiatives across government departments, delivered at scale, is the only way we can conceivably address this wicked problem.

In late 2014 McKinsey concluded that a combination of evidence-based interventions would be cost-effective and could save the NHS over £1.2bn a year. These interventions included taxation on high-sugar or high-fat foods, reducing portion sizes of packaged foods and fast food, changing marketing practices around price promotions of these foods, and focusing on improving obesity prevention in schools.² The proposed levy on high-sugar foods is an important new beginning for the UK, but by itself will not fix the problem. It is notable that while the Department

SEDENTARY LIFESTYLES: OUR 21ST CENTURY INACTIVITY HEALTH NEMESIS



Dr Richard Weiler

In the five or so minutes it takes to read this article, please attempt to read it standing up, not sitting down. By making your day only marginally harder, you will begin to accumulate gains: using your muscles; switching on your brain; reducing your risk of cardiovascular disease; improving your insulin sensitivity and glucose metabolism; reducing your risk of developing diabetes, cancers and non-alcoholic fatty liver disease; and reducing musculoskeletal pain (such as lower back) and fatigue.^{1,2,3,4,5,6,7,8,9} You may even burn a few additional kilocalories.^{10,11,12} You may find yourself moving while reading this article and so gain even more additional health and wellbeing benefits.¹³ Are you standing comfortably?

We live in the most sedentary era Homo sapiens has ever experienced, with increasingly sedentary jobs, travel and leisure occupying 9.5 or more hours of our waking day.^{14,15,16} We are living longer than ever before,¹⁷ but suffer additional longevity with rising levels of chronic disease due to unhealthy, inactive lifestyles. These diseases now account for 60% of global deaths each year,¹⁸ of which over 5.3m are the result of physical inactivity.¹⁹ Experts have calculated that today's inactive children will be the first generation to live shorter lives than their parents.²⁰ Sitting has become our 'normal'. When we sit, the opportunity cost of not moving deprives our bodies of countless health benefits.¹² Sitting is an unhealthy behaviour, but separate to other disease risk factors such as smoking, alcohol consumption, and perhaps even physical inactivity.²¹

For individuals with high levels of physical activity, sedentary behaviour does not seem to influence health benefits too dramatically.^{22,23} However, high levels of physical activity are rare: when physical activity is objectively measured, up to 95% of the adult population do not meet minimum internationally

recommended levels of activity to confer even basic health benefits.²⁴ While sitting has been linked to the risk of cardiovascular events in physically inactive women,²² sedentary behaviour does not appear to be linked to mortality risk in cohorts of physically active London civil servants.²³ However, a recent study of over 200,000 adults demonstrated that substituting one hour of sitting with walking each day was linked to a 12%–13% decrease in all-cause mortality; simply replacing one hour of sitting with standing led to a 5% decrease.²⁵

Efforts to reduce sedentary behaviour have focused on established interventions to address the conditions that affect the greatest number of people – such as lower back pain (affecting one in three UK adults each year), metabolic syndrome (affecting one in four UK adults) and type 2 diabetes (affecting 3.2 million UK adults) – as well as targeting those who sit for extreme amounts of time (eg older adults).²⁶

In the UK, working adults spend approximately 60% of their waking hours (9–10 hours: 6–7 hours at work and 3 hours at home) sitting down¹⁴. This rises to 70% for growing numbers of people at high risk of chronic disease.²⁷ Office workers typically sit for 65%–75% of their working day, of which more than half represents prolonged sedentary periods. On days off work, people sit for up to 2.5 hours less,^{28,29,30,31,32} so reducing occupational sedentary behaviour is becoming an increasingly important focus for research and interventions.

“In the UK, working adults spend approximately 60% of their waking hours...sitting down.”

Children spend most of their school day sitting and most spend many hours watching screens after school and at weekends.^{24,33} These behaviours learnt in childhood often inform behaviours in adulthood.^{34,35,36} Sedentary behaviour also increases with age,³⁷ making interventions in childhood increasingly important. Inactivity in the early years is associated with adverse cardiometabolic profiles,³⁸ lower cognitive development and chronic diseases typical of adulthood: type 2 diabetes and cardiovascular disease are now seen in children of primary school age.^{39,40,41} Australia, the US and Finland have released recommendations that children should only sit for 1–2 hours a day,^{42,43} which would be difficult to achieve in the UK without a targeted children’s strategy, active lifestyle education and active curriculums.⁴⁴

Older adults are often wrongly perceived as requiring more rest; they typically sit for 10 or more hours a day, making them the most sedentary group.⁴⁵ They are therefore at greatest risk of suffering from illnesses associated with sedentary behaviour and inactivity.⁴⁶ Sitting exacerbates the risk of falls, illness, hospital admissions and mortality, while exercise mitigates these risks.^{47,48} For frail older adults, reducing the amount of time they sit and taking breaks from prolonged sitting through standing or light movement can have a positive impact.¹² Greater understanding of the interventions that can resolve sedentary behaviour and inactivity in older adults is needed, but in the meantime the social ‘norms’ of rest and ‘taking it easy’ need to be dispelled.

Research to clearly demonstrate specific economic incentives for reducing sedentary behaviour is currently lacking. However, workplace studies have shown that interventions to promote standing breaks and adjustable sit/stand workstations may help reduce sitting time⁴⁹ and may also improve work productivity,

quality, efficiency and collaboration among employees.⁵⁰ They could also influence activity behaviours outside work.⁵¹

Research into sedentary behaviour is evolving; however it is clear that, as a nation, we spend too much time sitting and not enough time moving. Health care services are crippled by the burden of avoidable diseases associated with sedentary lifestyles, which have wide-reaching negative societal effects and cause much suffering. These rising trends are evident in our children and will burden our ageing population even more in the future. At present, primary prevention has little place in our health care services, which are archaically and unsustainably designed to treat disease rather than promote health.

“Health care services are crippled by the burden of avoidable diseases associated with sedentary lifestyles.”

Policymakers must look beyond health care to solve sedentary lifestyle problems. They need to ensure environments and behaviours across society change and become movement-focused. Moving more, and sitting less, needs to become the new ‘normal’. Physical activity and exercise are the best available medicines to cure our 21st century inactivity health nemesis. As the vast majority of the population are physically inactive and highly sedentary, changing these lifestyle behaviours urgently requires our attention.

THE IMPACT OF ENVIRONMENT ON PUBLIC HEALTH: PREVENTABLE NON-COMMUNICABLE DISEASE



Professor Paul Elliott and Professor Frank Kelly

According to the World Health Organization,¹ in 2012, an estimated 12.6m people died worldwide as a result of living or working in an unhealthy environment – nearly one in every four deaths. Non-communicable diseases, such as stroke, heart disease, cancers and chronic respiratory disease, now account for nearly two-thirds of these deaths. Many are attributable to air pollution, but other environmental risk factors are potential contributors, including noise, water and soil pollution, chemical exposure, climate change and radiation.

Air pollution is primarily caused by the combustion of fossil fuels, for example in power generation, industrial processes, domestic heating and road vehicles. Health effects include a range of respiratory and cardiovascular conditions, as well as cancer. Long-term exposure to particulate matter (PM_{2.5}), the air pollutant most strongly associated with increased risk of mortality, has been estimated to cause the equivalent of 29,000 premature deaths in the UK each year, predominantly from cardiovascular disease.² This can also be represented as a reduction of life expectancy from birth of approximately six months, which is worth £16bn a year to the UK.³

Nitrogen dioxide (NO₂), a major source of which is diesel vehicles, is also strongly associated with serious health effects. A recent report, the first to provide an estimate of the mortality burden of NO₂ in London, estimated that 5,879 deaths were attributable to long-term exposure to NO₂ in 2010.⁴

Exposure to particulates and NO₂ in combination is estimated to cause the equivalent of 40,000 premature deaths in the UK each year. Overall, the estimated cost of this to society is more than £20bn.⁵ The true cost of air pollution to the UK is no doubt greater, as the relationship between indoor air pollution (from

cooking, heating and household emissions) and health has yet to be fully quantified.

“Exposure to particulates and NO₂ in combination is estimated to cause the equivalent of 40,000 premature deaths in the UK each year.”

The impact of noise on health has been studied less than the impact of air pollution, but there is growing evidence that environmental noise adversely affects cognitive development in children.⁶ Research on noise and cardiovascular health also demonstrates an association between transport noise and hypertension,⁷ and other studies suggest high levels of aircraft and road noise are associated with hospital admissions and deaths due to heart disease and stroke.^{8,9} The scale of the problem is potentially huge, with over a million residents exposed to high daytime and night-time noise levels.¹⁰

Global climate change, which is expected to affect both average temperatures and temperature variability, will have health effects even in countries with a temperate climate like the UK. Vulnerability can vary across individuals and communities, because of socio-demographic, environmental and health care characteristics.¹¹ Indicators of these characteristics are regularly taken into consideration; less commonly used, but potentially very helpful, are quantitative outcome-based analyses of vulnerability. For example, across England and Wales as a whole, a summer that is 2°C warmer than average would be expected to cause around 1,550 extra deaths, with the effect worse in the most vulnerable districts, in London and the South East.¹² Such detailed information about which communities are most at risk can help to inform

local public health strategies, as well as wider climate change mitigation policies.

Population exposure to radiofrequency electromagnetic fields (RF-EMF) from mobile phones, wireless networking, broadcasting and other communications technologies has become ubiquitous. Given the increasing pervasiveness of the general public's exposure to RF-EMFs, there is concern over potential adverse health effects. Research initiatives in the UK and Europe have been developed to address this at the population level. While the accumulating evidence suggests that RF-EMFs do not pose adverse health risks to adults or children,^{13,14} these findings are not definitive: they do not assess health risks beyond 10–15 years from first exposure so continuing research is necessary.

Meanwhile, occupational diseases and deaths caused by chemical exposures in the workplace remain of concern. Each year there are approximately 12,000 deaths caused by occupational respiratory diseases in the UK, about two-thirds of which have longer latency, such as asbestos-related diseases and chronic obstructive pulmonary disease.¹⁵ It has been estimated that about 5.3% of all cancers occurring annually (8,000 deaths and 13,500 cancer registrations) are attributable to past occupational exposure to carcinogens.¹⁶

Of particular importance are known or probable carcinogens such as asbestos, mineral oils, solar radiation, silica and diesel engine exhaust, as well as chemicals associated with construction, metal working and agriculture. Shift work is also thought to have detrimental health effects. Although hazardous exposures are expected to fall, without strategic intervention occupation-attributable cancers in Great Britain are forecast to remain at over 10,000 by 2060.¹⁷ A wide range of other pollutants have possible effects on human health, for example microplastics, by-products from waste incineration and large-scale composting, disinfection by-products in chlorinated water,^{18,19} and heavy metals such as lead, cadmium and arsenic.

The effects of the environment on health are broad and require constant investigation as new technologies emerge and regulation sometimes fails to keep pace. There is, however, increasing public awareness and a desire for action, particularly on air pollution. The UK has been in breach of EU limits on annual mean NO₂ concentrations since the standard came into force in 2010. Following a challenge by campaigners, the Department for Environment, Food & Rural Affairs published a plan to address this.²⁰ The plan includes the implementation of 'Clean Air Zones' in five cities (Birmingham, Leeds, Nottingham, Derby and Southampton) by 2020. Even with these measures, however, it is predicted that the UK as a whole will not be compliant with EU limits until 2025. A pledge within the UN's Sustainable Development Goals to reduce the environmental impact of cities by 2030 should also provide a strong impetus for the UK to take action in all aspects of environmental health.

Given that many of the health effects associated with a poor quality environment are preventable, it is essential that there is a coordinated approach across industry, transport and other key economic sectors to act quickly to improve the quality of the living and working environment – and so improve public health and lives.

“It is essential that there is a coordinated approach across industry, transport and other key economic sectors to act quickly to improve the quality of the living and working environment.”

MOVING UPSTREAM: UNDERSTANDING THE WIDER DETERMINANTS OF HEALTH



Alex Bax

In 2010, Sir Michael Marmot estimated that the annual cost to the UK of illness-related health inequalities was £31bn–£33bn in lost productivity, £20bn–£32bn in lost tax revenues and increased welfare costs, and over £5.5bn in direct health care costs. His extensive reviews of the evidence for the UN and the UK government show we know how to prevent these inequities in health, and so their persistence is deeply unjust. He showed that it is the wider determinants of health that drive health injustices.¹ The health care community deals with the consequences of health inequalities every day, but health care-led actions rarely tackle the underlying causes. However, clinicians can shine a light on ‘the causes of the causes’.

In 1854 Dr John Snow removed the handle of the Broad Street pump in Soho and proved that cholera was carried by contaminated water. Lots of people didn’t believe him and the water companies who supplied foul water resisted, but over the next 50 years, sewers were built, clean water supplies engineered and cholera ceased to threaten London.

The occurrence of cholera is socially patterned: cases of cholera are more prevalent where there is greater poverty and deprivation, and 19th century Soho was a slum area. While Dr Snow discovered the cause of cholera, fixing the problem was the work of engineers, architects, planners and politicians. Doctors (and other clinicians) continue to try to understand the causes of disease, but very often it is concerted action across society that prevents it.

Successes against cholera in the 19th and 20th centuries are a good introduction to the wider determinants of health. Throughout the 20th century, medical and social science assembled evidence of things that make us sick (pathogens) and things that

make us healthier (salutogens). Improved social conditions and a huge range of medically evidenced interventions (for example vaccination programmes) led to over a century of increasing life expectancy for all. However, while life expectancy gaps between social groups have fluctuated, they remain stubbornly wide and may once again be increasing.

“While life expectancy gaps between social groups have fluctuated, they remain stubbornly wide and may once again be increasing.”

Extensive research on the social determinants of health has reached some important conclusions:

- Good or poor health in society is neither equally nor randomly distributed – it is socially patterned.
- This unequal distribution can be changed. It is caused by inequalities in the way we organise our society and economy – the wider determinants of health. Better choices about how we do so can lead to better health for all.

