Improving productivity, addressing unmet needs and prevention

How the NHS can optimise health outcomes in a time of financial constraint

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Context and aims

Context

The NHS needs to consider how it can increase healthcare value—i.e., deliver better outcomes and greater output from the amount of input. Delivering more from existing resource means increasing productivity. At the same time, it needs to understand the opportunity prevention and better managing illness can deliver. Together these things need to be possible for the NHS to be sustainable.

There is widespread concern about the current state of the National Health Service (NHS). The recent Darzi Report characterised it as "in serious trouble," highlighting the significant pressures it faces[1]. The NHS is experiencing declining—or at best, stagnating—performance even though it now absorbs approximately 29% of total public service spending[2].

The government has also made clear its commitment to a triple shift towards prevention, community and digital. Darzi points out that the commitment to prevention is two decades old and yet funding for acute hospital care has increased from 49% to 58% between 2002 and 2021 as a proportion of total health service spend, whilst proportional spend in other care settings has been flat or has fallen. The inverse of the strategic intent has happened.

A consequence of this is that the NHS perceives there is no new money—whilst the government view is that it has constrained or reduced spending elsewhere to invest in health. In recent speeches Prime Minister, Keir Starmer, and Health Secretary, Wes Streeting, have both asserted that any additional funding must sit alongside comprehensive reforms, underscoring the urgent need for systemic change.

Aims

This report seeks to understand at the highest level:

1) What is the **size of the productivity** opportunity in the NHS overall and what is driving it?
2) What is the **size of unmet needs** in chronic conditions, and what is the potential impact of closing these gaps through improved care and treatment?
3) What is the opportunity **for improved return on investment of prevention?**
4) What are the **critical enablers** to permit this to happen?

This report primarily focuses on secondary care due to comprehensiveness of the secondary care dataset and the high accuracy of the clinical coding aligned with therapeutic areas within secondary care.

Given the concentration of funding in the acute sector we have focused explicitly on acute sector impact in these three areas.

Source:

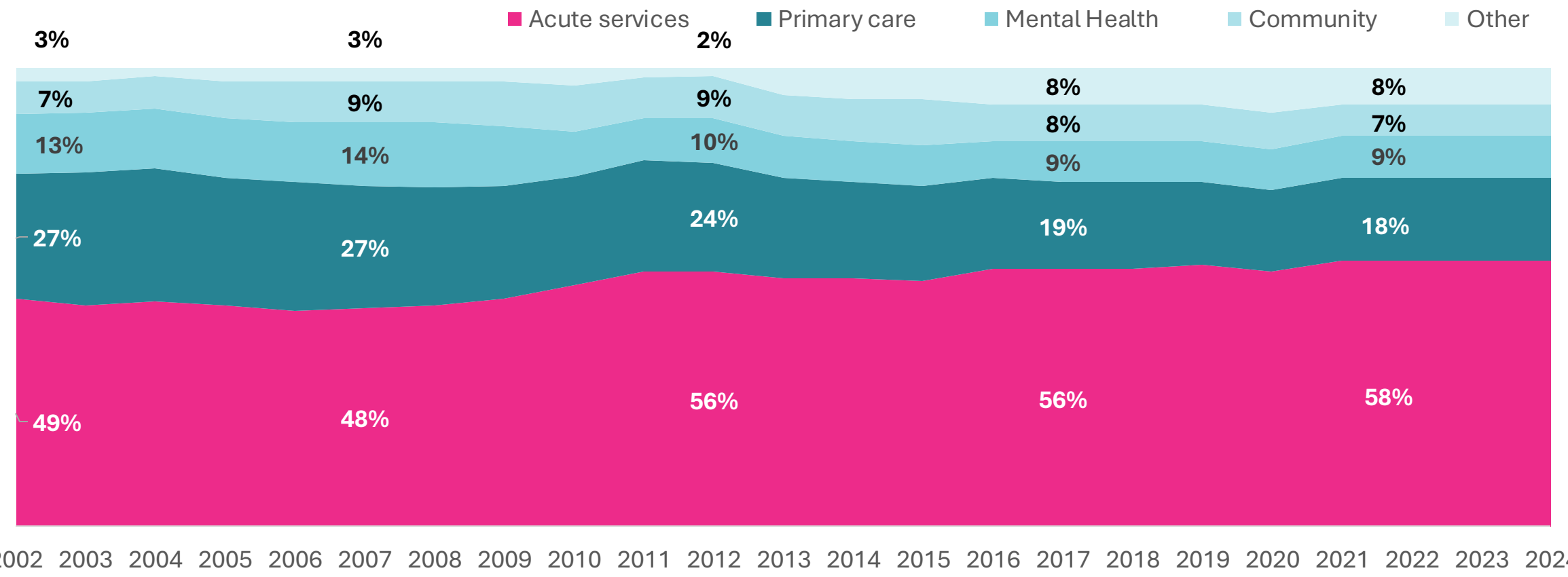
[1] Lord Ara Darzi's Independent investigation of the NHS in England (2024)

[2] Past and Future UK Health Spending, Institute of Fiscal Studies (2024)

Context: The Darzi report revealed that despite strategic intention to “shift left”, acute spend has continued to grow from 49% to 58%

Estimate of NHS spend by healthcare service

Percentage, 2002 - 2021



A substantial opportunity exists to improve productivity, increase congruence with guidelines in treating chronic conditions and better select investments in prevention

A substantial opportunity exists to improve productivity, address unmet patient needs in line with guidelines and improve investments in prevention:

- NHS productivity has declined in acute hospitals but not in the rest of the NHS; if addressed it could release **£12 - 17b** in resources in pure productivity gain from the acute sector. Productivity increased for first half of last decade and then started to fall in 2018/19, a year before Covid, as annual growth rate in clinical staff increased 2.3-3.7x. Note that inpatient care has managed to see rising numbers of patients with shrinking numbers of beds, but in comparison outpatients' volume has steadily risen 4x population growth.
- Significant unmet health needs exist in the management of chronic conditions relative to guidelines which contribute to the nation's ill health and increasing burden on the health system; closing these gaps could improve quality of life, improve life expectancy and lower acute sector resource utilisation costs on chronic diseases , estimated as **£6.1 - £9.2b** in total just from the cost of activity in the acute sector.
- Prevention spending is hard to identify and rarely evaluated but there is a wide range in impact from 0 to 35x; Improving the targeting of spending on prevention could double the impact it has from a median of 2x to an upper quartile of 4x, taking account of where the benefits fall suggests that the acute sector would receive **£3.3 - £7.2b** of the posited £11bn-22bn opportunity from improved investing in prevention.

Note: the NHS released its own productivity in February 2025 update whilst this report was under embargo:
https://www.england.nhs.uk/long-read/nhs-productivity-update-feb-25/
https://www.england.nhs.uk/long-read/nhs-productivity/

Realising the productivity opportunity requires an alignment of workforce and patient needs and a focus on major unmet health needs

Achieving this would require:

- Focusing on acute productivity to align workforce with patient needs (maximising activity per unit of input) within each provider and across providers on the one hand, and pursuing the transformation of outpatients through digitalisation to create new ways to address underlying demand
- Establishing an explicit focus on the major unmet health needs that driver ill health to close gaps in diagnosis and treatment with a greater emphasis on case finding and population health management; this will require using the disinvestment in acute and re-investment in primary and community care, diagnostics and medicine and data/digital to support this
- Taking a healthcare value approach, maximising impact and minimising costs to invest more in high impact prevention interventions, develop the commissioning approaches for high impact interventions and systematically evaluate these
- A common set of enablers including a much stronger focus on allocating resources where impact is maximised, ensuring the money follows the patient, linked patient level data, routine use of evaluation and data-driven evaluation

If the opportunity of £12 - 17b in acute productivity or £3.4b - £5.0b from reducing variation in chronic disease or £6.1 - £9.2b from closing care gaps would amount to **£15 to £27b** in opportunity to improve the resource use purely of the acute sector. Realising this benefit would allow the NHS to invest in spending more on the priorities of government including the additional activity that is needed to deliver elective waiting times, treat patients according to guidelines and invest in the triple shift (prevention, community and digital) that has been the stated priority of this government and previous ones.

Addressing these issues could release £10-16b in resources, cut chronic disease costs by 11% and boost prevention impact by £11b a year

Productivity

Looking back over the last decade, NHS spending has increased faster than output and hence productivity has fallen, in the acute sector in particular. If reversed, this would release £12-17b in resources.

Whilst spend in primary care and community care has fallen over the last 10 years, overall productivity in these areas has kept in level or increased as activity appears to have increased in line with spend.

Real spend per capita has increased by 23% across the NHS with spend in the acute sector growing 1.4 times faster than the whole NHS. However, whilst real spend has grown 41% and weighted activity output grew 21%, acute productivity has fallen 10-14%. The principal driver of this is workforce rising faster than output with doctors increasing 37% and nurses 34% since 2013/14.

The loss in acute productivity between 2019/20 and 2023/24 is estimated to have cost approximately 12-18% of the acute budget and is equivalent to £12-17b per year.

