POLICY BRIEFING

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How to save the NHS:
get serious about primary prevention

Jessica Jenkins, Darren Hilliard, Rachel Carter and Hugo Harper

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Key points

Despite spending more than ever on health the UK is getting sicker. Since 2010, the number of years a person can expect to live without illness has decreased. The impacts of this are clear – with waitlists for NHS treatment and economic inactivity at all-time highs and benefit spending growing rapidly. The Health Foundation projects nearly 25% more working-age adults will have a diagnosed major illness like chronic pain or diabetes in 2040.

Based on planned (and promised) health spending increases, the gap between illness and treatment will grow increasingly wide, with severe consequences for the NHS and the economy. The next government must put an end to worsening population health or face either a much larger health bill or much worse economic outcomes.

Projections indicate *stopping* the growth in chronic conditions (over and above ageing) could avoid cumulative health spending growth in the order of £70 billion by 2030, or nearly £500 billion by 2040, in addition to significant productivity gains and averted benefit spending. Going further, achieving *reductions* in current levels of illness could see reductions in cost growth that could offset other increases in health spending, like new technologies or pay increases. This should be possible – we've had lower levels of illness before and many conditions are reversible.

Preventing illness will be critical and, with tight restraints on government spending, *primary* prevention provides the best return on investment. On average, primary prevention is 4 times more cost-effective than treatment. System level changes are an even lower cost way to achieve high impact, with some interventions more than 20 times more cost-effective than treatment. The UK has deployed system change with huge success before by slashing smoking – successive government action to alter tobacco markets and support smoking cessation has saved the UK tens of billions in averted NHS costs and productivity losses, and prevented unknown suffering.

The next government should move urgently on population health, starting with obesity. Closing the illness gap will take time, ambition and political commitment. The next government must get to work immediately**.** Picking up and treating illness early (secondary prevention) and managing illness to soften its long-term impact (tertiary prevention) will no doubt be necessary, but, without serious action on primary prevention, it won't be sufficient – the alternative is not affordable.

How to save the NHS: get serious about primary prevention

The NHS will face an unsustainable sickness burden in the coming decades. The next government can beat it by getting serious about primary prevention.

With the general election looming, political focus is firmly on health. The NHS is a system in crisis, and parties are making big promises as to what they'll do to save it. With 1 in every 10 Brits currently waiting for NHS treatment, it's no surprise these promises begin with cutting waits.

But the elephant in the room is what's actually *possible* for the health system, given financial constraints and broader trends in population health.

The next government can change the UK's health trajectory within tight fiscal constraints, but only by tackling worsening population health trends head-on.

Despite spending more than ever on health, the UK is getting sicker.

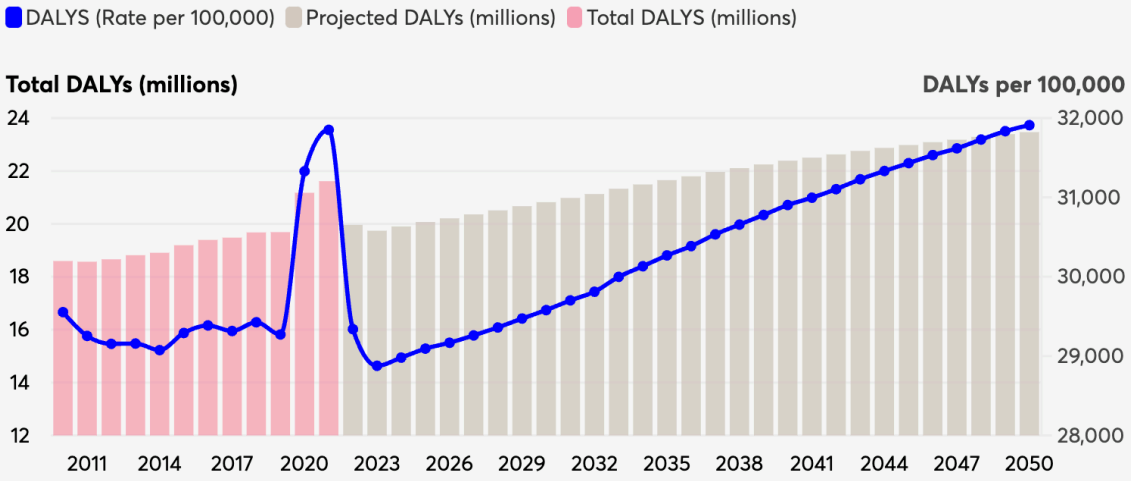
By the end of 2023, the UK was spending £211 billion on health services annually, with health spending growing faster than any other public spending area. Health accounts for 20% of total government spending, and 8% of GDP – a greater share than ever before, except for during the pandemic. At the same time, NHS waiting lists have grown to an all-time high of 7.5 million, and long-term sickness is seeing 2.8 million people of working age economically inactive.

Historic waiting lists and economic inactivity are the acute symptoms of a chronic problem – the UK's growing burden of ill health. Over 20 million people in the UK, almost one-third of the population, have a muscular-skeletal condition such as arthritis or back pain. 5.6 million people are living with diabetes, a figure that is growing rapidly. And more than 3 million people are living with cancer.

Even before the pandemic, the number of people living with a single chronic condition was growing by 4% a year, and the number living with multiple chronic conditions was growing by over 8% a year – far outstripping population growth.

The burden of illness in the UK is growing in both absolute and per-capita terms

The overall burden of disease is assessed using the disability-adjusted life year (DALY), a measure that combines years of life lost due to premature mortality and years of life lost due to time lived in states of less than perfect health. One DALY represents the loss of the equivalent of one year of perfect health.