The wider determinants in action

Joe was a 52-year-old alcoholic who died in a London hospital this year. Liver disease was given as the cause of death. NHS staff working with homeless patients see these kinds of deaths all the time, but why did Joe die 31 years earlier than a man born in Kensington (the district of the UK with the highest average life expectancy²)? He missed nearly a third of the average UK lifespan.³

Joe was born in 1963. His parents lived in poor quality housing. They fought, there was not enough money, and by the age of seven he was in a children's home. He attended school but was bullied for being in care. Having not had anyone to read to him regularly he struggled with literacy; having not witnessed many positive relationships he struggled to make friends. By his early teens he was identified as a 'troublemaker' and regularly ran away from the children's home. He went to a borstal, found alcohol, ducked and dived on the streets. In the 1980s, as a single man, he was judged under the regulations not 'to be in priority need' for housing. By the age of 35 he was labelled an 'entrenched rough sleeper with a personality disorder'. Services tried to work with him, but his experience had taught him not to trust anyone. He was survived by his dog, who he cared for deeply. The nurses who cared for him as he died said he was a gentleman.

“Good or poor health in society is neither equally nor randomly distributed – it is socially patterned.”

For Joe, post-war housing policy didn't move fast enough to help his parents. Their pinched backgrounds undermined their ability to care for him, while the poverty that surrounded his early years, the lack of a stable home, and perhaps the awareness that other children judged him, pushed him to the margins. Each step reinforced the last. Unfortunately for Joe he reached adulthood in the middle of the 1980s, when prospects for poorly educated, working-class boys were at a particularly low point and the government sought to blame the unemployed for their problems.⁴ Even later, a more generous response to housing might have helped.

If Joe's parents had had a secure home and some income, he might not have been 'different' at school. A better-resourced secondary school might have managed his challenging behaviour, and so on. Harms accumulated as Joe's life progressed and his capacity to overcome each additional insult diminished. These are the wider determinants of health in action.

Joe's story is an extreme example, but the wider determinants of health affect everyone. The obesity epidemic is socially patterned; smoking is socially patterned; environmental quality is often worse in poorer areas. Underneath these patterns are structural social and economic inequalities: in housing, pay, wealth and control over life. The harms are greater the further down the social scale you travel.

Structural responses – policies for cleaner air, safer roads, good housing, secure employment and a more even spread of wealth – would be better for us all, but they would bring most health gains to those at the very bottom. And, according to Sir Michael Marmot, action on the wider determinants of health might also save us £50bn–£70bn each year.

“Structural responses... would be better for us all, but they would bring most health gains to those at the very bottom.”

CREATING A MORE HUMANE SOCIETY: PREVENTING PSYCHOLOGICAL HEALTH PROBLEMS AND PROMOTING GENUINE WELLBEING



Professor Peter Kinderman

There are many reasons to make psychological health a priority for government,¹ while there is an absolute moral imperative to protect the mental and psychological health of citizens, especially children.

No health without mental health

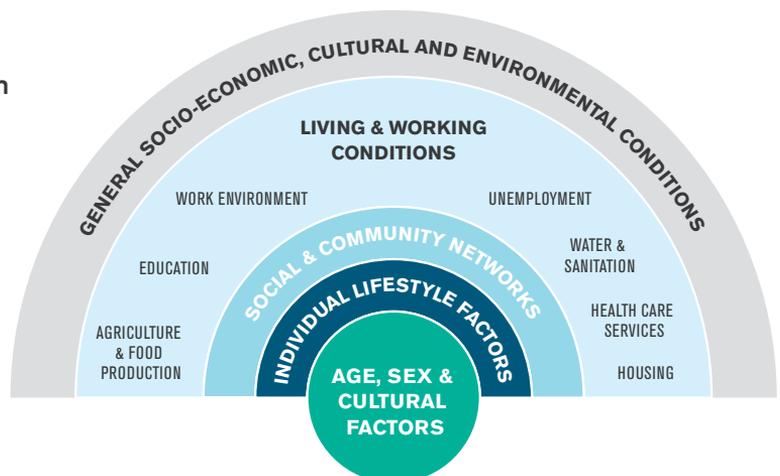
Psychological health problems represent the largest single cause of disability in the UK. The cost to the economy is estimated at £105bn a year,² partly because poor psychological health leads to higher costs in physical health care. For example, the costs of physical health care for people with type 2 diabetes are 50% higher for individuals also reporting poor psychological health.² Psychological issues also impact on at least six of the ten leading risk factors for physical disease.³ There are clear links between improving psychological and physical health.⁴

Social determinants of mental health

While psychological health should be a priority for the NHS and health services, we cannot separate mental health from its social context. Social, economic and cultural environments clearly impact upon physical health (see figure 1),⁵ and what is true for physical health is even more powerfully true for psychological health.

Many social and environmental factors are either direct causes of mental health problems or substantially increase our risk of developing them. These include poverty in childhood, social inequality, migration, belonging to an ethnic minority, early separation from parents, childhood abuse, and bullying at school.⁶ This relationship does not just apply to relatively mild problems: very serious, life-changing experiences that are commonly referred to as ‘mental illnesses’ have powerful social determinants. It has been suggested (synthesising the findings

Figure 1:
The main determinants of health



Source: Dahlgren and Whitehead, 1991

of a large number of epidemiological studies) that the association between childhood misfortune and psychosis in later life is about as strong as the link between smoking and specific kinds of lung cancer.⁷

This is remarkable, considering that we are repeatedly exposed to messages reinforcing the idea that serious mental illness is merely a disease of the brain. But it shouldn't be surprising. A moment's thought tells us that the deprivation or abuse of a child is highly likely to affect their developing sense of self, trust in others and ability to regulate emotions. Similarly, it is unsurprising that these experiences affect brain structure and function, since our brain is the organ with which we learn to respond to the world. It is important to note that this mechanism may explain many of the abnormal neurological characteristics that have been reported in people using psychiatric services, which have been assumed to imply underlying biological vulnerabilities.

Childhood abuse is certainly not the only social factor to have an impact on our psychological health. Mental health is also affected by problems such as debt, excessively demanding work environments and the threat of unemployment. However, relationships and a sense of meaning and purpose in life are perhaps the most significant predictors of life satisfaction.⁸ As Richard Bentall recently put it, 'arguably the biggest cause of human misery is miserable relationships with other people, conducted in miserable circumstances'.⁶

Implications and solutions

At present, our mental health services struggle to help people in need, let alone adequately address these wider social issues. This is in part because of an excessive focus on biomedical issues and a consequent failure to reflect all appropriate aspects of a genuinely biopsychosocial approach. People are rarely offered evidence-based psychological therapies, or practical help to resolve the real-world issues they are facing, such as debt, employment problems and domestic violence.

An example where this does happen is the Waterloo Project, through which clinical psychologist Emma Williamson works in hostels with people who used to be rough sleepers, many of who have mental health problems related to their circumstances. This kind of service acknowledges and addresses its clients' mental health problems, but also the social circumstances

and practical challenges in their lives. It offers a fully integrated service, supported by the NHS and the local authority. The outcomes look good, with reports of reductions in the social challenges and criminal activity of residents, along with improvements in their overall health and wellbeing.⁹

We need to see more initiatives like this, greater integration of health and social care, and government oversight of these cross-departmental policies. Wellbeing is now a key part of government planning¹, but many of the social issues that impact our psychological health are the responsibility of local government, delivered via health and wellbeing boards.⁶ And, of course, many local authorities are struggling financially.¹⁰ The recent decision to establish a Shadow Minister for Mental Health is welcome and a similar UK Government appointment would be appropriate; indeed the Scottish Government has now appointed a dedicated Minister for Mental Health.

To promote genuine psychological health and wellbeing, we need to protect and promote universal human rights.¹¹ Because experiences of neglect, rejection and abuse are hugely important in the genesis of many psychological problems, we must double our efforts to protect children from abuse and neglect. The Welsh Adverse Childhood Experience study, for example, revealed that around one in seven adults in Wales had experienced four or more adverse childhood experiences and that these increased the chances of high-risk drinking in adulthood by four times, being a smoker by six times and being involved in violence by around 14 times.¹² Clearly, addressing childhood abuse and neglect should be a national priority. Equally, we must protect both adults and children from bullying and discrimination, whether it is based on race, sexuality, gender, disability, mental health, or any other characteristic.

If we are serious about preventing psychological health problems and promoting genuine wellbeing, we must work collectively to create a more humane society. We must reduce or eliminate poverty, especially childhood poverty, and reduce financial and social inequality. We should also address the increasing atomisation of communities and the consequent loneliness and social isolation suffered by so many, especially the elderly.

HOW WE CAN HELP CHILDREN TO LEARN TO BE WELL



Elizabeth Owens

For 21 years I was a primary school headteacher in three inner-city schools, the third and last a failing one in an area where the indices for poverty, poor housing and poor health were high. It was an enormous challenge to put the children back on track for a positive future; we did it.

The creative principles to which our school community committed have a wide and ongoing validity and they need focused government support:

- The school environment must be safe, stimulating and caring, with learning at the heart of its ethos.
- A team of well-educated, empathetic, inspiring and talented teachers is vital.
- The development of high self-esteem/self-worth is the bedrock of wellbeing in these early years; it will impact positively on the rest of the child's life.

We focused on nutrition, exercise and emotional wellbeing for staff and children alike. The importance of these factors is demonstrated by the current push by the National Association of Headteachers (NAHT) for compulsory personal, social, health and economic (PSHE) education;¹ heads of wellbeing in schools, as suggested by 2020health;² and guidance by the National Institute for Health and Care Excellence (NICE) on social and emotional wellbeing for children and young people.³ Some of our children looked undernourished, while others were overweight or obese. We made sure that all our school meals were cooked from scratch from high quality ingredients and emphasised the value of good food in enjoying life and keeping well. Schools can access excellent support in this area from School Food Matters.⁴ We also provided breakfast, something that Magic Breakfasts is routinely able to do.⁵

The Soil Association's discussion paper for a Food for Life roundtable event in October 2015 set out essential guidance for a childhood obesity strategy. Growing their own food and cooking it, and understanding how to manage money, along with a variety of experiences outside the classroom, were important ways in which our children learned where good food comes from, and how it can be afforded. Farms for City Children provided an outstanding experience of farming; it still does.⁶

A high percentage of children live with undiagnosed and untreated mental disorders. It is crucial that children have the opportunity to talk about their feelings and fears and that early detection of problems is followed up and robustly supported by specialists. Well-directed circle time is an excellent tool for sharing experiences and feelings and supporting children who reveal low self-esteem. Many activities in schools, such as yoga and drama, tackle anxiety and lack of focus, but the referral of problems to specialists remains crucial. Unfortunately, a recent report indicated that some children's mental health services are failing children with serious conditions.⁷

The school curriculum needs to be as wide-ranging as possible so that every child has the opportunity to discover their enthusiasms and where their talents lie. A full sporting opportunity is not just hugely important in developing the skills of those for whom sport is a strength (a former pupil now plays for Liverpool Football Club), but also in encouraging the reluctant to engage. Children need to learn that physical activity is a vital part of healthy living. Play of all kinds needs to be vigorously encouraged and the space provided for it.

Our school was situated close to highly prestigious arts centres with whom we worked closely. The Globe, Tate Modern, The National Theatre, The Young Vic, Southwark Playhouse, The Bankside Gallery and the

Unicorn Theatre all helped the children to hone their creative skills and build a positive self-image. We put the creative arts at the heart of our purpose. If the school builds a cross-curricular approach to learning, this impacts positively on the core areas of English, maths and science. In our case we moved from being a failing school to being one of the ten most improved in the country.

In many ways, schools are the most powerful communities remaining in our society. Parents and carers must be encouraged to engage with what is going on and helped to support a positive future for their children. A whole raft of activities must be made available to these adults so that they have an informed understanding of how their children can be well; of their own capacity to fully support their children in how they eat and how much they exercise; and of how important it is to give time to talking to them.

“In many ways, schools are the most powerful communities remaining in our society.”

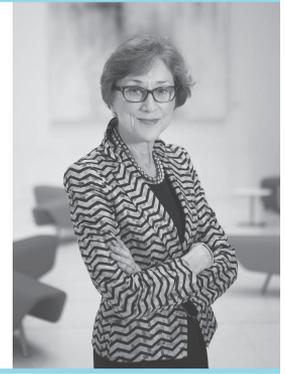
Parents and carers have an essential role to play in positively encouraging their children’s learning inside and outside school and the home. They must do what they can to responsibly manage their children’s use of the environment as exploring and exercising are essential. A child’s healthy development involves risk; it cannot be eliminated, but it can be managed. Many parents and carers are reluctant to allow their children out to play, but they need to know that a child moves developmentally from learning to keep safe to learning to take risk. Increasingly, their role in managing their children’s use of the media is hugely important. Parents and carers need to support their children as they negotiate our ever more complex world.

Poverty is an ever weightier undertow in our society, and at the heart of so many issues that adversely impact on a child’s wellbeing. Helping parents and carers who live in poverty, in as many ways as possible, is our collective and urgent responsibility.

Recent news has highlighted all kinds of threats to the wellbeing of our children: the inadequate resources of the NHS; the paucity of provision for treating mental illness, especially in young people; the reluctance of government to tackle the food industry head-on over harmful ingredients in processed foods; and the lack of affordable housing; the removal of benefits. Some years ago a government child wellbeing brief revealed that, as a nation, we rate very poorly in a child’s view of its happiness and self-worth.⁸ A report by the Children’s Society in 2015 sadly echoes these findings.⁹ This is a shocking revelation for such an advantaged nation.

“As a nation, we rate very poorly in a child’s view of its happiness and self-worth... This is a shocking revelation for such an advantaged nation.”

KEEPING THE WORKFORCE HEALTHY



Professor Dame Carol Black

There is strong evidence that ‘good’ work is beneficial for physical and mental health, whereas unemployment and absence due to long-term sickness often have a harmful impact.¹ ‘Good’ work is difficult to define, but for employees it generally concerns the ability to develop skills; flexibility and control over working hours and the pace of work; trust, communication and the ability to have a say in the decisions that affect them; and a balance between effort and reward.²

“There is strong evidence that ‘good’ work is beneficial for physical and mental health.”

My review – *Working for a healthier tomorrow* – recognised that there is strong and growing evidence that being in work is closely and powerfully linked to health and wellbeing, and that these need to be addressed together.³ However, it is also true to say that inappropriate work environments can exacerbate health problems.⁴ A more recent report I was involved in puts the approximate annual cost to business of sickness absence in the UK workplace at £15bn.⁵ What is more, employers also face significant costs due to employees attending work while sick, known as ‘presenteeism’.