It is important to consider reasons why productivity may have decreased over the last 10 years including a clear change in policy toward “safer staffing” in 2018/19 and the suspension of payment by results (PbR).

This report has not examined the level of productivity 10 years ago and opportunities may exist to improve from this baseline level in any of these sectors.

Unmet health needs

Unmet health needs contribute to the ill health of the nation and place an increasing burden on the health system. Addressing these gaps could lower acute sector resource utilisation costs on chronic diseases (CVD, CKD and dementia), which can be conservatively estimated as £6.1-£9.2b

These conditions represent these represent a growing spectrum of CRM conditions. CRM accounts for £26 billion or 50% of the chronic disease burden and 26% of acute healthcare cost, with dementia contributing an additional £8 billion, for a total of £34bn.

Approximately 18% to 40% of patients remain undiagnosed and 32% to 94% of patients are not receiving optimal treatment across these conditions.

Optimising treatment could cut HCRU costs and mortality across five health conditions, with potential gross savings of £870 million to £4.8 billion—excluding long-term impacts like heart attacks and strokes.

Applying a 15–29% gross opportunity rate to the £34b spend on CVRM and Dementia suggests savings of £4.7–9.0b. Extending this to other chronic conditions raises the total to £6.7–12.3b. After accounting for 25–50% reinvestment costs, the net opportunity ranges from £3.4–5.0b (variation) to £6.1–9.2b (guideline implementation).

Prevention

Secondary prevention (managing existing conditions) tends to generate savings mainly within the acute sector. Updating our previous analysis to take account of where the benefits fall suggests that the acute sector would receive £3.34bn - £7.24bn of the posited £11bn-22bn opportunity from improved investing in prevention.

Prevention is a stated priority for the NHS and the government, but what is spent on it is poorly captured and the return on investment is rarely analysed.

Analysis of prevention interventions shows median ±2x ROI and upper quartile ±4x ROI – with some interventions delivering far higher.

NHS and Local Authority (LA) colleagues indicated they do not use ROI routinely, hence there is no reason to think more than median impact.

Whatever the level of savings being targeted, the fact that the median ROI is 2x and upper quartile 4x, suggests it is reasonable to invest 25% to 50% of the expected savings from these initiatives in order to achieve the benefits of prevention.

Achieving this would require commissioning to adopt a healthcare value approach—maximising impact while minimising costs—to reinvest in high-impact prevention interventions. This includes developing effective commissioning strategies for these interventions and systematically evaluating their outcomes.

Quality

Overview of section

What we've done and why:

- This section focuses on five chronic condition: cardiovascular disease (CVD), type 2 diabetes, chronic kidney disease (CKD), obesity, and dementia. We examined the gaps in diagnosis and treatment for each, as well as the potential cost savings to the healthcare system if these conditions were treated more optimally.
- These conditions were selected due to their significant impact on mortality and disability, with dementia being the leading cause of death and CVD ranking second (ONS, 2022). Moreover, many of these conditions are closely linked and often coexist, compounding the burden on patients and healthcare systems.
- A key concern in addressing these conditions is the undiagnosed population and the gaps in diagnosis. These gaps hinder effective treatment and worsen health outcomes that could otherwise be mitigated with appropriate intervention.
- It is worth noting that this analysis does not include chronic obstructive pulmonary disease (COPD) and heart failure, both of which also contribute significantly to the burden of chronic disease. Future research could explore these conditions to provide a more comprehensive understanding of their impact on healthcare costs and patient outcomes.

Key points covered in this section are:

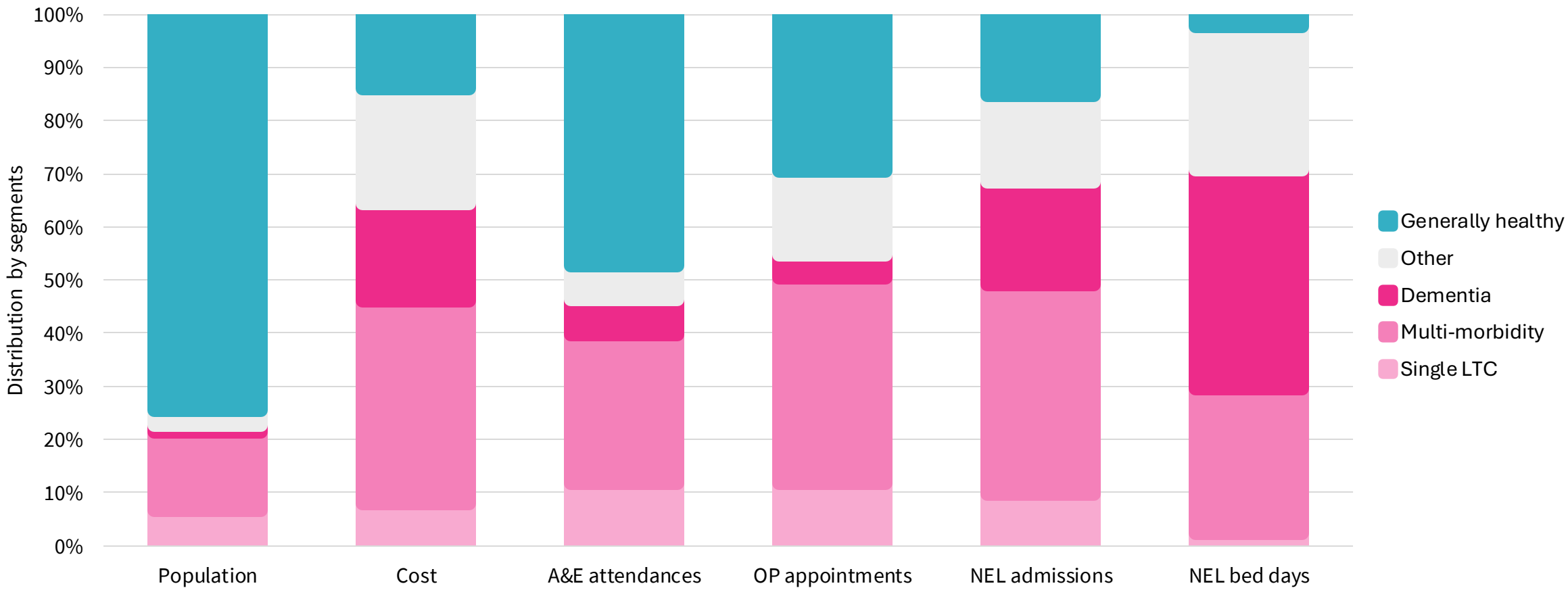
- Cardiovascular disease, chronic kidney disease, diabetes, dementia and obesity account for 50% of the chronic disease burden, 26% of acute healthcare cost and 37% of deaths per year, including those with singular or multiple conditions
- A comprehensive analysis of the disease burden of CVD, diabetes, obesity, CKD, and dementia highlighted the diagnosis and treatment gaps within each condition
- Optimising treatment based on intervention scenarios across the 5 disease areas with potential net opportunity of £3.4b-£5.0b from pure variation and £6.1-£9.2b based on the implementation of clinical guidelines
- Improving CVD treatment to lower LDL cholesterol levels can lead to gross savings of up to £4.8b and prevent 6.5k deaths from heart attacks and strokes
- Improving diabetes treatment to lower HbA1c levels can lead to gross savings of up to £1.6b, prevent 10k heart attacks and strokes, and avoid 1.6k amputations
- Reducing the overall obesity rate in the population could generate gross savings of £1.5b and prevent up to 5.1k CVD–related deaths associated with obesity
- Delaying the progression from mild to moderate and severe dementia through treatment can lead to gross savings of £1.8b in acute care costs

Source:https://www.ons.gov.uk/peoplepopulationandcommunity/birthsdeathsandmarriages/deaths/bulletins/deathsregistrationsummarytables/2022#leading-causes-of-death

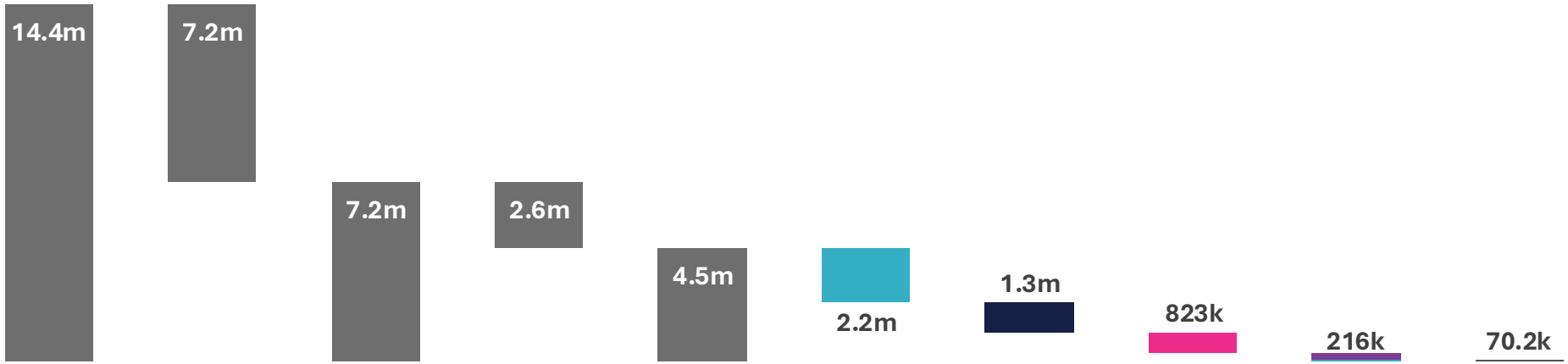
People with chronic conditions and dementia represent 21% of population and drive 64% of costs

