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# Reimagining Prevention for a Healthier, More Prosperous Society

Grace Hampson
Margherita Neri
Matthew Napier
Graham Cookson

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STATE OF PLAY WHITEPAPER

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**Grace Hampson**
Office of Health Economics, London

**Margherita Neri**
Office of Health Economics, London

**Matthew Napier**
Office of Health Economics, London

**Graham Cookson**
Office of Health Economics, London

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**Corresponding Author:**
Grace Hampson
ghampson@ohe.org

## About this Report

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# Executive summary

## KEY MESSAGES

- The UK Government and the National Health Service (NHS) recognise the value of prevention and have committed to making it a priority yet opportunities to adopt effective preventative strategies are repeatedly missed.
- The public health grant is allocated to local authorities for public health service delivery, including prevention. Since 2015/16 it has been cut by more than a quarter (26%) per person in real terms.
- Primary prevention programmes are substantially cost saving, with a major study showing an average return on investment of 14:1. Funding cuts are therefore missed opportunities for financial and capacity savings for the NHS.
- Investing in prevention through public health programmes will generate greater benefit than investment in the wider NHS. An extra year of good health via prevention costs an estimated £3,800, compared to £13,500 via treatment.
- For government, reductions in preventable ill health could increase tax receipts, reduce welfare payments, and generate savings for the police and criminal justice system.
- For society, the cost of lost productivity to the UK economy due to preventable ill health has been estimated at nearly £70 billion per year.
- Barriers to an effective prevention agenda could be overcome, ushering in a new era of prevention, through:
    - Long-term cross-party working
    - Innovative financing and contracting options such as:
        - Social impact bonds
        - A minimum investment standard
        - A dedicated prevention fund
    - Further research, particularly on improved monitoring of outcomes
    - Leveraging new opportunities, such as precision medicine and digital health
- The careful strategy and practical recommendations in this report are critical to fill these gaps and realise these opportunities. UK-specific and international learnings are presented.

## What do we mean by prevention?

Prevention is a highly cost-effective, and often cost-saving, investment of public sector resources. The many benefits of prevention include the potential to reduce the burden of ill health for patients, release capacity in the health system, and support wider economic growth.

In health terms, prevention refers to any action taken to decrease the chance of getting a disease or condition (National Cancer Institute, 2023). We consider different types of prevention activity, based on the *timing* of when the activity occurs (Nightingale, 1978):

- **primary** - aims to promote health before disease or injury develop
  - Examples: vaccination, education around healthy lifestyles
- **secondary** - aims to detect disease early, before symptoms are showing
  - Examples: screening programmes, medication such as statins
- **tertiary** - aims to reverse, stop, or delay disease progression.
  - Examples: rehabilitation, chronic disease management programmes

Whilst all health and non-health government departments have a critical role in the prevention of ill health (particularly their impact on the *wider determinants* of health, such as environment, employment, income, education and crime (PHE, 2018; WHO, n.d.)), our report focuses on the elements of prevention which can be implemented by or within the UK health sector.

## Financing of prevention

Prevention is a stated priority for the Office for Health Improvement and Disparities (OHID), the NHS and beyond, but investment has failed to match this aspiration. Of total NHS funding, only 5% per year was allocated to preventative care between 2013-2019 (ONS, 2022c).

Further to this, the public health grant (allocated to local authorities for the delivery public health services) has been declining since 2015/16 (Finch and Vriend, 2023); as of 2023/24, it has been cut by more than a quarter (26%) in real terms per person compared to 2015/16 (Ibid).

It is estimated that for the public health grant to match historical funding levels and adequately keep up with rising demand, it would need to grow by £0.9 billion per year (2023/24 £) (Finch and Vriend, 2023).

## The case for prevention

Investing in prevention through public health programmes will generate greater benefit than investment in the wider NHS, as the following two examples indicate.

A systematic review of 52 studies found that primary prevention, delivered through public health interventions, is substantially cost saving, with a median return on investment (ROI) of more than 14:1 (Masters et al., 2017)[1].

By implication, the funding cuts detailed above are false savings that will lead to avoidable future costs to the NHS and wider society. Put another way, the review suggests the opportunity cost of the cuts is 14 times higher than their numerical face value.

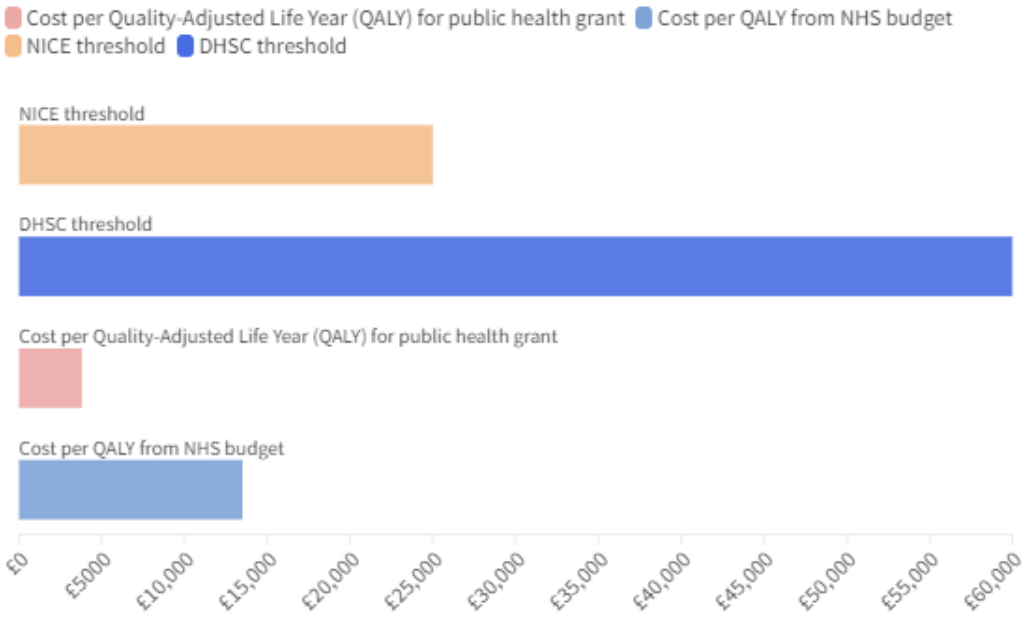



**FIGURE 1 COST-EFFECTIVE IMPACT OF PUBLIC HEALTH INVESTMENT: A COMPARISON OF QUALITY-ADJUSTED LIFE YEAR (QALY) COSTS AND THRESHOLDS**

Investing in prevention can be 3-4 times more cost-effective than investing in treatment. The estimated cost for each additional quality-adjusted life year (QALY) generated through the public health grant in the UK is £3,800, against a cost of £13,500 per QALY when generated from the NHS budget (Martin, Lomas and Claxton, 2020).

This £3,800 is substantially lower than both the £20,000-£30,000 threshold used by the National Institute for Health and Care Excellence (NICE) to determine whether interventions represent a cost-effective use of resources, and the £60,000 willingness to pay threshold used by the Department of Health and Social Care (DHSC).

The benefits of prevention also extend well beyond the health and social care system. From a government perspective, healthy lives provide an opportunity for savings across multiple areas of public spending. Evidence to quantify the potential benefits of prevention in this area is limited, but we do know that welfare payments to individuals with (partially)

[1] *In ROI estimates, the 'returns' are the benefits of the intervention under evaluation against the comparator. This includes (1) different types of cost-offsets to the health system and, if relevant to the perspective of analysis, societal costs; (2) the monetised health gains.*

preventable conditions are large. For example, annual unemployment benefits paid to individuals with obesity are an estimated £3.6 billion (Frontier Economics, 2022).

Wider society will also benefit from improved prevention efforts via productivity effects and their impact on economic growth. Estimates of the loss to the UK economy due to preventable ill-health related absenteeism and presenteeism at work were approximately £70 billion in 2019 (Vitality, 2022; Mercer, 2020), in a year when the monthly UK gross domestic product (GDP) was £188 billion (IMF, 2022).

## Where are the gaps?

Our analysis identifies four key gaps that are contributing to our missed opportunities for effective health prevention, and a healthier, more prosperous, nation:

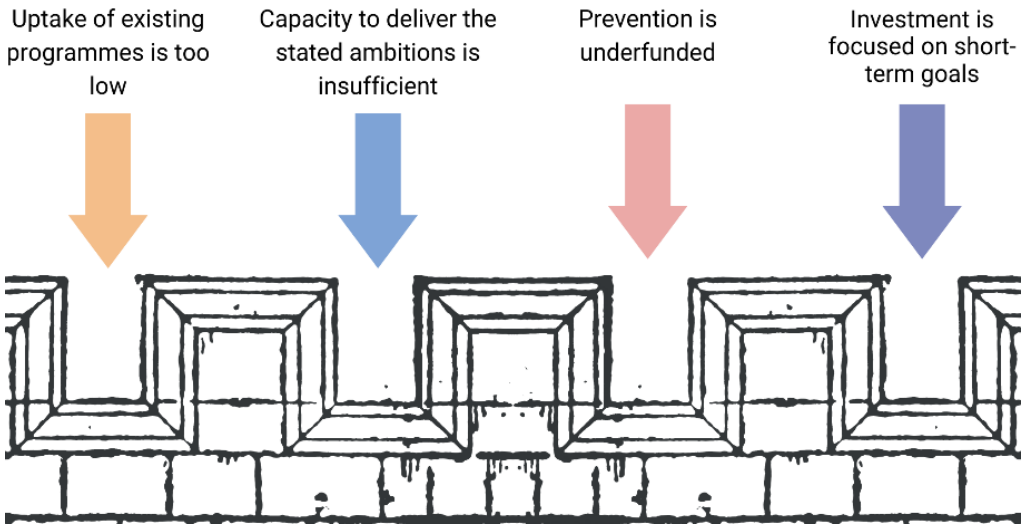



**FIGURE 2 FOUR KEY GAPS THAT ARE CONTRIBUTING TO THE MISSED OPPORTUNITIES FOR EFFECTIVE HEALTH PREVENTION**

1. **Uptake of existing programmes is too low:** For example, the NHS health check reached only 4 in 10 eligible people between 2015-2020 (OHID, 2021a). It is estimated that an uptake of 5 in 10 people would generate a return of £2.93 for every £1 spent, increasing to £3.55 at 6 in 10.

2. **Capacity to deliver the stated ambitions is insufficient:** For example, the NHS diabetes prevention programme (DPP) has been shown to reduce the chance of developing diabetes by 37% (NHS England, 2022c) and is highly cost-effective. Access to the DPP is available for up to 200,000 people per year (NHS England, 2022c) versus an estimated 13.6 million people who are eligible (Diabetes UK, 2023b).

3. **Investment is focused on short-term goals:** The benefits of prevention activities (particularly primary prevention activities) are likely to occur in the medium-long term, which means the cost and capacity savings fall outside of short-term budget considerations and political cycles. This is exacerbated by the 'chronic short-termism'

that characterises the political system in the UK (Hunter et al., 2022), inhibiting our ability to implement appropriate long-term plans.

4. **Prevention is underfunded:** There is a substantial gap between the stated importance of prevention and the reality of the funding it receives. As of 2023/4, the public health grant has been cut by more than a quarter in real terms since 2015/16 (Finch and Vriend, 2023). Given the high returns of investment generated by prevention interventions, the opportunity cost of these cuts is even greater.

## Reimagining prevention

To overcome the current gaps will require a coordinated approach that shifts the focus from short-term to long-term decision-making and implementation. This report highlights six areas for action to achieve this shift. Together, our proposed solutions and future opportunities could establish a new era of optimised prevention.

1. Long-term cross-party agreement: We need to elevate prevention above short-term political cycles, to a position where all parties accept that programmes initiated now may only reap benefits under successive governments. Benefits that will span individuals, the health system and wider society, and should not be denied by any one government or political party due to short-sightedness. A cross party initiative must be instated to persuade politicians and policy makers of the importance of this approach.