Source: Global Burden of Disease, WHO

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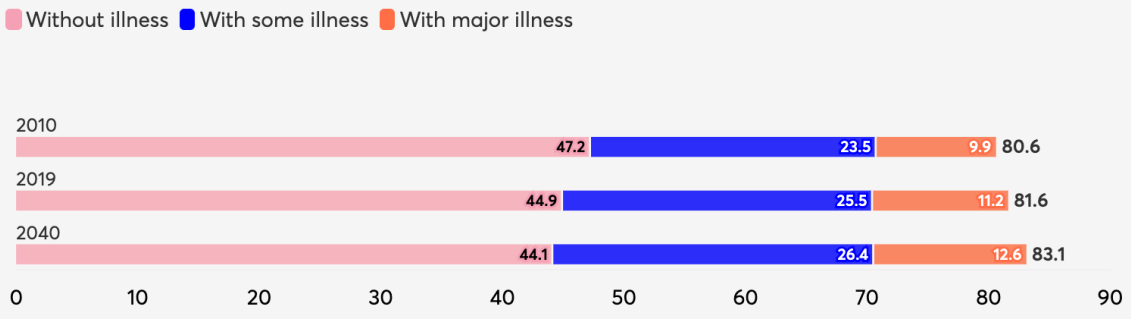
Life expectancy statistics evidence this gloomy reality. Since 1993, life expectancy has increased by 5 years. However, the number of years a person can expect to live without illness is *decreasing*, meaning considerably longer periods spent in ill health. These averages also mask stark inequalities: there is a ten-year difference in illness-free life expectancy between the 10% most and 10% least deprived areas of the UK.

The time a person can expect to live without illness is shrinking



Source: Health Foundation, Health in 2040

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This worrying trend in increased morbidity (that is, the likelihood of illness at a population level) is becoming known as 'generational health drift'. Thanks to longitudinal analysis of British birth cohort study data, we now know that more recently born generations experience the onset of conditions at younger ages, meaning more people are spending more time in ill health. Children are getting heavier and sicker, with particular increases in non-communicable conditions like diabetes, asthma, and common mental disorders in older age. Younger birth cohorts are also experiencing higher rates of *multimorbidity (the presence of two or more long-term health conditions)* in mid-life, with a third of adults experiencing midlife multi-morbidity and being hospitalised at an increasingly young age.

This rapid generational health drift, and its emergence across all generations simultaneously, *cannot* be explained by genetic changes or mutations. Instead, UCL's Centre for Longitudinal Studies argues this drift reflects social and environmental influences on health.

This isn't good news for the coming decades. Based on historic growth rates, the Health Foundation projects a 33% increase in cancer, a 36% increase in chronic pain, a 53% increase in diabetes and a 95% increase in heart failure by 2040.

On these trends, nearly 25% more working-age adults will have a diagnosed major illness like chronic pain or diabetes in 2040, with potentially devastating impacts for their labour market participation (with a much greater likelihood of illness if they come from a deprived area).

And if generational health drift continues to see earlier onset of conditions and increased prevalence across the population, these projections could get *worse*.

Keeping pace with increasing health needs will be a significant fiscal challenge. If current trends continue, the gap between illness and treatment will grow increasingly wide, with severe consequences for the NHS and the economy.

Health spending is driven by a complex mixture of factors, including:

- population need (a product of population growth, ageing, and health, including increasing rates of chronic conditions),
- non-demographic demand pressures, and
- inflation (including wage pressures and other cost pressures).

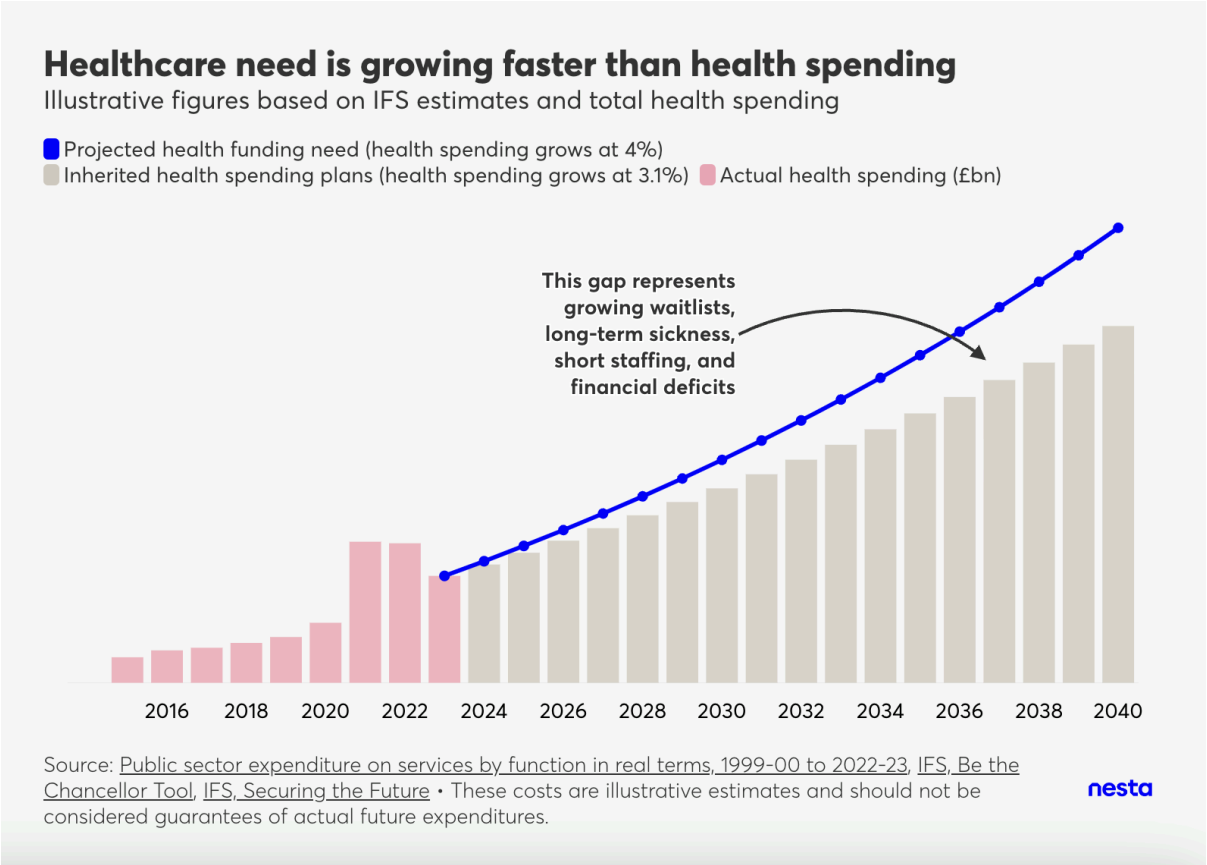
This is often called 'bottom-up' spending pressure, and it indicates the funding increase needed *before* any improvements in service quality or capacity – for example, funding new medicines or upgrading hospital infrastructure.

