

Prevention

Cardiovascular Disease (CVD)
Health Needs Assessment

publichealth
helping health happen

Priorities for Delivery

Plan for the Future
Healthier Together
2022 - 2032

NHS Grampian

NHS expenditure on CVD in Scotland is approximately £950 million with a wider cost to society which is estimated at £2.5 billion each year.

- CVD is a leading cause of death and DALYs in Grampian.
- Our working age population is at risk - this means it is our staff as well, impacting on staff wellbeing and service provision.



- 6000 people in Grampian had an admission for CVD in 2025.
- Mortality from CVD is rising among men.
- In 2024/25 4500 ambulances were called for chest pain and there were 800 community cardiac arrests in Grampian.

There are opportunities for prevention:

- 1.5 million people in Scotland are estimated to have high blood pressure, but only 36% of adults with high blood pressure were treated and controlled.
- 300 people in Grampian die prematurely each year.
- Although mortality rates are higher among people living in the most deprived areas of Grampian, this is not reflected in equivalent rates of treatment.

Executive Summary

Cardiovascular disease (CVD) is a leading cause of morbidity and premature mortality in Scotland[1], including in Grampian[2], and has been identified as a priority for NHS Grampian. This health needs assessment (HNA) aims to support a coordinated, system-wide approach to CVD prevention. The burden of CVD follows a clear social gradient, disproportionately affecting people living in more deprived areas, who also experience higher levels of key risk factors[1].

Although a range of CVD initiatives are already in place across the system, there is a need to better align and strengthen collaborative efforts. With an ageing population, the prevalence of CVD is expected to rise[1], reinforcing the importance of a comprehensive approach across all levels of prevention. This includes reducing modifiable risk factors such as smoking and obesity, improving identification of undiagnosed CVD through screening, and optimising treatment for those already living with the condition.

This HNA brings together recommendations for partners across the system, building on existing initiatives such as the whole-system approach (WSA) to obesity. Addressing CVD effectively offers a significant opportunity to deliver on the Population Health Framework[3] (PHF) and reduce inequalities in life expectancy between the most deprived communities and the Scottish average.

Aim

This health needs assessment (HNA) has two main aims:

1. To establish the burden of CVD in Grampian.
2. To recommend system actions to reduce CVD rates and risk factors in Grampian.

Objectives

1. Provide an overview of the existing and projected national burden of CVD and summarise relevant policy and preventative strategies.
2. Analyse local data to understand the current burden of CVD in Grampian and identify key risk factors.
3. Map and evaluate existing projects, services, and resources focused on CVD and its risk factors.
4. Summarise high level evidence on effective interventions for CVD.
5. Develop feasible and co-produced recommendations to maximise system improvement.

Methodology

Reducing the burden of CVD is a strategic priority for NHS Grampian. In response, system leaders agreed to undertake a HNA to map local data and existing activity across the system, enabling the prioritisation of future actions.

The HNA employed mixed methodology and focused on three primary sources of evidence:

1. **Local data**

   A CVD dashboard[4] was developed in Tableau using locally available data sources. The dashboard brings together key indicators including hospital admissions, mortality, and trends over time, enabling a population level view of CVD burden within the local area. The dashboard supports exploration of variation over time and geography and was used to identify priority areas.

2. **Stakeholder analysis and engagement**

   To summarise current activity and identify opportunities for further action, relevant stakeholders were consulted across health, public health, and partner organisations.

   Discussions focused on existing workstreams related to CVD prevention and management, areas of overlap or duplication, and opportunities to enhance collaboration, alignment, or scope of work. Insights from stakeholder engagement informed an understanding of system capacity, gaps, and potential levers for coordinated action. These conversations will continue with wider stakeholders at two planned workshops and will contribute to action planning following the HNA.

3. **Literature Review**

   A review of secondary research sources and guidelines was undertaken to identify population level interventions shown to reduce CVD incidence and mortality. Evidence was drawn from systematic reviews, policy reports, and guidelines. Findings were synthesised to highlight interventions which demonstrated effectiveness and relevance to local implementation.

Data Limitations

- **Primary Care Data** - Local primary care data is held differently by each GP practice and data sharing agreements are not currently in place. Therefore, data on incidence of CVD and clinical risk factors are based on self-reported incidence, prescription of CVD medications and hospital episodes. Data on CVD mortality rates are available at GP practice level.
- **Admissions Backlog -** As of 4th April 2026, 39% of hospital discharges in September, 47% in October, 28% in November and 22% in December 2024 remain uncoded. This impacts on the CVD admission data as a lack of coding mean the relevant admission cannot be identified. This may be noticeable in some graphs.
- **Social desirability bias** – The majority of risk factor data is derived from self-reported responses in the Scottish health survey. As a result, the data may be affected by social desirability bias, whereby respondents under-report behaviours perceived as unhealthy (such as smoking or poor diet) and over-report healthier behaviours.

- **Ecological Fallacy** – Using the Scottish Index of Multiple Deprivation (SIMD) can introduce an ecological fallacy, as area level deprivation does not always reflect individual circumstances. Individuals living in a highly deprived area may not themselves be deprived, while people experiencing poverty may live in areas classified as less deprived. To mitigate this limitation where possible, deprivation has also been defined using individual level indicators such as residence in social housing, to support and contextualise analysis.

Scope

Cardiovascular definition

CVD is defined as a group of conditions affecting the heart and circulatory system but can be defined differently across different datasets. For the purpose of the local dashboard, CVD was defined as including the following groups of conditions:

- Acute rheumatic fever
- Cerebrovascular disease
- Chronic rheumatic heart diseases
- Diseases of arteries, arterioles and capillaries
- Hypertensive diseases
- Ischaemic heart disease
- Other and unspecified disorders of the circulatory system
- Other forms of heart disease
- Phlebitis and thrombophlebitis
- Pulmonary heart disease and diseases of pulmonary circulation

Interventions

The scope of the literature review was limited to secondary research sources and published evidence syntheses, including reviews and guidance documents. Additional studies were included for newer emerging evidence bases.



Objective 1

Background

Cardiovascular disease (CVD) is an umbrella term for a range of conditions that affect the heart and blood vessels. These conditions may be congenital or develop later in life. Examples of CVDs include ischaemic heart disease, strokes, and vascular dementia[5]. CVD arises from a complex interplay of multiple, interrelated risk factors spanning clinical, behavioural, and wider social and environmental determinants[6].