2. Innovative financing within NHS budgets:

    - **A prevention investment standard** would mirror the mental health investment standard (MHIS). This stipulates that mental health spending nationally and within each Integrated Care Board (ICB) must increase at a greater rate than overall spending.

    - **Contracting** which stipulates payment by results could help when evidence of effect is uncertain; and annuity payments could smooth payment schedules when high upfront investments are required. A scoping study is needed to explore the use of these mechanisms for prevention.

3. Financing prevention outside core NHS budgets: With the strains on existing NHS funding greater than ever we need to find alternative ways to fund prevention. The following solutions should be explored further:

    - Social impact bonds could raise capital to invest in public health programmes. They can raise capital without substantial additional government investment, by leveraging the expectation of future benefits. An investor (a financial institution, charity or philanthropic organisation) provides funds to pay for a range of interventions that are expected to provide social/health and economic benefits. If these benefits occur, the investor receives their initial investment plus a financial return. We have

established that prevention is a good investment, and thus a good candidate for social impact bonds.

- A dedicated prevention fund: A dedicated fund (as is used for cancer drugs and innovative medicines) for prevention would generate substantial benefits for the UK, improving health, reducing health system pressure, reducing welfare payments whilst increasing tax receipts, and increasing productivity and economic growth. In the short term, the fund could be financed by government or (in part) by social impact bonds. In the long term, the savings generated would likely more than outweigh the initial investment and the fund would effectively pay for itself.

4. **Improved monitoring**: To support the continued funding of prevention activities relevant indicators related to implementation and outcomes (beyond uptake) should be monitored in the medium to long term at the provider level. This monitoring could be used to increase accountability and incentivise desired action.

5. **New opportunities:** Models for prevention are typically broad campaigns or standardised interventions for large populations or sub populations (based on risk factors or early signs of ill health). Precision medicine and digital health could make the future of prevention more tailored, targeted, and personalised to individual needs.

6. **Evidence-based clinical strategy:** To pull all this together, we need an evidence-based clinical strategy backed by clinical and political consensus and a delivery architecture (including funding) to execute the strategy on a multi-year basis. Critically, the plan should have an intentional focus on delivery and allocate agency to specific stakeholder groups to generate action.

### What can stakeholders do?

There is substantial scope for stakeholder groups to take meaningful steps to advance the prevention agenda:

- **Politicians** should highlight the importance and potential of prevention to their peers. In particular, communicating the substantial benefits of prevention for society to help elevate prevention above short-term political cycles.

- **Government, including DHSC, agencies and partner organisations** should develop the strategy outlined above. For funding and for implementation they should look to the options outlined in this report.

  Non-health government departments and agencies must also be given some accountability for prevention. Further research on the full economic 'prize' for engaging in prevention would help galvanise support for greater involvement amongst this broader stakeholder group.

- **Integrated care systems (ICSs)** should work towards local solutions, prioritising prevention in support of healthy local communities and economies, and fit-for-purpose local healthcare ecosystems.

- **Clinicians and other health care professionals** should champion prevention. This involves identifying ways to promote prevention of ill health within their areas of influence and looking for opportunities to demonstrate clinical leadership in prevention.

- **Industry** should continue to innovate in the prevention space, concentrating on interventions that offer good value for money for payers and research that uncovers the benefits of the prevention agenda. Industry can also actively support and encourage the development of the strategy outlined above with the goal of improving the strength and resilience of the healthcare system as a partner.

- **Economists and other researchers** should take all opportunities to further the evidence base, refine existing tools and develop new ideas to facilitate change (such as funding models, incentive schemes, and monitoring systems).

- **Members of the public** should be empowered to take ownership of their own health and have a social responsibility to do so to protect the NHS.

## Wider UK and international relevance

This report focuses mainly on the budgets and approach of NHS England with some examination of examples from the devolved nations. With small amendments and more detailed consideration, many of these recommendations would be applicable to all parts of the UK as well as having international relevance. Internationally relevant learnings are explored in Box 2 (Chapter 5.8) of the main report.

Efforts by this breadth of stakeholders to turn attention towards and promote the prevention agenda will have wide reaching benefits for society. Combined with a coherent plan with clear delivery architecture and funding, a shift in focus towards prevention is possible, using the tools outlined in this report.

# 1 Introduction

## HIGHLIGHTS

- **Effective prevention strategies have the potential to reduce the burden of ill health for patients, release capacity in the health system, and support wider economic growth.**
- **The National Health Service (NHS) and the UK Government have both recognised the value of prevention and stated their commitment to its prioritisation.**
- **However, opportunities for adoption of effective preventative strategies have been repeatedly missed in the UK.**
- **Uptake of existing prevention programmes is suboptimal, capacity to deliver the stated ambitions is insufficient, investment strategies are focused on short-term goals and there is overall underinvestment.**
- **The purpose of this report is to advance the prevention agenda in the UK by outlining clear and actionable recommendations for a wide range of stakeholder groups. Internationally relevant learnings are also highlighted.**

Preventable ill health is placing a significant burden on patients and represents a major threat to the sustainability of the NHS. In 2020, 23% of all deaths in Great Britain were considered avoidable[2], (ONS, 2022a) of which two thirds could be attributed to conditions considered preventable[3]. Further, modifiable risk factors such as smoking, high blood pressure and high BMI account for 25% of the ill-health related4 burden of disease in England (Schmidt et al., 2020).

Prevention activities represent a highly cost-effective, and often cost-saving, investment of public sector resources. Effective prevention can include a wide range of activities, from public health information campaigns to medical intervention, or improving the environment people live in (more on what constitutes prevention is given in section 2.1). The benefits of prevention are manifold, including the potential to reduce the burden of ill health for patients, release capacity in the health system, and support wider economic growth.

The National Health Service (NHS) and the UK Government have both recognised the value of prevention and stated their commitment to its prioritisation. Prevention was a cornerstone of the 2019 NHS Long-Term Plan (NHS, 2019), which committed to both additional 'upstream prevention' tackling risk factors to help people stay healthy, and 'population health management' supporting people in avoiding illness complications. The Government Green Paper 'Advancing our health: prevention in the 2020s' (GOV.UK, 2019),

*[2] Avoidable deaths are those that are preventable or are a result of treatable ill health.*
*[3] Preventable deaths are those that can be averted through effective public health and primary prevention interventions.*
*[4] Burden of disease is analysed via estimation of life expectancy, years of life lost due to premature mortality (YLLs), years lived with disability (YLDs), disability-adjusted life-years (DALYs), and risk factors (Schmidt et al., 2020).*

went further and claimed that that the 2020s will be the decade of 'proactive, predictive, and personalised prevention' where health is seen as a major nation asset for a prosperous and thriving society.

Despite these commitments and policy ambitions, action has fallen short. Our analysis shows four major gaps across the current prevention initiatives: (1) uptake of existing programmes is suboptimal (2) capacity to deliver the stated ambitions is insufficient; (3) investment strategies are focused on short-term goals and (4) there is overall underinvestment.

Given the current NHS crisis, tackling preventable ill health has never been more important.

## This report

This report has been developed to advance the prevention agenda in the UK by outlining clear and actionable activities for a wide range of stakeholder groups.

A previous version was developed to stimulate and inform debate at a Roundtable meeting for key stakeholders in the prevention space held in April 2023. The meeting was chaired by Lord James Bethell.

Attendees included representatives from:

- Department of Health and Social Care (DHSC)
- An Integrated Care Board (ICB)
- Industry, manufacturers and innovators (the Association of the British Pharmaceutical Industry, MSD, Microsoft, and GRAIL)
- Non-profit research organisations (Health Foundation and Office of Health Economics).

Attendees discussed key gaps in the prevention agenda, opportunities for strengthening prevention activities in the UK, and how an effective prevention agenda could be implemented.

Following the roundtable, the report was expanded to include key discussion points and reflections from the attendees.

Please note: this report is not intended as, and should not be interpreted as, a consensus statement from the roundtable attendees.

# 2 Setting the scene

HIGHLIGHTS

- **There have been multiple major changes in the past decade to the organisation of public health services in the UK. Commentators warn the current set up may not be fit for purpose.**
- **Prevention is stated as a priority across a range of government departments and arms-length organisations, yet corresponding investment has failed to materialise.**
- **Of total NHS funding, only 5% per year was allocated to preventative care between 2013-2019.**
- **The public health grant (allocated to local authorities for the delivery public health services) has been declining since 2015/16; as of 2023/24, it has been cut by more than a quarter (26%) in real terms per person compared to 2015/16.**
- **Given the vast array of potential benefits and savings from appropriate prevention, this extent of underfunding is reckless in the context of an overburdened health system.**

## 2.1 What do we mean by prevention?

Health prevention refers to any action taken to decrease the chance of getting a disease or condition (National Cancer Institute, 2023). Prevention can be implemented through various approaches, differing by stage of disease, target outcome, and setting. Understanding of the term has evolved over time and is still subject to nuances (Starfield et al., 2008). To set reference definitions for this report, this section provides a brief review of the most common uses of the term and ways to distinguish between different levels of prevention.

One of the earliest and now most widespread characterisations distinguishes prevention based on the *timing* of when the prevention activity occurs[5] (Nightingale, 1978):

- **primary** prevention aims to promote health prior to the development of disease or injuries, such as vaccination and education around healthy lifestyles.
- **secondary** prevention aims to detect disease in early (asymptomatic) stages, such as via screening or medication such as statins.

[5] *A fourth level of prevention, called 'quaternary', has emerged more recently. However, existing definitions of quaternary prevention are somewhat inconsistent (Starfield et al., 2008), referring to it as: minimisation of risk of over-medicalisation, rehabilitation functions or quality assurance for process improvement. Due to these inconsistencies, we leave this category out of the suggested classification.*

- **tertiary** prevention aims to reverse, arrest or delay the progression of a disease, such as through rehabilitation or chronic diseases management programmes.

Another important element of distinction concerns the *target* of a preventative programme, being it a specific disease or a **risk factor** underlying the disease manifestation. Indeed, prevention through identification and management of risk factors has gained increasing prominence over time. In high-income settings, this is because:

1. Success in tackling infectious diseases: Measures to tackle infectious diseases (e.g. vaccines) have been highly successful in past decades. This has led to a redistribution of the burden of disease by cause, increasing the relevance of conditions associated to individual behaviours or lifestyle factors (e.g. smoking, obesity), or wider determinants of health (e.g. social, economic and environmental factors) (Wanless, 2003).

2. Greater ability to predict future health: Advancements in medicine and technology have greatly improved our knowledge about the genesis of diseases and our ability to predict future health status by detecting risk factors, for example through diagnostic techniques based on genetic mapping and screening.

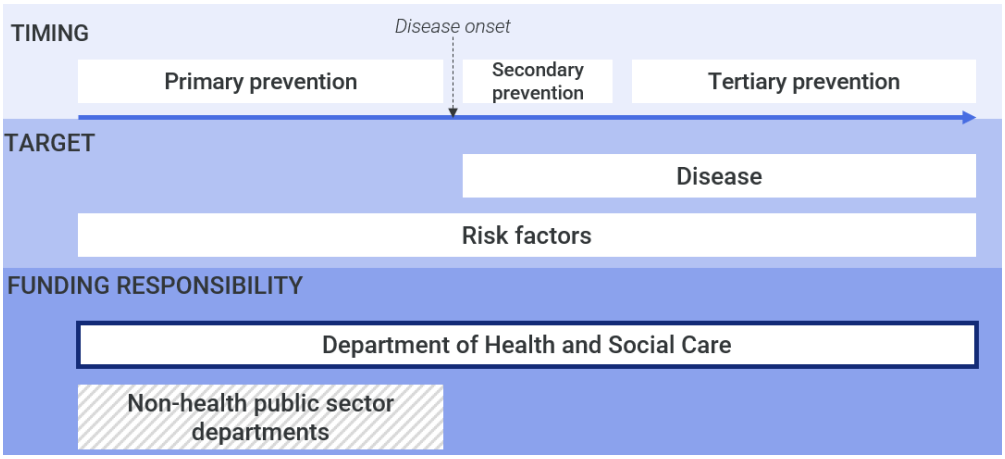
A holistic approach to prevention must acknowledge the role of other (non-health) government departments and their impact on the *wider determinants* of individual health. It is recognised that environment (built and natural – including air quality, access to green space, housing), employment, income, education and crime all have a substantial and interconnected impact on an individual's health (PHE, 2018; WHO, n.d.).