This bottom-up pressure means around 4% real growth is required each year to deliver the *same* service levels, of which around a quarter of growth is due to increasing chronic conditions:

- In 2018, the Institute for Fiscal Studies and Health Foundation estimated that, due to these bottom-up pressures, it would cost 4.4% more each year in real terms to provide NHS hospital services at 2015/16 levels without any productivity improvements. Increasing chronic conditions, over and above population growth and ageing, accounted for over a quarter of this growth, at 1.2% (The IFS considered this estimate likely to reflect the *minimum* impact of illness.)
- More recently, the Health Foundation has released new figures calling for an average annual increase in NHS funding of 3.8% in real terms over the next ten years (or 4.7% if excluding assumed productivity growth of 0.9%) for an 'improved scenario', or 3.5% annual growth for a 'minimal change' scenario (excluding assumed productivity gains of 0.6%).

What is actually spent on health is typically a question of 'top-down' factors, including what's affordable for the government based on tax revenue and debt levels, and priorities across other areas of government. Since 2000, increases have averaged 3.3% in real terms (excluding COVID-related spending), and the next government will inherit health spending plans of 3.1% real annual growth over coming years.

The gap between health system need and health system funding (which determines health service provision) has various consequences – from long-term sickness and waitlists to NHS deficits and understaffing. And if population health need continues to grow more quickly than health service provision, this 'illness gap' will grow even wider.



The emerging 'illness gap' leaves our next government with tough choices.

1. Accept the population getting much sicker, with impacts for waiting lists and economic inactivity;
2. Accept spending much more on treating sickness, with impacts on other areas of government spending or revenue; or
3. Stop these trends in their tracks by addressing the drivers of worsening health

Political promises are currently focusing on closing the illness gap by increasing hospital activity and health system funding to treat growing illness, with costs to be offset by productivity measures.

There's no doubt increasing spending is part of the solution. But closing the gap through increased funding alone, even if offset by productivity gains, is both *inefficient* and *inequitable* compared to preventing worsening health.

- It's *inefficient*, because of the dramatic differences in the cost of *preventing* and *treating* illness. The cost of achieving an additional year in good health (QALY) through treatment is approximately 3.5 times the cost of an additional QALY through prevention, due to high incremental costs of new technologies (whereas public health interventions tend to have lower incremental costs per person due to relatively low intervention costs, shared between a large group of people).
- It's also *inequitable* because of the higher rates of illness among more deprived communities, and a postcode lottery for NHS services that underserves certain communities. If we allow illness trends to continue, with disproportionate impacts for deprived groups, and with flow on impacts for labour market participation, we will see inequalities grow even wider.

Moreover, without stopping (or slowing) the rapid rise in poor health, keeping pace with illness is unlikely to be a viable long-term choice for any future Government. No manifesto, from any political party, has committed to increasing funding to match projected health spending needs, and even if the NHS can deliver long-run average productivity growth (noting significant productivity challenges at present), productivity gains will likely still be insufficient to offset the fiscal impacts of worsening population health.

This means we must either accept a sicker population, with a healthcare system that is unable to service it or stop these trends in their tracks.

The next government must put an end to worsening health.

With the increasing sickness burden driving health spending growth, what matters for the next government is moving the dial on healthy life expectancy: *growing* the years spent in good health, and *reducing* the years spent in ill health.

Reducing the growth in chronic conditions could avoid tens of billions in increased health spending by 2030, and hundreds of billions by 2040.

The following scenarios provide a sense of the magnitude of the savings available by taking prevention seriously:

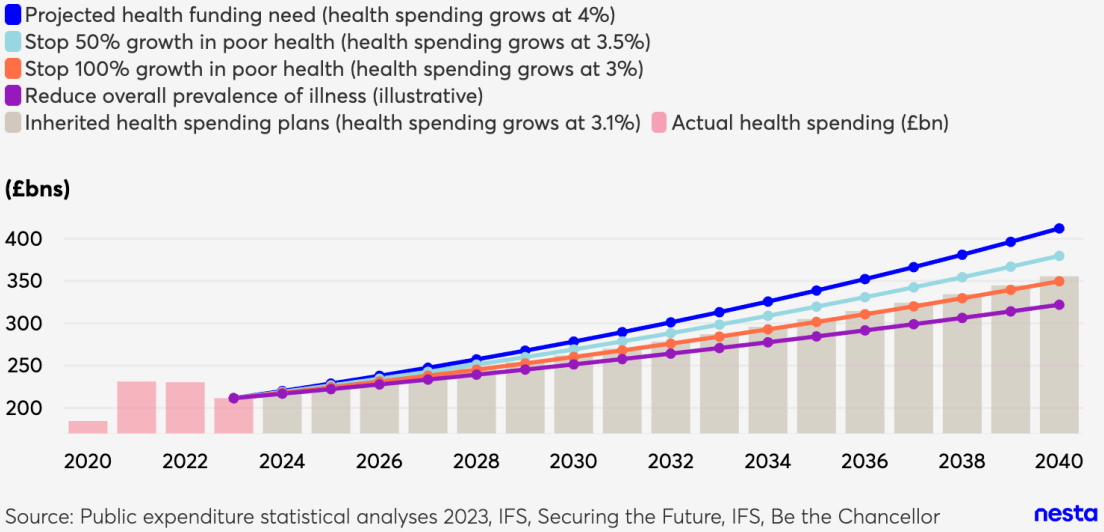
Using rounded estimates from the IFS – 4% real annual increases to meet bottom-up pressure (that is, the increase required *before* any real improvements in services), including a quarter – 1% is for increasing chronic conditions over and above demographic change (considered a conservative estimate), we find:

- By *stopping the growth* in chronic conditions entirely – i.e. holding the prevalence of illness where it is today – we could avoid total health spending growth of around **£500 billion** by 2040;
- But even by *halving* the growth of chronic conditions (to 0.5% annually), we could avoid total health spending growth in the order of **£200 billion** by 2040.

A government with ambition doesn't need to stop there – we've seen lower rates of illness in the past, and we know many common conditions are reversible (including Type 2 diabetes and many muscular-skeletal conditions). If we could *reduce the overall prevalence* of conditions across the population – i.e. return to rates seen in the past – we could see reductions in cost that could *offset* other increases in health spending, like new technologies or pay increases.