There are two main conditions that disproportionately lead to people struggling to maintain or gain employment: mental health and musculoskeletal conditions. At any given point in time, around one in six people of working age in England has a mental health condition.⁶ Of these, the majority have either depressive disorders, anxiety disorders, or a mixture of the two.⁷ Almost a quarter (23%) of Jobseeker’s Allowance claimants, and more than 40% of incapacity benefits claimants, have a mental health problem.⁸

Evidence collected for my forthcoming review on addiction and obesity also shows that mental health is associated with a range of other conditions, such as obesity, drug addiction and alcoholism, which have a significant impact on society. The Mental Health Taskforce recently put current NHS spending on mental health in England at £34bn a year – an insufficient figure to meet current demand.⁹

Musculoskeletal conditions account for around 55% of all work-related illness and are the second most commonly identified cause of long-term absence for manual workers (44%).¹⁰ The Office for National Statistics found that musculoskeletal conditions cost the UK economy more than 30m working days in 2013.¹¹ Musculoskeletal conditions also show comorbidity with a range of other conditions, including mental health.

These conditions play against longer-term trends of an ageing workforce. EUROSTAT projects that, given current trends, the number of people in the UK over the age of 65 will be equivalent to more than 37% of the population aged 15–64 by 2040.¹² Currently, more than a million people aged over 65 are in some form of employment in the UK.¹³ With the likely continued rise in the pension age, employers will also need to effectively manage chronic conditions in the workplace.

For individuals there is a strong case for gaining and maintaining employment. For employers the simple logic is that effective investment in health and wellbeing means they save more through improved productivity than the original investment.¹⁴ For governments, the costs of evidence-based interventions can often be offset against the benefit savings and tax gains when individuals find or stay in work.¹⁵

So, the real question is: what is effective? We're gaining more insights into the importance of specific aspects of 'good' work and how it is related to workplace culture and services, including: leadership; effective line management and employee support; good relationships at work; autonomy for workers in their work; return-to-work schemes; regular hours; decent pay; and job security.¹⁶ Of these, there is increasing evidence that line manager training and board engagement are critical in driving through the required culture change in the workplace.¹⁷

Similarly, the body of evidence is growing on the effectiveness of organisational wellness programmes.¹⁸ Evidence-based guidance on how to promote health and wellbeing in the workplace is now available through a variety of organisations, including National Institute for Health and Care Excellence (NICE) guidelines, the Department of Health's work on wellbeing and work, and Public Health England's Work and Wellbeing Charter – as well as the Chartered Institute of Professional Development and other business groups such as Business in the Community and Engage for Success. Wider initiatives such as Britain's Healthiest Workplace have helped to make the case that improving the health and wellbeing of staff makes business sense.

For their part, public services should try to break out of their silos. If we accept that 'good' work is associated with better health outcomes, health professionals may need to engage more with employment outcomes. The 'fit note', asking GPs to focus more on return to work rather than signing people off work, is one such effort. Another example is the government-funded 'Fit for Work' service, which provides expert occupational health advice to employers and employees on the return to work of employees who have been off sick for more than four weeks.¹⁹

If mental health problems are one of the most significant barriers preventing people on benefits from taking up employment, then why not transform how the benefits system supports them and focus more on improving mental health in the benefit system? The new Joint Work and Health Unit is a good example of a more integrated approach. With funding of £115m, it aims to halve the disability employment gap by putting a million more disabled people into work; it also seeks to reduce health inequalities around gender, age and geography.

Given the costs to society, can government do more to support evidence-based workplace interventions through the tax system, guidance or subsidies? A lesson from several reviews is that government/ employer interventions need to come sooner to prevent health conditions that affect employment from becoming chronic and structural.

“Interventions need to come sooner to prevent health conditions that affect employment from becoming chronic and structural.”

Ultimately, gaining or maintaining 'good' employment and improving workplace health has the potential to make a significant contribution to personal wellbeing, the economy and reducing levels of disease and illness in society.

INTERVENTIONS AND POLICIES TO CHANGE BEHAVIOUR: WHAT IS THE BEST APPROACH?



Dr Ildiko Tombor and Professor Susan Michie

Smoking, excessive alcohol consumption, physical inactivity and unhealthy eating are the leading causes of ill health and premature death in England.¹ Helping people change these behaviours is therefore important in order to improve population health.^{2,3} However, changing behaviours is challenging, as the contexts in which they occur are complex, involving the interaction of people's individual characteristics, social influences and physical environment – among other things.^{4,5} Designing effective strategies to change behaviour requires an understanding of these factors, as well as the nature of the behaviour(s) where change is desirable. It also requires a consideration of the range of interventions and policies that could be drawn upon and a systematic method for selecting and developing a strategy for behaviour change.⁵

A National Institute for Clinical Excellence (NICE) literature review looked at a number of psychological principles underlying effective behaviour change that could serve as targets in a strategy to change behaviour.² NICE guidance, updated in 2014, found a similar pattern and identified good evidence for the effectiveness of goals and planning, feedback and monitoring, and social support.³

A plethora of theories of behaviour change exist – a recent review identified 83 of them.^{6,7} Many are partial and/or overlapping and come into and out of fashion. There is currently little evidence-based advice about which theories are likely to be helpful in which situations for informing the development of particular behaviour change strategies. There is also little evidence about how to select and apply them.⁸

One simple and integrative model of behaviour change is the COM-B model. This proposes Capability, Opportunity and Motivation as the necessary conditions for Behaviour to occur (COM-B), and describes the relationships between them.⁵ This model

suggests that people need to have the physical and psychological capability to perform the behaviour, strong automatic and reflective motivation to engage with the behaviour, and the social and physical environment to engage with the behaviour. The components interact: they all influence behaviour; capability and opportunity can influence motivation; and behaviour can influence all three components. A COM-B analysis can be used to identify what enables or hinders any particular behaviour, and what would need to change in people and/or their environment to achieve the desired change.

The COM-B model sits at the heart of a framework of behaviour change interventions: the Behaviour Change Wheel (Figure 1).^{5,9} This was developed as a synthesis of 19 frameworks identified in a systematic review⁵ and consists of three layers: the COM-B model of behaviour; a comprehensive list of intervention functions; and related policy categories. The Behaviour Change Wheel therefore provides a systematic approach to designing intervention strategies and it has been widely used to inform a range of interventions.

“A plethora of theories of behaviour change exist – a recent review identified 83 of them.”

After specifying what behaviour needs to change – in terms of to what degree, when, where and in whom – COM-B can help considerations of what should be targeted by an intervention. This ‘behavioural diagnosis’ indicates which of the general intervention types and policy categories within the Behaviour Change Wheel are likely to be effective at changing a given behaviour in a given context. General intervention strategies need to be translated into

specific behaviour change techniques.^{10,11} This translation requires great sensitivity to context and can be aided by considering the techniques in relation to a set of criteria: Affordability, Practicability, Effectiveness/cost-effectiveness, Aceptability, Safety/side-effects and Equity (the APEASE criteria).¹² These criteria can also be used to inform decision making regarding the most appropriate mode or modes of delivery for the intervention.

Starting with a broad framework such as the Behaviour Change Wheel helps to ensure that a wide range of potentially effective interventions are considered and that rationales can be provided for which ones are, and are not, used.

Implementing effective behaviour change interventions can prove cost-effective for the NHS.¹³ The Tobacco Control Plan in England¹⁴ is one of the best real-world examples of a comprehensive approach to government strategy to effectively tackle a preventable behavioural risk factor of premature death and illness. Smoking costs approximately £13.9bn in direct medical costs and indirect costs (eg productivity losses) for the NHS annually.¹⁵ Elements of the tobacco

control strategy – that broadly include behavioural and pharmacological support,¹⁶ fiscal and legislative interventions and mass media campaigns¹² – are all cost-effective.

Examples of cost-effective interventions to tackle other behaviours include:

- screening and brief interventions in primary care to reduce excessive alcohol consumption,¹⁸ and behavioural and pharmacological support to treat alcohol dependence¹⁹
- increasing adherence to medications for chronic conditions (eg heart disease, HIV) with computer-delivered²⁰ and mailed interventions²¹
- optimising health professionals’ behaviours through low-cost feedback on their antibiotic prescribing.²²

Many behaviour change theories and techniques exist. Using a comprehensive framework to sensitively inform behaviour change intervention strategies can ensure that the widest range of potentially effective interventions and policies are considered and systematically selected in order to maximise their impact.

“Implementing effective behaviour change interventions can prove cost-effective for the NHS”

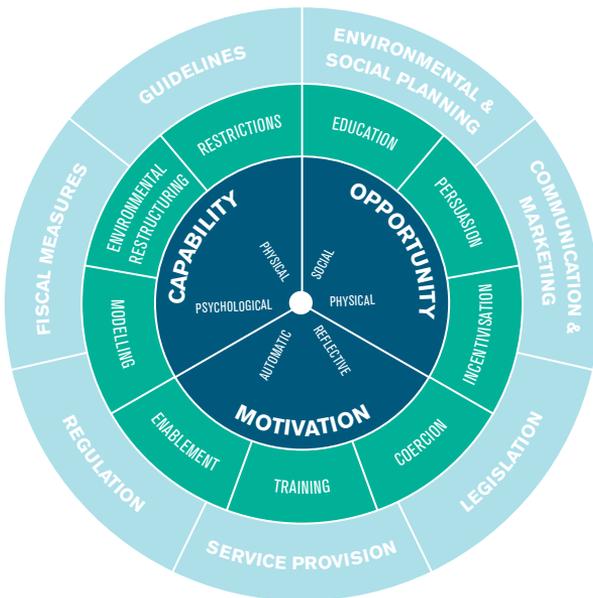


Figure 1:
The Behaviour Change Wheel

- Sources of behaviour
- Intervention functions
- Policy categories

REGULATION AND CULTURE: LEARNING FROM THE HISTORY OF SMOKING AND ALCOHOL



Professor Virginia Berridge and Dr Alex Mold

The introduction of a sugar tax as part of the Government's anti-obesity strategy encourages reflection on the role of regulation in improving public health. We can look to the past and examine how different forms of regulation, including taxation, came onto the health agenda. The key examples are smoking and alcohol, which have set the pattern. Regulation in its various forms is important, but interaction with the culture of the time is also a key variable.

Public health after the Second World War: smoking as the model

Smoking was the defining issue for a new style of public health after the Second World War. The decline in smoking since the 1950s offers a case study of a long-term interplay between regulation and culture. A policy package stressing advertising controls, taxation, health education and opposition to industry collaboration became the norm. However, this was not the case initially.

The style of public health that emerged after 1945 was new. It was concerned with the long-term risks of certain activities, and with chronic disease rather than epidemics. The new science of risk factor epidemiology revealed the connection between smoking and lung cancer. But smoking was a habit deeply embedded in popular culture. During the war, pensioners had been issued with tokens to obtain tobacco, which was seen as essential. Politicians were dubious about whether it was the role of the state to intervene, so changing culture rather than regulation was the immediate objective. A number of methods were used: health education campaigns; control of advertising on television; public health and industry cooperation over product modification; and the activity of the health pressure group ASH (Action on Smoking and Health).

Later, in the 1970s, taxation came onto the agenda, when a decline in the cultural embedding of tobacco was clear. It was then possible to contemplate more stringent measures. Health economists argued that smoking was a 'waste of working class life' and amplified inequality. But the increase in taxation itself heightened inequality because working class people continued to smoke.

Regulation and taxation of alcohol

Two examples relating to alcohol show how cultural context strongly affects regulation. They demonstrate that regulation and taxation are only feasible when a cultural tipping point has been reached.

“Regulation and taxation are only feasible when a cultural tipping point has been reached.”

During the First World War, the government introduced wide-ranging controls on alcohol to help the war effort. Nationalising the drinks industry was not practical politics and, instead, a Central Control Board (CCB) was set up in 1915. The CCB limited hours of consumption and introduced the 'afternoon gap', when pubs had to close. Off licence sales of spirits were prohibited in the evenings and at weekends and their strength was reduced. 'Treating' (buying rounds) was forbidden. The CCB had a research committee and wanted to act on scientific evidence. Its policies, which were widely accepted by the public, had a major impact on harm from alcohol. By the early 1920s per capita spirit consumption had halved from its pre-war level and beer consumption had dropped markedly. Convictions for drunkenness fell from more than 130,000 to just over 29,000 a year.

Central control was abandoned after the First World War, although some parts of the system continued – in the case of the afternoon gap – until 1987. The decline in drinking was maintained until the 1960s, but when drinking culture changed it was difficult to re-orient policy to the new public health model. Alcohol consumption increased from the 1960s, bringing problems such as liver cirrhosis and a rise in convictions for drunkenness. Alcohol experts argued that consumption needed to decrease throughout the population. Such a view contrasted with the existing approach which focused on treating alcoholics and tackling alcoholism. The population-level approach would require a new set of policies. One method suggested was to increase taxation in order to raise prices.

However, this was controversial: a government think tank report in the late 1970s proposing that taxation should be used to raise the price of alcohol was never officially published. The government was opposed to using tax policy in this way and was fearful of the economic impact such measures would have on the drinks industry, tax revenue and jobs.

Instead, the chosen strategy was health education, as it had been initially with smoking. Drinkers were encouraged to consume alcohol ‘sensibly’. Guidance on ‘safe’ levels of alcohol consumption, based on units of alcohol, was issued in the mid-1980s and has formed the cornerstone of alcohol health education policy ever since, although advice about the number of safe units has changed.

Using taxation or measures such as minimum unit pricing (MUP) to raise the price of alcohol remains controversial. Unlike smoking, drinking continues to be ubiquitous within British society. A cultural tipping point around the potential harms caused by

alcohol and the value of reducing consumption at the population level has yet to be reached.

Conclusions

Forms of regulation are time-contingent. Wartime crisis in the 20th century offered the opportunity for the development of a national alcohol strategy. The 1970s saw a particular model of action established by public health interests, focused on taxation and fiscal levers, as well as opposition to industry involvement. But our examples show that there can be industry cooperation with a regulatory agenda: during the First World War the drinks industry and temperance interests worked together; there was hospitality industry support for the 2007 smoking ban; and the arrival of e-cigarettes has demonstrated the possibilities of industry involvement in harm reduction. However, using taxation to reduce consumption can be a double-edged sword, potentially amplifying disadvantage. History therefore shows us that both ‘nudge’ and ‘shove’ can be effective public health tactics, but regulatory interventions have, above all, to be carefully timed so that they resonate with the prevailing culture and the forces driving policy at the time.