The World Health Organization (WHO) (WHO, n.d.) distinguishes between **disease prevention** as the specific, population-based, and individual-based interventions to minimise the burden of diseases and associated risk factors primarily concentrated within the health care sector; and **health promotion** as the process of empowering people to increase control over their own health and its determinants through multisectoral action to increase healthy behaviours and tackling the wider determinants of health.

The scope of this report is necessarily limited, **focusing on the elements of prevention which can be implemented by or within the health sector**. This report also focuses only on the UK, which means it is concerned with prevention activities within the funding remit of the Department of Health and Social Care (DHSC) including the ring-fenced public health grant managed by local authorities.

However, we acknowledge that a comprehensive prevention plan will require a wider remit than is possible within the scope of this report. Figure 3 maps the timing, target, and responsibility for prevention activities in the UK, with DHSC and local authorities highlighted as the primary focus of this report.

**FIGURE 3: THE TIMING, TARGET AND FUNDING RESPONSIBILITY OF PREVENTION ACTIVITIES**




*Note: The red box highlights the focus of this report. The ring-fenced public health grant managed by local authorities is included in the funding responsibility of the DHSC.*

## 2.2 Delivery and responsibility for the prevention of ill health in the UK

In general, the NHS leads the delivery of secondary and tertiary prevention interventions. Local authorities, together with the Office for Health Improvement and Disparities (OHID), lead on primary prevention interventions via public health.

There have been significant changes in the organisation of public health (and therefore primary prevention in particular) in the UK in recent years, impacting how the system functions and where responsibilities lie. Major changes for England are highlighted in Figure 4.

Some of the changes, such as the abolition of Public Health England (PHE) in 2021, were sudden and without consultation, leading to questions around whether the new system(s) will be fit-for-purpose. PHE was replaced by the UK Health Security Agency (UKHSA) and the OHID, following criticism over how it had handled the COIVID-19 pandemic.

Concerns have been raised about the remits and governance of the new bodies (Hunter, Littlejohns and Weale, 2022), leading to claims that the UK lacks a joined-up strategy for tackling public health problems and has an overreliance on the NHS. Writing in the Lancet in 2022, Hunter (Professor of Health Policy), Littlejohns (Professor of Public Health), and Weale (Professor of Public Policy), claimed that the current system is not fit for purpose and must be replaced with a strong and confident public health system that is well placed to confront the challenges facing it. They state that unless prevention is made a higher priority, the NHS may become unsustainable.

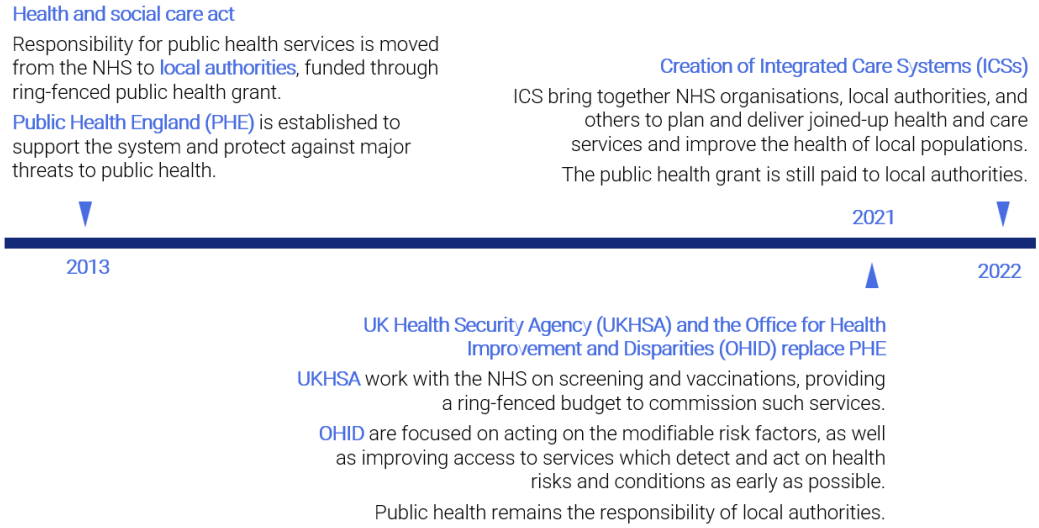



**FIGURE 4: TIMELINE OF CHANGES TO THE ORGANISATION AND FUNDING OF PUBLIC HEALTH**

As part of the reorganisation of the public health system in 2021, a new cross-government ministerial board on prevention was announced (DHSC, 2021) to coordinate action on the wider determinants of health. We have been unable to identify further discussion or action relating to this board since its announcement in 2021.

Since the introduction of UKHSA and OHID, Integrated Care Systems (ICSs) have also been introduced in England. These partnerships bring together NHS organisations, local authorities, and others to plan and deliver joined-up health and care services. They comprise of integrated care boards (ICBs) and integrated care partnerships (ICPs). ICBs are responsible for commissioning services and managing the NHS budget. ICPs are committees formed of the NHS integrated care board and all upper-tier local authorities in the ICS area, working together to develop an integrated care strategy. ICSs present significant opportunities to build a consensus and action on preventative measures, while maximising productivity and value for money, through having a joined-up strategy for commissioning and delivering of prevention programmes.

As acknowledged in the NHS long-term plan, the delivery of prevention by the NHS and local government should be complementary, with many services commissioned by the public health grant closely linked to NHS care and in many cases provided by NHS trusts (NHS, 2019). The establishment of the ICSs should help ensure that the services remain complementary, as part of a joined-up health and care system.

Whilst health is a devolved responsibility, the UKHSA is expected to perform as system-leader for health security across the UK. In Scotland, Public Health Scotland has responsibility for improving and protecting the health and wellbeing of all of Scotland's people, focusing on prevention and early intervention (Public Health Scotland, 2022). In Wales, Public Health Wales has a remit to protect and improve health and well-being and reduce health inequalities for the people of Wales (Public Health Wales, n.d.). Northern Ireland's Public Health Agency exists to protect and improve the health and social wellbeing of the population and reduce health inequalities (Public Health Agency, n.d.).

## 2.3 Prevention as a priority

Prevention is stated as a priority across a range of government departments and arms-length organisations:

- OHID states their priorities as addressing health disparities, tackling preventable risk factors of ill health such as tobacco, obesity and alcohol, and working with the NHS and local government to optimise access to services which detect and address health risks and conditions, amongst others (OHID, 2021b).

- NHS England's prevention programme lists earlier detection of disease, reducing the use of antibiotics and preventing infections, and tackling health inequalities as key aims, as well as supporting people to play an active role in their health (NHS England, 2022b). In addition, the programme aims to support individuals to take action to reduce the risks of tobacco, high blood sugar levels, obesity, dietary risk, high blood pressure and alcohol use (as identified by the global burden of disease study (Steel et al., 2018)) (NHS England, 2022b).

- Prevention also formed a key component of the 2019 NHS Long-Term Plan (NHS, 2019). The plan included a commitment to both additional 'upstream prevention' tackling risk factors to help people stay healthy, and 'population health management' supporting people in avoiding illness complications.

- The Government Green Paper 'Advancing our health: prevention in the 2020s' (GOV.UK, 2019), claimed that the 2020s will be the decade of 'proactive, predictive, and personalised prevention' where health is seen as a major nation asset for a prosperous and thriving society.

- The DHSC set out 'early action to prevent poor health outcomes' as an area of research interest (DHSC, 2023a), to ensure a focus on areas of strategic policy importance.

- In August 2023, DHSC published the Major conditions strategy: case for change and our strategic framework (DHSC, 2023b). Chapter 2 of this document is dedicated to primary and secondary prevention.

There is also public and opposition party support for prevention. The public believe the government should prioritise preventing ill health above treating it, with 40% of people agreeing there should be a greater focus, even if it meant there was less funding for those in hospital (The Health Foundation and Ipsos, 2022). In January 2022, the Labour Party's leader Sir Keir Starmer spoke on the party's vision for health (The Labour Party, 2022). Sir Keir outlined the idea of moving the NHS model from a system focused on curing sickness to prevention, as well as recognising the wider determinants of health outside of healthcare. Ultimately, well-being would be viewed as a national asset. Furthermore, Labour have committed to harnessing life sciences and technology to reduce preventable illness (The Labour Party, 2023), recognising the role of innovation in the new model of prevention

Finally, there are also local policies recognising the importance of prevention in improving the health and well-being of society. For example, the Greater Glasgow and Clyde (GGC)

NHS outlined their public health strategy for 2018-2028 (de Caestecker, 2018), with early intervention and addressing the wider determinants of health central to the strategy. Within NHS GGC, there will be a shift in focus and spending from treatment to prevention (de Caestecker, 2018).

## 2.4 Key prevention programmes

NHS England, in partnership with the National Institute for Health and Care Excellence (NICE), have outlined the most impactful interventions, known as 'high-impact interventions' relating to modifiable risk factors and the prevention and management of CVD, diabetes and respiratory disease (NHS England, 2022a). The interventions are characterised by a robust evidence base, alongside the benefits to patients at an individual level being realised within 36 months. The interventions relating to modifiable risk factors align well with the priorities set by the NHS in its long-term plan, published in 2019.

Table 1 summarises a selection of key healthcare prevention programmes. The programmes included are the high-impact interventions of the NHS (NHS England, 2022a), with some additions based on the NHS long term plan priorities (NHS, 2019), and screening and immunisation programmes. While these are not specifically mentioned in the long-term plan or the prevention priorities, we consider these to be a key component of the health system's prevention plan.

For example, the COVID-19 vaccination programme has been deemed highly successful. By the end of September 2021 the programme was estimated to have averted approximately 128,000 deaths and 262,000 hospitalisations (National Audit Office, 2022). The uptake was higher than anticipated with 85% of adults receiving two doses by the end of October 2021. The National Audit Office assessed that the £5.6 billion spent represented good value for money (National Audit Office, 2022).

The implications of the findings in the table are discussed further in section 4 which attempts to summarise the gaps in current UK prevention efforts.