Stopping the growth in chronic conditions could save almost £500 billion by 2040

Estimates indicate health spending will need to grow in real terms at roughly 4% annually (excluding productivity gains), of which around a quarter is driven by increasing chronic conditions over and above ageing. The indicative scenarios illustrate the savings available through halving, stopping, or reducing this growth in chronic conditions.



Source: Public expenditure statistical analyses 2023, IFS, Securing the Future, IFS, Be the Chancellor

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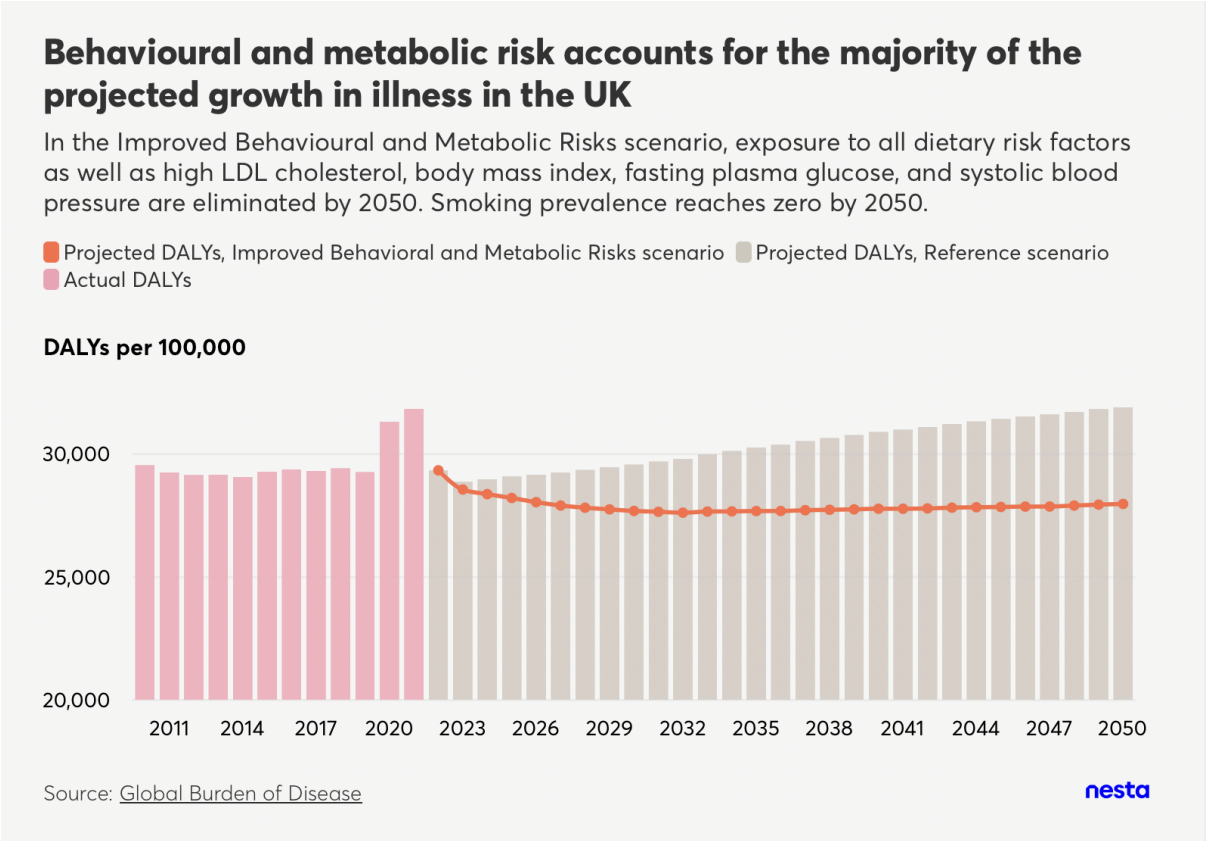
Prevention provides the best bang for your buck.

Global Burden of Disease projections show preventable behavioural and metabolic risk account for almost all the projected growth in illness in the UK *beyond* population growth. The Improved Behavioural and Metabolic Risk scenario below shows a scenario in which exposure to all dietary risk factors as well as high LDL cholesterol, body mass index, fasting plasma glucose, and systolic blood pressure are eliminated, and smoking prevalence reaches 0 by 2050. In this scenario, the prevalence of illness across the population slightly decreases, before remaining stable from around 2030.

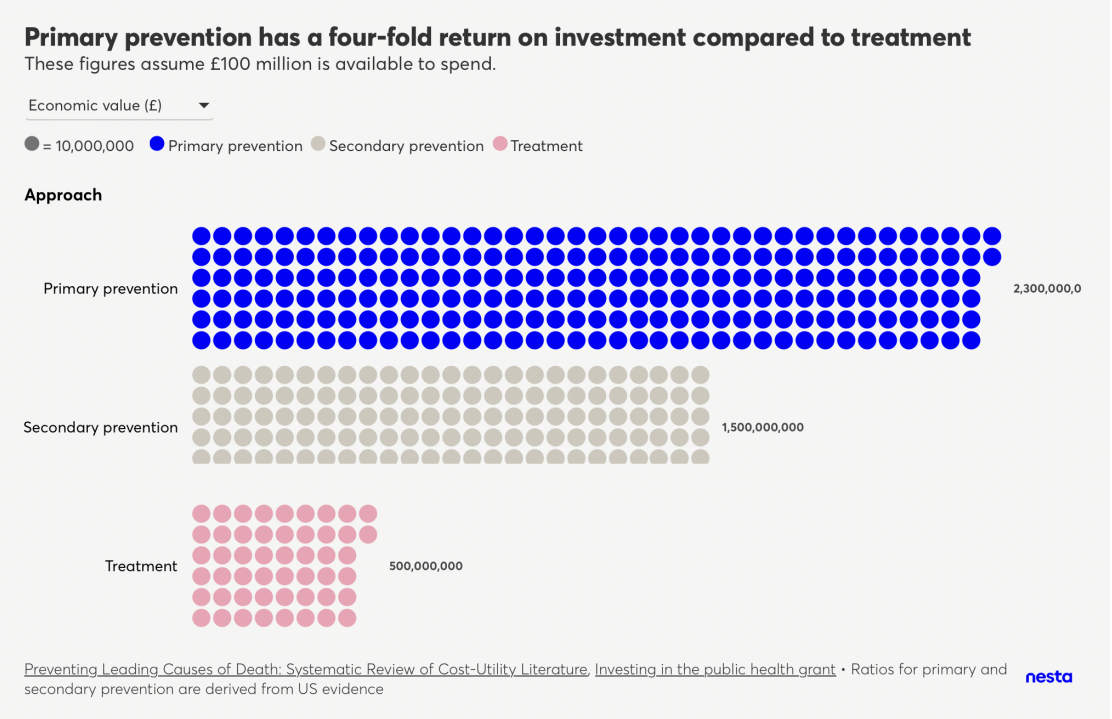
Although these figures are just projections, and don't provide the level of detail available through more granular health modelling (like the Health Foundation's Health in 2040 report), they provide an order of magnitude for the health gains available and a sense of the goal posts for a government willing to get serious about prevention. Putting a stop to preventable risk factors could see 1.3 million fewer disability-adjusted life years (DALYs) in 2030 and 2.4 million fewer DALYs in 2040 compared to the status quo – a cumulative saving of over 45 million DALYs by 2040 worth *trillions* in economic value.