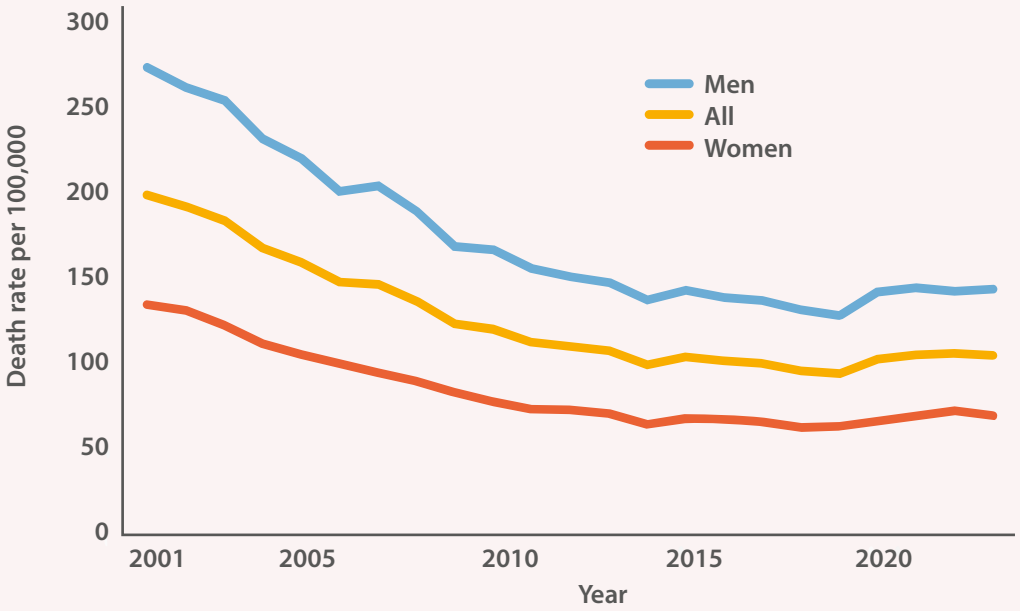
Burden of Disease

CVD is the leading cause of death and disability in Europe and causes 1 in 3 of all deaths each year[6].

Although the burden of CVD is high and projected to increase, there have been significant recent successes. Between 1980 and 2005, CVD mortality halved in several European countries. Two components are responsible for this:

1. Changes in incidence of CVD: driven by changing presence of risk factors
2. Changes in case fatality: driven by medical technology and improvements in health care services[6]

Since 2005, countries including the UK have seen rates of CVD begin to plateau[6]. Graph 1 shows premature (under 75) deaths in the UK started to plateau in 2010 and have begun to increase since 2019[5]. In Scotland, indicators suggest that CVD remains a major contributor to excess mortality[7] and Scotland continues to have higher rates of coronary heart disease (CHD) compared with the rest of the UK[1].



Graph 1: Premature death (under 75) from CVD in UK from 2001 to 2023[5]

In Scotland almost a third (28%) of all deaths are due to CVD and the prevalence of CVD is significantly higher in the most deprived areas. The burden of CVD is also expected to increase by 34% from 2019 to 2043, which is the highest predicted increase amongst all disease groups[1].

Population in Grampian

In Grampian, the population is ageing. Figure 1 compares the population age pyramid between 1991 and 2025. In 2025, 20% of the population were over the age of 65. The population of older and younger people is also not evenly distributed across Grampian. In Moray for example, 23% of the population is over 65, which is among the highest in Scotland. As the population ages, the burden of CVD is expected to increase[8].

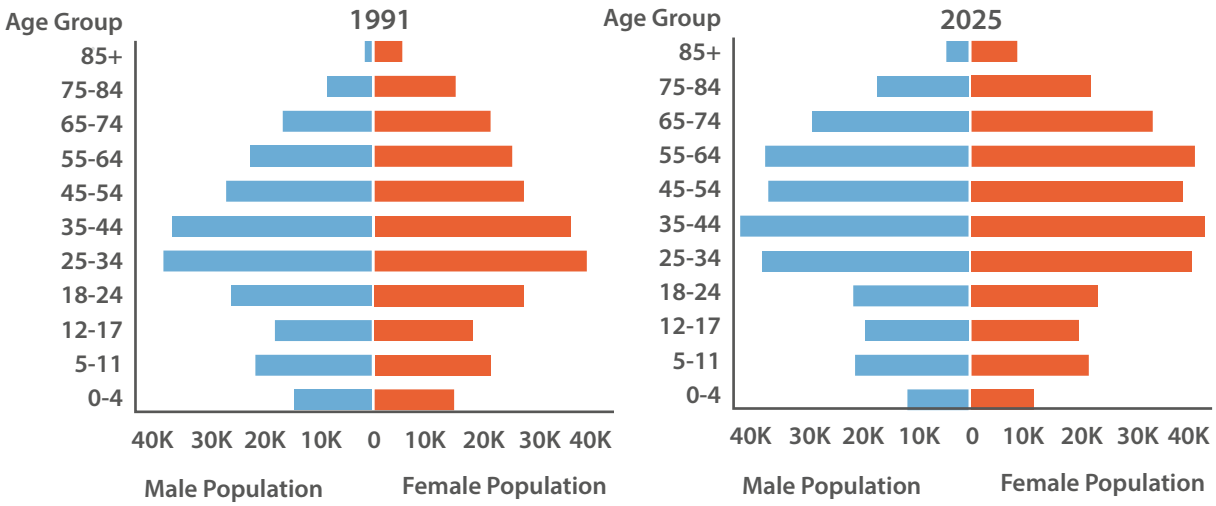


Figure 1: Age pyramid profile for Grampian population 1991 vs 2025[8]

While the risk of CVD increases with age, over 5,000 people died before the age of 75 in Scotland in 2024, accounting for 30% of all CVD deaths[5]. This highlights that premature mortality and inequalities are still accounting for a large proportion of CVD burden.

As the population ages, multimorbidity is expected to become more common, adding to the complexity of prevention and care. CVD can already be difficult to manage, as around 80% of people with CVD have at least one other health condition, and this is likely to be higher in women[9].

As already explored, living in deprivation is associated with a much higher risk of CVD[1]. Although Grampian is overall a relatively affluent region in Scotland, some of the most deprived communities live here and there are people living in deprivation among most communities in Grampian[8]. CVD is an important driver of differences in health experiences by those living in the most and least deprived areas[1].

Other living conditions can make living with CVD more challenging. For example, 1 in 2 households in Grampian are not energy efficient, which is particularly true among private rented households[10]. 53,000 households in Grampian meet the Scottish Government definition for 'vulnerable households', including 14% of households in Grampian that have a resident over 65 living alone[11].

Cost

In Scotland, the NHS spends an estimated £950 million on CVD. Additionally, when premature death, long term care, disability and informal costs are calculated, CVD costs the Scottish economy an estimated £2.5 billion every year[1].

Policy Overview

The Population Health Framework is a 10-year strategy aimed at reducing the gap in life expectancy between those living in the most and least deprived areas in Scotland. It outlines an approach for prevention focused systems structured around four drivers of health:

1. Social and economic factors
2. Places and communities
3. Enabling healthy living
4. Equitable health and care[3]

The enabling healthy living driver focuses on improving nutrition and physical activity, among other priorities, to reduce the burden of CVD. The framework also identifies the CVD prevention programme as a key action to address health inequalities and reduce avoidable variation in CVD outcomes[3].