**TABLE 1. KEY PREVENTION PROGRAMMES**

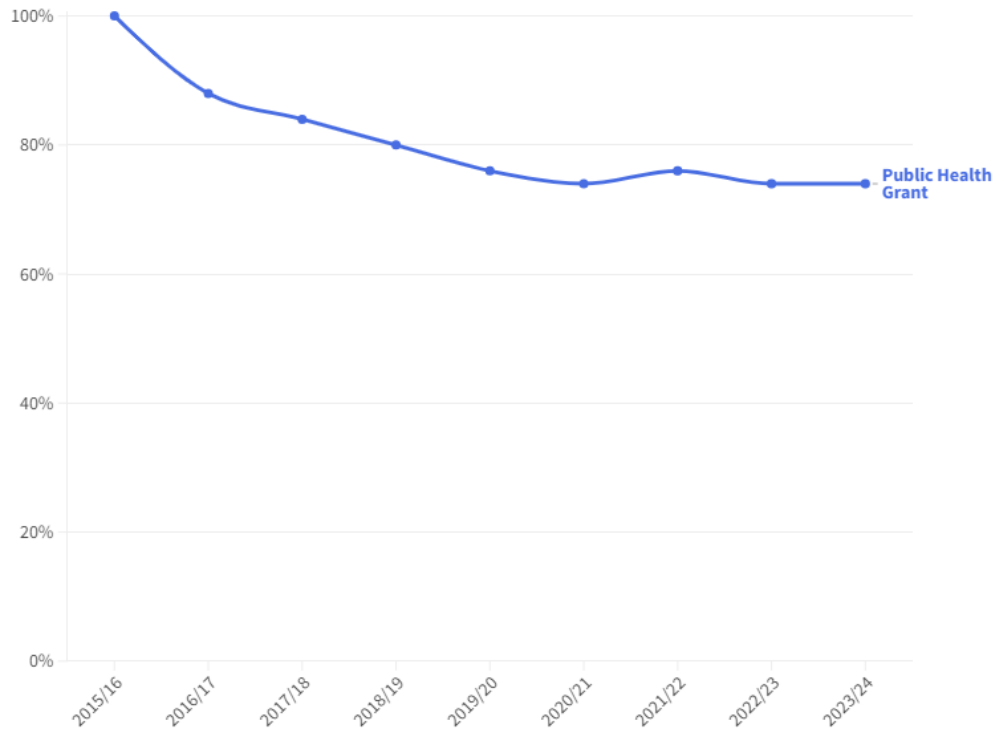
| Programme type | Notable programmes | Timing of prevention[1] | Timing to benefit realisation [2] | Current uptake[3] | Is this stated as an NHS priority?[5] |
|---|---|---|---|---|---|
| Immunisation | Childhood vaccination | Primary | Immediate | High | N |
| | Seasonal influenza vaccination | Primary | Immediate | High | N |
| | COVID-19 vaccination | Primary | Immediate | High | N |
| Modifiable risk factor treatment/ service | NHS stop smoking services: CURE model | Primary/Secondary | Short to medium term | Unknown[4] | Y |
| | Weight management services | Primary | Medium term | Unknown | Y |
| | NHS diabetes prevention programme | Primary | Short to medium term | Unknown | Y |
| | Alcohol care teams | Primary/Secondary | Medium term | Unknown | Y |
| Screening | NHS cancer screening (Breast, bowel, cervical) | Secondary | Medium term | Medium | N |
| | NHS newborn screening | Secondary | Medium to long term | High | N |
| Disease management and optimisation of treatment | NHS diabetes support | Secondary | Medium term | Unknown | Y |
| | Optimising treatment for hypertension | Tertiary | Short to medium term | Low | Y |
| (Early) disease diagnosis | Diagnosis of asthma and COPD, hypertension case finding | Secondary | Medium term | Unknown | Y |
| | NHS health check | Secondary | Medium term | Medium | Y |

[1]As per definitions in section 2.1. [2]Refers to onset of the benefits from the intervention: immediate (< 3months); short-term (<1 year); medium-term (1-5 years); long-term (>5 years). [3]High = the intervention is close to its target uptake; medium = slightly below target; low = uptake is significantly below the stated target; unknown = not possible to estimate. More information can be found in the Appendix.[4]Full rollout in 2023/24. [5]Are considered a NHS priority if they are set out in the NHS high impact interventions (NHS England, 2022a).

## 2.5 Financing of prevention

Whilst prevention is a stated priority for many governmental organisations, investment has failed to match this aspiration. Of total NHS funding, only 5% per year was allocated to preventative care between 2013-2019 (ONS, 2022c). Further to this, the public health grant (allocated to local authorities for the delivery public health services) has been declining since 2015/16 (Finch and Vriend, 2023); as of 2023/24, it has been cut by more than a quarter (26%) in real terms per person compared to 2015/16 (Ibid). This decrease over time is shown in Figure 5. It is estimated that for the public health grant to match historical funding levels and adequately keep up with rising demand, it would need to grow by £0.9 billion per year (2023/24 £) (Finch and Vriend, 2023).

**FIGURE 5: CHANGE IN PUBLIC HEALTH ALLOCATIONS IN ENGLAND (REAL, PER CAPITAL)**




Source: Reproduced from Finch and Vriend (2023).

The largest reduction in spend over this period has been for stop smoking services and tobacco control, which has fallen by 45% in real terms. Spend on sexual health services has decreased by 29% and drug and alcohol services for youths by 28% (Finch and Vriend, 2023).

There are also large regional disparities in how much is spent on public health. In 2019/20, spending varied from £27 per person to £156 per person, with a median of £58 per person (Local Governement Association, 2022). Whilst some of this disparity can be explained by differences in the needs of local populations, it is concerning that cuts to the grant have been greater in less affluent regions (Finch and Vriend, 2023).

Current funding levels fall far short of those recommended by the Wanless Review (Box 1) which generated projections of the levels of NHS investment needed to deliver a high-quality healthcare service. The review and recommendations demonstrated the potential for effective health promotion and prevention to divert demand from healthcare resources in the longer-term but was not actioned. Given the vast array of potential benefits from appropriate prevention (Chapter 3), particularly for an overburdened health system, this extent of underfunding is reckless.

**BOX 1: THE WANLESS REVIEW**

The Wanless Review (Wanless, 2003) generated projections on the levels of NHS investment needed over the following 20 years to deliver a high-quality healthcare service, catching-up with internal and international performance gaps caused by historical underinvestment, and keeping-up thereafter. They modelled investment patterns considering three scenarios on the factors driving NHS spending in the following future 20 years. Specifically, each scenario (1. Slow uptake; 2. Solid progress; 3. Fully engaged) made alternative assumptions about the health status and needs of the population, and the NHS level of technological development and productivity in the future.

The review showed that the catch-up and keep-up targets could be achieved by all three scenarios with sustained growth in NHS financing. Compared to the least optimistic scenario, the fully engaged one predicted an estimated £30 billion of savings for the NHS in 2022/23, coupled with better health outcomes for patients. In this scenario, the public is assumed to take active ownership of their health through improved lifestyle choices (e.g. smoking, diet, physical activity) and by actively seeking care through prevention and self-care.

The Wanless Review therefore showed the potential for effective health promotion and prevention to divert demand from healthcare resources in the longer-term. However, contrary to the recommendations, NHS funding has stalled over recent years and the overall annual health spend has fallen well short of the recommended levels (Kopelman, 2019).

# 3 The case for prevention

## HIGHLIGHTS

- **Investment in prevention is a smart use of public funds.**
- **For the health and social care sector, primary prevention programmes have been shown to offer returns on investment of more than 14:1.**
- **Investing in prevention can be significantly more cost-effective than in treatment, with an extra year of good health costing an estimated £3,800 via means of prevention, compared to £13,500 via treatment.**
- **For government, reductions in preventable ill health could increase tax receipts, reduce welfare payments, and generate savings to the police and criminal justice system. For example, a reduction of 10% in obesity prevalence could reduce annual spending on unemployment benefits by £400 million.**
- **For society, the cost of lost productivity to the UK economy due to preventable ill health has been estimated to be nearly £70 billion per year.**
- **Unmet need in preventable ill health in the UK is extensive and the consequent "prize" for addressing it is substantial.**

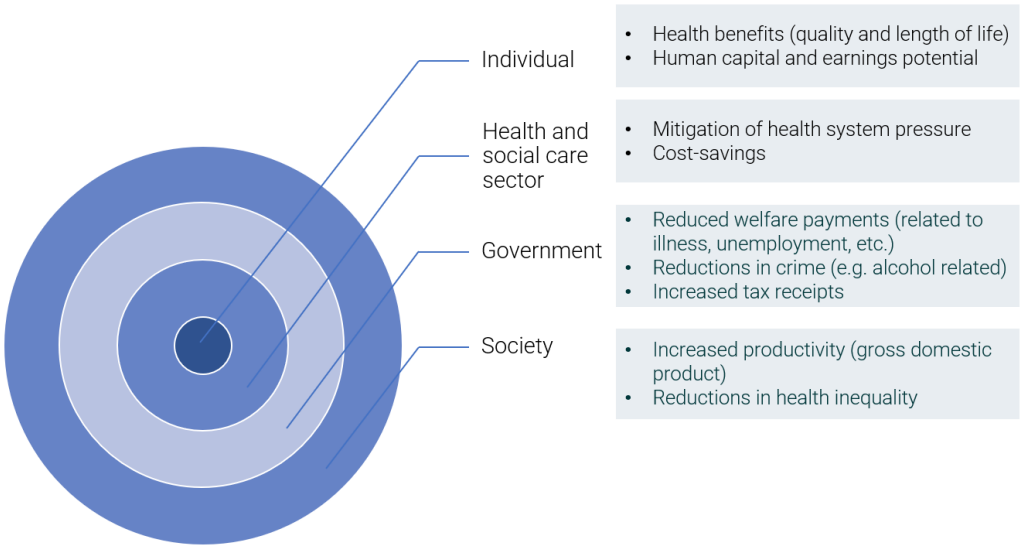
The benefits of prevention are large and manifold, reaching beyond the health system. Figure 6 illustrates the spread of some of the benefits of prevention across multiple stakeholders, including individuals, the health system, the government, and the broader society.

Different interventions will generate this range of benefits over different time periods. Public health interventions which encourage people to live healthier lives - such as childhood vaccination, mental health promotion, tobacco control services, substance abuse services – only produce measurable public benefits in the medium- to long-term. Whilst some individual benefits may accrue in the short-term (e.g. increased immunity, health status, and wellbeing), the reduction in healthcare utilisation and the consequent expenditure savings occur in the longer term. The required time horizon to benefits realisation can create perverse incentives for policymakers to invest in prevention due to their focus on budget considerations of much shorter term.

Other forms of prevention can also reduce demand for health services in the immediate to short-term. For example, effective management of existing long-term conditions and the associated risk factors can prevent resource use due to disease progression and aggravation, thus mitigating pressure on health care resources today.

Sections 3.1-3.3 explore the benefits to different stakeholder groups in further detail, with the exception of individual benefits which are not the focus of this report. Overall, we show that unmet need in preventable ill health in the UK is extensive, and the economic "prize" for addressing it would be substantial.

**FIGURE 6: EXAMPLE DISTRIBUTION OF POTENTIAL BENEFITS OF PREVENTION**




Notes: This list is not exhaustive. Individual benefits are outside of the scope of this paper.

## 3.1 Benefits for the health and social care sector

### 3.1.1 Financial benefits

Prevention is a highly cost-effective, and often cost-saving, investment of public sector resources. Focusing on primary prevention delivered through public health interventions in high-income countries, a systematic review of 52 studies found that public health interventions are substantially cost saving, with a median return on investment (ROI) of more than 14:1 (Masters et al., 2017)[6]. By implication, the funding cuts detailed in section 2.4 are false savings that will generate additional future costs to the NHS and wider society. Indeed, the opportunity cost of the cuts is 14 times higher than their numerical face value.

Investing in prevention can be 3-4 times more cost-effective than in treatment, with an estimated cost of £3,800 for each additional quality-adjusted life year (QALY) generated through the public health grant in the UK, against a cost of £13,500 per QALY when generated from the NHS budget (Martin, Lomas and Claxton, 2020). This £3,800 is substantially lower than both the £20,000-£30,000 threshold used by NICE to determine whether interventions represent a cost-effective use of resources, and the £60,000 willingness to pay threshold used by DHSC. This evidence asserts that investing in public health programmes will generate greater benefit than investment in the wider NHS.

Still, the unrealised benefits of prevention remain significant. For example, unnecessary NHS spending associated with preventable conditions includes an estimated £2.5 billion

[6] *In ROI estimates, the 'returns' are the benefits of the intervention under evaluation against the comparator. This includes (1) different types of cost-offsets to the health system and, if relevant to the perspective of analysis, societal costs; (2) the monetised health gains. The assumed monetary value of health gains is £20,000 per quality-adjusted life year (QALY) generated.*

per year due to smoking related conditions (Action on Smoking and Health, 2021), £6 billion for obesity-related conditions (PHE, 2017), and £3.5 billion on alcohol (NHS Digital, 2015). The burden on the NHS of these three risk factors alone corresponds to about 11%[7] of total government spending on curative healthcare in 2020 (£134 billion) (ONS, 2022c).