Public health experts talk about three key categories of health prevention: primary, secondary and tertiary: primary prevention seeks to prevent illness or injury from occurring in the first place; secondary prevention seeks to reduce the impact of illnesses or injuries by diagnosing and treating them early, and tertiary prevention seeks to manage conditions to prevent long term deterioration (for this reason, tertiary prevention is closest to treatment).

All types of prevention are cost-effective when compared to the 'worst case' scenario – significant deterioration in illness resulting in (expensive and invasive) hospital treatment. This is clear when we consider the respective cost-effectiveness of achieving one additional year of life in perfect health (QALY) via different means. The Treasury considers a QALY is worth £70,000 in economic value, and is good value for money when it costs less than £15,000.

Primary prevention Prevent illness or injury from occurring	**Secondary prevention** Reduce the impact of illness or injury by diagnosing and treating early	**Treatment** Treating an illness (including tertiary prevention to soften the impacts of long-term illness)
£3,040 per QALY[1]	**£4,560 per QALY**[1]	**£13,500 per QALY**
So if we had £100 million to spend, it would get us:		
32,900 QALYs, worth £2.3 billion, a 23-fold return on investment	21,900 QALYs, worth £1.5 billion, a 15-fold return on investment	7,400 QALYs, worth £500 million, a 5-fold return on investment



But primary and secondary prevention are broad categories that capture a wide range of interventions – the figures above are *averages*, and hide significant variations in the cost-effectiveness of different activities and interventions.

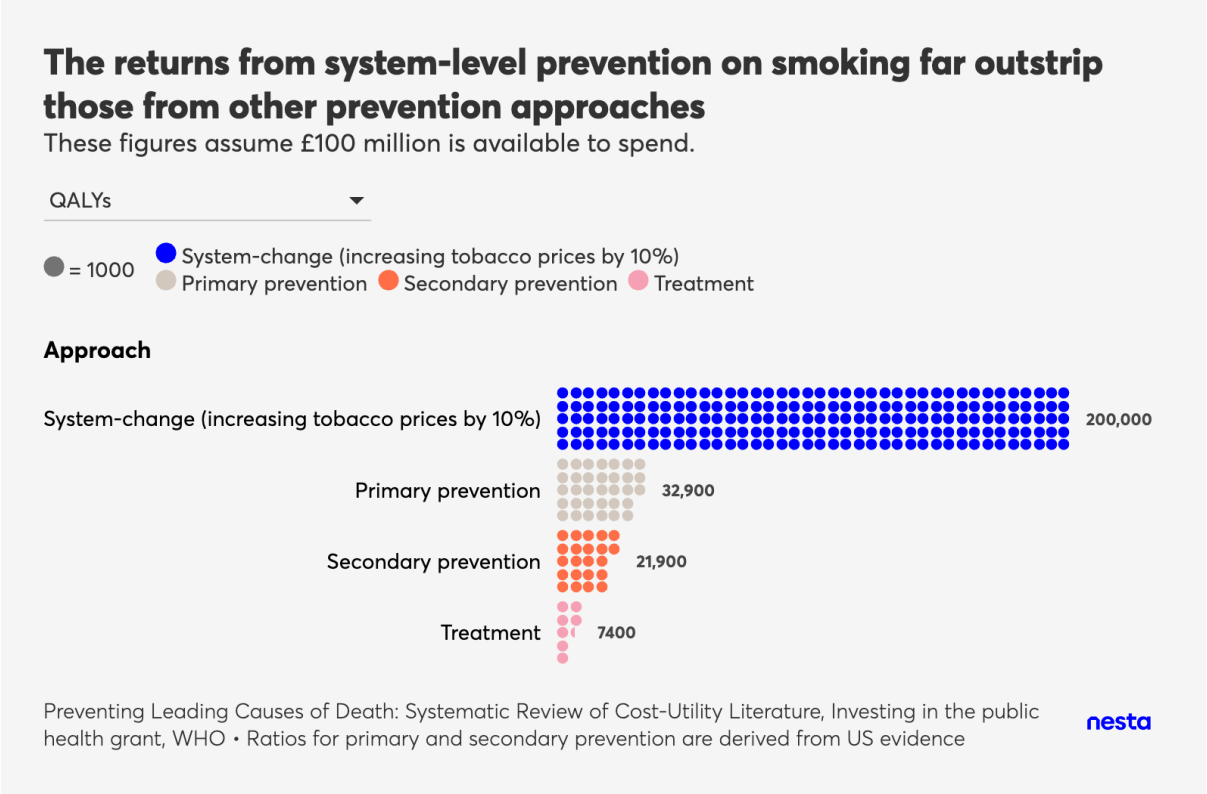
- Not all prevention activity is good value for money – in an analysis of public health interventions examined by NICE from 2011 to 2016, a third were not cost-effective, with a cost per QALY of over £30,000, including exercise referral schemes, mandatory 20mph zones, and text messages to reduce sunlight exposure.
- But lots of prevention activity *is* cost-effective – and some are even cost-saving when compared to the status quo. The same NICE analysis found two-thirds of interventions were cost-effective, and a quarter were cost-saving. "Dominant" interventions – that is, interventions that saved money compared to existing alternatives – included Sure Start, total indoor and outdoor smoke-free policy, and region-wide multicomponent diabetes interventions.