Distribution across segments by population, total cost, and activity (all ages)

%, 2024



Cardio Renal Metabolic diseases account for 50% of the chronic disease burden and 26% of acute healthcare cost, including those with singular or multiple conditions



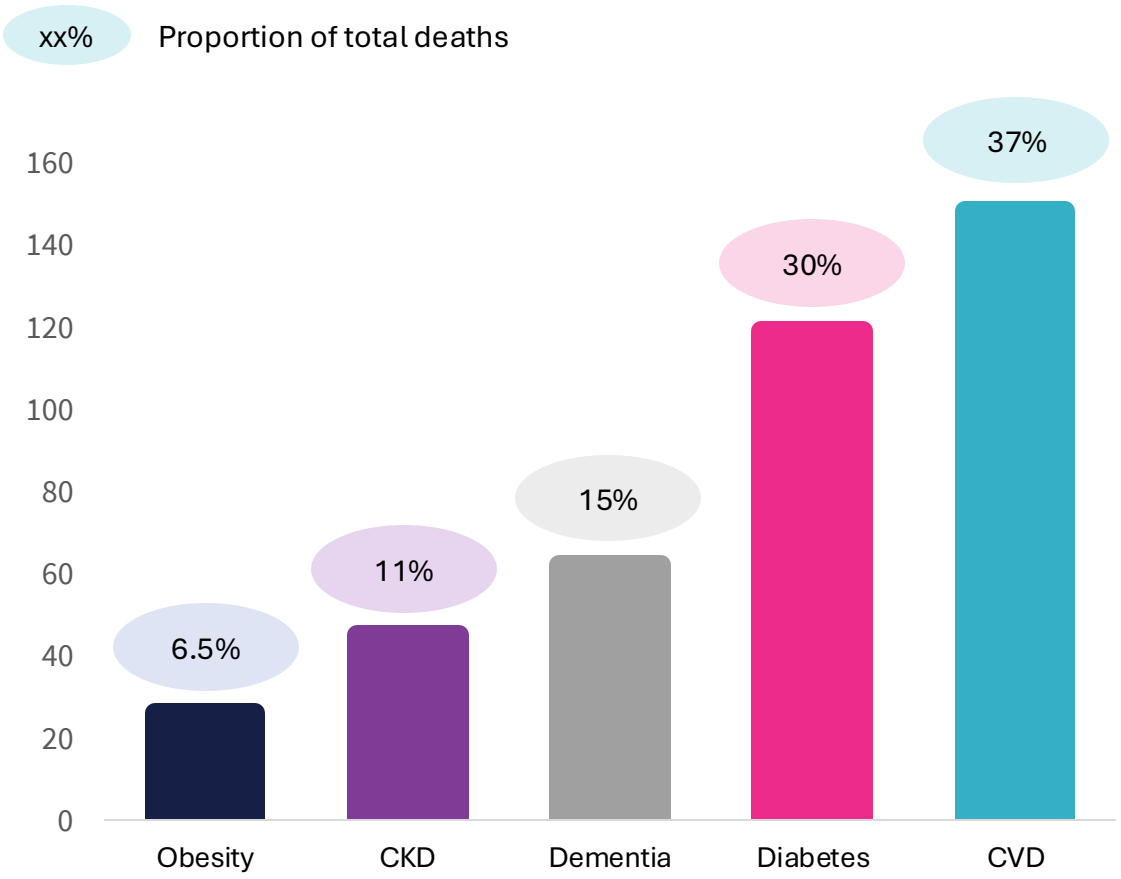
		People with LTCs incl. dementia	No core-5 condition	Core-5 conditions	Multiple core-5 conditions	Single core-5 condition	CVD	Obesity	Diabetes	CKD	Dementia
HCRU	Inpatient Spells	15.6m	5.67m	9.94m	4.93m	5.01m	2.68m	1.21m	682k	375k	69.5k
	Attendances	13.6m	6.06m	7.54m	3.44m	4.1m	2.22m	1.05m	588k	159k	83.1k
	Appointments	76.9m	30.9m	46.0m	19.5m	26.4m	12.7m	7.29m	4.8m	1.41m	247k
Costs	Non-Elective	£37.3b	£6.8b	£30.5b	£19.0b	£11.5b	£7.9b	£1.4b	£1.0b	£603m	£468m
	A&E	£3.9b	£1.5b	£2.4b	£1.2b	£1.2b	£693m	£273m	£158m	£50m	£32.4m
	Outpatient	£13.4b	£5.5b	£7.9b	£3.4b	£4.6b	£2.2b	£1.3b	£849m	£251m	£46.2m
	Subtotal	£54.6b	£13.8b	£40.9b	£23.6b	£17.2b	£10.8b	£2.9b	£2.1b	£904m	£547m
	Other	£18.1b	£6.8b	£11.3b	£4.9b	£6.4b	£3.1b	£2.1b	£766m	£367m	£36.3m
	Total costs	£72.7b	£20.6b	£52.1b	£28.5b	£23.6b	£13.9b	£5.1b	£2.8b	£1.3b	£583m

* In this infographic, population counts are derived from LTC diagnoses in secondary care settings only.

Millions with cardiovascular disease, chronic kidney disease, diabetes, dementia and obesity remain undiagnosed and at risk, which are associated with up to 37% of deaths

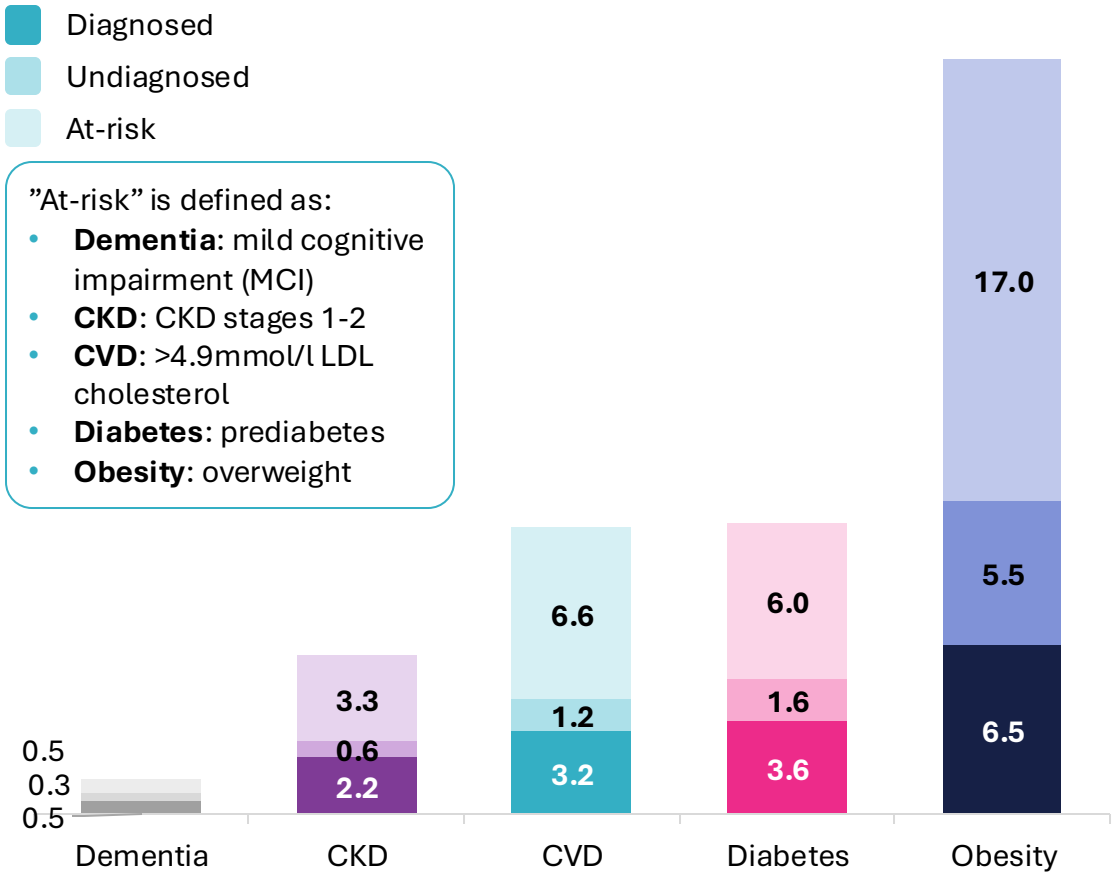
Baseline deaths

Number of deaths associated with condition ('000)