NHS Scotland Policy and Investment in CVD

Within the NHS Scotland Operational Improvement Plan[12] published in 2025, the Scottish Government committed an additional £10.5 million to expand targeted interventions for CVD and frailty prevention. A key focus of this investment was the expansion of General Practice enhanced services targeting major CVD risk factors, including: high blood pressure, high cholesterol, high blood sugar, obesity, and smoking. This investment reflects a shift towards earlier identification and proactive management of risk factors within primary care, particularly in populations experiencing the greatest inequalities.

Heart Disease Action Plan

The Scottish Government Heart Disease Action Plan[13] sets out four national priorities to improve outcomes for people living with, or at risk of, heart disease:

1. Prevention: tackling risk factors by focusing on community-based action, whole system approaches, and increased use of self-monitoring technology
2. Timely and equitable access to diagnosis, treatment, and care
3. Workforce: focusing on training, recruitment, and sustainability of the cardiovascular workforce
4. Effective use of data: development of the Scottish Cardiac Audit Programme to monitor outcomes, variation, and the impact of interventions

These priorities reinforce the importance of prevention, equity, and data driven improvement across the CVD pathway.

NHS Grampian Priorities 2026-27

In line with national policy, NHS Grampian's 2026–27 prevention priorities focus on increasing uptake of screening and prevention interventions for CVD and its key risk factors. These priorities are summarised in Table 1.

Prevention Priority	Impact on CVD
Increase uptake of CVD assessments by 30%	Earlier detection of CVD and key risk factors
Support 5% of the adult population in Grampian set a quit date	Reduce the burden of smoking, a major risk factor for coronary artery disease (CAD[1])
Increase access to weight management services by 10%	Increased proportion of the population achieving a healthy weight
Increase breastfeeding rates at 6-8 weeks by 2%	Breastfeeding helps reduce long term CVD risk for both mothers and infants[14,15]
Increase uptake of the six national screening programmes	Earlier identification and management of abdominal aortic aneurysms
Achieve vaccination uptake levels in line with national KPIs	The influenza vaccination is recommended for people with chronic heart or vascular disease[16]
Increase the percentage of primary 1 and primary 7 children with no obvious dental decay	Poor periodontal health status is associated with an increased risk of CVD[17]

Table 1: NHS Grampian prevention priorities for 2026-27



Objective 2

Local Data and Risk Factor Burden

In 2025, heart attacks were the leading cause of death in males and the second leading cause of deaths in females in Grampian. Of the top five causes of death in men in Grampian, three were CVDs. In Grampian, more than one person dies every day due to heart attacks alone[2] and 1,500 people die each year from CVDs[4].

Incidence

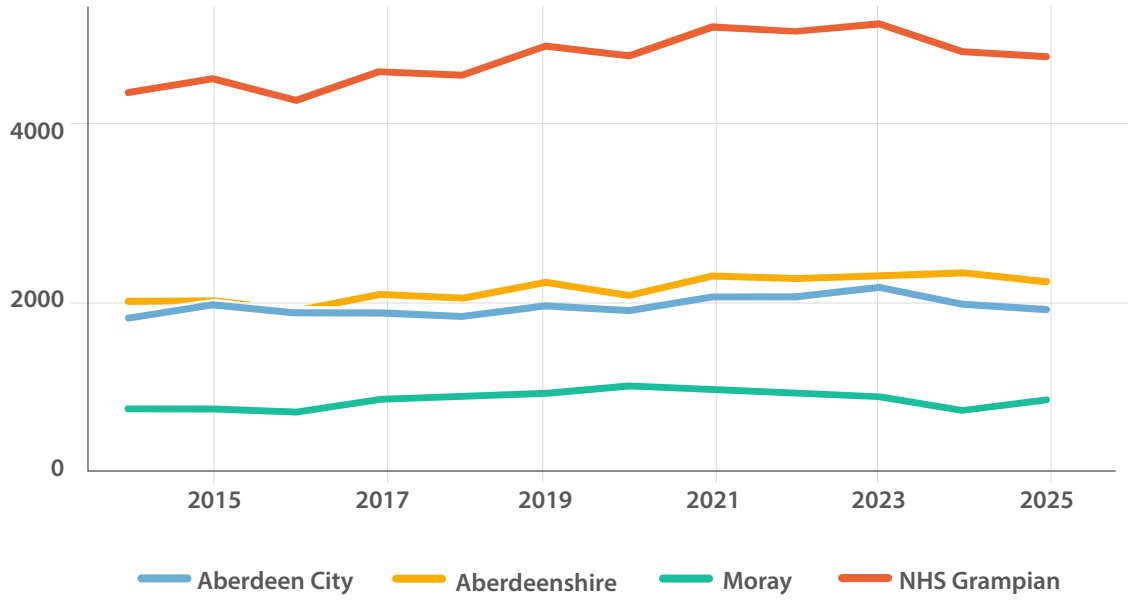
Primary care data limitations mean assessing the incidence of CVD is challenging. According to the Scottish Health Survey 2021-2024 1 in 7 adults (14%) in Grampian reported they had a CVD[18]. However, using prescription data, the rate appears higher, with 1 in 4 people in Grampian having received at least one prescription for a medication used to treat CVD[11].

In 2024-2025 there were almost 4500 ambulance calls for chest pain and over 800 community cardiac arrests in Grampian[19].

Hospital Admissions

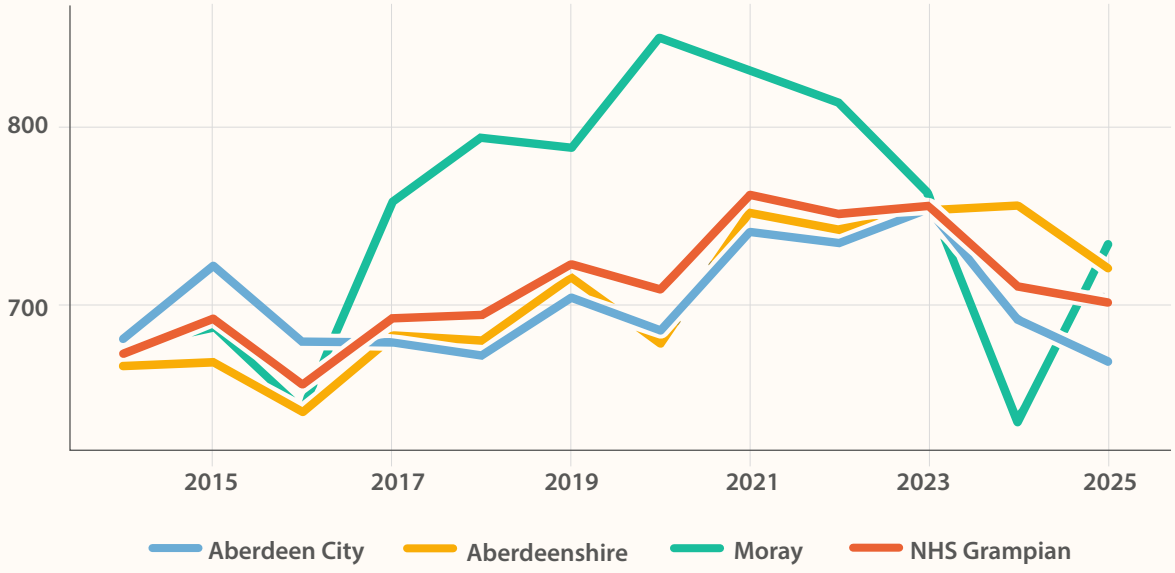
Almost 7,000 people in Grampian were admitted to hospital for CVD in 2025. CVD admissions increase with age and, like the overall burden of disease, are higher among men and people living in more deprived areas[4].