Decision makers can maximise health gains within limited budgets by focusing on the most cost-effective interventions. In a fiscal environment in which new health spending is likely to be highly constrained, system-level changes that have relatively low costs are of strategic advantage.

The interventions referenced above are *discrete* initiatives, usually implemented at a local level, with known resources – meaning it's possible (if still challenging) to evaluate the total health gain for the total cost. Harder to measure are system-level interventions, implemented at a national level, that don't rely on government spending, like regulation and tax.

Evaluations that *are* available show these system-level interventions are the most cost-effective prevention available. Increasing tobacco prices, for example, is recognised by the WHO as the single most effective way to reduce smoking rates. For example, increasing the price of tobacco by 10% (i.e. system-level primary prevention) has been found to cost just £130-500 per QALY in high-income countries, compared to £580-915 through publicly provided nicotine replacement therapies (i.e. individually-targeted secondary prevention).[2] Against the averages above (let alone the Green Book's value for money thresholds), both represent excellent value

for money, but increasing tobacco prices is more cost-effective by a factor of 5. Evaluations of the cost-effectiveness of regulatory change are harder to find, however, one US study comparing the cost-effectiveness of nicotine replacement therapy with a statewide smoke-free workplace policy found costs per QALY of $6,367 and $726 respectively – an 88% difference in cost.

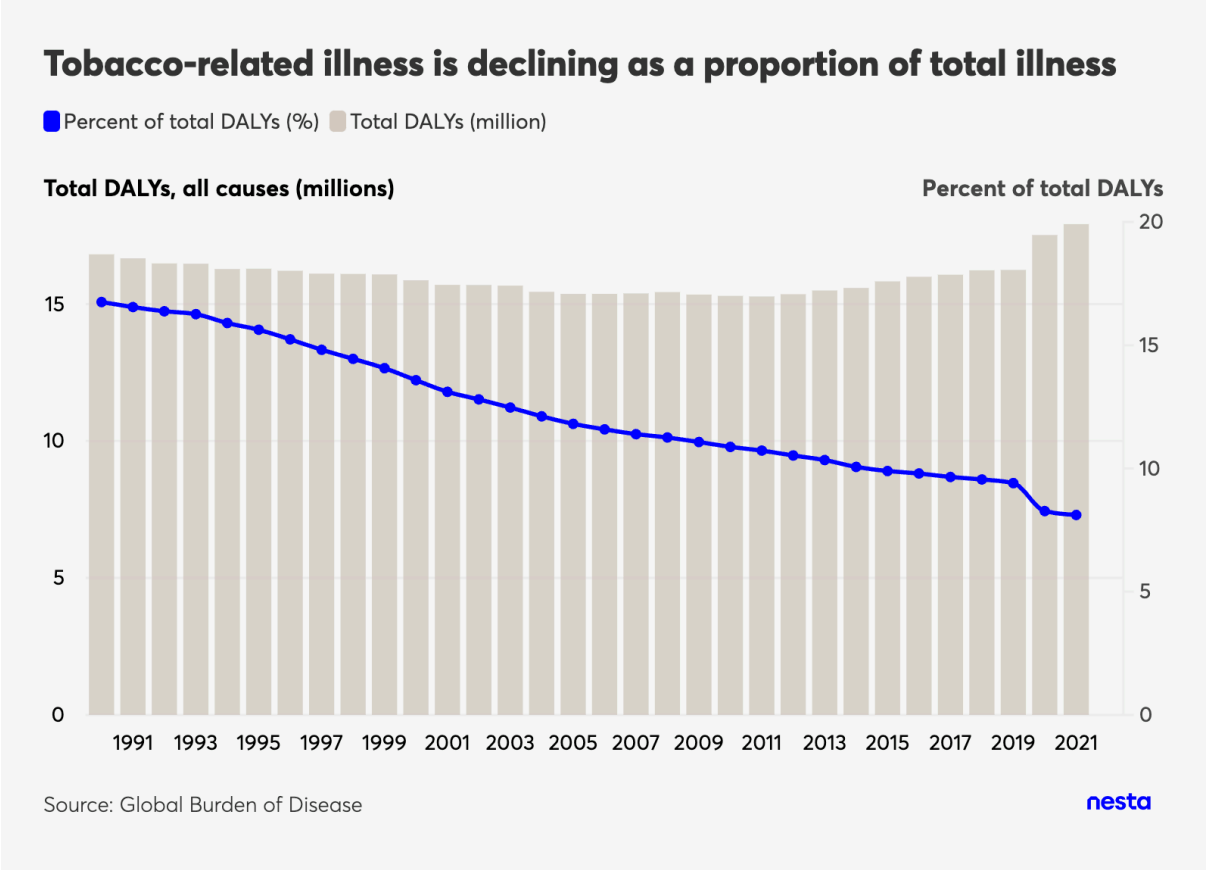


Halving smoking rates in the UK since 2000 has generated savings worth billions.

UK tobacco policy is a masterclass in successful prevention, seeing smoking rates halve from 26% in 2000 to under 13% in 2022 through a highly effective combination of: upstream system changes to the tobacco market through regulation and taxation, utilising changes to choice environments by regulating promotion and placements, and, more recently, through smart individual supports like the Swap to Stop scheme.

The burden of smoking-related illness is still moving through the NHS and broader economy (with a current annual cost of £1.89 billion to the NHS, and productivity losses of £18.3 billion), making it challenging to quantify the total avoided costs from halving smoking. However, we can be confident the costs will continue to come down: tobacco-related illness has halved as a proportion of total illness since 1990,

and we are already seeing tens of thousands fewer deaths annually than if smoking rates had stayed at 2004 levels. This improvement in population health is worth tens of billions in economic value over decades to come – both in terms of avoided NHS costs, as well as productivity losses.