Diagnosed, undiagnosed, and at-risk population

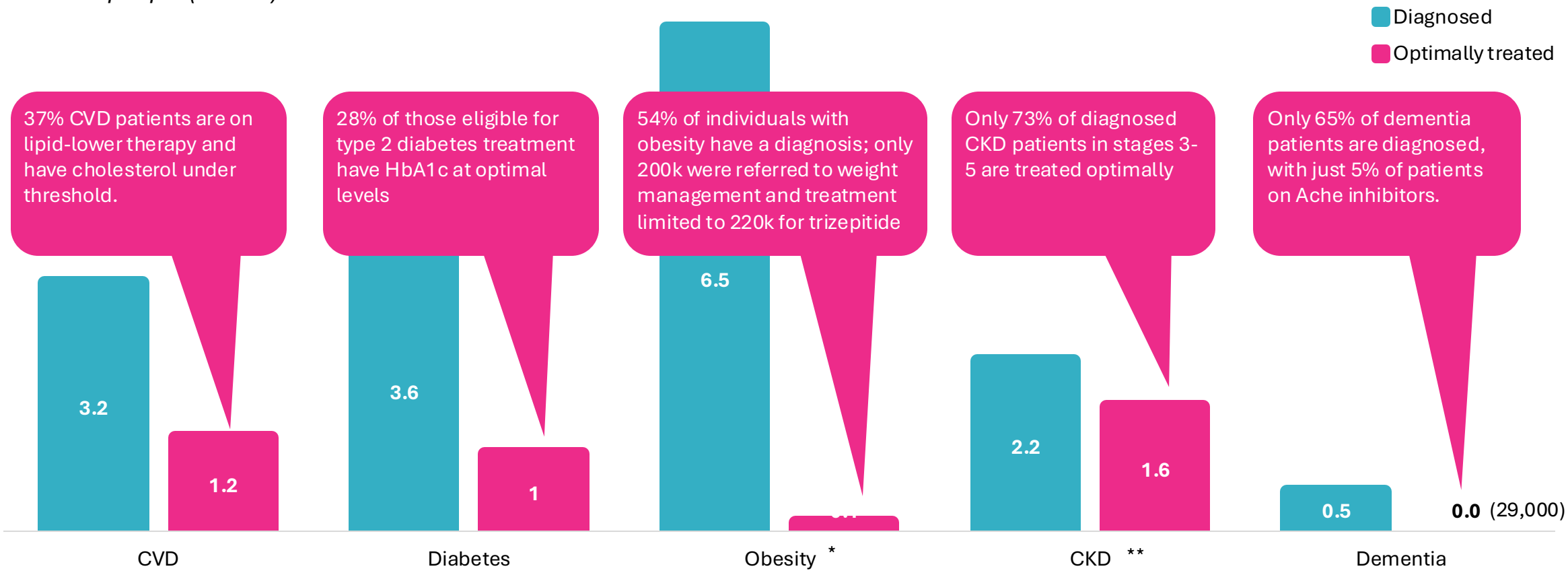
Number of people (million)



Significant gaps exists in the diagnosis and treatment of major health conditions

Diagnosis and treatment gap in CVD, diabetes, obesity, CKD and dementia

Number of people (million)



**Treatment statistics for obesity were not included as targets for obesity are subjective and differ for each individual*

***Treatment statistics for CKD were not included as the number of people on CKD medicines (independent of dialysis and/or transplant) are not widely reported*

Sources: CVD: CVDPREVENT, Health Survey England; NHSBSA; British Heart Foundation; Diabetes: QOF, NHSE, ONS; Obesity: Gov.UK, QOF, National Obesity Audit; CKD: Kidney Research UK, QOF; Dementia: NHSE Primary Care Dementia Data, DiscoverNOW, QOF, CF analysis

A comprehensive analysis of the disease burden of CVD, diabetes, obesity, CKD, and dementia highlighted the diagnosis and treatment gaps within each condition

Category	Cardiovascular disease (CVD)	Type 2 Diabetes	Obesity	Chronic Kidney Disease (CKD)	Dementia
Estimated prevalence vs. diagnosed vs. at-risk population	Prevalence: 4.4m[1,2] Diagnosed: 3.2m[2] At-risk (high cholesterol) including diagnosed and undiagnosed • 27m (59%) > 4.9 mmol/L TC[3] • 11m (24%) > 4.9 mmol/L LDL-C[4]	• Prevalence: 5.2m (9%)[10,11,12] • Diagnosed: 3.6m[10,11] • At-risk (prediabetes): 6m[13]	• Prevalence: 12m (26%)[22] • Diagnosed: 6.5m[15] • At-risk (overweight): 17m[22] • 29% of adults living with obesity (BMI ≥30 kg/m^2), and 64% living with overweight or obesity[23]	• Prevalence: 6.1m (total CKD); 2.8m (G3-5)[30] • Diagnosed: 2.2m (G3-5)[31] • At-risk (G1-2): 3.3 m[30]	• Prevalence: 826k (1.4%)[30] • Diagnosed: 482k[31] • At-risk (MCI): 524k[32]
Diagnosis gap	• 1.2m	• 1.6m	• 5.5m	• 520k	• 344k
Eligible vs. Optimally treated population	• Eligible: 10.7m[5] • Optimally treated: 1.3m[6]	• Eligible: 5.2m[10,11,13,14] • Optimally treated: 1m[16]	• Eligible: 3.4m* • Treated: <200k referred to weight management • Trizeptiide limited to 220k**	• Eligible : 2.2m[31] • Optimally treated: 1.6m[28]	• Eligible: 482k[31] • Treated: 29k[31,33]
Treatment gap	• 9.4m	• 4.2m	-	• 675k	• 453k
Events (per year)	• 148k overall deaths (based on 175k UK figure)[7] • 102k heart attacks[8] (18k deaths[9]) • 88k strokes[8] (27k deaths[9])	• 119k overall deaths (based on 141k UK figure)[17] • 34k heart attacks[13] (6k deaths[18]) • 48k strokes[13] (15k deaths[18]) • 10k amputations[13] • 155k heart failures[13] • 49k retinopathy[8]	• 26k CVD deaths associated with obesity[24]	• 30k people receiving dialysis[26] • 3k people receiving transplant[26] • 45k deaths[29]	• 62k deaths*[34]

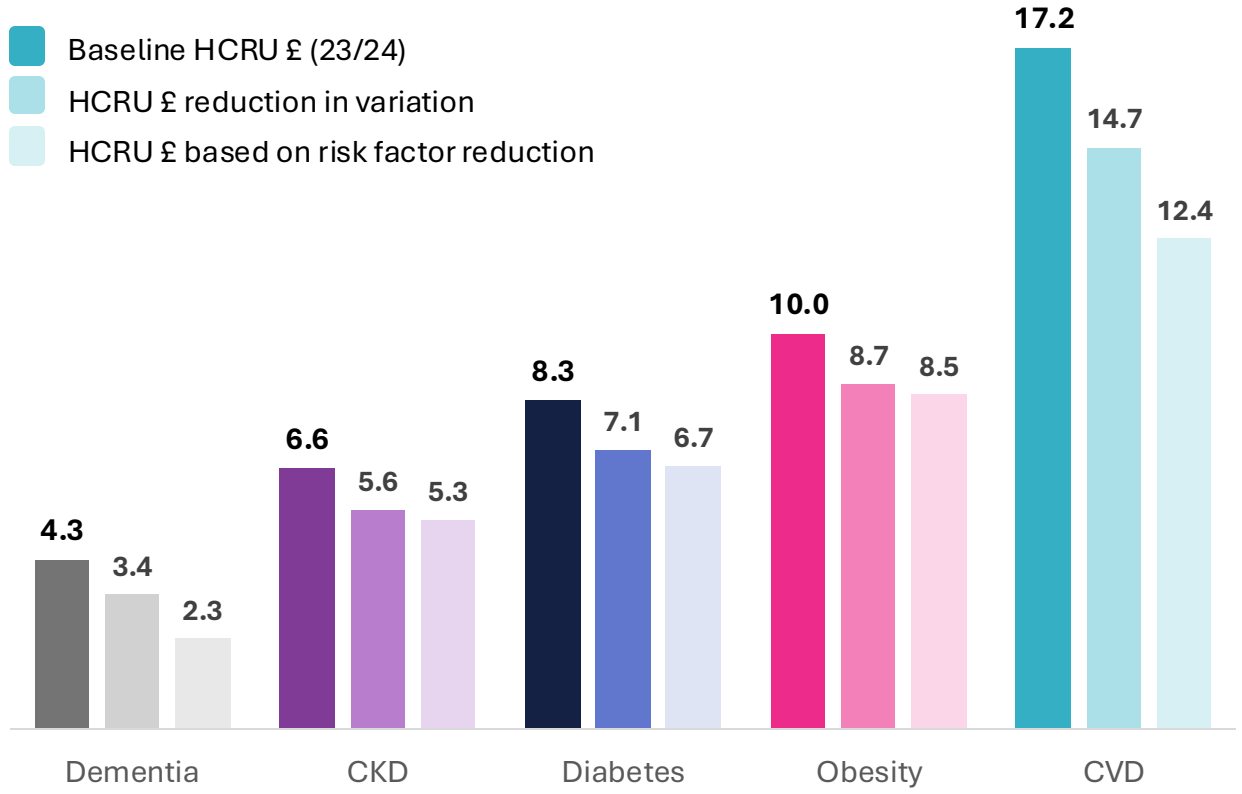
Note: List of sources and the links can be found on slides 46-51

Optimising treatment has the potential to reduce HCRU costs and mortality across the five health conditions with potential gross savings between £870 million to £4.8 billion

This analysis uses two different methods: 1) variation analysis of populations with similar conditions, controlling for age and deprivation, and 2) risk reduction based on the achievement of clinical guidelines and reducing underlying drivers of disease.