While the total number of people being admitted for CVD generally has fallen, the number of people using unscheduled care has risen. Three in every four CVD admissions are for unscheduled care. Graph 1 shows the trend for unscheduled care admissions for CVD across Grampian[4].



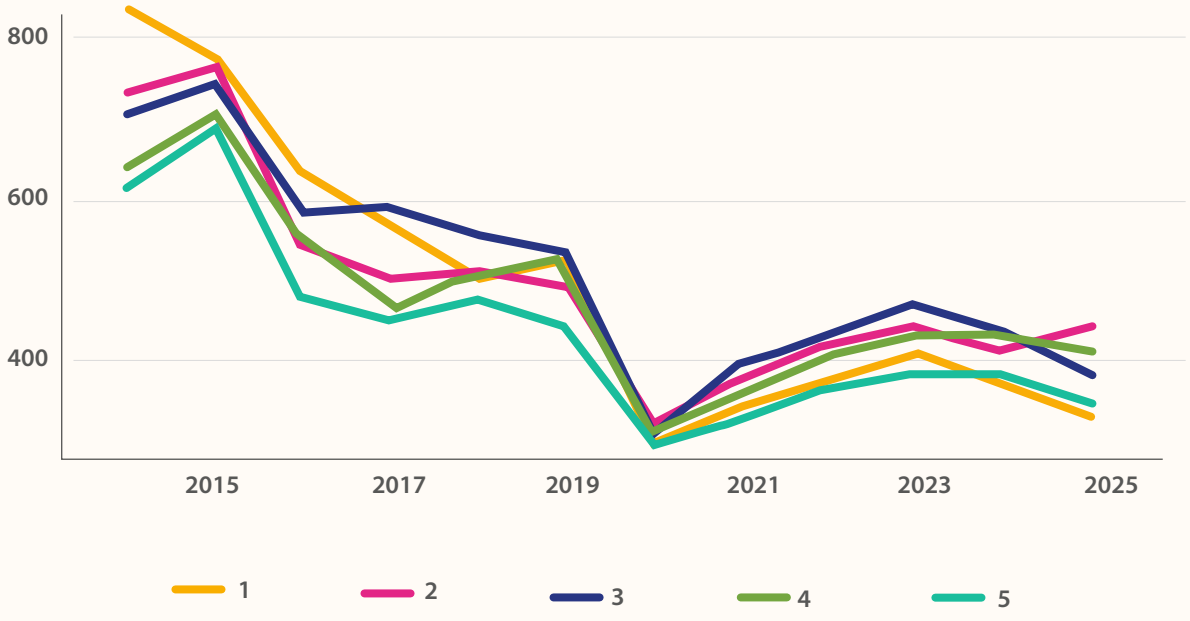
Graph 1: Total non-elective admission for CVD by local authority[4]

Admission rates vary by local authority area. Moray has particularly high levels of CVD admissions when compared to its population size, see Graph 2. Please refer to data limitation section to explain apparent drop in admissions in 2024[4].

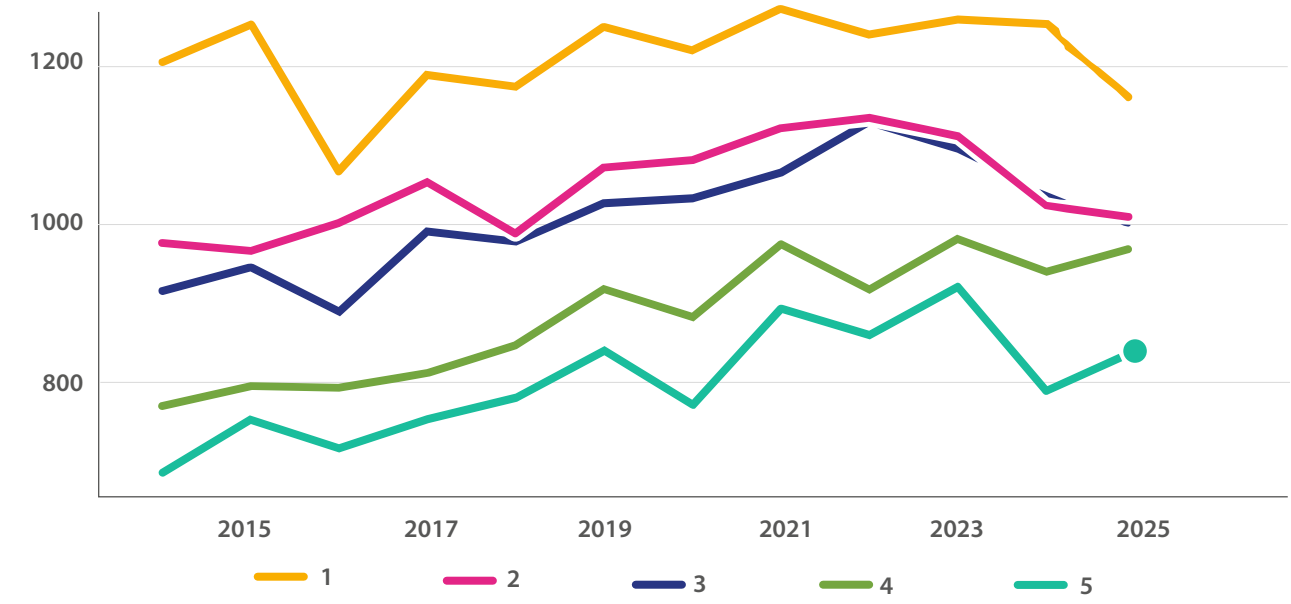


Graph 2: Number of people admitted (non-elective) per 100,000 for CVD by local authority[4]

Graph 3 shows that elective admissions have been falling in each SIMD quintile, this compared to rising rates in admissions for non-elective care, see Graph 4[4]. 2020 has a larger than expected dip in elective admission likely due to the COVID-19 pandemic.