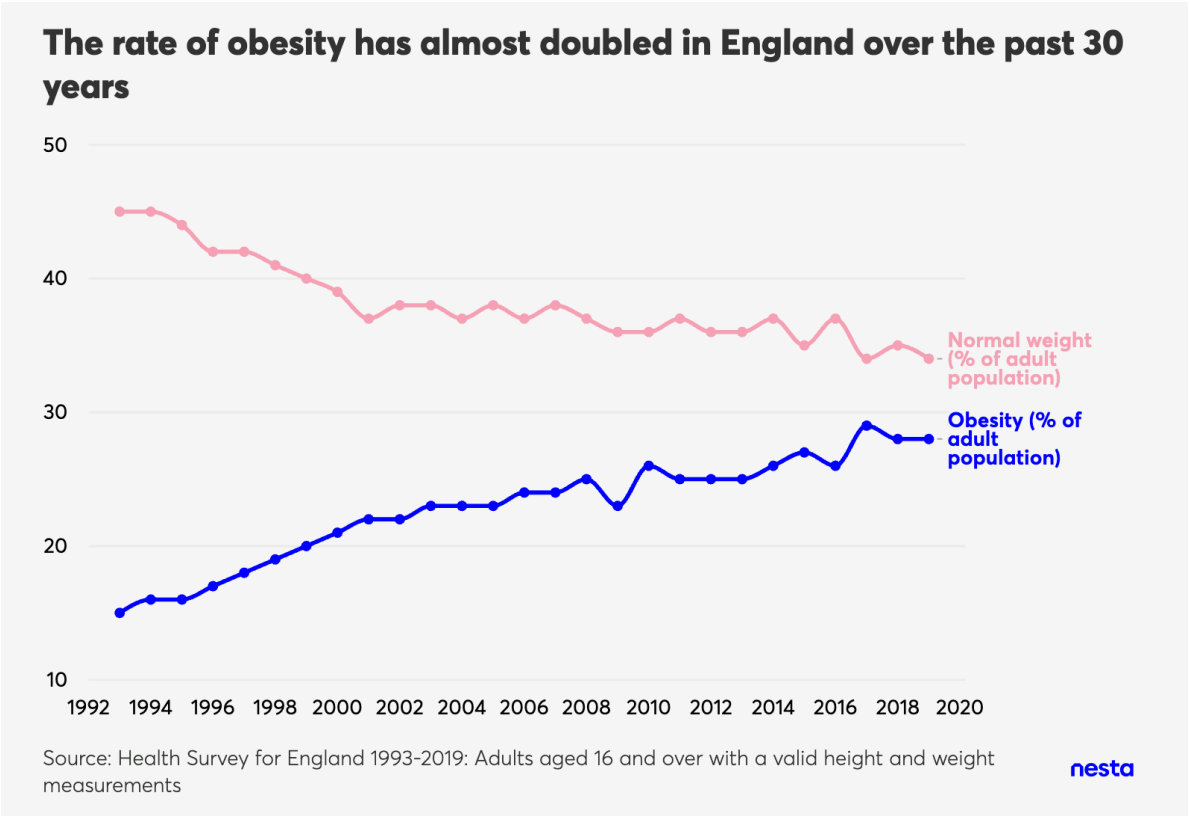


But there's still work to do: 13% of the population are still regular smokers. The next government must finish the job, by phasing out tobacco for the next generation and continuing to support smoking cessation. The impact assessment for the Tobacco and Vapes Bill estimates that by 2056, phasing out smoking for the next generation will lead to a cumulative £20.7 billion in productivity gains, £4.4 billion in reduced health and social care costs, and £404.6 million in monetised QALYs.

Now we must focus on the next biggest driver of avoidable illness: obesity

Excess weight is one of our clearest examples of generational health drift, with generations born since 1980 three times more likely to be overweight or obese at age 10 than those born prior. Obesity rates have nearly doubled since 1993 – increasing from 15% to 26% in 2023.

The costs of obesity and related conditions are significant: both in terms of individual impacts, and system costs, with Frontier Economics estimating the total cost at over £70 billion annually. When compared to having a healthy weight, an individual with obesity is 9 times more likely to develop type 2 diabetes, 3 times more likely to develop osteoarthritis, and almost three times more likely to develop chronic back pain. Type 2 diabetes, which comprises 90% of the total diabetes burden and for which obesity accounts for 80–85% of risk, is quickly climbing the ranks as a share of the overall burden of disease and is projected to grow even further. Diabetes already accounts for 10% of the NHS budget in England and Wales.



But the fact that obesity has been lower in the past means we know another reality is possible – concerted action can see the prevalence of obesity return to previous rates. And, although obesity is a different kind of challenge, our success on tobacco means we know what will be most effective. We can change markets by regulating or taxing foods (or ingredients) that drive obesity. We can alter the environments in which health choices are made, for example through promotion and placement; and we can provide individuals with the support they need to maintain healthy habits.

Action on obesity could pay huge dividends: the Department for Health and Social Care's calorie model estimates that a modest reduction in 20 kcal a day across the population would lead to an average weight loss of 0.84kg per person. Over a 20-year period, this reduction would save 10,500 lives, 174,000 QALYs, £2.5 billion in NHS and social care costs, and increase economic output by £191 million over 25 years.

Closing the illness gap will take time, ambition and political commitment. The next government must get to work immediately

A common argument against investment in prevention is that its pace and impact can't meaningfully support a government looking to achieve immediate goals for health. It is true that it takes time to see the returns from prevention. It is also very true that there are lots of sick people who need help now.

But prevention *does* have short-term benefits – for example, the health benefits of quitting smoking at an individual level start immediately and continue over decades. It's just that it is a huge challenge to measure these impacts for the NHS, and it is easier to do so with respect to illnesses that *have* developed (i.e. secondary prevention), than illnesses that *would otherwise* have developed (primary prevention).

We know that many common chronic conditions are not binary and that they are influenced by risk. Prevention activity can immediately start to reduce these risks, especially among younger populations. Prevention can also complement treatment efforts, making it easier for health gains to stick and preventing people from falling ill again. This is intuitive: there's no point in rescuing someone from a health crisis, only to let them fall back into the same risk factors and environment that caused it. That's like pulling someone out of the river, giving them CPR, and then pushing them back in again.