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HEALTH AND WELLBEING BOARDS: GLASS HALF FULL OR HALF EMPTY?



Dave Buck

The transfer of important public health functions to local authorities and the creation of health and wellbeing boards (HWBs) was among the most welcomed aspects of the coalition government's health reforms. So how has this been shaping up?

“Health and wellbeing boards [were] among the most welcomed aspects of the coalition government's health reforms.”

Early progress

Generally, the transfer of public health functions and staff from the NHS to local authorities appears to have gone smoothly, with directors of public health (DsPH) confident of better health outcomes in the future and reporting positive experiences of working in local authorities.¹

Initial reports of how HWBs were doing raised some questions, in particular the risk of HWBs becoming ‘talking shops’² – the fate of many previous attempts at partnership between local government and the NHS. Yet it was also recognised that this was an important opportunity for public health to influence actions over the wider determinants of health.

Four DsPH who recently gave evidence to the Health Select Committee were unanimous that their new roles have given them more influence over decision making, despite downsides, most notably restrictions on access to NHS data.³ However, experience among DsPH is not uniform: a recent survey found that, when asked whether they could influence priorities in their local authority, 10% of respondents answered ‘yes, quite a lot’, 54% said ‘yes, but not a lot’ and 36% said they had no influence.⁴

Dominated by NHS England and squeezed by devolution

Two further trends since the reforms are also at risk of isolating HWBs and their role in public health. These are the increasing grip that NHS England is asserting over the system and, ironically, the move towards greater devolution in health and care. Both of these factors seek to develop much larger geographical footprints than HWBs.

NHS England has flexed its muscles through the *NHS Five year forward view*, including its aggressive support for a limited range of new models of care. One of the stark, yet unaddressed, questions is how this new policy approach of ‘choose among our options’ conflicts with the strategic role of HWBs. They are, after all, the bodies who are meant to set the overall health and wellbeing strategies for their areas.

“One of the stark, yet unaddressed, questions is how [the] new policy approach of ‘choose among our options’ conflicts with the strategic role of HWBs.”

The NHS has been developing sustainability and transformation plans (STPs), a welcome strategic shift towards place-based planning for the NHS. However, this has occurred very quickly and has initially resulted in 44 plans that cover England⁵ – this is clearly at odds with the footprint of 152 HWBs. While welcoming the ‘emphasis on place-based planning’, the Local Government Association (LGA) is concerned that the development of STPs is ignoring HWBs, stating: ‘The development of these arrangements draws accountability away from local communities, including health and wellbeing boards.’

In this context, it's not surprising that the NHS locally has a lukewarm view of HWBs and doesn't consider them places where key strategic decisions are being made. This comes through in The King's Fund's joint work with the Nuffield Trust on clinical commissioning group (CCG) development. The latest survey of over 300 CCG staff across six CCGs suggests that only 7% of respondents thought HWBs were influential over clinical decisions.⁷ A recent wider *Health Service Journal* survey of CCGs also showed that half of chairs or chief officers thought that HWBs were 'a place of discussion but not action', while only 3% thought they were 'driving strategic decisions about long-term population needs' and 2% thought they were 'delivering real change'.⁸

At first sight, devolution looks good for HWBs and for public health. One of the exciting aspects of the plans for Greater Manchester (the poster child of devolution) is a focus on the common factors that affect the wellbeing of 2.7m residents across 10 local authorities. Greater Manchester recognises that if inequalities in health and wellbeing are to be addressed, integration needs to spread much further across the economically inactive working age population, raising skills, improving health (including mental health) and focusing on families as much as individuals. This insightful, tailored approach is way ahead of the national debate on integration and could be transformative for future inequalities in health. To help make this a reality, Greater Manchester has signed a ground-breaking memorandum of understanding on public health.⁹

However, while the LGA's database of HWB priorities shows some clear agreement across local authorities in Greater Manchester, notably in the focus on the early years, there is actually more divergence than commonality between HWBs overall.¹⁰ Greater Manchester – and those that follow in its wake – must therefore avoid mistaking increased regional control for permission to override local priority setting. That means difficult decisions will need to be made regarding who is responsible and accountable at each level. The trade for devolution and all it offers may ironically see HWBs squeezed and marginalised by 'regionalism' on the local government side, and larger planning footprints and restricted choice over models of care defined by the centre on the NHS side. The question is whether these evolving organisational

forms retain the focus, funds and local knowledge and expertise to deliver on public health and reducing inequalities.

So, is the glass half full or half empty?

Some DsPH have clearly continued to benefit from the move to local government and membership of a HWB, which has given them wider influence locally, particularly over local government policies that influence public health. However, many DsPH – and the HWBs of which they are a key part of – still struggle to make an impact. HWBs are meant to bring a broader range of partners together to deliver the joint health and wellbeing strategy. But, their most important partners – local CCGs – are clearly underwhelmed. Meanwhile, wider developments in the NHS and in the move to devolution risk overpowering and isolating them. It remains to be seen as the environment continues to evolve at pace around them whether the HWB glass is half full, half empty, or about to be dropped altogether.

“HWBs are meant to bring a broader range of partners together to deliver the joint health and wellbeing strategy. But, their most important partners – local CCGs – are clearly underwhelmed.”

THE ECONOMIC CASE FOR PREVENTING ILL HEALTH



Dr Louise Marshall and Anita Charlesworth

What do we know about the costs to society of preventable ill health?

Potentially preventable conditions – including some cardiovascular disease, respiratory problems, cancers, and mental ill health – are the leading causes of ill health and death in the UK. It is estimated that 40% of the burden on health services in England may be preventable through action on the determinants of such conditions, but only around 4% of the health budget is spent on prevention.¹ The total costs of preventable ill health fall far wider than health and care services though, considering the cost to the economy of the reduced ability to work, the lost years of working life, and the high physical and emotional impact on people's lives.

The need to strengthen prevention is widely acknowledged.^{2,3} Without effective action targeting the determinants of health, together with early identification and intervention, the costs of preventable ill health will continue to rise with the increasing prevalence of preventable conditions, the ageing population, and the rising cost of medical treatment.^{4,5}

This action must be delivered more broadly than through health services. The key factors driving the state of people's health – and inequalities in health – are the social determinants.⁶ These include people's housing, education, income, and the physical and social environment. These are outside the control of health services, and influence over them was the rationale for transferring public health teams from the NHS to local government. However, their budgets were cut by £200m (7%) in 2015/16, with further cuts of 3.9% planned each year to 2020/21.⁷

Is prevention cost-effective?

Demonstrating the value for money of adopting strategies to prevent ill health is critical, particularly in the current financial climate. Economic analyses allow the assessment of cost-effectiveness by looking at the costs and benefits of interventions set against the current and future costs of non-intervention (including potential treatment costs), enabling consideration of the opportunity costs of various decisions (ie whether more good could be done by investing the funding differently).

The National Institute for Health and Care Excellence (NICE) and other institutions assess the cost-effectiveness of public health interventions. Most are relatively low cost and highly cost-effective – considering intervention costs against gains in quality and years of life – including tobacco control, immunisation, cardiovascular disease prevention and workplace health promotion.^{8,9}

Given the escalating costs of treating preventable ill health, and the availability of cost-effective interventions, there is clearly an economic case for investing in prevention. However, the overriding aim of prevention to equitably increase population health must also not be forgotten.

The need for a broader, longer-term perspective

Economic methods can and must support spending on prevention, but they cannot alone capture the full societal burden of preventable ill health, or its effects on different groups. We need to widen our perspective and base decision making for preventive action to improve health outcomes and equity on broader evidence. Economic measures are necessary, but not sufficient.

Methods that reflect non-health and non-monetary benefits of intervention, and incorporate equity, are increasingly being used, but need to be more widely adopted and understood. These include cost-consequence, cost-benefit, and social return-on-investment analyses.⁶ Although interventions aimed at populations are often the least expensive and most cost-effective,⁸ the differing impacts across social groups must be considered. A marked social gradient exists in the prevalence of preventable ill health, with the impact of inequality accumulating over a lifetime. Preventive interventions should not increase this gradient, and some – but by no means all – involve a trade-off between equity and efficiency.^{6,10} Consideration should also be given to the potential disbenefits of interventions for those whose behaviour is not problematic.¹¹

“A marked social gradient exists in the prevalence of preventable ill health, with the impact of inequality accumulating over a lifetime.”

While some preventive interventions have rapid impacts on population health, for example the ban on smoking in public places,¹² health benefits frequently take years to emerge. The timeframe chosen for analysis can therefore alter conclusions: looking at short-term return-on-investment within an annual budget or political cycle would fail to capture cost-effectiveness or savings over the medium/long term. Furthermore, economic methods ‘discount’ future benefits as we value benefits occurring in the present more highly, reducing the apparent value of many population health outcomes.

Why is the adoption of more comprehensive strategies challenging?

To improve population health equitably, the social determinants must be tackled. The economic case supporting this is gathering pace.^{6,10,13} However, the nature of the interventions needed to tackle these

complex, interacting determinants – including education, employment and housing – poses barriers to their adoption. Costs and benefits fall across sectors and funding flows; important benefits are often distant in time, not within parliamentary terms; and outcomes are difficult to measure, value in economic terms, and attribute to particular actions. This complicates the case for prevention, and the evidence base therefore needs strengthening to support cross-sectoral policymaking and investment by non-health sectors.

Motivating sectors beyond health to invest requires evidence of the economic benefits to them of doing so: we must therefore make the business case for a ‘health in all policies’ approach, and move towards framing health and wellbeing as a valuable asset. Health needs to become the responsibility of all sectors, but the risk of it then becoming no-one’s priority must also be resisted.¹⁴

“We must therefore make the business case for a ‘health in all policies’ approach, and move towards framing health and wellbeing as a valuable asset.”

While preventive intervention can avert future treatment, care and lost productivity costs, these benefits can take years to realise. Until we reach this turning point, when resources can be invested in prevention instead of treatment, extra funding is needed. Although challenging in a time of financial austerity, and within relatively short-term political cycles, a longer-term perspective on the future benefits of investing in health and its drivers is especially critical. New and creative thinking is needed about sources and flows of funding; the balance over time of preventing conditions versus preventing their progress and complications; and the motivators for cross-sectoral investment in health.

COULD GOVERNMENT DO MORE TO CONSIDER THE IMPACT ON HEALTH OF WIDER POLICY?



Emma Spencelayh and Dr Jo Bibby

In this essay collection, leading experts have outlined the population health challenges facing the UK, as well as some potential solutions. The collection provides a thought-provoking reminder that we must not lose sight of supporting the population to be healthy during a time when the public discourse on health appears to be firmly rooted in the sustainability of the NHS. For example, while the health care system has been broadly protected, public health budgets face a 4% real-terms reduction for the rest of the decade.¹ There is no escaping the fact that the NHS is a national institution – more than half of the public say that the NHS is what makes them most proud to be British.² But could our love for the NHS actually be diverting attention away from the real drivers of health?

The World Health Organization states that ‘health is a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity’.³ But for too long, public discussions about health have effectively become conversations about health care services and the role of the NHS.

“For too long, public discussions about health have effectively become conversations about health care services and the role of the NHS.”

It is important to consider the absolute measures of health that affect us all, such as life expectancy, as well as distribution across communities. We know that the lower a person’s socio-economic status, the lower their health status will be.⁴ The wider factors that contribute to a person’s health include their access to education; their conditions of work and leisure; their homes, communities, towns or cities; and their chances of leading a flourishing life.⁵ Many of these factors sit outside the direct control of health departments, but

despite high profile reports such as the Black Report in 1980⁶ and the Marmot Review in 2010,⁴ progress in tackling the wider determinants of health has been disappointing. For example, between 2012 and 2014, life expectancy for baby boys was highest in Kensington and Chelsea (83.3 years) and lowest in Blackpool (74.7 years) – a difference of 8.6 years.⁷

In the words of the former Secretary of State for Health in England, Andrew Lansley: ‘Everybody actually knows that making the population healthy is not delivered through the NHS; it is delivered through almost everything else.’

“Everybody actually knows that making the population healthy is not delivered through the NHS; it is delivered through almost everything else.”

One mechanism to do this is for governments to promote a comprehensive inter-sectoral approach. This approach is a mechanism to ensure that those developing public policies across sectors take action to systematically consider the health implications of decisions, seek synergies, and avoid harmful health impacts.⁹ A health in all policies approach is not radical or new. In 2011, the UK signed up to the Rio Political Declaration on Social Determinants of Health, which confirmed a ‘determination to achieve social and health equity through action on social determinants of health and wellbeing by a comprehensive inter-sectoral approach.’

However, in practice, implementation appears to be patchy. In England, the short-lived Public Health Cabinet Sub-Committee was abolished in 2012,¹⁰ despite the need for cross-government collaboration

on health issues. Meanwhile, for some high profile policy areas, there appears to have been limited consideration of the potential health impacts. For example, for the impact assessment of the changes to housing benefit brought in by the Welfare Reform Act 2012 – aka the ‘bedroom tax’ – policy officials gave a simple response of ‘no’ to the question ‘does our policy option/proposal have an impact on health and wellbeing?’¹¹ That said, there are a number of promising initiatives such as the new Joint Work and Health Unit; the creation of ‘What Works Centres’ focused on cross-cutting issues such as wellbeing¹² and ageing;¹³ and the development of cross-government strategies.