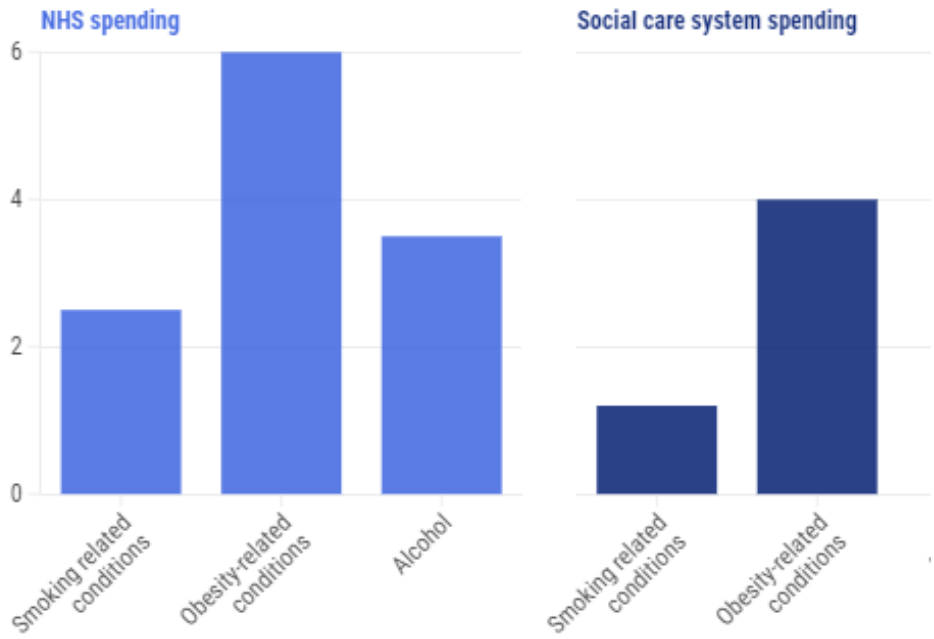



**FIGURE 7: UNNECESSARY NHS SPENDING ASSOCIATED WITH PREVENTABLE CONDITIONS (IN £ BILLIONS)**

Another area of considerable savings from prevention concerns the social care system, which is responsible for providing care for long-term conditions through services offered by local authorities through domiciliary and residential care. Social care costs can be significant for long-term conditions requiring continued assistance outside the clinical settings. For example, the estimated costs to the social care system of smoking related conditions is £1.2 billion (Action on Smoking and Health, 2021) and £4 billion for obesity (Frontier Economics, 2022). Taken together, these figures amount to about 16%[8] of the public social care budget in 2020 (£30 billion).

### 3.1.2 Capacity related benefits

Under the current level of capacity constraint facing the NHS, averting demand that could further disrupt the functioning of the healthcare system is crucial. Following the COVID-19 pandemic, the backlog of patients waiting to receive hospital treatment reached a record high of 7.2 million in October 2022. Of these, over 410 thousand waited over a year to be admitted (BMA, 2022) - against an NHS recommendation that patients should begin treatment for non-urgent care within 18 weeks of referral. In A&E, the number of patients

*[7] Obtained after adjusting for inflation the burden of disease estimates of obesity and alcohol, both from 2015. Estimates for smoking are already for 2020. NHS spending is approximately £7.8 billion on obesity and £3.8 billion on alcohol related conditions at 2020 prices.*
*[8] Obtained after adjusting for inflation the burden of disease estimates of obesity from 2021. Estimates for smoking are already in 2020 prices. Social care spending on obesity is approximately £3.5 billion at 2020 prices.*

waiting over 12 hours from decision to admission was 34 times higher than it was in November 2019 (Ibid).

Still, the delivery and uptake of secondary and tertiary prevention programmes in the UK is suboptimal and has further been disrupted by the COVID-19 pandemic. For example, raised blood pressure (hypertension) is a leading cause of cardiovascular disease, which accounts for a quarter of premature deaths in the UK (UCL Partners, 2022). Despite the availability of highly effective treatments, many people with raised blood pressure are not on the recommended treatment. Based on pre-COVID-19 data (QOF), 30% of people with hypertension were unaware of their condition and around one third were not treated to target (NHS Digital, 2020). During COVID-19, the proportion of people with optimally controlled blood pressure additionally fell from 70% to 50% (20/21) and it has been estimated that 27,000 cardiovascular events in the next three years could occur if this is not immediately addressed (UCL Partners, 2022).

## 3.2 Benefits to the government

The benefits of prevention extend well beyond the health and social care system. In fact, prevention was a pillar of the UK's government view for health in the 2020s, viewing "health as an asset to invest in throughout our lives, and not just a problem to fix when it goes wrong" (GOV.UK, 2019). A healthy person has good physical and mental health and with the opportunity for meaningful work, secure housing, stable relationships, high self-esteem and healthy behaviours (Lovell and Bibby, 2018).

From a government perspective, healthy lives provide an opportunity for savings across multiple areas of public spending. A healthy person with additional employment opportunities and better job stability throughout their lifetime translates into **higher tax receipts** and, in parallel, **reduced costs to the social security system** in terms of welfare payments (e.g., unemployment benefits, or sickness benefits).

The Office for Budget Responsibility has shown that the number of people citing long-term sickness as their reason for being inactive in the labour market has been rising steadily since the pandemic. They estimate that the increase in labour market inactivity due to long-term sickness and rising ill-health among those in work over this period has already increased annual welfare spend by £6.8 billion, and cost £8.9 billion in foregone tax receipts. These figures combined amount to a substantial loss of 0.6% of GDP (Office for Budget Responsibility, 2023a).

Further estimates of the burden of preventable ill health on government welfare payments are available for individual diseases. For example, annual unemployment benefits to individuals with obesity are an estimated £3.6 billion (Frontier Economics, 2022). These welfare payments are estimated to represent an increasingly large component of government spending in the medium term (Office for Budget Responsibility, 2022) (Office for Budget Responsibility, 2023b).

Further benefits to the government from prevention may also stem from indirect effects of improved health through prevention. One example is the reduction in the **rate of criminal behaviour** due to alcohol consumption, which imposes costs on the police and criminal justice system. While not fully preventable, the annual cost to the police and criminal justice system of alcohol-related violent crime is an estimated £1.9 billion[9] (Institute of Economic Affairs, 2015).

[9] *This figure adjusts by inflation the original £1.6 billion estimate at 2015 prices.*

## 3.3 Societal benefits

The contribution of prevention to the development of healthy lives also generates benefits from a broader societal perspective.

A key outcome of prevention to society is in terms of **productivity effects** and their impact on **economic growth**[10]. For example, preventative interventions in childhood (e.g., mental health, immunisation) contribute to better educational outcomes and employment opportunities in the future. Additionally, interventions that promote health within the workplace or targeting disease episodes in the working age population can have immediate effects on reducing absenteeism and presenteeism**.** Estimates of the loss to the UK economy due to ill-health related absenteeism and presenteeism at work were approximately £92 billion in 2019, with three-quarters attributed to poor mental well-being and unhealthy lifestyle choices that are preventable (Vitality, 2022; Mercer, 2020). This £70 billion in productivity losses attributable to preventable ill health equal approximately 40% of the monthly UK gross domestic product (GDP) in 2019 (£188 billion) (IMF, 2022).

Indirect productivity effects from prevention may also occur from reducing the amount of social care provided by informal carers or family members for individuals suffering preventable conditions. In the case of smoking, the cost of informal care "paid for" by carers is an annual £8.16 billion (Action on Smoking and Health, 2021). This represents 6.8 times the cost of social care associated to smoking related conditions to the government.

Productivity effects are especially important to the UK, where growth has slow since the 2008 financial crisis; between 2009 and 2019, UK output per hour growth among the G7 countries was the second slowest (ONS, 2022d). Productivity growth has further been inhibited by Brexit and the COVID-19 pandemic. In fact, the UK was the only G7 economy to not have recovered its pre-COVI-19 level by the second quarter of 2022 (Nabarro, 2022).

On top of these macroeconomic figures is a rise in economic inactivity due to a substantial increase in long-term sickness since 2019. Recent data show a record 2.5 million working-age people are inactive, an increase of about 25% since 2019 (ONS, 2022b). While no direct causes have been established, part of this issue is likely to result from treatment delays due to the large NHS patient backlog, mental health issues, and a lack of support in returning to work (Strauss, 2022). The delivery plan for tackling the COVID-19 backlog of elective care will help address this rise in long-term sickness (NHS, 2022).

Prevention also has a role in fulfilling other **societally desirable outcomes**, such as reducing health inequalities. From an equity perspective it may be desirable to live in a more equitable society where individuals have the same opportunity to achieve outcomes such as a long life and a higher income.

The role of prevention in addressing health inequalities is particularly strong for "upstream" (primary) prevention, which is seen as more effective at reducing inequalities than "downstream" (secondary and tertiary) (WHO, 2020). In fact, much of the preventable risk factors for ill health in the UK are concentrated among disadvantaged socioeconomic groups. For example, in 2019 the proportion of adults in England who were smokers in the lowest income quintile was 27 per cent, compared to 10 per cent in the highest income

[10] *When analysing the total burden of preventable ill health from a societal perspective, productivity effects normally already include tax returns to the government. Under a societal perspective, tax returns, as well as welfare payments, are considered as a transfer and therefore should not be included in the full cost of disease.*

quintile (King's Fund, 2022). Similar trends are seen in obesity, where the UK the largest gaps among European countries in childhood obesity between the least and most affluent families in the UK (26 points compared to the EU average of 8 percentage points) (King's Fund, 2021).

# 4 Where are the gaps?

HIGHLIGHTS

- **Targeted high impact prevention strategies are in place within the NHS and public health services, but uptake and coverage are suboptimal. For example, the NHS Diabetes Prevention Programme which has been shown to be effective at preventing diabetes and cost-effective for the NHS, has the capacity to include only a small proportion of its eligible population.**
- **System priorities, specifically the stated commitment to prevention, have been undermined by consistent cuts to public health funding. Investment in public health decreased by a quarter between 2015-2022.**

Our analysis identifies four key gaps and opportunities for further research to support the prevention agenda.

The gaps are as follows:

**1. Uptake of existing programmes is suboptimal**

Table 1 (Chapter 2) showed that uptake of key prevention programmes is suboptimal, with many of the interventions having scope to reach a greater number of people. For example, there has been a COVID-19 pandemic impact on the uptake of cancer screening services and access to medicines (PwC, 2022). Furthermore, the NHS health check reached only 41% of eligible people between 2015-2020 (OHID, 2021a).

It's estimated that at an uptake of 50% every £1 spent generates a return of £2.93, with this increasing to £3.55 at a 60% uptake. The optimisation of hypertension treatment was another area with poor uptake, combined with poor diagnosis rates. It is estimated approximately 4 million people with hypertension do not have a diagnosis, and of those diagnosed, 30% are not managed optimally (NHS England, 2022b). Roundtable attendees noted that poor uptake is often linked to inability to access services, which has implications for service design.

**2. Capacity to deliver the stated ambitions is insufficient**

For example, the NHS diabetes prevention programme (DPP) has been shown to reduce the chance of developing diabetes by 37% (NHS England, 2022c) and is highly cost-effective. Access to the DPP is available for up to 200,000 people per year (NHS England, 2022c). However, it is recommended for adults with nondiabetic hyperglycaemia (GOV.UK, 2018) yet Diabetes UK estimate there are 13.6 million people eligible under this definition of nondiabetic hyperglycaemia (Diabetes UK, 2023b). Given that, approximately 10% of the annual NHS budget is spent on diabetes (NHS England, 2022c), and 50% of diabetes cases can be prevented or delayed with the right support (Diabetes UK, 2023a), increasing uptake would be highly beneficial.