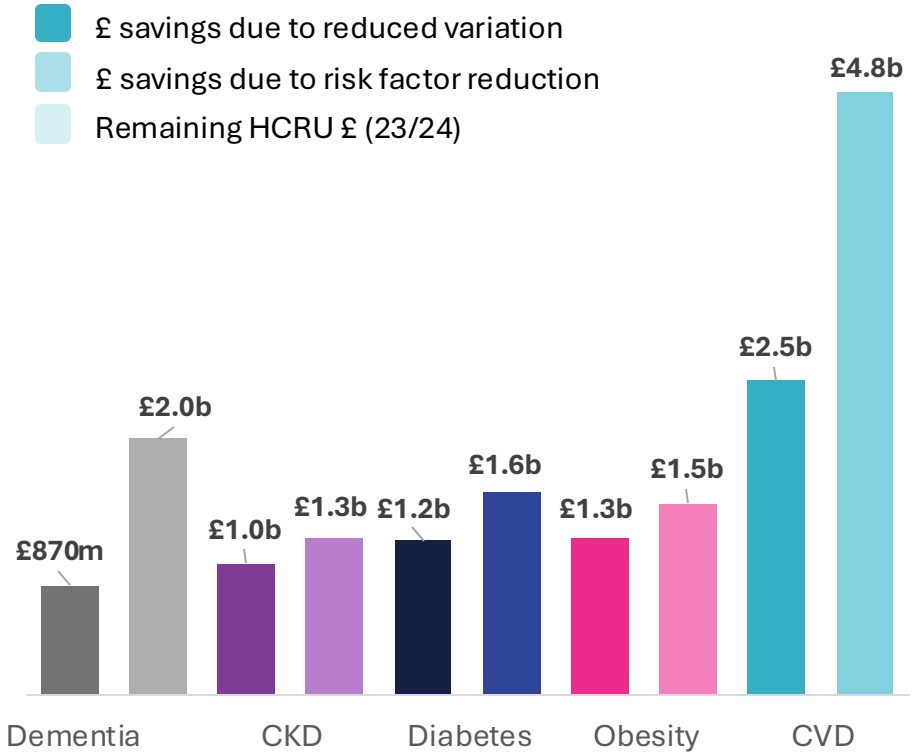
HCRU costs before and after intervention

Secondary care costs (£ billion), 2023/24



HCRU costs savings

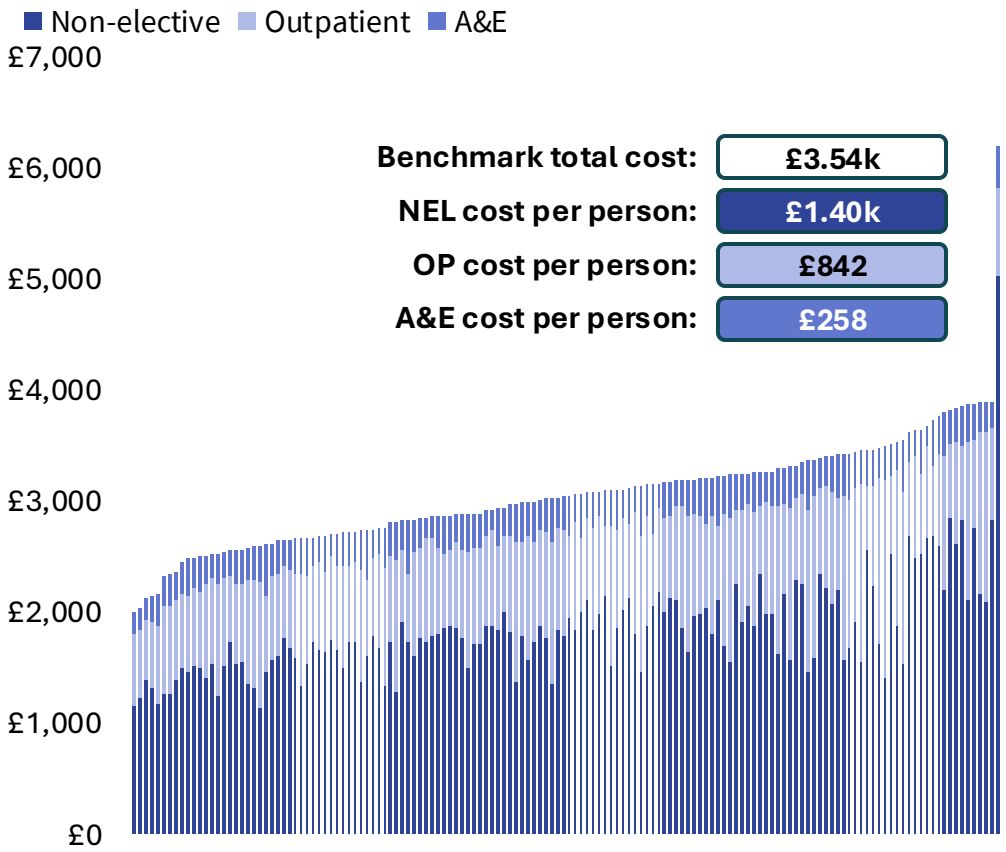
Secondary care costs (£ billion), 2023/24



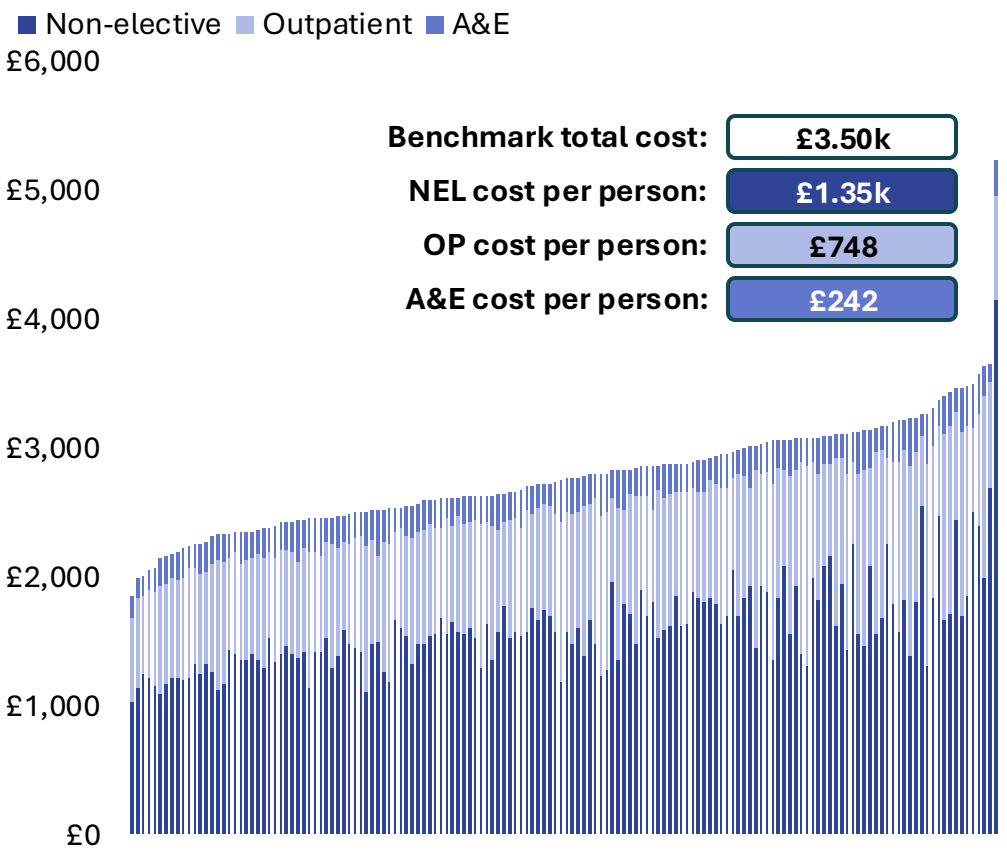
Variation analysis has considered segmentation by condition, age band and core 20 status to quantify the opportunity by segment

Cost per Core20 person with multi-morbidity across non-elective, emergency, and outpatient care in UTLAs

2024



Cost per non-Core20 person with multi-morbidity across non-elective, emergency, and outpatient care in UTLAs



Variation analysis method has calculated degree of variation in total acute cost per capita for NEL, A&E, OP by UTLA for core 20 and non core 20 by age band.