Wales appears to have made progress in this area through the Wellbeing of Future Generations (Wales) Act 2015, which is intended to promote a long-term coordinated approach to preventing problems, and ensure that public bodies work better with communities. The Act requires public bodies to set and publish wellbeing objectives at a national level: Welsh Ministers are required to set national indicators and milestones and must publish an annual report on progress.¹⁴ The legislation sets out goals to create a more equal Wales where society enables people to fulfil their potential, no matter what their background or circumstances. As the Health Foundation found from participants drawn from 17 countries at our recent co-sponsored Salzburg Global Seminar session,¹⁵ we are not alone in facing this challenge. This means that there are opportunities to learn from international experience, ranging from the Robert Wood Johnson Foundation’s promotion of a ‘Culture of Health’¹⁶ in the US, to New Zealand’s approach to social investment which seeks to identify where early investment might generate future savings.¹⁷

As tempting as it may be to say that a ‘health in all policies’ approach is too difficult, there is a clear need to take radical action to re-orientate government decision making processes towards health. As NHS England puts it: ‘the future health of millions of children, the sustainability of the NHS, and the economic prosperity of Britain all now depend on a radical update in prevention and public health.’¹⁸

In order to take this action, the Health Foundation believes that there needs to be a broader narrative change so that:

- health is seen by the public and politicians to be an emergent property of our life chances and environment, rather than as an output of the NHS
- health is seen as contributing to the core infrastructure of a prosperous and sustainable society, rather than something we can ‘afford’ when the economy is thriving
- spending on health is seen as an investment
- maintaining and improving health is viewed as a priority across government and is not just the domain of the Department of Health.

REFERENCES

The formidable burden of preventable disease facing the UK today

- 1 United Nations (UN). *UN high-level meeting on NCDs: Summary report of the discussions at the round tables*. New York: UN; 2011. Available from: www.who.int/nmh/events/moscow_ncds_2011/round_tables_summary.pdf?ua=1.
- 2 Acheson D. *Independent Inquiry into Inequalities in Health Report*. London: The Stationery Office; 1998. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/265503/ih.pdf.
- 3 HM Government. *The Health of the nation: a strategy for health in England*. London: HMSO; 1992.
- 4 HM Government. *Saving Lives: Our Healthier Nation*. London: The Stationery Office; 1999. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/265576/4386.pdf.
- 5 HM Government. *Choosing Health: making healthy choices easier*. London: The Stationery Office; 2004. Available from: www.nhs.uk/history/choosing%20health%20summary.pdf.
- 6 HM Government. *Healthy Lives, Healthy People: Our strategy for public health in England*. London: The Stationery Office; 2010. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/216096/dh_127424.pdf.
- 7 National Assembly for Wales. *Public Health White Paper, Listening to you – Your Health Matters*. Cardiff: The Stationery Office; 2014. Available from: www.assembly.wales/research%20documents/rn-14-023%20white%20papers%20health/rn14-023.pdf.
- 8 NHS Scotland. *Partnerships for Care. Scotland's Health White Paper*. Edinburgh: The Stationery Office; 2003. Available from: www.gov.scot/resource/doc/47032/0013897.pdf.
- 9 Department of Health and Social Security. *Prevention and Health—Everybody's Business*. London: HMSO; 1976.
- 10 HM Treasury. *Budget 2016*. London: The Stationery Office; 2016. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/508193/HMT_Budget_2016_Web_Accessible.pdf
- 11 Butland B, Jebb S, Kopelman P, et al. *Tackling Obesity: Future Choices – 2nd Edition*. London: Government Office for Science; 2007. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/287937/07-1184x-tackling-obesity-future-choices-report.pdf

The burden of smoking in the UK

- 1 Action on Smoking and Health (ASH). *Smoking Statistics: Illness and Death*. ASH; 2015. Available from: http://ash.org.uk/files/documents/ASH_107.pdf. London: ASH; 2015.
- 2 Thun M, Peto R, Boreham J, Lopez AD. Stages of the cigarette epidemic on entering its second century. *Tobacco Control*. 2012;21(2): 96–101 Available from doi: 10.1136/tobaccocontrol-2011-050294.
- 3 Doll R, Peto R, Boreham J, Sutherland I. Mortality in relation to smoking: 50 years' observations on male British doctors. *BMJ*. 2004;328: 1519. Available from doi: 10.1136/bmj.38142.554479.AE.

- 4 Pirie K, Peto R, Reeves GK, et al. The 21st century hazards of smoking and benefits of stopping: a prospective study of one million women in the UK. *The Lancet*. 2013;381(9861): 133–41. Available from doi: 10.1016/S0140-6736(12)61720-6.
- 5 Fidler J, Ferguson SG, Brown J, et al. How does rate of smoking cessation vary by age, gender and social grade? Findings from a population survey in England. *Addiction*. 2013;108(9): 1680–5. Available from doi: 10.1111/add.12241.
- 6 Shahab L, West R. Do ex-smokers report feeling happier following cessation? Evidence from a cross-sectional survey. *Nicotine & Tobacco Research*. 2009;11(5): 553–7. Available from doi: 10.1093/ntr/ntp031.
- 7 Shahab L, West R. Differences in happiness between smokers, ex-smokers and never smokers: cross-sectional findings from a national household survey. *Drug and Alcohol Dependence*. 2012;121(1–2):38–44. Available from doi: 10.1016/j.drugalcdep.2011.08.011.
- 8 Taylor G, McNeill A, Girling A, et al. Change in mental health after smoking cessation: systematic review and meta-analysis. *BMJ*. 2014;348: g1151. Available from doi: 10.1136/bmj.g1151.
- 9 Ekpu VU, Brown AK. The Economic Impact of Smoking and of Reducing Smoking Prevalence: Review of Evidence. *Tobacco Use Insights*. 2015;8:1–35. Available from doi: 10.4137/TUI.S15628.
- 10 *Smoking in England*. Available from: www.smokinginengland.info.
- 11 McNeill A, Brose LS, Calder R, et al. *E-cigarettes: and evidence update*. London: Public Health England, 2015. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/457102/E-cigarettes_an_evidence_update_A_report_commissioned_by_Public_Health_England_FINAL.pdf.
- 12 Royal College of Physicians (RCP). *Nicotine without smoke: Tobacco harm reduction*. London: RCP, 2016. Available from: www.rcplondon.ac.uk/projects/outputs/nicotine-without-smoke-tobacco-harm-reduction-0.

E-cigarettes: Safe and effective, or a Trojan horse for the tobacco industry?

- 1 Lavery AA, Diethelm P, Hopkinson NS, et al. Use and abuse of statistics in tobacco industry-funded research on standardised packaging. *Tobacco Control*. 2015;24(5): 422–4. Available from doi: 10.1136/tobaccocontrol-2014-052051.
- 2 Department of Health. *Post-Implementation Review: Tobacco Plain Packaging 2016*. Australian Government, 2016. Available from: <https://ris.govspace.gov.au/2016/02/26/tobacco-plain-packaging>.
- 3 McKee M. Electronic cigarettes: peering through the smokescreen. *Postgraduate Medical Journal*. 2014;90: 607–609. Available from doi: 10.1136/postgradmedj-2014-133029.
- 4 Pisinger C, Dossing M. A systematic review of health effects of electronic cigarettes. *Preventive Medicine*. 2014;69: 248–60. Available from doi: 10.1016/j.ypmed.2014.10.009.
- 5 Smith RF, McDonald CG, Bergstrom HC, et al. Adolescent nicotine induces persisting changes in development of neural connectivity. *Neuroscience & Biobehavioral Reviews*. 2015;55: 432–43. Available from doi: 10.1016/j.neubiorev.2015.05.019.

- 6 Schaal C, Chellappan SP. Nicotine-mediated cell proliferation and tumor progression in Smoking-related cancers. *Molecular Cancer Research*. 2014;12(1): 14–23. Available from doi: 10.1158/1541-7786.MCR-13-0541.
- 7 McNeill A, Brose LS, Calder R, et al. *E-cigarettes: an evidence update – A report commissioned by Public Health England*. London: Public Health England; 2015. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/457102/E-cigarettes_an_evidence_update_A_report_commissioned_by_Public_Health_England_FINAL.pdf.
- 8 Nutt DJ, Phillips LD, Balfour D, et al. *Estimating the harms of nicotine-containing products using the MCDA approach*. *European Addiction Research*. 2014;20(5): 218–25. Available from doi: 10.1159/000360220.
- 9 McKee M, Capewell S. Evidence about electronic cigarettes: a foundation built on rock or Sand? *BMJ*. 2015;351: h4863. Available from doi: 10.1136/bmj.h4863.
- 10 Gornall J. Public Health England's troubled trail. *BMJ*. 2015;351: h5826. Available from doi: 10.1136/bmj.h5826.
- 11 Combes RD, Balls M. On the Safety of E-cigarettes: “I can resist anything except temptation”. *Alternatives to laboratory animals*. 2015;43(6):417–425.
- 12 McRobbie H, Bullen C, Hartmann-Boyce J, Hajek P. Electronic cigarettes for smoking cessation and reduction. *Cochrane Database of Systematic Reviews*. 2014;12: Cdo10216. Available from doi: 10.1002/14651858.CD010216.pub2.
- 13 Kalkhoran S, Glantz SA. E-cigarettes and smoking cessation in real-world and clinical settings: a systematic review and meta-analysis. *The Lancet Respiratory Medicine*. 2016;4(2): 116–28. Available from doi: 10.1016/S2213-2600(15)00521-4.
- 14 Donny EC, Denlinger RL, Tidey JW, et al. Randomized Trial of Reduced-Nicotine Standards for Cigarettes. *New England Journal of Medicine*. 2015;373(14): 1340–9. Available from doi: 10.1056/NEJMs1502403.

Harm from alcohol: The solutions are there but not the will to implement them 16

- 1 Gilmore W, Chikritzhis T, Gilmore I. Alcohol: is the evidence base guiding public policy? *International Journal of Evidence-Based Healthcare*. 2013;11(2): 85–6. Available from doi: 10.1111/1744-1609.12021.
- 2 Babor T, Caetano R, et al. *Alcohol: No ordinary commodity – research and public policy, second edition*. Oxford: Oxford University Press; 2010.
- 3 Sheron, N, Gilmore I. Effect of policy, economics, and the changing alcohol marketplace on alcohol related deaths in England and Wales. *BMJ*. 2016;353: i1860. Available from doi: 10.1136/bmj.i1860.
- 4 World Health Organization (WHO). *Global status report on alcohol and health*. Geneva: WHO; 2014. Available from: www.who.int/substance_abuse/publications/global_alcohol_report/en.
- 5 World Health Organization (WHO). *Global strategy to reduce the harmful use of alcohol*. Geneva: WHO; 2010. Available from: www.who.int/substance_abuse/alecstratenglishfinal.pdf?ua=1.
- 6 Brown K. Association Between Alcohol Sports Sponsorship and Consumption: A Systematic Review. *Alcohol and Alcoholism*. 2016; Epub. Available from doi: 10.1093/alealc/agw006.
- 7 Department of Health. *Alcohol Guidelines Review – Report from the Guidelines development group to the UK Chief Medical Officers*. London: The Stationery Office; 2015. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/489797/CMO_Alcohol_Report.pdf.

Obesity: One of the greatest health challenges of the 21st century 18

- 1 Public Health England (PHE). *PHE Obesity*. Available from: www.noo.org.uk/NOO_about_obesity.
- 2 Dobbs R, Sawers C, Thompson F, et al. *Overcoming obesity: An initial economic analysis*. London: McKinsey Global Institute; 2014. Available from: www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/how-the-world-could-better-fight-obesity.
- 3 Butland B, Jebb S, Kopelman P, et al. *Tackling Obesities: Future Choices – 2nd Edition*. London: Government Office for Science; 2007. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/287937/07-1184x-tackling-obesities-future-choices-report.pdf.
- 4 Simonds M, Llewellyn A, Owen CG, Woolacott N. Predicting adult obesity from childhood obesity: a systematic review and meta-analysis. *Obesity Reviews*. 2016;17(2): 95–107. Available from doi: 10.1111/obr.12334.
- 5 World Health Organization (WHO). *Report of the Commission on Ending Childhood Obesity*. Geneva: WHO; 2016. Available from: http://apps.who.int/iris/bitstream/10665/204176/1/9789241510066_eng.pdf.

Sedentary lifestyles: Our 21st century inactivity health nemesis 20

- 1 Katzmarzyk PT, Church TS, Craig CL, Bouchard C. Sitting time and mortality from all causes, cardiovascular disease, and cancer. *Medicine & Science in Sports & Exercise*. 2009;41(5): 998–1005. Available from doi: 10.1249/MSS.0b013e3181930355.
- 2 Patel AV, Bernstein L, Deka A, et al. Leisure time spent sitting in relation to total mortality in a prospective cohort of US adults. *American Journal of Epidemiology*. 2010;172(4): 419–429. Available from doi: 10.1093/aje/kwq155.
- 3 Van der Ploeg HP, Chey T, Korda RJ, et al. Sitting time and all-cause mortality risk in 222 497 Australian adults. *Archives of Internal Medicine*. 2012;172(6): 494–500. Available from doi: 10.1001/archinternmed.2011.2174.
- 4 Proper KI, Singh AS, van Mechelen W, Chinapaw MJ. Sedentary behaviors and health outcomes among adults: a systematic review of prospective studies. *American Journal of Preventive Medicine*. 2011;40(2): 174–82. Available from doi: 10.1016/j.amepre.2010.10.015.
- 5 Healy GN, Matthews CE, Dunstan DW, et al. Sedentary time and cardio-metabolic biomarkers in US adults: NHANES 2003–06. *European Heart Journal*. 2011;32(5): 590–7. Available from doi: 10.1093/eurheartj/ehq451.
- 6 Schmid D, Leitzmann MF. Television viewing and time spent sedentary in relation to cancer risk: a meta-analysis. *Journal of the National Cancer Institute*. 2014;106(7): dju08. Available from doi: 10.1093/jnci/dju098.
- 7 Seguin R, Buchner DM, Liu J, et al. Sedentary behavior and mortality in older women: the Women's Health Initiative. *American Journal of Preventive Medicine*. 2014;46: 122–35. Available from doi: 10.1016/j.amepre.2013.10.021.
- 8 Buckley JP, Mellor DD, Morris M, Joseph F. Standing-based office work shows encouraging signs of attenuating post-prandial glycaemic excursion. *Occupational and Environmental Medicine*. 2014;71: 109–11. Available from doi: 10.1136/oemed-2013-101823.
- 9 Smith L, Thomas EL, Bell JD, Hamer M. The association between objectively measured sitting and standing with body composition: a pilot study using MRI. *BMJ Open*. 2014;4: e005476. Available from doi: 10.1136/bmjopen-2014-005476.