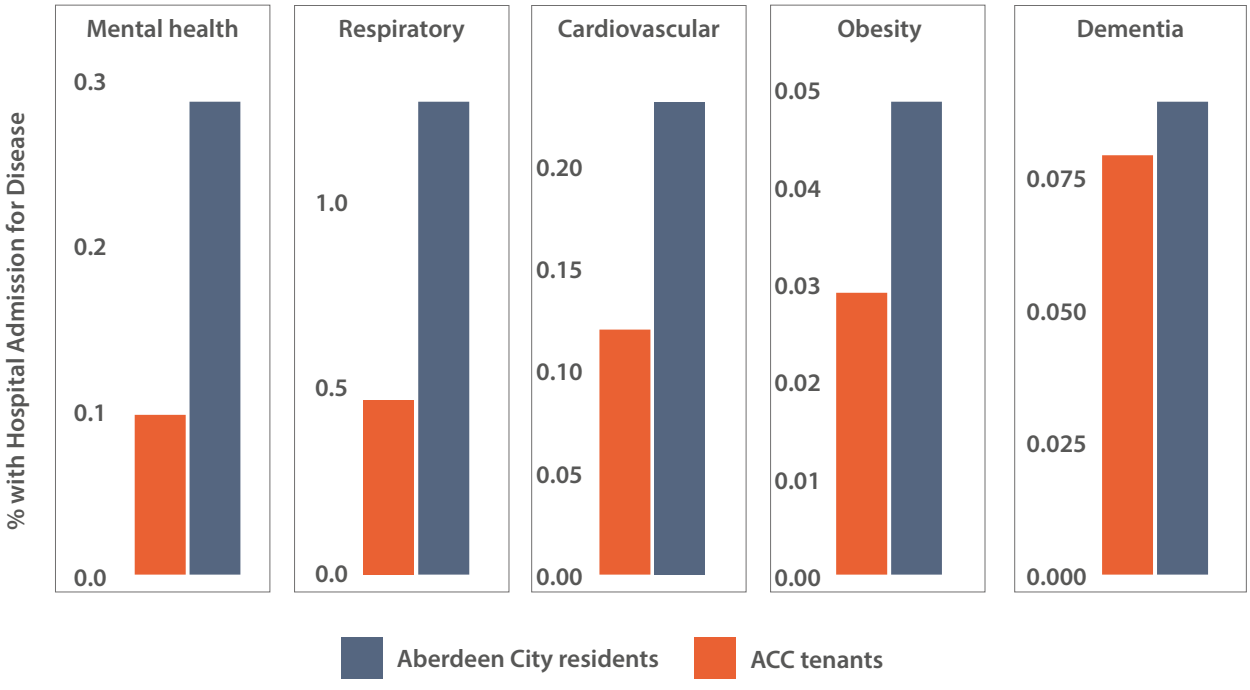
Graph 3: Elective admission for CVD by local SIMD 2020 quintile by SIMD[4]



Graph 4: Non-elective admission for CVD by local SIMD 2020 quintile by SIMD[4]

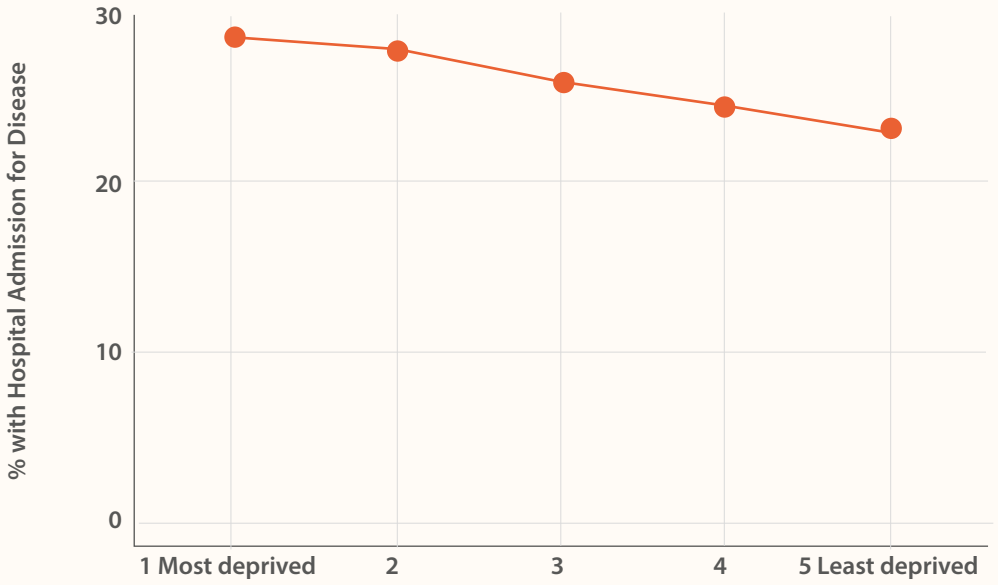
Using SIMD potentially masks populations who are experiencing poverty but are living out-with deprived communities. For example, around half of Aberdeen City's most deprived residents live in council homes however most council tenants live in less deprived SIMD areas. Additionally, in rural areas deprivation is often masked in data by small and dispersed communities.

In Aberdeen City, those living in social housing are more likely to be admitted to hospital for all diseases, including CVD, see Graph 5[11].



Graph 5: Percentage of hospital admissions for different diseases among Aberdeen City residents and Aberdeen City council tenants[11]

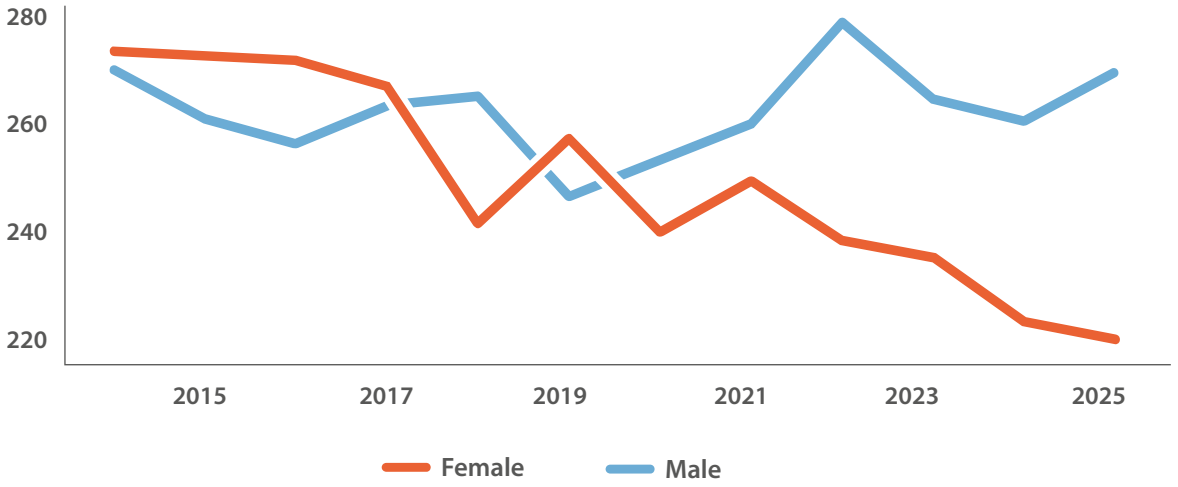
In Grampian, prescription data suggests that those in the most deprived communities may be under-treated relative to their level of need. Despite experiencing a higher burden of CVD, Graph 6 shows that, after adjusting for age and sex, those in the most deprived areas are only slightly more likely to be receiving a CVD treatment than those in the least deprived areas[11]. The graph includes the whole population of Grampian, followed over a six-month period during 2024.