This result has been aggregated up to a total opportunity to best quartile and decile

Source: CF population segmentation model (HES, National Cost Collection, ONS); CF analysis

A new method of addressing care gap to address gaps in care

The potential impact of the interventions was measured through the following steps:

1. Estimate the population distribution across relevant clinical risk factors thresholds and/or disease progression rates
2. Calculate the HCRU based on risk factor distribution – patients were identified by using diagnosis codes in the Hospital Episode Statistics (HES) data set
3. Calculate the impact of interventions that shift population from high risk to low risk based on healthcare resource utilisation

Category	Cardiovascular disease (CVD)	Type 2 Diabetes	Obesity	Chronic Kidney Disease (CKD)	Dementia
Diagnostic assessment	Blood drawn and sent away; POC	Blood drawn and sent away	Scales and BMI calculator	Blood drawn and sent away	Clinical evaluations, neuroimaging, lab tests, and cognitive assessments
Criteria	LDL > 1.8 mmol/L	HbA1c > 48 mmol/mol	BMI > 30	eGFR < 90ml/min, proteinuria	
Treatment standard	• Statins, PCSK9 inhibitors, • siRNA	• DPP4, GLP1, SGLT2, Insulin	• GLP-1 agonists	• SGLT2 inhibitors	• Cholinesterase Inhibitors • NMDA Receptor Antagonists
Expected impact of treatment	• 1 mmol/L reduction in LDL results in 25% reduction in CVD events[1]	1% reduction in HbA1c associated with a • 25% reduction in risk of microvascular complications[2] • 14% reduction in risk of heart attack[3] • 21% reduction in the risk of death from any cause[4]	1 unit reduction in BMI is associated with a • 5% reduction in the risk of cardiovascular disease[5] • 16% reduction in the risk of developing type 2 diabetes[6] • 6% reduction in all cause mortality[7] • 4% reduction in risk of mortality[8]	Treating CKD to maintain an eGFR above 90 mL/min/1.73 m^2 can result in • 30% lower risk of major adverse cardiovascular events (MACE), including heart attacks and strokes[9] • up to 40% reduction in the risk of all-cause mortality[10]	Treatment with AChE inhibitors can • result in a 20-30% slower decline in cognitive function over 6-12 months compared to placebo[11] • show a 15-20% improvement in daily functioning scores[12] • delay nursing home admission by an average of 6-12 months[13] • reduce the risk of severe dementia by 31%[14] • slow progression from mild to moderate dementia by 50%[15]
Intervention scenario	• All eligible patients (according to NICE guidelines) are treated, and their LDL-C levels are reduced to below 2.5mmol/L	• All current patients' HbA1c levels are reduced to between 42-48 mmol/mol	• The body weight of all obese patients are reduced by 17.8% and overall obesity rate is reduced by 16.6%	• 100% of patients with CKD stages 3-5 are treated to the appropriate BP threshold	• Progression rate from mild dementia to severe dementia is reduced by 50% (from 25% to 12.5%) and the rate from moderate dementia to severe dementia is reduced by 31% (from 36% to 25%)

Sources: Silverman et al. Association between LDL-C and CVD risk; Diabetes.co.uk-hba1c; Furman et al. Diabetes Inside; Knowler et al. HbA1c as predictor of diabetes; Kompaniyets et al. BMI reduction; Inside Precision Medicine; NIH Research Matters; Inker et al. GFR decline; Marucci et al. Efficacy of AChE Inhibitors in Alzheimers; Moss, D. Benefits of AChE Inhibitors; Aneshensel et al. Transition from home to nursing home; Xu et al. Long term effects of ChE inhibitors; Zuin et al. AChE Inhibitors

In practice, the actual impact on cost savings and patient outcomes is likely to be greater than what has been estimated in the report

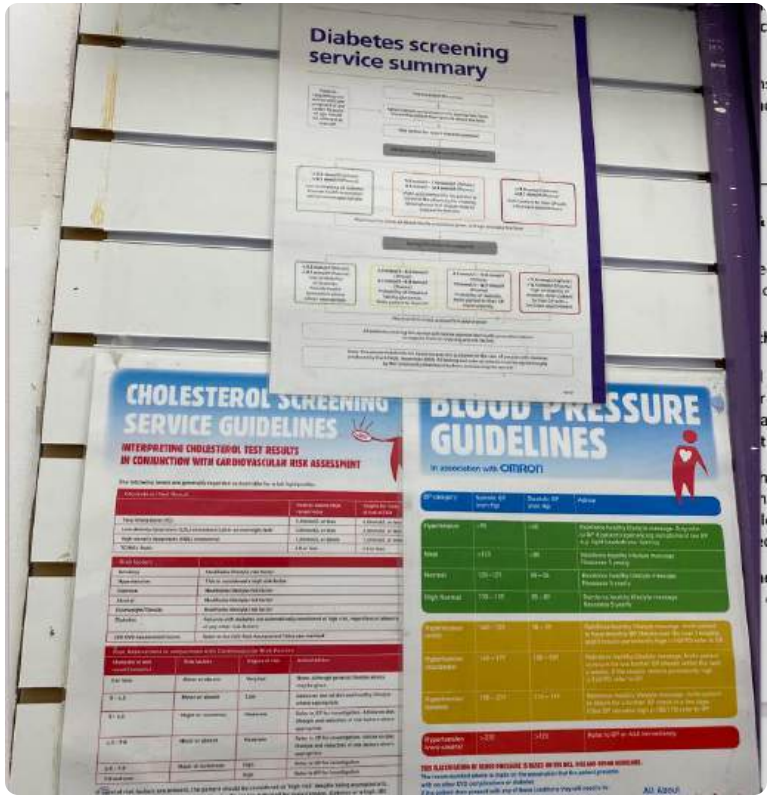
Quality of life	• The current analysis does not account for improvements in the population's quality of life, such as reduced pain, increased mobility, and better mental health • Incorporating these benefits into a health economic model could demonstrate the cost effectiveness and quality of life benefits of the interventions assessed in this report
Multi-year impact	• The current analysis only captures the impact of different interventions over a single year • In reality, the benefits of these interventions are likely to be recurring, extending across multiple years as they prevent disease progression, reduce healthcare utilisation, and improve long-term patient outcomes • Over time, this cumulative effect would amplify cost savings and health gains
Other direct costs	• The analysis in this report narrowed in and focused on NHS acute care costs • Chronic conditions also place substantial financial strain on primary care, community care, and social care services • The interventions could significantly reduce the burden across other care sectors, leading to much greater overall savings
Wider economic impact	• Our estimates do not consider the broader economic benefits of healthier individuals being able to remain active in the workforce and contributing to the economy • Reducing illness-related absences, improving productivity, and preventing premature deaths would generate significant additional economic value that is not captured in this analysis

Closing care gaps could use protocolised driven preventative-care, exemplified in local approaches to CVD interventions, which typically exhibit a high return on investment

What has worked in the past

- Protocol-driven delivery of care is **already implemented** in some areas
- This has allowed **co-location** and care for multiple pathways, thus streamlining care
- For example, diabetes and cholesterol management are being conducted by **the same pharmacists, co-located with vaccination centres**

Examples of protocol-driven diabetes and cholesterol care in a pharmacy cubicle also delivering COVID vaccinations



Suggestions for CVD Management

- Better management of CVD can support PHM and reduce UEC pressure focusing on the ABC model
- Establishing a consistent **protocolised model of care for CVD** that is data-driven and depends on taking precise measurements
- This allows for **adjustment of the skill mix required** for care from one that relies heavily on GP/nurse time to one that can be driven by pharmacists
- This will allow to develop ABC delivery model and **codesign neighbourhood teams** to carry out CVD management leveraging pharmacists and administrative roles – supported further by ARRS
- Establish the **governance model** that enables at-scale-delivery through PCN collaboration

Across cardio-metabolic and renal, a protocolised driven approach could be deployed outside of hospital, including community pharmacies and through local hubs

ABC provides a holistic approach for CVD monitoring and prevention, and shares common approach to case finding and protocol driven care – this common approach could also be applied to **renal, diabetes, and obesity**

	A Atrial Fibrillation	B Blood Pressure	C Cholesterol
Optimisation target	Optimise the treatment of every patient with a **CHA_2DS_2VASc score > 2**	Optimise the treatment of every patient with recorded hypertension above the **age-appropriate treatment threshold**	Optimise the treatment of every patient with recorded **non-HDL>2.5mmol/L**
Case finding	**Practice Nurses Identify at-risk CVD patients who are not optimised on medication and invite for a consultation with the potential of sending for follow up tests.**		
Out of hospital pathway	Pulse reading *In clinic - Pharmacist*	Blood pressure reading *In clinic - Pharmacist*	Blood test *In clinic - Pharmacist*
	ECG *outside of clinic*	Follow-up blood pressure reading *In clinic - Nurse*	
	Anticoagulant prescription *In clinic - Pharmacist*	Antihypertensive prescription In clinic - *Pharmacist*	Lipid-lowering prescriptions *In clinic - Pharmacist*

PHMv2.0 provides a way to operationalise data-driven protocol-guided for CVDRM

1. Identify

Identify key people within each cohort as defined by set criteria (using data and case finding)