### 3. Investment is focused on short-term goals

Programmes have been selected by the NHS as high-impact interventions with benefits for the individual being realised within 36 months. This benefit to the individual is important in terms of health gains but masks the reality that the benefit to the system is likely to be felt over a much longer term. For example, whilst vaccination benefits in the form of increased immunity are almost immediate for the individual, the most substantial benefits for the health system are felt when episodes of illness are avoided due to vaccination, transmission is reduced, and/or diseases are eradicated.

As discussed in Chapter 3, some of these benefits to the system are more likely to occur in the medium-long term. Indeed, most primary prevention efforts will have benefits that occur to the health system and wider government in the medium to long term, which means the cost and capacity savings fall outside of short-term budget considerations and political cycles, making them appear less attractive at the point of initiation. Indeed, Hunter et al. (2022) state that the political system in the UK suffers 'chronic short-termism' which inhibits our ability to implement appropriate long-term plans.

Roundtable attendees confirmed that one-year budget cycles mean long term activities like prevention become a side-activity as they are forced to compete with short term health care spending. Such short-term spending is often more urgent than long term activities like prevention, but it is not more important.

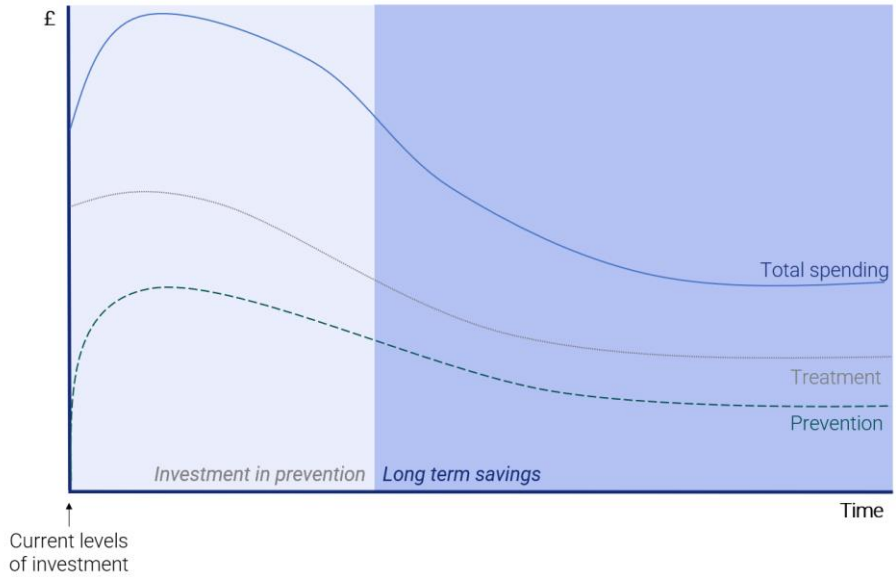
### 4. Prevention is underfunded

Whilst the priorities in specific disease areas are being met by tailored prevention policies, progress towards the broader aims of helping people to stay healthy and ushering in the decade of 'proactive, predictive, and personalised prevention' is not evident. Achieving these aims requires a shift in system priorities towards prevention, allowing (in the longer term) a move away from the current focus on reactive treatment. For this to happen, investment in prevention is critical, and we have to accept that many of the benefits to the NHS, the government and wider society may take many years to occur (as per the gap identified around the timing of costs and savings). Whilst evidence suggests we may see cost savings from an appropriately broad prevention strategy, in order for these to be realised, additional investment is needed in the short term. Figure 8 illustrates these relationships.

In reality, prevention efforts, and public health in particular, have not been made a financial priority. Of total NHS funding, only 5% per year was allocated to preventative care between 2013-2019 (ONS, 2022c). This is despite clear evidence that investment in public health generates greater benefits to individuals, health systems and society than investment in the wider NHS. Further to this, the public health grant (allocated to local authorities for the delivery public health services) has been declining since 2015/16 (Finch and Vriend, 2023); as of 2023/4, it has been cut by more than a quarter in real term since 2015/16 (Ibid).

Given the high returns of investment generated by prevention interventions, the opportunity cost of these cuts is even greater. There is thus a substantial gap between the semantics of stating that prevention is priority, and the reality of the funding that it has received. Roundtable attendees summarised this as: despite the significant and known benefits of prevention, it is competing with healthcare for funding, and, as it stands, is losing.

**FIGURE 8: INDICATIVE SCHEMATIC OF INVESTMENT IN PREVENTION AND POTENTIAL SAVINGS OVER TIME**




*Please note the proportions in this graph are purely for illustrative purposes and are not based on real data or projections. Roundtable attendees were not unanimous in their acceptance that a greater emphasis on prevention will lead to long term savings. Disagreement centred around whether the evidence shows that prevention just delays ill health from one condition, so that the individual develops the next condition instead, or whether appropriate and effective prevention delays ill health beyond normal life expectancy (so that it no longer a cost or concern). Further research on this question is suggested in section 5.6*

### Further research: Incomplete evidence on the economic "prize" of prevention

Evidence of the economic "prize" attached to an effective prevention agenda is incomplete. The majority of the available ROI studies are restricted to a number of public health interventions targeting risk factors such as smoking, obesity and alcohol consumption. By design, these studies do not reflect the whole spectrum of benefits generated by prevention across stakeholder groups. The Wanless Review (Box 1) provided a comprehensive analysis of potential benefits but is now 20 years old.

Up to date evidence to quantify the benefits at the government and societal levels is particularly sparce. In our analysis of the case for prevention (Chapter 3), we largely proxied these effects using evidence of the existing burden of preventable ill health in the UK. However, strengthening the case for investing in prevention with cross-sector support may require more complete evidence of the multiple types of benefits attached to tackling a wider spread of preventable conditions.

# 5 Potential solutions

HIGHLIGHTS

- **Cross party working, a minimum investment standard, innovative financing and contracting options, a dedicated prevention fund, and further research could be leveraged to overcome barriers to an effective prevention agenda.**
- **New opportunities exist that if correctly harnessed, could usher in a new era of prevention. For example:**
    - **precision medicine allows healthcare professionals to target treatments and diagnoses to patients who will benefit from them, in contrast to the traditional "one size fits all" approach.**
    - **digital health technologies (DHTs) have the advantage of having a low marginal cost, and thus when effective, have the potential to be highly cost effective. DHTs can also be highly targeted and made available 24/7.**
- **To leverage all these opportunities, an evidence-based clinical strategy backed by clinical and political consensus and a delivery architecture (including funding) to execute the strategy on a multi-year basis is required. We set out supporting activities for a wide range of stakeholders to enable the development of such s strategy, support its delivery, and truly usher in the promised decade of 'proactive, predictive, and personalised prevention'.**

The following paragraphs outline several ideas which could potentially serve as solutions to the identified gaps, focusing on gaps 3 (Investment is focused on short-term goals) and 4 (Prevention is underfunded). The purpose of this section is to stimulate discussion and new ideas, rather than to provide definitive solutions.

## 5.1 Political commitments, strategies and plans

- **Raising the salience of the 'why' for prevention across political parties**

Cross party understanding will be critical in overcoming the prevailing short-sightedness. As outlined above, many primary prevention efforts pay off in the medium to long term, which means savings fall outside of short-term budgets and political cycles. To persuade politicians and policy makers to take a long-term view, a cross party initiative must be instated to elevate prevention above short-term political cycles, to a position where all parties share an understanding of the need to play the long game. A cross party commitment to prevention in the long term will require an understanding that benefits from programmes initiated now will reap benefits under successive governments. These benefits will be manifold, reaching across individuals, the health system and wider society, and should not be denied by any one government or political party due to short-sightedness.

In practice, this could be achieved by the All-Party Parliamentary Health Group (APHG) leading a collective of All-Party Parliamentary Groups (APPGs) focused on health and prevention (including those for Cancer, Pharmacy, Diabetes, etc.) to come together to look at prevention via a series of events over 6-12 months. This should be combined with an effort to share high-level reports and research which showcase the current challenges the UK's health sector faces when tackling prevention.

It is vital that APPGs continue to listen, connect and learn directly from frontline health care providers and system partners, who bring unique insights to generate cross-cutting action plans. Key aims of the collective of APPGs would be raising awareness of the missed opportunities to date, evaluating potential solutions, and communicating the vast and multifaceted potential benefits of effective prevention. Cross-party groups (CPGs) in Scotland may provide another useful opportunity for cross-party understanding and collaboration on prevention.

These efforts will be useful in creating a platform to raise the salience of prevention across parties, highlighting the cost of insufficient action and identifying key areas for change. However, this may not be sufficient to drive change as APPGs hold no accountability for outcomes, and thus will need to be combined with further action.

- **Alignment of strategies and plans relevant to prevention**

Once the salience of prevention has been raised across political parties, development of a clinically evidenced plan supported by politicians and clinical leaders will drive action. This should include the alignment of the forthcoming Major Conditions Strategy and the upcoming refresh of the NHS Long Term Plan (NHS, 2019). The process should allow for the co-creation of accountable targets to improve preventative health outcomes, with clinical and political support, as well as the funding and metrics to achieve it(indeed, Roundtable attendees stressed that a multi-year funding commitment will be needed before any significant action is taken). Any potential outputs from the aforementioned cross-government ministerial board on prevention (DHSC, 2021) should also be brought into alignment. Further ideas on funding and metrics are given below.

## 5.2 Innovative financing within NHS budgets

### 5.2.1 A prevention investment standard

A prevention investment standard could mirror that which is in place for mental health. The mental health investment standard (MHIS) stipulates that mental health spending nationally and within each ICB must increase by a greater rate than overall spending. ICBs (and previously CCGs) are required to report on their compliance with the standard.

If implemented to incentivise prevention spending, an investment standard would need to be done alongside a clear plan for where spending should be targeted, and how the standard could best be monitored. Careful consideration should be given to minimising unintended consequences, such as how additional spending related to one-off projects in

any one year can be captured in a way that does not disadvantage the ICB in meeting the target in the following year.

Given the widely repeated rhetoric that prevention is a priority to the government and NHS, at a very minimum, a similar standard should be implemented and legislated for spending on prevention activities. The purpose would be to ensure prevention spend can no longer continue to be eroded, against the stated priorities and the best interests of individuals, the NHS, government and society.

### 5.2.2 Contracting options

The challenge of needing investment up front to generate future returns is not exclusive to prevention. As such, there are various financial tools and contracting options available which could be leveraged. These options will be particularly useful in cases where prevention requires a large upfront investment and/or the supporting evidence is particularly uncertain:

- **Payment by results** is a type of outcomes-based payment which allows health care payers to be reimbursed should the expected outcome not be achieved. This type of agreement has been suggested for high-cost treatments such as cancer therapies and gene therapies (Cole et al., 2019; Cole, Neri and Cookson, 2021; Hampson et al., 2017), often where the evidence base is uncertain. Whilst popular in academic discussion, these agreements are yet to gain significant traction in the UK NHS due to concerns over administrative complexity and the requirements for ongoing evidence collection (Cole et al., 2019; Cole, Cubi-Molla and Steuten, 2021). As progress is made and barriers are overcome, similar agreements could be leveraged for prevention activities.

- **Payment over time:** Outcomes-based payments can be combined with amortisation, which is a mechanism for paying a large upfront cost by making smaller payments over a period of time (like a mortgage). In the meantime, when the prevention activity has begun but it has not been paid in full, someone is required to hold the debt. This role could be served by financial institutions, government, or when circumstances allow, by large manufacturers.