Graph 6: Percentage of population on treatment for CVD (age and sex adjusted) by national SIMD quintiles in Grampian[11]

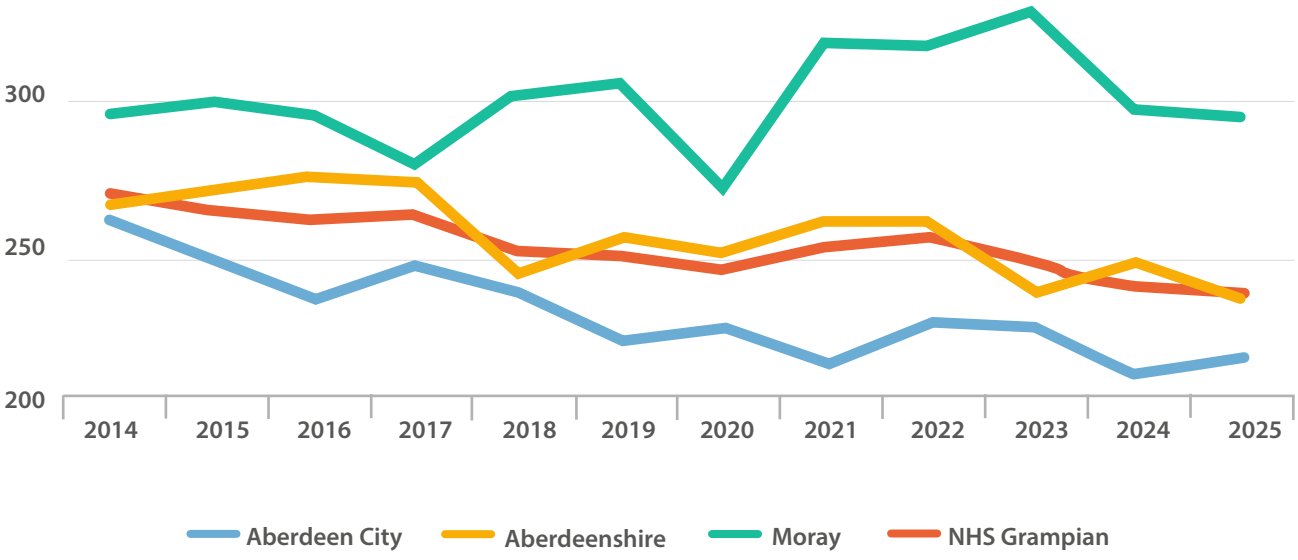
Mortality

In Grampian, mortality from CVD is rising among specific groups. Graph 7 shows that mortality from CVD has fallen in women but is increasing in men[4].



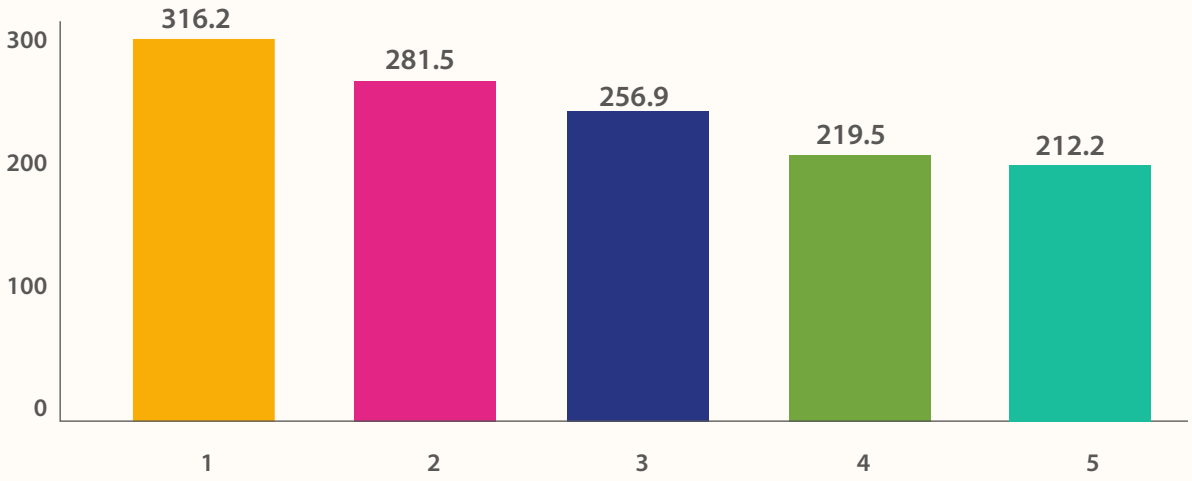
Graph 7: Crude mortality rate per 100,000 population from CVDs by gender in Grampian[4]

Mortality is also consistently higher in Moray compared to other local authority areas within Grampian, see Graph 8[4].