- 10 Levine JA. Non-exercise activity thermogenesis (NEAT). *Nutritional Reviews*. 2004;62(7 Pt 2): S82–97. Available from doi: 10.1111/j.1753-4887.2004.tb00094.x.
- 11 Ainsworth BE, Haskell WL, Herrmann SD, et al. 2011 Compendium of physical activities: a second update of codes and MET values. *Medicine & Science in Sports & Exercise*. 2011;43(8): 1575–81. Available from doi: 10.1249/MSS.0b013e31821eece12.
- 12 Júdice PB, Hamilton MT, Sardinha LB, et al. What is the metabolic and energy cost of sitting, standing and sit/stand transitions? *European Journal of Applied Physiology*. 2016;116(2): 263–73. Available from www.ncbi.nlm.nih.gov/pubmed/26467968.
- 13 UK Chief Medical Officers. Start Active, Stay Active: A report on physical activity for health from the four home counties' Chief Medical Officers. London: Department of Health; 2011. Available from: www.bhfactive.org.uk/userfiles/Documents/startactivestayactive.pdf.
- 14 Townsend N, Bhatnagar P, Wickramasinghe K, et al. *Physical activity statistics 2012*. London: British Heart Foundation; 2012. Available from: www.bhf.org.uk/publications/statistics/physical-activity-statistics-2012.
- 15 Brownson RC, Boehmer TK, Luke DA. Declining rates of physical activity in the United States: what are the contributors? *Annual Review of Public Health*. 2005;26: 421–43. Available from doi: 10.1146/annurev.publhealth.26.021304.144437.
- 16 Church TS, Thomas DM, Tudor-Locke C, et al. Trends over 5 decades in US occupation-related physical activity and their associations with obesity. *PLoS ONE*. 2011;6(5): e19657. Available from doi: 10.1371/journal.pone.0019657.
- 17 Murray CJ, Richards MA, Newton JN, et al. UK health performance: findings of the Global Burden of Disease Study 2010. *The Lancet*. 2013;381(9871): 997–1020. Available from doi: 10.1016/S0140-6736(13)60355-4.
- 18 Daar AS, Singer PA, Persad DL, et al. Grand challenges in chronic non-communicable diseases. *Nature*. 2007;450: 494–6. Available from doi: 10.1038/450494a.
- 19 Alwan D (ed.). *Global status report on noncommunicable diseases 2010*. Geneva: World Health Organization; 2011. Available from: www.who.int/nmh/publications/ncd_report_full_en.pdf.
- 20 *Designed to Move: A Physical Activity Agenda*. 2012. Available from: http://designedtomove.org/resources.
- 21 Thorp AA, Owen N, Neuhaus M, Dunstan DW. Sedentary behaviors and subsequent health outcomes in adults: a systematic review of longitudinal studies, 1996–2011. *American Journal of Preventive Medicine*. 2011;41(2): 207–15. Available from doi: 10.1016/j.amepre.2011.05.004.
- 22 Chomistek AK, Manson JE, Stefanick ML, et al. Relationship of sedentary behavior and physical activity to incident cardiovascular disease: results from the Women's Health Initiative. *Journal of the American College of Cardiology*. 2013;61(23): 2346–54. Available from doi: 10.1016/j.jacc.2013.03.031.
- 23 Pulsford R, Stamatakis E, Britton A, et al. Associations of sitting behaviours with all-cause mortality over a 16-year follow up: the Whitehall II study. *International Journal of Epidemiology*. 2015;44: 1909–16. Available from doi: 10.1093/ije/dyv191.
- 24 Craig R, Mindell J, Hirani V (eds). *Health survey for England 2008: Volume 1 – physical activity and fitness*. London: The NHS Information Centre; 2009. Available from: www.hscic.gov.uk/catalogue/PUB00430/heal-surv-phys-acti-fitt-eng-2008-rep-v2.pdf.
- 25 Stamatakis E, Rogers K, Ding D, et al. All-cause mortality effects of replacing sedentary time with physical activity and sleeping using an isotemporal substitution model: a prospective study of 201,129 mid-aged and older adults. *International Journal of Behavioral Nutrition and Physical Activity*. 2015;12(1):121. Available from doi: 10.1186/s12966-015-0280-7.
- 26 Gardner B, Smith L, Lorenzetti F, et al. How to reduce sitting time? A review of behaviour change strategies used in sedentary behaviour reduction interventions among adults. *Health Psychology Review*. 2016;10(1): 89–112. Available from doi: 10.1080/17437199.2015.
- 27 Henson J, Yates T, Biddle SJ, et al. Associations of objectively measured sedentary behaviour and physical activity with markers of cardiometabolic health. *Diabetologia*. 2013;56(5): 1012–20. Available from doi: 10.1007/s00125-013-2845-9.
- 28 Kazi A, Duncan M, Clemes S, Haslam C. A survey of sitting time among UK employees. *Occupational Medicine*. 2014;64(7): 497–502. Available from doi: 10.1093/occmed/kqu099.
- 29 Clemes SA, O'Connell SE, Edwardson CL. Office workers' objectively measured sedentary behavior and physical activity during and outside working hours. *Journal of Occupational and Environmental Medicine*. 2014;56(3): 298–303. Available from doi: 10.1097/JOM.0000000000000101.
- 30 Thorp AA, Healy GN, Winkler E, et al. Prolonged sedentary time and physical activity in workplace and non-work contexts: a cross-sectional study of office, customer service and call centre employees. *International Journal of Behavioral Nutrition and Physical Activity*. 2012;9: 128. Available from doi: 10.1186/1479-5868-9-128.
- 31 Ryan CG, Dall PM, Granat MH, et al. Sitting patterns at work: objective measurement of adherence to current recommendations. *Ergonomics*. 2011;54(6): 531–8. Available from doi: 10.1080/00140139.2011.570458.
- 32 Evans RE, Fawole HO, Sheriff SA, et al. Point-of-choice prompts to reduce sitting time at work a randomized trial. *American Journal of Preventive Medicine*. 2012;43(3): 293–7. Available from doi: 10.1016/j.amepre.2012.05.010.
- 33 Mantjes JA, Jones AP, Corder K, et al. School related factors and 1 year change in physical activity amongst 9–11 year old English schoolchildren. *International Journal of Behavioral Nutrition and Physical Activity*. 2012;9: 153. Available from doi: 10.1186/1479-5868-9-153.
- 34 Telama R, Yang X, Viikari J, et al. Physical activity from childhood to adulthood: a 21-year tracking study. *American Journal of Preventive Medicine*. 2005;28(3): 267–73. Available from doi: 10.1016/j.amepre.2004.12.003.
- 35 Telama R. Tracking of physical activity from childhood to adulthood: a review. *Obesity Facts*. 2009;2(3): 187–95. Available from doi: 10.1159/00022244.
- 36 Biddle SJ, Pearson N, Ross GM, Braithwaite R. Tracking of sedentary behaviours of young people: a systematic review. *Preventive Medicine*. 2010;51(5): 345–51. Available from doi: 10.1016/j.jpmed.2010.07.018.
- 37 Mitchell JA, Pate RR, Dowda M, et al. A prospective study of sedentary behavior in a large cohort of youth. *Medicine & Science in Sports & Exercise*. 2012;44(6): 1081–7. Available from doi: 10.1249/MSS.0b013e3182446655.
- 38 Stamatakis E, Coombs N, Tilling K, et al. Objectively measured sedentary behavior in late childhood and cardiometabolic risk in adolescence. *Pediatrics*. 2015; 135(6): e1432–41. Available from: http://pediatrics.aappublications.org/content/135/6/e1432.info.
- 39 Biddle SJH, Asare M. Physical activity and mental health in children and adolescents: a review of reviews. *British Journal of Sports Medicine*. 2011;45: 886–95. Available from doi: 10.1136/bjsports-2011-090185.
- 40 Diabetes UK. *Diabetes in the UK 2012: Key statistics on diabetes*. London: Diabetes UK; 2012. Available from: www.diabetes.org.uk/Documents/Reports/Diabetes-in-the-UK-2012.pdf.

- 41 De Ferranti SD, Gauvreau K, Ludwig DS, et al. Prevalence of the metabolic syndrome in American adolescents findings from the Third National Health and Nutrition Examination Survey. *Circulation*. 2004;110(16): 2494–7. Available from doi: 10.1161/01.CIR.0000145117.40114.C7.
- 42 Biddle S, O'Connell S, & Braithwaite RE. Sedentary behaviour interventions in young people: a meta-analysis. *British Journal of Sports Medicine*. 2011;45(11): 937–42. Available from doi: 10.1136/bjsports-2011-090205.
- 43 Maniccia DM, et al. A meta-analysis of interventions that target children's screen time for reduction. *Pediatrics*. 2011;128(1): e193–210. Available from doi: 10.1542/peds.2010-2353.
- 44 Weiler R, Allardyce S, Whyte GP, Stamatakis E. Is the lack of physical activity strategy for children complicit mass child neglect? *British Journal of Sports Medicine*. 2014;48(13): 1010–13. Available from doi: 10.1136/bjsports-2013-093018.
- 45 De Rezende LF, Rey-López JP, Matsudo VKR, do Carmo Luiz O. Sedentary behavior and health outcomes among older adults: a systematic review. *BMC Public Health*. 2014;14(1):333. Available from doi: 10.1186/1471-2458-14-333.
- 46 Biswas A, Oh PI, Faulkner GE, et al. Sedentary time and its association with risk for disease incidence, mortality, and hospitalization in adults: a systematic review and meta-analysis. *Annals of Internal Medicine*. 2015;162(2): 123–32. Available from doi: 10.7326/M14-1651.
- 47 Sherrington C, Tiedemann A, Fairhall N, et al. Exercise to prevent falls in older adults: an updated meta-analysis and best practice recommendations. *NSW Public Health Bulletin*. 2011;22(3-4): 78–83. Available from doi: 10.1071/NB10056.
- 48 Gillespie LD, Robertson MC, Gillespie WJ, et al. Interventions for preventing falls in older people living in the community. *Cochrane Database Systematic Review*. 2009;(2):CD007146. Available from doi: 10.1002/14651858.CD007146.pub2.
- 49 Neuhaus M, Eakin EG, Straker L, et al. Reducing occupational sedentary time: a systematic review and meta-analysis of evidence on activity-permissive workstations. *Obesity Reviews*. 2014;15(10): 822–38. Available from doi: 10.1111/obr.12201.
- 50 Buckley JP, Hedge A, Yates T, et al. The sedentary office: a growing case for change towards better health and productivity. Expert statement commissioned by Public Health England and the Active Working Community Interest Company. *British Journal of Sports Medicine*. 2015 [epub ahead of print]. Available from doi: 10.1136/bjsports-2015-094618.
- 51 Mansoubi M, Pearson N, Biddle SJ, Clemen SA. Using Sit-to-Stand Workstations in Offices: Is There a Compensation Effect? *Medicine & Science in Sports & Exercise*. 2015 [epub ahead of print]. Available from doi: 10.1249/MSS.0000000000000802.
- 3 Department for Food, Environment & Rural Affairs. *Air quality: economic analysis*. Available from: www.gov.uk/guidance/air-quality-economic-analysis.
- 4 Walton H, et al. *Understanding the Health Impacts of Air Pollution in London*. London: King's College London; 2015. Available from: www.london.gov.uk/sites/default/files/HIAinLondon_KingsReport_14072015_final_o.pdf.
- 5 Royal College of Physicians (RCP). *Every breath we take: the lifelong impact of air pollution*. London: RCP; 2016. Available from: www.rcplondon.ac.uk/projects/outputs/every-breath-we-take-lifelong-impact-air-pollution
- 6 World Health Organization (WHO). *Burden of disease from environmental noise: Qualification of health life years lost in Europe*. Geneva: WHO; 2011. Available from: www.euro.who.int/__data/assets/pdf_file/0008/136466/e94888.pdf.
- 7 Van Kempen E, Babisch W. The quantitative relationship between road traffic noise and hypertension: a meta-analysis. *Journal of Hypertension*. 2012;30(6): 1075–86. Available from doi: 10.1097/HJH.0b013e328352ac54.
- 8 Halonen JI, Hansell AL, Gulliver J, et al. Road traffic noise is associated with increased cardiovascular morbidity and mortality and all-cause mortality in London. *European Heart Journal*. 2015;36(39): 2653–2661. Available from doi: 10.1093/eurheartj/ehv216.
- 9 Hansell AL, Blangiardo M, Fortunato L et al. Aircraft noise and cardiovascular disease near Heathrow airport in London: small area study. *BMJ*. 2013;347: f5432. Available from doi: 10.1136/bmj.f5432.
- 10 Gulliver J, Morley D, Vienneau D, et al. Development of an open-source road traffic noise model for exposure assessment. *Environmental Modelling & Software*. 2015;74: 183–193. Available from doi: 10.1016/j.envsoft.2014.12.022.
- 11 Hajat S, Kovats RS, Lachowycz K. Heat-related and cold-related deaths in England and Wales: who is at risk? *Occupational & Environmental Medicine*. 2007;64(2): 93–100. Available from doi: 10.1136/oem.2006.029017.
- 12 Bennett JE, Blangiardo M, Fecht D, Elliott P, Ezzati M. Vulnerability to the mortality effects of warm temperature in the districts of England and Wales. *Nature Climate Change*. 2014;4: 269–73. Available from doi: 10.1038/nclimate2123.
- 13 Mobile Telecommunications and Health Research Programme (MTHR). *MTHR Report 2007*. MTHR; 2007. Available from: www.mthr.org.uk/documents/MTHR_report_2007.pdf.
- 14 Mobile Telecommunications and Health Research Programme (MTHR). *MTHR Report 2012*. MTHR; 2013. Available from: www.mthr.org.uk/documents/MTHRreport2012.pdf.
- 15 Health and Safety Executive (HSE). *Work related Stress, Anxiety and Depression Statistics in Great Britain 2015*. London: HSE, 2015. Available from: www.hse.gov.uk/statistics/causdis/stress/stress.pdf.
- 16 Rushton L, et al. Occupational cancer burden in Great Britain. *British Journal of Cancer*. 2012;107: S3-S7. Available from doi: 10.1038/bjc.2012.112.
- 17 Hutchings S, Cherrie JW, Van Tongeren M, Rushton L. Intervening to Reduce the Future Burden of Occupational Cancer in Britain: What Could Work? *Cancer Prevention Research*. 2012;5: 1213–1222. Available from doi: 10.1158/1940-6207.CAPR-12-0070.
- 18 Nieuwenhuijsen MJ, Grellier J, Smith R, Iszatt N, Bennett J, Best N, Toledano M. The epidemiology and possible mechanisms of disinfection by-products in drinking water. *Philosophical Transactions of the Royal Society A: Mathematical, Physical and Engineering Sciences*. 2009;367(1904): 4043–76. Available from doi: 10.1098/rsta.2009.0116.