- Using data insights from population segmentation and risk stratification to prioritise individuals before risk increases
- Professionals may also case find additional people as they present

2. Engage/ enrol

Proactive reach out to cohort to engage into the programme and triage onto the right pathway

- Proactive reach out to identified people to ensure they enter the right pathway
- Invite using text/ email/ call
- Enrol in session
- May need to work with individual and their family/care

3. Assess

Deliver a person-centred assessment of a person's needs that covers all needs

- Assessment may vary based on requirement
- Diagnostic tests may be required
- Fuller assessment of needs may be holistic
- Identification of priorities to address

4. Protocolised care

Address needs with professionals involved in person's care

- Protocolised care collaborating with key professionals and partners defining who will do what
- Management by thresholds where appropriate
- Identification of escalation needs

5. Manage

Ongoing effective case management of person with a single 'point person' (the care coordinator)

- Planning, co-ordinating and reviewing the ongoing effective case management of a person
- Tracking progress at individual level
- Supporting

Quality can be improved by addressing care gaps and optimising in line with guidelines

Explicit focus on the major drivers of ill health	• The huge impact of unmet patient need warrant an explicit prioritisation and goals of these areas as part of nation strategy. • Specific goals should be set for increasing the proportion of diagnosed patients reaching treatment goal and reducing number of undiagnosed. • CVD, Diabetes, CKD, obesity and dementia should all explicitly be prioritised
Change allocation of funding to increase community based and reduce acute spend	• More resource show be provided for diagnosing and treating patients in these chronic conditions to meet treatment targets • Increase spending on Primary and Community Care, pharmacy and prescribing—and reduce acute spending—will need to be enacted by ICBs • Integrated neighbourhood teams should focus on forming multi-disciplinary teams to manage chronic conditions more effectively. A targeted expansion of roles within community (e.g. specialist nursing capacity) would increase the capacity to enable the shift from hospital to community, and sickness to prevention.
Improve awareness and screening within at-risk population	• Limited awareness and screening contribute to gaps in diagnosis. Opportunities to detect early signs of disease or elevated risk factors—in primary care settings and especially in the wider community—are not fully realised. Awareness of risk factors and early disease symptoms is not high in public consciousness. Invitations for screening and health check programmes are pathway focused not person-centric, meaning at-risk populations may not be routinely or proactively invited. This leads to low levels of successful outreach and lower levels of uptake within targeted populations.
Improved access, capacity and waiting times	• Socioeconomic barriers – Deprived areas have higher rates of undiagnosed cases due to limited access, transport challenges, low health literacy, and cultural barriers. • System pressures – Post-pandemic capacity issues, backlogs, and clinic cancellations are delaying or disrupting diagnostic pathways. • Treatment delays – Longer waits are slowing treatment initiation and extending the time to optimise interventions.
Improved medicines optimisation in-line with guidelines	• Inadequate use of new and established therapies that have received regulatory approval (e.g. safe by MHRA, cost-effective by NICE, and reimbursable via NHS England), yet these “triple-approved” medicines may be under-utilised as innovation takes too long to spread. Ensuring that eligible patients actually receive these treatments remains a persistent challenge.

Sources

List of sources

Category		Cardiovascular disease (CVD)	Type 2 Diabetes	Obesity	Chronic Kidney Disease (CKD)	Dementia	Multi-morbidity
Estimated prevalence vs. Diagnosed population		• 1) British Heart Foundation • 2) CVDPREVENT • 3) Health Survey England • 4) NHSBSA	• 10) NHS England • 11) QOF • 12) ONS • 13) Diabetes.co.uk • 14) EClinicalMedicine • 15) BMJ	• 20) GOV.UK • 21) QOF • 22) BMJ • 23) Health Survey England	• 26) Kidney Research UK • 27) QOF	• 30) Alzheimer's Society • 31) QOF • 32) Epidemiology forecast	• 35) Royal Society of Medicine • 36) GOV.UK
Diagnosis gap		• CF Analysis					
Eligible vs. Optimally treated population		• 5) CVDPREVENT • 6) CVDPREVENT	• 16) NHS Digital		• 28) CVDPREVENT	• 33) Alzheimer's Society	
Treatment gap		• CF Analysis					
Events (per year)		• 7) NICE • 8) Hospital Episode Statistics (HES) • 9) NHS Compendium: Mortality	• 8) HES • 13) Diabetes UK • 17) Statista • 18) NHS Compendium: Mortality	• 24) British Heart Foundation • 25) ONS	• 26) Kidney Research UK • 29) NHSE	• 34) Alzheimer's Research UK Dementia Statistics Hub	
Events prevented		• HES APC, ECDS, OP • CF Analysis					
HCRU	Spells	• HES APC, ECDS, OP • CF Analysis					
	OBDs						
	Attendances						
	Appointments						
Costs	Inpatient	• HES APC, ECDS, OP • CF Analysis					
	A&E						
	Outpatient						
	Total costs						
Gross savings		• CF Analysis					

CVD

Measures	Statistics	Source	Calculation	Link to source
Prevalence	• 4.4 million	• CVDPREVENT* • British Heart Foundation	• Estimated proportion of people diagnosed with heart failure at GP (3.2m): 73% • Total estimated number of people with CVD = 3.2m / 0.73 = 4.4m	• BHF • CVDPREVENT CVDP001CVD
Diagnosed population	• 3.2 million	• CVDPREVENT		• CVDPREVENT CVDP001CVD
At risk (high cholesterol)	• 27m (59%) > 4.9 mmol/L total cholesterol • 11m (24%) > 4.9 mmol/L LDL-cholesterol	• Health Survey England • NHSBSA Estimates Report	• (Adult population in England) x (Proportion of adults with high cholesterol levels) • *46m** x 0.59 = 27m* • *46m x 0.24 = 11m*	• NHS Digital • NHS Business Services Authority
Diagnosis gap	• 1.2 million	• British Heart Foundation • CVDPREVENT	• *4.4m – 3.2m = 1.2m*	• Listed above
Eligible population	• 10.7 million	• CVDPREVENT	• Number of adults with one or more risk factors for CVD: 7.9m • Number of people with CVD (narrow definition)***: 2.8m • *7.9m + 2.8m = 10.7m*	• CVDPREVENT CVDP008CHOL • CVDPREVENT CVDP009CHOL
Optimally treated population	• 1.3 million	• CVDPREVENT		• CVDPREVENT
Treatment gap	• 9.4 million	• CVDPREVENT	• 10.7m – 1.3m = 9.4m	• Listed above
Events (per year)	• 148k overall deaths (based on 175k UK figure) • 102k heart attacks (18k deaths) • 88k strokes (27k deaths)	• NICE • Hospital Episode Statistics (HES) (2023/24) • NHS Compendium: Mortality (2022)		• NICE • Mortality from acute myocardial infarction (NHS Digital) • Mortality from stroke (NHS Digital)

**CVDPREVENT includes 7 conditions in their wide definition of CVD: coronary heart disease, ischaemic stroke, acute coronary syndrome, peripheral arterial disease, transient ischaemic attack, heart failure and abdominal aortic aneurysm*

***Adult (18 and older) population in England (ONS), 2023*

**** Includes any or more than one of these conditions: CHD, non-haemorrhagic stroke and stroke cause not specified, TIA, and PAD)*

Type 2 diabetes

Measures	Statistics	Source	Calculation	Link to source
Estimated prevalence	• 5.2 million	• NHS England (2024) • QOF (2023/24) • ONS (2024) • EClinicalMedicine	• Proportion of people with type 2 diabetes (T2D) that are undiagnosed = 30% • Number of people diagnosed with T2D= (number of people diagnosed with diabetes) – (number of people with type 1 diabetes) • = 3.9m – 270k = 3.6m • (Total estimated number of people with T2D) x 70% = 3.6m • Total estimated number of people with T2D = 5.2m **Estimated 55% of T2D patients have 0 or 1 other comorbidity at time of diagnosis** Prevalence of T2D as a single LTC *= 5.2m x 55% = 2.9m* *"7.8% prevalence in England" = 4.4m (gov.uk) for Type 2*	• NHSE • QOF (Fingertips) • ONS • Variations in comorbidity burden in people with type 2 diabetes over disease duration: A population-based analysis of real world evidence
Diagnosed population	• Diagnosed: 3.6 million	• NHS England (2024) • QOF (2023/24) • BMJ	**Recorded prevalence of type 2 diabetes** = (recorded prevalence of overall diabetes) – (recorded prevalence of type 1 prevalence) = QOF records *3.9m – 270k = 3.6m* **Estimated 77% of T2D patients have at least one other comorbidity** Diagnosed T2D as a single LTC *= 3.6m x 23% = 828k*	Listed above (QOF and NHSE) • https://bmjopen.bmj.com/content/10/7/e033866
At risk (prediabetes)	• 6 million	• Diabetes.co.uk	• Percentage of England adult population with prediabetes = 13% • 46m x 13% = 6 million	• Diabetes UK
Diagnosis gap	• 1.6 million	• NHS England (2024) • QOF (2023/24) • ONS (2024)	• *5.2m – 3.6m = 1.6m*	Listed above
Eligible population	• 5 million	• Diabetes.co.uk • GOV.UK (2022/23) • NHS England (2024) • QOF (2023/24)	• Total eligible population = (number of people diagnosed with T2D) + (number of people with prediabetes that are eligible for treatment) • Obesity rate in England = 26% • Number of people with T2D = 3.6m • Number of eligible people with prediabetes = (Total number of people with prediabetes) x (obesity rate) *= 6 million x 26% = 1.6m* • *3.6m + 1.6m = 5.2m*	• Diabetes UK • UK Government
Optimally treated population	• 1 million	• National Diabetes Audit (2023)		• NHS Digital
Treatment gap	• 4.2 million		• *5.2m – 1m = 4m*	Listed above
Events (per year)	• 119k overall deaths (based on 141k UK figure) • 34k heart attacks (6k deaths)	• Statista • Diabetes UK • HES (2023/24) (retinopathy)	Derived from Diabetes UK statistics which are cited on weekly basis: • 660 x 52 = 34,320 heart attacks • 930 x 52 = 48,360 strokes	• Statista • Diabetes UK