## 5.3 Financing prevention outside core NHS budgets

### 5.3.1 Social impact bonds

Social impact bonds or health impact bonds are financial instruments that allow outcomes-based payments (OECD, 2016). They provide a mechanism for capital raising without requiring substantial additional government investment, by leveraging the expectation of future benefits. An investor (a financial institution, charity or philanthropic organisation) provides funds to pay for a range of interventions that are expected to provide social/health and economic benefits. If these benefits occur, the investor receives their initial investment plus a financial return. The Impact Bond Dataset (part of the International Network for Data on Impact and Government Outcomes (INDIGO)) lists 93 active social impact bonds in the UK, of which 12 are in health (INDIGO, 2023). We have established that prevention is a good investment, and thus is a good candidate for social impact bonds.

### 5.3.2 A dedicated prevention fund

Dedicated funds are used in the UK to commit resources to areas deemed to be of high importance. The Cancer Drugs Fund (NHS England, 2016) and the Innovative Medicines Fund (NHS England, 2023) use ringfenced funds to provide managed access for patients to promising new treatments. These existing funds have annual budgets of £340m each (NICE, 2023). The medicines supplied via these funds are likely to be of high value to individual patients and their loved ones in the short to medium term, but are not expected to provide cost savings, or generate longer term and wider gains to the health system, government and society on the same scale as effective prevention initiatives.

A dedicated fund for promising new prevention interventions would generate substantial benefits for the UK, improving health, reducing health system pressure, reducing welfare payments whilst increasing tax receipts, and increasing productivity and economic growth[11]. Such a fund may also stimulate innovation in prevention activities. In the short term, the fund could be financed by government or (in part) by social impact bonds. In the long term, the savings generated would likely more than outweigh the initial investment and the fund would effectively pay for itself. The fund could be administered leveraging the existing public health evidence review expertise of NICE.

### 5.3.3 Adjusting the balance of (financial) responsibility

As avoiding preventable ill-health benefits all (individual, government, society), framing it as purely a health problem is limiting in terms of the budget and influence that could be available. Other government departments and private companies should be strongly encouraged (if not mandated) to play an active role (including via financing) in the prevention of ill-health, acknowledging that improvements in population health will reach far beyond the health sector. Further research on the full economic 'prize' for doing so for each stakeholder would be helping in galvanising wider support for broader involvement in prevention, helping to establish its position as a good investment outside of the health sector.

## 5.4 Improved monitoring

To support the continued funding of prevention activities relevant indicators related to implementation and outcomes should be monitored in the medium to long term at the provider level. This monitoring could be used to increase accountability and incentivise desired action. Indeed, roundtable attendees confirmed that whilst there is typically strong support amongst clinicians for prevention activities in theory, without proper incentivisation and monitoring, treatment will always be prioritised.

An example of such an incentive system is that  of the quality and outcomes framework (QOF) which ties a proportion of general practice payments to indicators in selected disease areas (e.g. cardiovascular disease, chronic obstructive pulmonary disease (COPD), and smoking) (NHS Digital, 2022). The QOF indicators measure achievement against health outcomes and care processes indicating high quality care. Evidence suggests that,

[11] *Careful thought would need to be given to the scope any such fund to ensure alignment across the fund, local authority public health grants, the Long Term Plan and Major Conditions Strategy and NHS funding for prevention activities. As with the Cancer Drugs Fund and the Innovative Medicines Fund, the purpose would be to provide access to promising new interventions. The intention is that the fund would be in addition to the existing ringfenced public health grant, just as the Cancer Drugs Fund and Innovative Medicines Fund are in addition to the NHS budget..*

since the QOF introduction in 2004/05, clinical standards of the disease areas included in the framework have improved[12] (Sonsale, 2017).

As part of the upcoming refresh of the Long-Term Plan, existing targets should be updated in line with prevention ambitions. For example, a similar system to the QOF could be designed for providers of public health initiatives (within the NHS and local authorities) to ensure that the processes around prevention delivery are monitored on an ongoing basis, as opposed to focusing on outcomes that only occur in the long-term. A transparent monitoring system may also support a clearer distribution of roles and responsibilities following the recent reorganisation of prevention services in England and introduction of ICSs.

## 5.5 Awareness and messaging for population behaviour change

Roundtable attendees stressed that public perception and buy in is important. Prevention activities can be costly to individuals (e.g. a healthy lifestyle may cost time, goodwill, energy, and/or money). Thus, given an individual's time preference (the rate at which they trade off costs and benefits that occur now with those that may be expected to occur in the future), a rational individual may conclude that the cost of prevention activities outweighs the perceived benefits. This is exacerbated by: 1) the incomplete information many of us hold about our future health risks, making it difficult for any individual to accurately weigh up the costs and benefits of engaging in prevention activities, 2) time inconsistent preferences, whereby an individual may pursue happiness today even if it's not in their long-term interests (i.e. decisions made today do not maximise lifetime utility) and 3) a prevailing misconception that medicines and healthcare professionals can fix all health problems,. In reality, illness is limiting, and the healthcare system is not able to restore everyone to full health.

Awareness campaigns and activities developed in collaboration with behavioural scientists may help to reshape attitudes towards prevention. Prevention activities should be positioned as in investment in health, much like pensions, mortgages and savings. This type of behaviour change is difficult, and progress is likely to be slow, but examples from COVID do show success in engaging communities to stay home and to be vaccinated. A key message which may have contributed to the success of the COVID example was protecting the NHS, which remains highly relevant for the broader the case of prevention.

Roundtable attendees suggested Core20PLUS5 may be a good starting point to narrow the scope and improve the likelihood of impact of these types of campaigns. The end goal is

[12] *The evidence suggests that the QOF is effective at improving care quality, although there are concerns around a decline in patient-centeredness and some 'gaming' of the system among providers. Policy makers should be mindful of these limitations when designing any similar system for prevention.*

for individuals to feel able and empowered to take ownership of their own health. They also have a social responsibility for doing so, in order to protect the NHS.

Policies and interventions can also be designed to reduce the 'cost' of prevention activities for individuals, e.g. integration of green space into communities or building cycle lanes to allow exercise to form part of an individuals' commute.

## 5.6 Further research

Evidence to quantify the benefits of prevention activities at the government and societal levels or around the optimal level of prevention funding is sparce, which makes development of a robust business case challenging. In particular, there is no up to date direct evidence on the size of the economic prize for government and wider society that would be gained from appropriate investment in a comprehensive prevention plan. It is clear that the benefits will be large and wide ranging (see Chapter 3 for many examples), but specific evidence on the scale of specific types of gains may help spur policy makers into action.

Roundtable attendees noted that further research to demonstrate cost implications and savings would strengthen the case for investing in prevention with cross-sector support. In particular, they suggested two key areas for research: 1) What can we learn from international best practice, and 2) Do project cost savings from prevention interventions translate into long term cost savings for the NHS? On the latter, there was some debate around whether prevention just delays ill health from one condition, so that the individual develops the next condition instead, or whether appropriate and effective prevention could delay il health beyond normal life expectancy (so that it no longer a cost or concern). This could be explored via further research.

A scoping study to explore how the various financial solutions that have been proposed here (social impact bonds, a prevention investment standard, a dedicated prevention fund and payment by results) could most effectively be applied to prevention activities, would also be beneficial.

## 5.7 New opportunities

In addition to considering how to correct opportunities that have been missed so far, a comprehensive prevention agenda must take account of emerging opportunities. To date, models for prevention have typically been based on broad campaigns or standardised interventions for large populations or sub populations (based on risk factors or early signs of ill health). The future of prevention has the potential to be more tailored, targeted, and personalised to individual needs. The adoption of new technology and biomedical innovation, as well as collaboration across government, industry, and academia will be essential to realising the new opportunities. Our proposed solutions and these future

opportunities should be viewed as complementary strategies to establish a new era of optimised prevention.

### 5.7.1 Precision medicine

Precision medicine and genomics use an individual's genetic profile to guide decisions about the prevention, diagnosis and treatment of disease (UCL, 2019). The variability in genes, environment and lifestyle are considered to determine disease treatment and prevention, more accurately predicting which strategy could work well for a particular patient (NHS, 2020). Precision medicine therefore allows healthcare professionals to target treatments and diagnoses to patients who will benefit from them, in contrast to the traditional "one size fits all" approach (EFPIA, 2023).

Precision medicine has the potential to improve outcomes across all three dimensions of prevention:

- In primary prevention, use of genome sequencing at birth has the potential to treat and prevent disease before its onset. The Newborn Genomes Programme pioneered by Genomics England (Genomics England, 2021b) will sequence 100,000 newborns to assess the benefits, challenges and practicalities of offering whole genome sequencing for all (thereby expanding the current newborn screening programme in the UK). Aims of the programme include ensuring timely diagnosis, access to treatment, and generating better outcomes for babies and their families.

- In secondary prevention, genomics could support earlier and more accurate diagnostics of disease, as well as the delivery of more personalised and effective treatments. Genomics England are exploring the clinical potential of long-read sequencing to support quicker and more accurate diagnosis of cancer than is currently available (Genomics England, 2021a).

- Finally, there is potential for this to give an insight into treatment that more targeted and thus effective for the patient, strengthening tertiary prevention.

### 5.7.2 Digital Health

Digital health technologies (DHTs) represent "various products used in the healthcare system, including software, applications (apps) and online platforms benefiting individuals and the wider health and social care system" (Brassel et al., 2022).

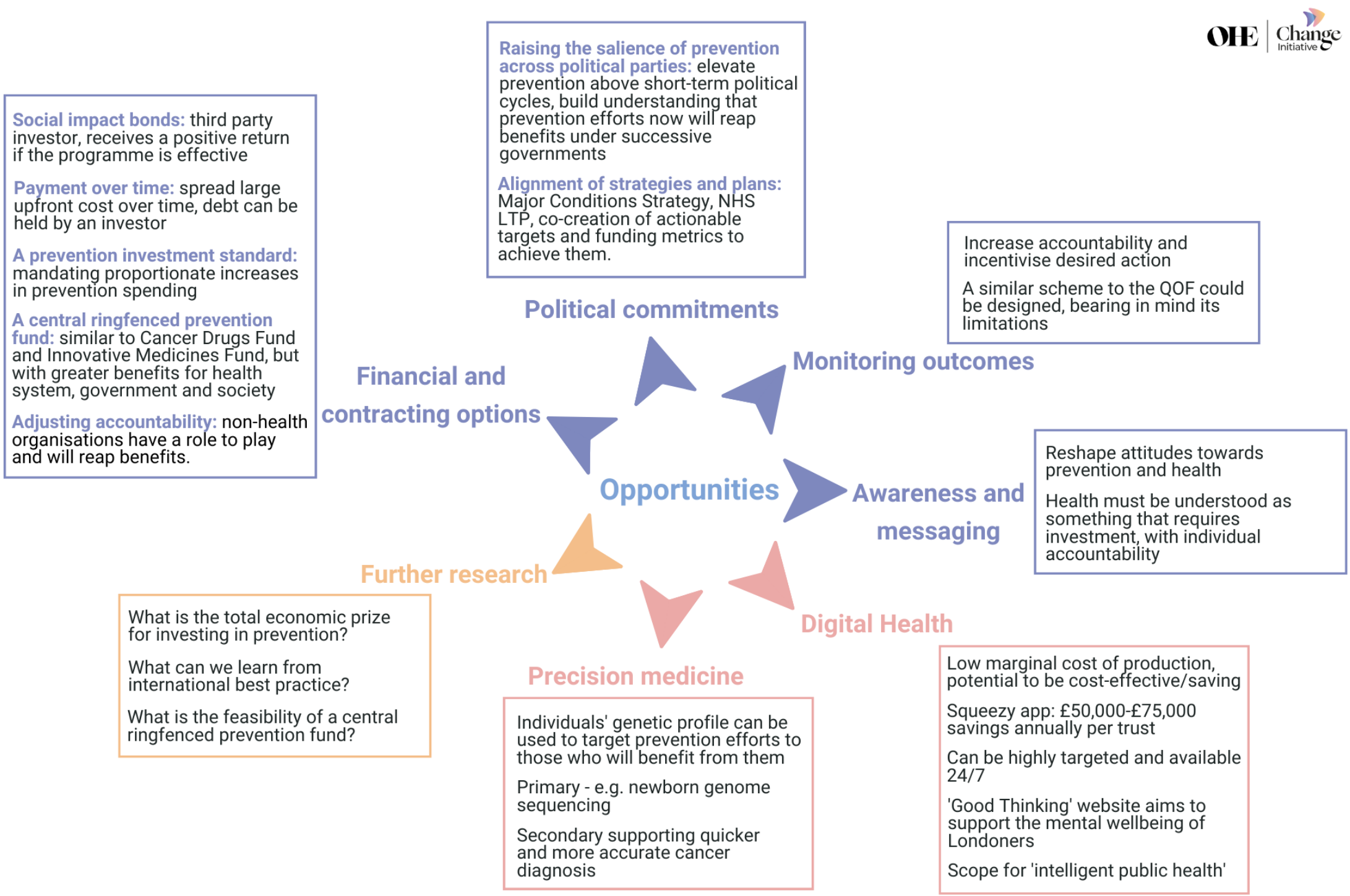
DHTs have the advantage of having a low marginal cost, and thus when effective, have the potential to be highly cost effective (depending on how this low marginal cost of production is translated into a price for the NHS or local authority payer). One simple example is the NHS-endorsed Squeezy app (Living With, 2023). The app aims to support women and men complete a pelvic floor exercise programme to improve their health outcomes. The users can keep a symptom diary, tailor their exercise plan, or follow a pre-set exercise plan approved by NICE. The app is cost-saving to the extent of £50,000-£75,000 savings annually per trust, via a reduction in the frequency of surgery and improved health outcomes (Living With, 2023). The app shows how digital health could have an important role in the delivery of effective and potentially cost-saving interventions.