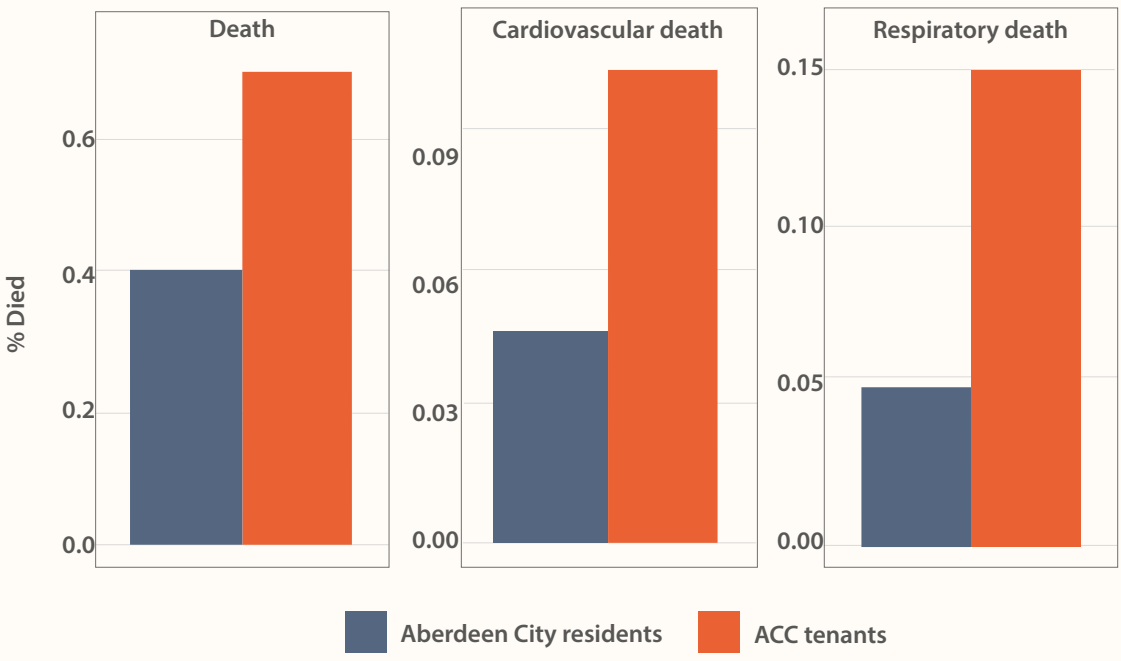
Graph 8: Crude mortality rate per 100,000 population from CVDs by local authority in Grampian[4]

Areas of deprivation also have considerably higher rates of mortality from CVD. As Graph 9 shows, standardised mortality rate was around 50% higher in the most deprived areas compared with the least deprived areas[4]. This may be related to higher overall burden and potential undertreatment which has been explored in the section above.



Graph 9: Standardised mortality rate per 100,000 population per annum 2015 -24) by Local SIMD quintile[4]

Social housing tenants in Aberdeen City are more likely to die from CVD than those living in private accommodation, see Graph 10. Similar pictures are seen for all-cause mortality and respiratory diseases[11].

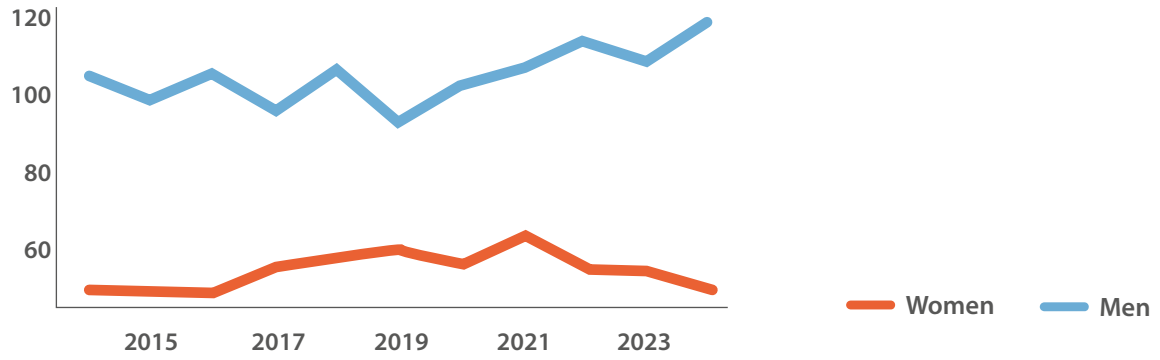


Graph 10: Percentage of deaths due to all causes, CVD and respiratory diseases among social housing tenants and the general population in Aberdeen City[11]

Premature Mortality

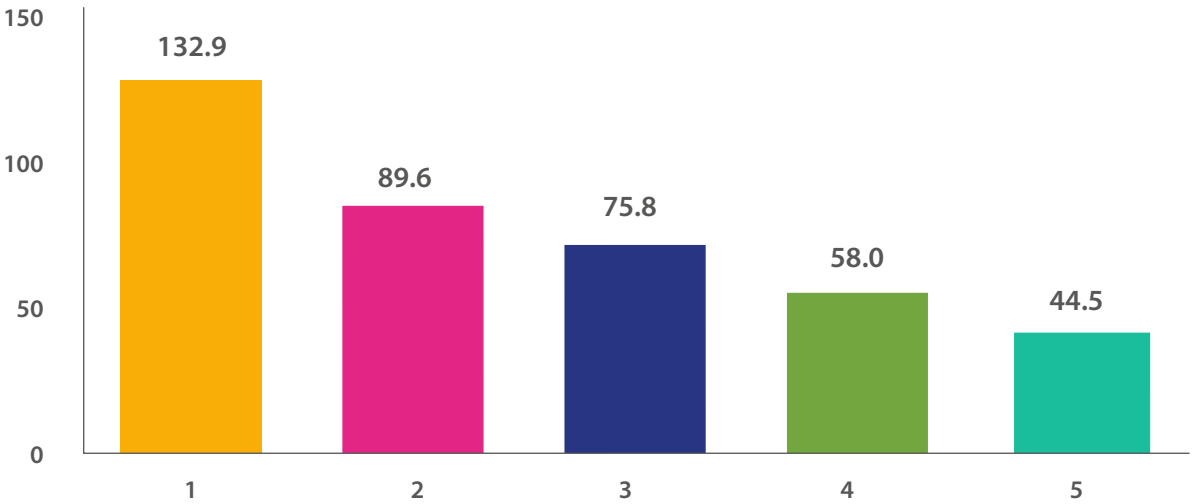
Premature mortality is defined as death occurring before the age of 75[4]. It is an important indicator as it highlights deaths that occur earlier than expected and helps identify opportunities for prevention.

In Grampian, around 300 people die prematurely of CVD each year[11]. A similar increasing trend is seen in premature mortality due to CVD. Men are disproportionately affected compared with women. As shown in Graph 11, premature mortality has been increasing among men, while declining since 2021 among women[4].