Obesity

Measures	Statistics	Source	Calculation	Link to source
Estimated prevalence	• Prevalence: 12m (26%)	• GOV.UK (2022/23) • BMJ	• 26% of adults in England are estimated to be living with obesity • Adult population in England = 46m • *46m x 0.26 = 12m* • **Estimated 17% of people have no other comorbidity** • *12m x 17% = 2.0m*	• GOV.UK • https://pmc.ncbi.nlm.nih.gov/articles/PMC8246368/#abstract1 • NHS Digital
Diagnosed population	• 6.5m	• QOF (2023/24)	• Recorded prevalence of obesity in England = 6.5m • 6.5m x 17% = 1.1m	• Fingertips • BMJ listed above
At risk (overweight)	• 17m	• GOV.UK (2022/23)	• In 2022 to 2023, 64.0% of adults aged 18 years and over in England were estimated to be overweight or living with obesity • *64% - 26.2% = 37.8%* • *46m x 37.8% = 17m*	• GOV.UK
Diagnosis gap	• 5.5m	• GOV.UK (2022/23) • QOF (2023/24)	• *12m – 6.5m = 5.5m* • *Obesity as a S-LTC = 2.0m - 1.1m = 900k*	• Listed above
Eligible population*	-			
Optimally treated population*	-			
Treatment gap*	-			
Events (per year)	• 26,000 CVD deaths associated with obesity in the England	• British Heart Foundation • ONS	• There are 31,000 CVD deaths associated with obesity in the UK • Given that the UK population is 67.6 million and England's population is 57.1 million (ONS, Mid-2022), we used this proportion to adjust the figures to England • *57.1 / 67.6 = 0.845* • *31,000 x 0.845 = 26,195*	• British Heart Foundation • Office for National Statistics

Chronic kidney disease

Measures	Statistics	Source	Calculation	Link to source
Estimated prevalence	• 6.1m (total CKD) • 2.8m (G3-5)	• Kidney Research UK (2023)	• Estimated total prevalence of CKD in adults in the UK = 7.2m • Estimated total prevalence of CKD stages 3-5 in adults in the UK = 3.25m • Given that the UK population is 67.6 million and England's population is 57.1 million (ONS, Mid-2022), we used this proportion to adjust the figures to England • 57.1 / 67.6 = 0.845 • 7.2m x 0.845 = 6.1m • 3.25m x 0.845 = 2.8m	• Kidney Research UK
Diagnosed population	• 2.24m (G3-5)	• QOF (2023/24)	• Recorded prevalence of CKD G3-5 in England = 2.24m	• Fingertips
At risk (CKD G1-2)	• 3.3m	• Kidney Research UK (2023)	• Estimated total prevalence of CKD in adults in the UK = 7.2m • Estimated total prevalence of CKD stages 3-5 in adults in the UK = 3.25m • Estimated prevalence of CKD stages 1-2 = 7.2 – 3.25 = 3.95m • 3.95m x 0.845 = 3.34m	• Kidney Research UK
Diagnosis gap	• 520k	• Kidney Research UK (2023) • QOF (2023/24)	• 2.8m – 2.2m = 0.6m	• Listed above
Eligible population	• 2.2m	• QOF (2023/24)	• Assumed that everyone diagnosed with CKD G3-5 is eligible for treatment • Recorded prevalence of CKD stages 3-5 in England = 2.2m	• Fingertips
Optimally treated population	• 1.6m	• CVDPREVENT	• Proportion of patients with GP recorded CKD (G3a to G5) with an ACR of less than 70 mg/mmol (controlled) = 70.2% • Number of people with GP recorded CKD G3-5 = 2.24m • 2.24m x 0.702 = 1.57m	• CVDPREVENT CVDP007CKD
Treatment gap	• 675k	• QOF (2023/24) • CVDPREVENT	• 2.24m - 1.57m = 675k	• Listed above
Events (per year)	• 30k people receiving dialysis • 3k people receiving transplant • 45k deaths	• Kidney Research UK (2023) • NHSE – Chronic Kidney Disease in England: The Human and Financial Cost	• In 2020, there were 29,354 adults receiving dialysis for end stage kidney disease in the UK • In 2021, there were 2,863 adults who received a kidney transplant in the UK • It is estimated that there are 40,000 – 45,000 premature deaths each year in people with CKD	• NHS England

Dementia

Measures	Statistics	Source	Calculation	Link to source
Estimated prevalence	• 826k	• Alzheimer's Society		• Alzheimer's Society
Diagnosed population	• 482k	• QOF		• Fingertips
At risk (mild cognitive impairment)	• 524k	• Globe News Wire	• Estimated prevalence of MCI in the UK = 610k • Given that the UK population is 67.6 million and England's population is 57.1 million (ONS, Mid-2022), we used this proportion to adjust the figures to England • 57.1 / 67.6 = 0.845 • 620,000 x 0.845 = 523,900	• GlobeNewswire (2024)
Diagnosis gap	• 344k		• 826k – 482k = 344k	• Listed above
Eligible population	• 482k	• QOF	• Assumed that everyone diagnosed with dementia is eligible for treatment • Recorded prevalence of dementia in England = 482k	• Listed above
Treated population	• 29k	• Alzheimer's Society • QOF	• Estimated proportion of people dementia that are on NICE approved medications = 6% • Recorded prevalence of dementia in England = 482k • 482,000 x 0.06 = 28,920	• Alzheimer's Society
Treatment gap	• 453k		• 482k – 29k = 453k	• Listed above
Events (per year)	• 62k		Number of deaths due to Alzheimer's disease in the UK in 2022: 74,000 • Given that the UK population is 67.6 million and England's population is 57.1 million (ONS, Mid-2022), we used this proportion to adjust the figures to England • 57.1 / 67.6 = 0.845 • 74,000 x 0.845 = 62,530	• Dementia Statistics

Multi-morbidity

Measures	Statistics	Source	Calculation	Link to source
Estimated prevalence		• Royal Society of Medicine GOV.UK (2022/23)	• 15% of people in England are living with two or more health conditions • Adult population in England = 46m • 46m x 15% = 6.9m	• Prevalence of multiple long-term conditions (multimorbidity) in England: a whole population study of over 60 million people • GOV.UK
Diagnosed population				
At risk (mild cognitive impairment)				
Diagnosis gap				
Eligible population				
Treated population				
Treatment gap				
Events (per year)				

Methodology

Quality gap methodology

1	**Calculate prevalence of disease and elevated risk factors**	Understand the prevalence of disease	• Understand the diagnosed and undiagnosed populations using QOF and published literature
		Understand the split between treated and untreated populations	• Estimate the split between untreated and treated population using national prescribing data and published literature
2	**Attribute healthcare resource utilisation (HCRU) to different risk thresholds**	Calculate the distribution of disease risk factor across the population	• Estimate the distribution of population across the relevant clinical risk factor thresholds and/ or disease progression rates using QOF, published literature and surveys
		Calculate the healthcare resource utilisation based on risk factor distribution	• Identify patients with underlying disease using ICD-10 and SNOMED codes in Hospital Episodes Statistics (HES) and distribute the hospital activity across the risk factor populations based on established hazard ratios
3	**Calculate the impact of intervention on healthcare resource utilisation**	Estimate the eligible population for risk factor intervention	• Estimate the population that are eligible for intervention based on NICE guidelines • Understand the number of people currently treated who are sub-optimally managed based on QOF
		Calculate the impact of different interventions on healthcare resource utilisation	• Calculate the impact of interventions on healthcare resource utilisation and morbidity and mortality figures

Limitations

Unmet needs:

- We based our estimates of healthcare resource utilisation on activity data from 2023/24, assuming these figures provide a representative measure of current trends.
- To determine the number of inpatient spells associated with a particular disease area, we counted any spell in which a relevant ICD-10 or SNOMED code appeared in a diagnosis field. This approach may include cases where the disease in question was not the primaryreason for admission, but given the conditions examined are known risk factors, we considered it appropriate to adopt a more inclusive definition.

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