The impact of environment on public health: Preventable non-communicable disease

22

- 1 World Health Organization (WHO). *Preventing disease through healthy environments: a global assessment of the burden of disease from environmental risks*. Geneva: WHO; 2016. Available from: http://apps.who.int/iris/bitstream/10665/204585/1/9789241565196_eng.pdf?ua=1.
- 2 Committee on the Medical Effects of Air Pollution (COMEAP). *Long-Term Exposure to Air Pollution: Effect on Mortality*. COMEAP; 2009. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/304667/COMEAP_long_term_exposure_to_air_pollution.pdf.

19 Villanueva CM, Cordier S, Font-Ribera L, Salas LA, Levallois P. Overview of Disinfection By-products and Associated Health Effects. *Current Environmental Health Reports*. 2015;2(1):107–15. Available from doi: 10.1007/s40572-014-0032-x.

20 Department for Food, Environment & Rural Affairs (Defra). *Improving air quality in the UK: Tackling nitrogen dioxide in our towns and cities*. London: Defra; 2016. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/492901/aq-plan-2015-technical-report.pdf

7 Varese F, Smeets F, Drukker M, et al. Childhood Adversities Increase the Risk of Psychosis: A Meta-analysis of Patient-Control, Prospective and Cross-sectional Cohort Studies. *Schizophr Bull*. 2012;38(4): 661–671. Available from doi: 10.1093/schbul/sbs050

8 Pontin E, Schwannauer M, Tai S, Kinderman P. A UK validation of a general measure of subjective well-being: the modified BBC subjective well-being scale (BBC-SWB). *Health and Quality Life Outcomes*. 2016; 11: 150. Available from doi: 10.1186/1477-7525-11-150.

9 Attwood K. Pioneering homelessness hostel uses on-site psychologists to treat addicts – and enjoys a successful first year. *The Independent*. 25 January 2015. Available from: <http://www.independent.co.uk/life-style/health-and-families/health-news/pioneering-homelessness-hostel-uses-on-site-psychologists-to-treat-addicts-and-enjoys-a-successful-1000838.html>.

10 Taylor-Robinson D. *Bigger cuts to local authority budgets in the most deprived areas are likely to widen health inequalities*. British Politics and Policy at LSE. Available from: http://eprints.lse.ac.uk/35546/1/blogs.lse.ac.uk-Bigger_cuts_to_local_authority_budgets_in_the_most_deprived_areas_are_likely_to_widen_health_inequali.pdf.

11 Kinderman P. *A Prescription for Psychiatry: Why We Need a Whole New Approach to Mental Health and Wellbeing*. London: Palgrave Macmillan; 2014.

12 Bellis MA, Ashton K, Hughes K, et al. *Adverse Childhood Experiences and their impact on health-harming behaviours in the Welsh adult population*. Cardiff: Public Health Wales NHS Trust; 2015. Available from: <http://www.cph.org.uk/wp-content/uploads/2016/01/ACE-Report-FINAL-E.pdf>.

Moving upstream: The wider determinants of health 24

1 Marmot M. *Fair Society, Healthy Lives: The Marmot Review*. London: The Marmot Review, 2010. Available from: www.instituteofhealthequity.org/Content/FileManager/pdf/fairsocietyhealthylives.pdf.

2 Office for National Statistics (ONS). *Life Expectancy at Birth and at Age 65 by Local Areas in England and Wales: 2012 to 2014*. London: ONS, November 2015. Available from: www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/bulletins/lifeexpectancyatbirthandage65bylocalareasinenglandandwales/previousReleases.

3 Joe's story is a composite based on six years' experience of supporting specialist Pathway homeless health teams in hospitals across the UK. Pathway is currently midway through a two-year study of end of life care for homeless people.

4 See the work of Professor Dennis Culhane, University of Pennsylvania. For example: his presentation at the 4th International Homeless & Inclusion Health Symposium, London, 2016. Available from: www.homelessnessandhealth.co.uk/events/event-01/babybooms-recessions-long-term-homelessness.

Creating a more humane society: Preventing psychological health problems and promoting genuine wellbeing 26

1 Kinderman P. Why are governments interested in our wellbeing? *World Economics Forum*. 2015. Available from: www.weforum.org/agenda/2015/09/why-are-governments-interested-in-our-wellbeing.

2 Mental Health Task Force. *The Five Year Forward View for Mental Health*. London: Mental Health Task Force; 2016. Available from: www.england.nhs.uk/wp-content/uploads/2016/02/Mental-Health-Taskforce-FYFV-final.pdf.

3 World Health Organization (WHO). *Social Determinants of Health: The Solid Facts. Second edition*. Geneva: WHO; 2003. Available from: www.euro.who.int/__data/assets/pdf_file/0005/98438/e81384.pdf.

4 Kinderman P, Tai S, Chaudhry S, et al. *Psychological health and well-being: A new ethos and a new service structure for mental health*. Leicester: British Psychological Society; 2009. Available from: www.bps.org.uk/sites/default/files/images/psychological_health_and_well-being_-_a_new_ethos_for_mental_health.pdf.

5 Dahlgren G, Whitehead M. *Policies and strategies to promote social equity in health*. Stockholm: Institute for Future Studies; 1991. Available from: www.euro.who.int/__data/assets/pdf_file/0018/103824/E89384.pdf.

6 Bentall R. Mental illness is a result of misery, yet still we stigmatise it. *The Guardian*. 26 February 2016. Available from: www.theguardian.com/commentisfree/2016/feb/26/mental-illness-misery-childhood-traumas.

How we can help children to learn to be well 28

1 PHSE Association. *Personal, Social, Health and Economic (PHSE) education – a curriculum for life: The case for statutory status*. PHSE Association; 2016. Available from: www.naht.org.uk/_resources/assets/attachment/full/0/48391.pdf.

2 Manning J, Paxman J. *Head of Wellbeing: An essential post for secondary schools?* 2020health; 2015. Available from: www.2020health.org/2020health/Publications/Publications-2015/Head-of-Wellbeing.html.

3 National Institute for Health and Care Excellence (NICE). Social and emotional wellbeing for children and young people. NICE; 2013. Available from: www.nice.org.uk/advice/lgb12/chapter/introduction.

4 See: www.schoolfoodmatters.com.

5 See: www.magicbreakfast.com.

6 See: <http://farmsforcitychildren.org>.

7 The Children's Commissioner for England, Lightning Review: Access to Child and Adolescent Mental Health Services, May 2016. Available from: www.childrenscommissioner.gov.uk/sites/default/files/publications/Children%27s%20Commissioner%27s%20Mental%20Health%20Lightning%20Review.pdf.

8 Statham J, Chase E. Childhood Wellbeing: A brief overview. Childhood Wellbeing Research Centre; 2010. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/183197/Child-Wellbeing-Brief.pdf.

9 The Children's Society, The Good Childhood Report, 2015. Available at: www.childrensociety.org.uk/sites/default/files/TheGoodChildhoodReport2015.pdf

- 1 Marmot M, Bell R. Fair society, healthy lives. *Public Health*. 2012;126: S4–S10. Available from doi: 10.1016/j.puhe.2012.05.014.
- 2 The Good Work Commission. *What is good work?* Available from: www.goodworkcommission.co.uk/About.
- 3 Black C. *Working for a healthier tomorrow: Dame Carol Black's Review of the health of Britain's working age population*. London: TSO; 2008. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/209782/hwwb-working-for-a-healthier-tomorrow.pdf.
- 4 Waddell G, Burton K. *Is work good for your health and well-being?* London: The Stationery Office; 2006. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/214326/hwwb-is-work-good-for-you.pdf.
- 5 Black C, Frost D. *Health at work – an independent review of sickness absence*. London: The Stationery Office; 2011. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/181060/health-at-work.pdf.
- 6 Based on data from: National Centre for Social Research, University of Leicester. *Adult Psychiatric Morbidity Survey, 2007*. Third edition. London: UK Data Service; 2011. Available from: <http://discover.ukdataservice.ac.uk/catalogue/?sn=6379&type=Data%20catalogue#variables>.
- 7 The NHS Information Centre for health and social care. *Adult psychiatric morbidity in England, 2007: Results of a household survey*. London: The Health & Social Care Information Centre; 2009.
- 8 Author's own calculations based on 5% sample of administrative data and the Work and Pensions Longitudinal Study, available from the DWP tabulation tool: <http://83.244.183.180/5pc/tabtool.html>. Note: Incapacity Benefit, Sever Disablement Allowance and Employment and Support Allowance claimants are included.
- 9 Mental Health Taskforce, 2016 available at www.england.nhs.uk/mentalhealth/taskforce/ (accessed April, 2016).
- 10 Zheltoukhova K, O'Dea L, Bevan S. *Taking the strain: The impact of musculoskeletal disorders on work and home life*. Lancaster: The Work Foundation, Lancaster University; 2012. Available from: www.theworkfoundation.com/DownloadPublication/Report/326_FFW%20UK%20survey%20FINAL.pdf.
- 11 Office for National Statistics (ONS). *Sickness Absence in the Labour Market*. London: ONS; 2014. Available from: www.ons.gov.uk/employmentandlabourmarket/peopleinwork/employmentandemployeetypes/datasets/sicknessabsenceinthelabourmarket.
- 12 van Stolk C. *Impact of the recession on age management policies*. Dublin: European Foundation for the Improvement of Living and Working Conditions; 2011. Available from: www.eurofound.europa.eu/sites/default/files/ef_files/pubdocs/2011/75/en/4/EF1175EN.pdf.
- 13 Department for Work and Pensions (DWP). *Older People's Day: 1 million in work over 65: 3 years since end of default retirement age*. Available from: www.gov.uk/government/news/older-peoples-day-1-million-in-work-over-65-3-years-since-end-of-default-retirement-age.
- 14 This is also emphasised in a recent report by the Confederation of British Industry (CBI). *Getting Better: Workplace Health as a Business Issue*. London: CBI; 2014. Available from: www.cbi.org.uk/media/2727613/getting-better.pdf.
- 15 van Stolk C, Hofman J, Hafner M, Janta B. *Psychological Wellbeing and Work: Improving Service Provision and Outcomes*. Santa Monica, CA: RAND Europe; 2014. Available from: www.rand.org/pubs/research_reports/RR407.html.

- 16 Hafner M, van Stolk C, Saunders C, et al. *Health, wellbeing and productivity in the workplace: A Britain's Healthiest Company summary report*. Santa Monica, CA: RAND Europe; 2015. Available from: www.rand.org/pubs/research_reports/RR1084.html.
- 17 National Institute for Health and Care Excellence (NICE). *Workplace health: policy and management practices*. London: NICE; 2015. Available from: www.nice.org.uk/guidance/ng13.
- 18 Mattke S, Liu H, Caloyeras JP, et al. *Workplace Wellness Programs Study: Final Report*. Santa Monica, CA: RAND Corporation; 2013. Available from: www.rand.org/content/dam/rand/pubs/research_reports/RR200/RR254/RAND_RR254.sum.pdf.
- 19 See: Fit for Work. Available from: <http://fitforwork.org>.

Interventions and policies to change behaviour: What is the best approach?

- 1 Department of Health. *Living Well for Longer: National Support for Local Action to Reduce Premature Avoidable Mortality*. London: Department of Health; 2014. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/307703/LW4L.pdf.
- 2 National Institute for Health and Clinical Excellence (NICE). *Behaviour change at population, community and individual levels*. London: NICE; 2007. Available from: www.nice.org.uk/guidance/ph6.
- 3 National Institute for Health and Clinical Excellence (NICE). *Behaviour change: individual approaches*. London: NICE; 2007. Available from: www.nice.org.uk/guidance/ph49.
- 4 Bouton ME. Why behaviour change is difficult to sustain. *Preventive Medicine*. 2014;68: 29–36. Available from doi: 10.1016/j.ypmed.2014.06.010.
- 5 Michie S, van Stralen MM, West R. The Behaviour Change Wheel: a new method for characterising and designing behaviour change interventions. *Implementation Science*. 2011;6(42): 42. Available from doi: 10.1186/1748-5908-6-42.
- 6 Davis R, et al. Theories of behaviour and behaviour change across the social and behavioural sciences: a scoping review. *Health Psychology Review*. 2015;9(3): 323–344. Available from doi: 10.1080/17437199.2014.941722.
- 7 Michie S, et al. *ABC of behaviour change theories*. Croydon: Silverback publishing; 2014.
- 8 Craig P, et al. Developing and evaluating complex interventions: the new Medical Research Council guidance. *BMJ*. 2008;337: a1655. Available from doi: 10.1136/bmj.a1655.
- 9 Michie S, Atkins L, West R. *The Behaviour Change Wheel: a guide to designing interventions*. Croydon: Silverback Publishing; 2014.
- 10 Michie S, et al. The Behavior Change Technique Taxonomy (v1) of 93 hierarchically clustered techniques: building an international consensus for the reporting of behavior change interventions. *Annals of Behavioral Medicine*. 2013;46(1): 81–95. Available from doi: 10.1007/s12160-013-9486-6.
- 11 Michie S, et al. Behaviour change techniques: the development and evaluation of a taxonomic method for reporting and describing behaviour change interventions (a suite of five studies involving consensus methods, randomised controlled trials and analysis of qualitative data). *Health Technology Assessment*. 2015;19(99): 1–188. Available from doi: 10.3310/hta19990.