And even if this *weren't* true – even if it did take 10 years to see any returns from prevention activity – the argument misses the bigger picture: political parties often remain in power for 10-15 years. And their success in delivering on long-term health promises – like both parties' commitment to narrowing the gap in healthy life expectancy between the richest and poorest local areas in England – will crucially depend on making significant improvements in population health.

Consider this: there are an estimated 7 million people in the UK who are pre-diabetic. If they all developed diabetes, this could more than double the NHS diabetes spend to £20 billion annually – even before we consider the economic and human costs. Preventing these individuals from developing diabetes would represent a significant win – not only for the taxpayer who would be footing the bill but for each of these individual lives.

A Government that is committed to setting the NHS on a sustainable footing by its second term cannot afford to delay or equivocate on the affordability of prevention. We tend to overestimate what's possible in one year but underestimate what's possible in ten. The good news here is that prevention is well evidenced – there are lots of good ideas and policies, many of which are relatively inexpensive, already sitting on the shelf. If implemented, they would have a significant impact. It just requires a Government that is bold enough and committed enough, to prioritise prevention now.

At the end of the day, this isn't just about saving the NHS – or the taxpayer – it's about saving individuals and households from the impacts of illness – and giving everyone the chance of a healthy life.

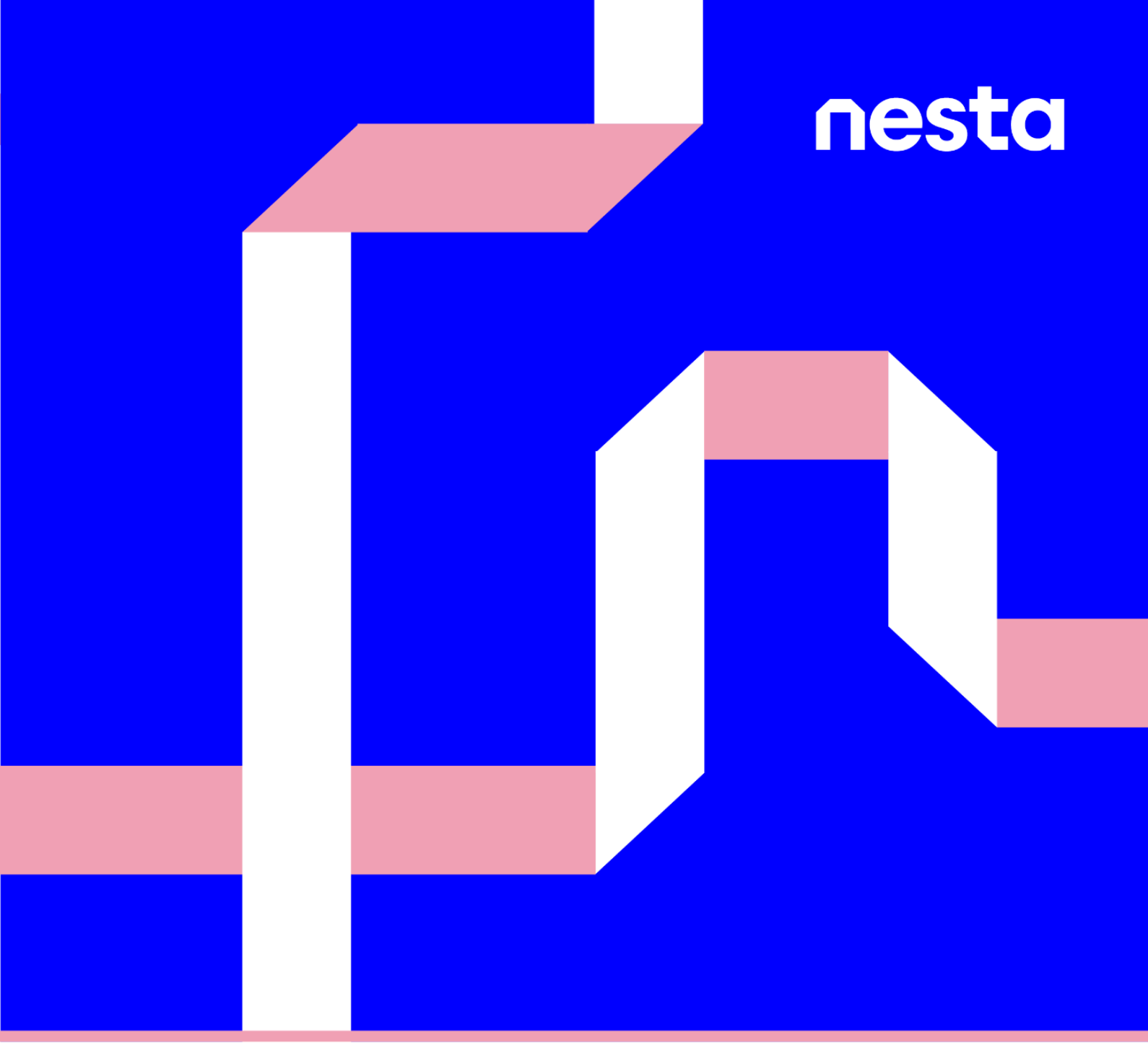
The argument for investing in prevention is so often couched as an argument for what we can or cannot afford: that we need to invest in prevention to save the NHS. This is true, and of macroeconomic importance.

But taking a step back, investing in prevention is a moral imperative, and part of the social contract a government makes with its citizens, as well as the commitment it makes to govern well for future generations. Investing and prioritising primary prevention activities today will enable more people to live a better, more productive, life, with more of those years in good health tomorrow. This means more parents who are able to play with their kids at the playground; more grandparents who are better able to keep up with their grandchildren; more working-age adults who are able to stay in work; and more children who can concentrate at school. It means a UK where more people are able to participate fully in what, for them, makes a good life. And that is worth investing in.

Endnotes

1. We take the cost per QALY estimate for the public health grant of £3,800. This grant funded both primary and secondary prevention activities. We assume that the grant activities are evenly split between the two. We then take evidence from the US for the relative cost-effectiveness of primary and secondary prevention which finds that the cost per QALY of primary prevention is about two-thirds of that for secondary prevention. We assume this ratio holds for activities in the public health grant and use this to estimate a figure of the cost-effectiveness of primary and secondary prevention separately.

2. These figures have been converted from USD to GBP



58 Victoria Embankment
London EC4Y 0DS
+44 (0) 7438 2500
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