DHTs can also be highly targeted and available 24/7. Good Thinking[13] is a website which aims to support the mental wellbeing of Londoners by offering a range of questionnaires and free NHS-approved apps. Targeted online advertising is utilised to reach people who may be demonstrating signs that their mental wellbeing is suffering, offering resources and advice related to primary and secondary prevention. Individuals are able to reach the site at the time they most need it, unlike traditional services that are more likely to have set hours and waiting lists.

The utilisation of DHTs forms part of the UK government's vision of intelligent public health, which refers to the use of technology and data to deliver more targeted public health services (GOV.UK, 2019). The NHS health check has been identified as a public health programme in need of reformation. The vision is for NHS Health checks to become intelligent health checks, for example by making it digital in the first instance (allowing the check to be convenient and more relevant as its tailored to the individual), to ensure greater uptake and ultimately improve outcomes (GOV.UK, 2019).

The potential solutions and new opportunities are summarised in Figure 6 below.

[13] *https://www.good-thinking.uk/about-good-thinking*


Raising the salience of prevention across political parties: elevate prevention above short-term political cycles, build understanding that prevention efforts now will reap benefits under successive governments
Alignment of strategies and plans: Major Conditions Strategy, NHS LTP, co-creation of actionable targets and funding metrics to achieve them.
Political commitments
Social impact bonds: third party investor, receives a positive return if the programme is effective
Payment over time: spread large upfront cost over time, debt can be held by an investor
A prevention investment standard: mandating proportionate increases in prevention spending
A central ringfenced prevention fund: similar to Cancer Drugs Fund and Innovative Medicines Fund, but with greater benefits for health system, government and society
Adjusting accountability: non-health organisations have a role to play and will reap benefits.
Financial and contracting options
Increase accountability and incentivise desired action
A similar scheme to the QOF could be designed, bearing in mind its limitations
Monitoring outcomes
Opportunities
Awareness and messaging
Reshape attitudes towards prevention and health
Health must be understood as something that requires investment, with individual accountability
Further research
What is the total economic prize for investing in prevention?
What can we learn from international best practice?
What is the feasibility of a central ringfenced prevention fund?
Digital Health
Low marginal cost of production, potential to be cost-effective/saving
Squeezy app: £50,000-£75,000 savings annually per trust
Can be highly targeted and available 24/7
'Good Thinking' website aims to support the mental wellbeing of Londoners
Scope for 'intelligent public health'
Precision medicine
Individuals' genetic profile can be used to target prevention efforts to those who will benefit from them
Primary - e.g. newborn genome sequencing
Secondary supporting quicker and more accurate cancer diagnosis

## 5.8 An evidence-based clinical strategy

To pull all of this together, we need an evidence-based clinical strategy backed by clinical and political consensus and a delivery architecture (including funding) to execute the strategy on a multi-year basis. Rather than providing another standalone plan, this strategy should align the existing plans and strategies (see 2.3) and crucially, should have an intentional focus on delivery. It should also allocate agency to specific stakeholder groups to generate action. It should provide a practical guide for a system shift towards prevention, drawing upon the elements set out in sections 0 and 5.7 and Figure 6 of this report.

Such a strategy would reap multifaceted benefits throughout the health system and beyond. To be successful, it must be developed as a collaboration between government (including devolved nations) and key stakeholders such as DHSC, NHS England and NHS Scotland, and must have political support.

Outside of the strategy, there is substantial scope for stakeholder groups to take meaningful steps to advance the prevention agenda:

- Politicians should work to raise the salience of prevention amongst their peers. In particular, wider visibility and understanding of the substantial benefits of prevention for society and the requirement for a systemic shift towards prevention is needed to elevate prevention above short-term political cycles. The APHG may have a key role to play here.

- Government, including DHSC, agencies and partner organisations (such as NHS England, NHS Scotland and UKHSA) should work to develop the strategy outlined above, including allocating the required funding. For funding and for implementation they should look to the options outlined in Figure 6. For the benefits of prevention to truly be realised, these organisations must galvanise a systemic shift away from treatment and towards prevention.

  Non-health government departments and agencies must also be given some accountability for prevention. The case is reasonably clear for those related to wider determinants of health (housing, education, etc.) but the benefits of a true system shift to prevention will have yet wider reaching benefits. Further research on the full economic 'prize' for engaging in prevention would be helping in stimulating wider support for broader involvement amongst this broader stakeholder group.

- Integrated care systems (ICSs) should work towards local solutions, prioritising prevention in support of healthy local communities and economies, and fit-for-purpose local healthcare ecosystems. Successful prevention policies and interventions should be reported and shared with other ICS.

- Clinicians and other health care professionals should champion prevention in practice, not just in theory. This involves identifying ways to promote prevention of ill health within their areas of influence and looking for opportunities to demonstrate clinical leadership in prevention. Buy-in from this stakeholder group will be key to driving system change. Critical messages around the benefits of

prevention on health system capacity, health benefits for patients, and protecting the NHS, may be key arguments for provoking action amongst this group.

- Industry should continue to innovate in the prevention space, concentrating on interventions that offer good value for money for payers and research that uncovers the benefits of the prevention agenda. Industry can also actively support and encourage the development of the strategy outlined above with the goal of improving the strength and resilience of the healthcare system as a partner.

- Economists and other researchers should take all opportunities to further the evidence base (ideas for further research are given in section 0), refine existing tools and develop new ideas to facilitate change (such as funding models, incentive schemes, and monitoring systems).

- Members of the public should be empowered to take ownership of their own health and have a social responsibility to do so to protect the NHS. Health should be seen as an investment, with understanding that the healthcare system is not able to fix all health problems. Awareness campaigns and activities developed in collaboration with behavioural scientists may help to reshape attitudes towards prevention in this way.

Efforts by this breadth of stakeholders to turn attention towards and promote the prevention agenda will have wide reaching benefits for society. Combined with a coherent plan with clear delivery architecture and funding, a shift in focus towards prevention is possible, using the tools outlined in this report.

Finally, this report focuses mainly on the budgets and approach of NHS England with some examination of examples from the devolved nations. However, with small amendments and more detailed consideration, many of these recommendations would be applicable to all parts of the UK as well as having international relevance. Box 2 provides amended recommendations to allow for broader applicability and implementation.

**BOX 2: INTERNATIONALLY RELEVANT RECOMMENDATIONS**

- Politicians should work to raise the salience of prevention amongst their peers. In particular, wider visibility and understanding of the substantial benefits of prevention for society and the requirement for a systemic shift towards prevention is needed to elevate prevention above short-term political cycles.

- Governments, including Departments/Ministries of Health and partner organisations should galvanise a systemic shift away from treatment and towards prevention. For funding and for implementation they should look to the options outlined in Figure 6 of this report.

  Non-health government departments and agencies must also be given some accountability for prevention. Further research on the full economic 'prize' for engaging in prevention would be helping in galvanising wider support for broader involvement amongst this broader stakeholder group.

- Clinicians and other health care professionals should champion prevention in practice, not just in theory. This involves identifying ways to promote prevention of ill health within their areas of influence and looking for opportunities to demonstrate clinical leadership in prevention.

  Critical messages around the benefits of prevention on health system capacity and health benefits for patients may be key arguments for provoking action amongst this group.

- Industry should continue to innovate in the prevention space, concentrating on interventions that offer good value for money for payers and research that uncovers the benefits of the prevention agenda. Strengthening the prevention agenda will serve to improve the strength and resilience of the healthcare system as a partner.

- Economists and other researchers should take all opportunities to further the evidence base, refine existing tools and develop new ideas to facilitate change (such as funding models, incentive schemes, and monitoring systems).

- Members of the public should be empowered to take ownership of their own health. Health should be seen as an investment, with understanding that the healthcare system is not able to fix all health problems.

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# Appendix

**Table A1: Uptake of key prevention programmes**

| Programme type | Notable programmes | | Current uptake |
|---|---|---|---|
| Immunisation | Childhood vaccination | High (slightly below target) | Target uptake of 95%, current uptake for 5 in 1 at 5 yrs 94.4% (2021-22). Fallen from previous years. |
| | Seasonal influenza vaccination | High | High uptake: 78.4% of over 65s, 46.3% 6 months-65 at risk. Highest uptake on record in 2021. |
| Modifiable risk factor treatment/service | NHS stop smoking services: CURE model | Unclear, full rollout in 2023/24 | Full rollout in 2023/24 |
| | Weight management services | Medium (scope to reach more) | Nationally rolled out, lack of data on the uptake but there is more scope to reach obese people |
| | NHS diabetes prevention programme | Unclear | No data on uptake, but access has been expanded to 200,000. 13.6 million at increased risk of diabetes, therefore there is scope to reach more people at risk |
| | Alcohol care teams | Unclear | Current uptake unknown. By 2024 will be delivered in the top 25% of hospitals with the highest rate of alcohol dependence-related admissions. |
| Screening | NHS cancer screening (Breast, bowel, cervical) | Medium (scope to reach more) | Close to target, but scope to reach more eligible people. (2019-2020) 3.2 million women screened for cervical abnormalities, 2.9 million for bowel cancer, 2.1million for breast tissue abnormalities. |
| | NHS newborn screening programmes | High | High uptake and close to target: 617,000 babies screened for 15 conditions, 660,000 pregnant women screened for conditions |
| Disease management and optimisation of treatment | NHS diabetes support | Unclear | 9 key processes of care recommended for all people with diabetes aged 12 years and above by NICE, but uptake is unknown |
| | Optimising treatment of hypertension | Low (adherence can be sub-optimal) | 12.5 million have hypertension, 4 million of those have no diagnosis, and only 30% receive optimal treatment |
| (Early) disease diagnosis | Diagnosis of asthma and COPD, hypertension case finding | Unclear (underdiagnosis of asthma and hypertension) | Uptake is unknown. There is an under diagnosis of moderate to severe asthma. 4 million have undiagnosed hypertension |
| | NHS health check | Medium (scope to reach more) | Currently a 50% uptake. At an uptake of 50%, there is scope for greater uptake in eligible population: 40-74 year olds. |

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- Capturing preferences using patient-reported outcomes measures (PROMs) and time trade-off (TTO) methodology
- Roles of the private and charity sectors in health care and research
- Health and health care statistics