- 12 Brown J, et al. How effective and cost-effective was the national mass media smoking cessation campaign 'Stoptober'? *Drug and Alcohol Dependence* 2014;135(100): 52–8. Available from doi: 10.1016/j.drugalcdep.2013.11.003.
- 13 Owen L, Morgan A, Fischer A, et al. The cost-effectiveness of public health interventions. *Journal of Public Health Advance Access*, 2012; 34(1): 37–45. Available from doi: 10.1093/pubmed/fdr075.
- 14 Department of Health. Healthy Lives, Healthy People: A Tobacco Control Plan for England. London: Department of Health; 2014. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/213757/dh_124960.pdf.
- 15 Action on Smoking and Health (ASH). The Local Cost of Tobacco. London: ASH; 2015. Available from: <http://ash.org.uk/localtoolkit/docs/Reckoner.xls>.
- 16 West R. The clinical significance of 'small' effects of smoking cessation treatments. *Addiction*. 2007;102(4): 506–509. Available from doi: 10.1111/j.1360-0443.2007.01750.x.
- 17 Asaria P, Chisholm D, Mathers C, et al. Chronic disease prevention: health effects and financial costs of strategies to reduce salt intake and control tobacco use. *The Lancet*. 2007;370(9604): 2044–53. Available from doi: 10.1016/S0140-6736(07)61698-5.
- 18 Angus C, Latimer N, Preston L, et al. What are the implications for policy makers? A systematic review of the cost-effectiveness of screening and brief interventions for alcohol misuse in primary care. *Frontiers in Psychiatry*. 2014;5: 114. Available from doi: 10.3389/fpsy.2014.00114.
- 19 Laramée P, Brodtkorb TH, Rahhali N, et al. The cost-effectiveness and public health benefit of nalmefene added to psychosocial support for the reduction of alcohol consumption in alcohol-dependent patients with high/very high drinking risk levels: a Markov model. *BMJ Open*. 2014;4(9): e005376. Available from doi: 10.1136/bmjopen-2014-005376.
- 20 Ownby R, et al. Cost effectiveness of computer-delivered intervention to improve HIV medication adherence. *BMC Medical Informatics and Decision Making* 2013;13: 29. Available from doi: 10.1186/1472-6947-13-29.
- 21 Ito K, Shrank WH, Patrick AR, et al. Comparative cost-effectiveness of interventions to improve medication adherence after myocardial infarction. *Health Services Research*. 2012;47(6): 2097–117. Available from doi: 10.1111/j.1475-6773.2012.01462.x.
- 22 Hallsworth M, Chadborn T, Sallis A, et al. Provision of social norm feedback to high prescribers of antibiotics in general practice: a pragmatic national randomised controlled trial. *The Lancet*. 2016;387(10029): 1743–52. Available from doi: 10.1016/S0140-6736(16)00215-4.
- 4 Jenkins LM, Bramwell D, Coleman A, et al. Integration, influence and change in public health: findings from a survey of Directors of Public Health in England. *Journal of Public Health*. 2015. Available from doi: 10.1093/pubmed/fdv139.
- 5 See: www.england.nhs.uk/ourwork/futurenhs/deliver-forward-view/stp.
- 6 Local Government Association (LGA). *Update on NHS Policy Announcements and Supporting Joint Working*. London: LGA; 2016. Available from: <http://lga.moderngov.co.uk/documents/s9218/Update%20on%20NHS%20Policy%20Announcements%20and%20Supporting%20Joint%20Working.pdf>.
- 7 Holder H, Robertson R, Naylor C, et al. *Has clinical commissioning found its voice? GP perspectives on their CCGs*. The King's Fund; 2016. Available from: www.kingsfund.org.uk/audio-video/gp-perspectives-ccg
- 8 Thomas R. Survey: Commissioners lack faith in HWBs to deliver change. *HSJ*. 3 March 2016. Available from: www.hsj.co.uk/sectors/commissioning/survey-commissioners-lack-faith-in-hwbs-to-deliver-change/7002881.article.
- 9 Manchester City Council. *Unique public health agreement in latest wave of health and care devolution*. 10 July 2015. Available from: www.manchester.gov.uk/news/article/7208/unique_public_health_agreement_in_latest_wave_of_health_and_care_devolution
- 10 Local Government Association (LGA). *Health and Wellbeing Board priorities and good practice across England*. Available from: www.local.gov.uk/health-and-wellbeing-boards/-/journal_content/56/10180/6111055/ARTICLE

The economic case for preventing ill health 38

- 1 Newton JN, et al. Changes in health in England, with analysis by English regions and areas of deprivation, 1990–2013: a systematic analysis for the Global Burden of Disease Study 2013. *The Lancet*. 2015;386: 2257–74. Available from doi: 10.1016/S0140-6736(15)00195-6.
- 2 Faculty of Public Health. *UK Faculty of Public Health response to the Department of Health consultation on Local authority public health allocations 2015-2016*. 2015. Available from: www.fph.org.uk/uploads/Department%20of%20Health%20Consultation%20on%20Local%20Authority%20Spending.pdf.
- 3 NHS. *Five year forward view*. London: NHS; 2014. Available from doi: www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf.
- 4 Roberts A, Marshall L and Charlesworth A. *NHS funding pressures in a decade of austerity*. London: Nuffield Trust; 2012. Available from: www.nuffieldtrust.org.uk/publications/decade-austerity-funding-pressure-facing-nhs.
- 5 Scarborough et al. The economic burden of ill health due to diet, physical inactivity, smoking, alcohol and obesity in the UK: an update to 2006–07 NHS costs. *Journal of Public Health*. 2011;33(4): 527–535. Available from doi: 10.1093/pubmed/fdr033.
- 6 Public Health England (PHE). *Local action on health inequalities: Understanding the economics of investments in the social determinants of health*. London: PHE; 2014. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/356051/Briefing9_Economics_of_investments_health_inequalities.pdf.
- 7 The Health Foundation/The Nuffield Trust/The King's Fund. *The Spending Review: what does it mean for health and social care?* December 2015. Available at: http://www.health.org.uk/sites/default/files/Spending-Review-Nuffield-Health-Kings-Fund-December-2015_spending_review_what_does_it_mean_for_health_and_social_care.pdf

Health and wellbeing boards: Glass half full or half empty? 36

- 1 Association of Directors of Public Health (ADPH). *Submission to Spending Review 2015*. ADPH; 2015. Available from: www.adph.org.uk/wp-content/uploads/2015/09/ADPH-submission-2015-Spending-Review.pdf.
- 2 Humphries R, Galea A, Sonola L, Mundle C. *Health and wellbeing boards: System leaders or talking shops?* London: The King's Fund; 2012. Available from: www.kingsfund.org.uk/publications/health-and-wellbeing-boards.
- 3 House of Commons. *Oral evidence: Public health post-2013 – structures, organisation, funding and delivery, HC 569*. 1 March 2016. Available from: <http://data.parliament.uk/writtenevidence/committeeevidence.svc/evidencedocument/health-committee/public-health-post2013-structures-organisation-funding-and-delivery/oral/30079.html>.

- 8 Owen et al. The cost-effectiveness of public health interventions. *Journal of Public Health*. 2011;34(1): 37–45. Available from doi: 10.1093/pubmed/fdr075.
- 9 Richardson A. Investing in public health: barriers and possible solutions. *Journal of Public Health*. 2012: 1–6. Available from doi: 10.1093/pubmed/fds039.
- 10 World Health organization (WHO). *The Economics of Social Determinants of Health and Health Inequalities: a resource book*. Geneva: WHO; 2013. Available from: http://apps.who.int/iris/bitstream/10665/84213/1/9789241548625_eng.pdf?ua=1&ua=1.
- 11 Griffith R, et al. *Using taxation to reduce sugar consumption: IFS Briefing Note BN180*. London: IFS; 2016. Available from: www.ifs.org.uk/uploads/publications/bns/BN180.pdf.
- 12 Glantz S, Gonzalez M. Effective tobacco control is key to rapid progress in reduction of non-communicable diseases. *The Lancet*. 2012;379(9822): 1269–1271. Available from doi: 10.1016/S0140-6736(11)60615-6.
- 13 Buck D, Gregory S. *Improving the public's health: A resource for local authorities*. London: The King's Fund; 2013. Available from: www.kingsfund.org.uk/sites/files/kf/field/publication_file/improving-the-publics-health-kingsfund-dec13.pdf.
- 14 Craig N. *Best preventative investments for Scotland – what the evidence and experts say*. NHS Health Scotland; 2014. Available from: www.healthscotland.com/uploads/documents/24575-Best%20Preventative%20Investments%20For%20Scotland%20-%20What%20The%20Evidence%20And%20Experts%20Say%20Dec%202014.pdf.
- 7 Office for National Statistics (ONS). *Life expectancy at birth and at age 65 by local areas in England and Wales: 2012 to 2014*. London: ONS; 2015. Available from: www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/lifeexpectancies/bulletins/lifeexpectancyatbirthandage65bylocalareasinenglandandwales/previousReleases.
- 8 Timmins N, Davies E. *Glaziers & window breakers: The role of the Secretary of State for Health, in their own words*. London: The Health Foundation; 2015. Available from: www.health.org.uk/sites/default/files/GlaziersAndWindowBreakers.pdf.
- 9 World Health Organization (WHO). *Health in All Policies: Seizing opportunities, implementing policies*. Geneva: WHO; 2013. Available from: www.euro.who.int/__data/assets/pdf_file/0007/188809/Health-in-All-Policies-final.pdf.
- 10 Campbell C. Doctors dismayed as public health committee is scrapped. *The Guardian*. 8 November 2012. Available from: www.theguardian.com/politics/2012/nov/08/doctors-dismay-public-health-committee.
- 11 Department for Work and Pensions (DWP). *Housing Benefit: Under occupation of social housing*. DWP; Updated 28 June 2012. Available from: www.gov.uk/government/uploads/system/uploads/attachment_data/file/214329/social-sector-housing-under-occupation-wr2011-ia.pdf.
- 12 What Works Wellbeing. Available from: <https://whatworkswellbeing.org>.
- 13 Centre for Ageing Better. Available from: www.ageing-better.org.uk.
- 14 Welsh Government. *How to measure a nation's progress? National Indicators for Wales*. Welsh Government; 2016. Available from: <http://gov.wales/docs/desh/publications/160316-national-indicators-to-be-laid-before-nafw-en.pdf>.
- 15 Salzburg Global Seminar. *Hooked on Health Care: Designing Strategies for Better Health*. Available from: www.salzburgglobal.org/calendar/2010-2019/2016/session-559.html.
- 16 Lavizzo-Mourey R. A Bird's Eye View. Robert Wood Johnson Foundation; 2014. Available from: www.rwjf.org/en/library/annual-reports/presidents-message-2014.html.
- 17 The Treasury. *The Role of Data in Social Investment*. New Zealand Government; 2016. Available from: www.treasury.govt.nz/statesector/socialinvestment/data.
- 18 NHS England. *The Five Year Forward View*. London: NHS England; 2014. Available from: www.england.nhs.uk/wp-content/uploads/2014/10/5yfv-web.pdf.

Could government do more to consider the impact on health of wider policy? 40

- 1 The Health Foundation. *Health Foundation responds to government's Spending Review*. 25 November 2015. Available from: www.health.org.uk/news/health-foundation-responds-government%E2%80%99s-spending-review.
- 2 Quigley A. *Maintaining pride in the NHS: The challenge for the new NHS Chief Exec*. Weblog; 8 May 2014. Available from: www.ipsos-mori.com/newsevents/blogs/makingsenseofsociety/1553/Maintaining-pride-in-the-NHS-The-challenge-for-the-new-NHS-Chief-Exec.aspx.
- 3 Preamble to the Constitution of the World Health Organization (WHO) as adopted by the International Health Conference, New York, 19–22 June, 1946; signed on 22 July 1946 by the representatives of 61 States (Official Records of the WHO, no 2, p100) and entered into force on 7 April 1948.
- 4 Marmot M. *Fair Society, Healthy Lives: The Marmot Review*. London: The Marmot Review; 2010. Available from: www.instituteofhealthequity.org/Content/FileManager/pdf/fairsocietyhealthylives.pdf.
- 5 World Health Organization (WHO). *Closing the gap in a generation: Health equity through action on the social determinants of health*. Geneva: World Health Organization; 2008. Available from: http://apps.who.int/iris/bitstream/10665/43943/1/9789241563703_eng.pdf.
- 6 Black D, Morris J, Smith C, Townsend P. *Inequalities in health: report of a research working group*. London: Department of Health and Social Security; 1980. Available from: www.sohealth.co.uk/resources/public-health-and-wellbeing/poverty-and-inequality/the-black-report-1980.

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ABOUT THE ALL-PARTY PARLIAMENTARY HEALTH GROUP

The All-Party Parliamentary Health Group (APHG) was launched in November 2001 and it is a group dedicated to disseminating knowledge, generating debate and facilitating engagement with health issues amongst Members of Parliament.

The APHG comprises parliamentarians of all political parties and both Houses and its remit is to provide Members of Parliament with high quality and impartial information and to inform them about the key health issues of the day, often debated in Parliament and affecting MPs' constituents. We are recognised as one of the preferred sources of information on health in Parliament.

The APHG is very grateful to be able to draw on the invaluable expertise of Parliamentarian, and senior figures in the public, private and voluntary sectors. Our agenda is set by our all-party team of elected Parliamentary Officers, in consultation with our distinguished advisory panel, and our work is delivered by a small, dedicated secretariat.

We inform and engage parliamentarians through the organisation of seminars on topical health issues at Westminster and also provide parliamentarians and other stakeholders with a Daily Health Bulletin, in addition to a Weekly parliamentary E-Bulletin, containing essential information on health policy developments in Westminster, Whitehall and the wider health sector.

The APHG is financially supported by a membership of 15 of the UK's leading companies working in the health sector, who, as well as providing an independent source of funding, offer a valuable insight into developments in the wider health care community in the UK.

The APHG is part of the Policy Connect Network, a NFP Social Enterprise group of 18 all-party groups, forums and commissions.

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ABOUT THE HEALTH FOUNDATION

The Health Foundation is an independent charity committed to bringing about better health and health care for people in the UK.

Our aim is a healthier population, supported by high quality health care that can be equitably accessed. We learn what works to make people's lives healthier and improve the health care system. From giving grants to those working at the front line to carrying out research and policy analysis, we shine a light on how to make successful change happen.

We make links between the knowledge we gain from working with those delivering health and health care and our research and analysis. Our aspiration is to create a virtuous circle, using what we know works on the ground to inform effective policymaking and vice versa.

We believe good health and health care are key to a flourishing society. Through sharing what we learn, collaborating with others and building people's skills and knowledge, we aim to make a difference and contribute to a healthier population.





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