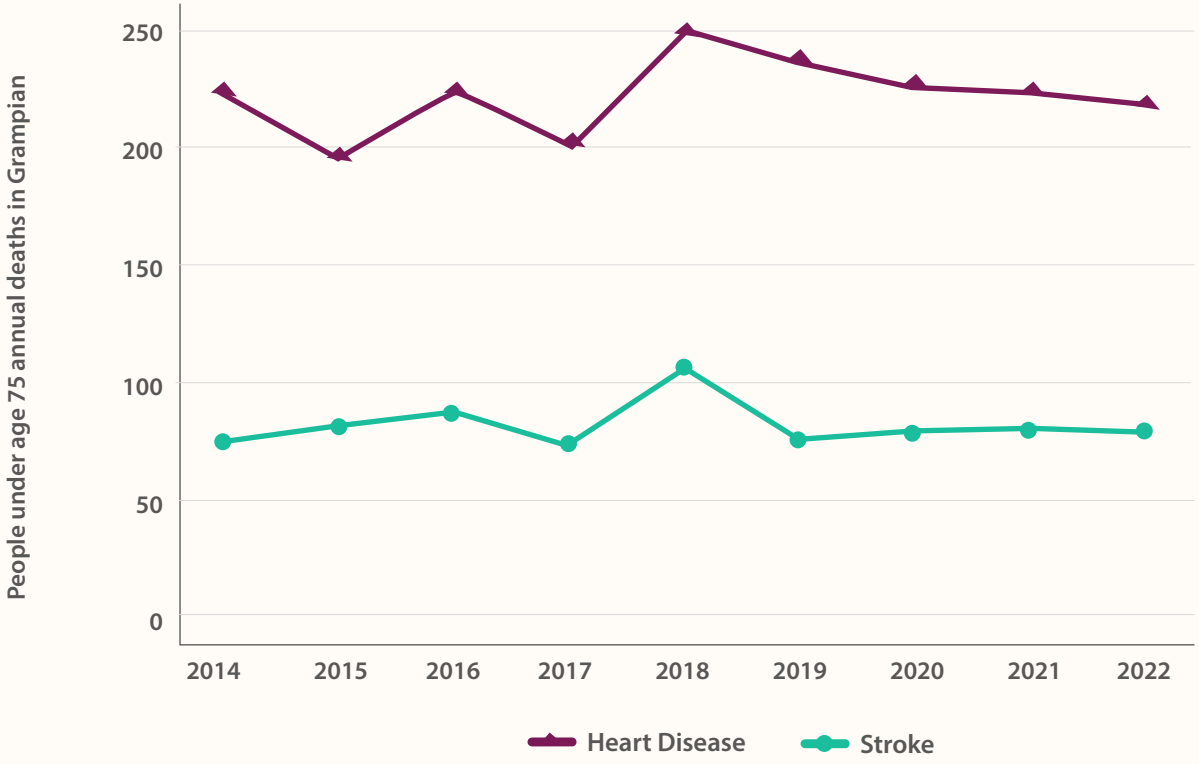
Graph 11: Premature mortality rate per 100,000 from CVD per 100,000 population by Gender in Grampian[4]

A steeper social gradient is evident in premature mortality than in overall mortality. The rate of premature mortality from CVD was almost three times higher in the most deprived areas than in the least deprived areas[4].



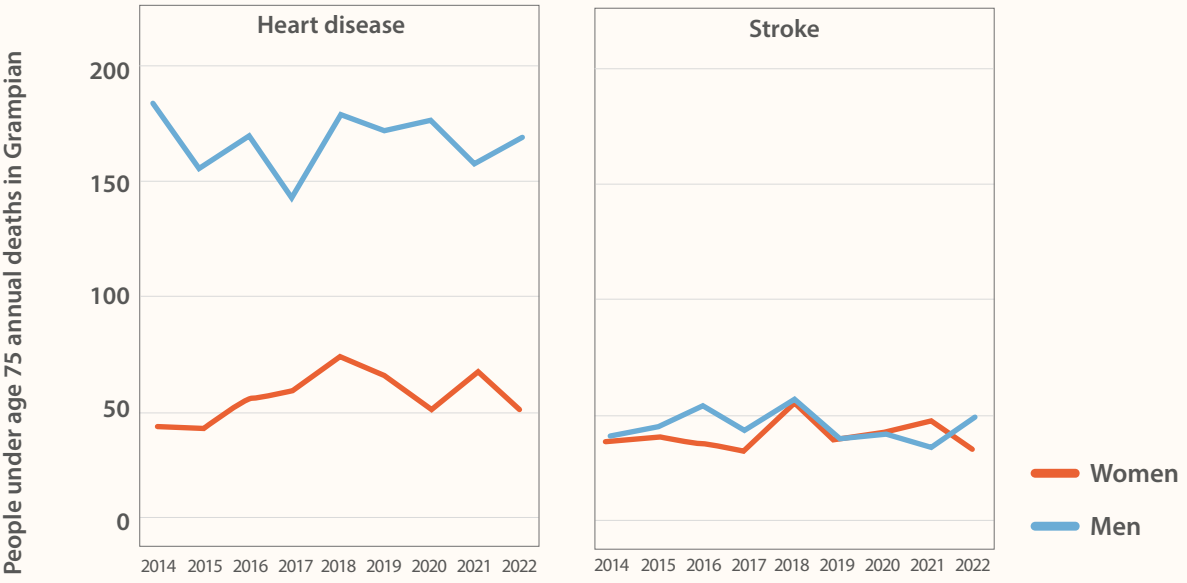
Graph 12: Premature age standardised mortality rate per 100,000 population under 75 per annum (2015-24) by local SIMD quintile[4]

Certain CVDs are more likely to cause premature death. For example, Graph 13 shows that heart disease is a more common cause of premature death than stroke[11].



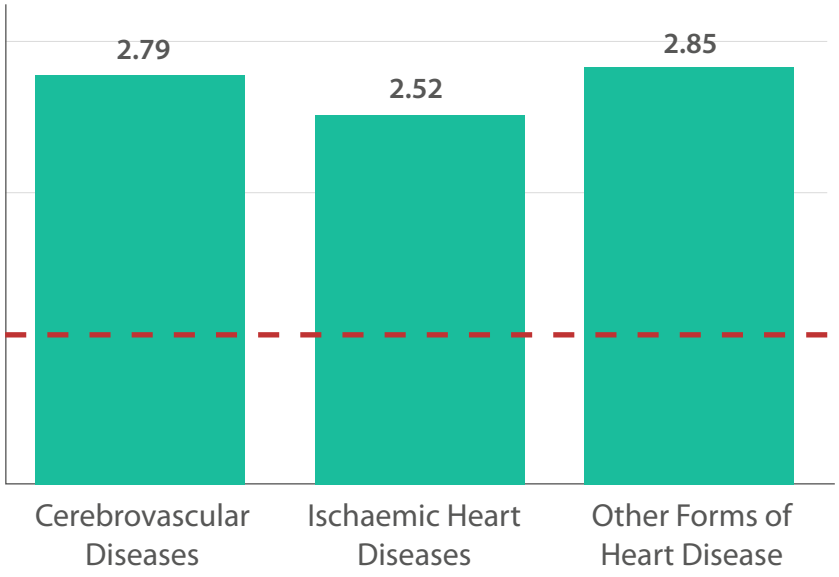
Graph 13: Death under the age of 75 due to heart disease and stroke in Grampian[11]

There are notable gender differences in the causes of premature mortality, with certain diseases contributing more heavily to premature death in men than in women. As shown in Graph 14, heart disease is much more likely to cause premature mortality in men[11].



Graph 14: Premature death under 75 by heart disease and stroke in Grampian by men and women[11]

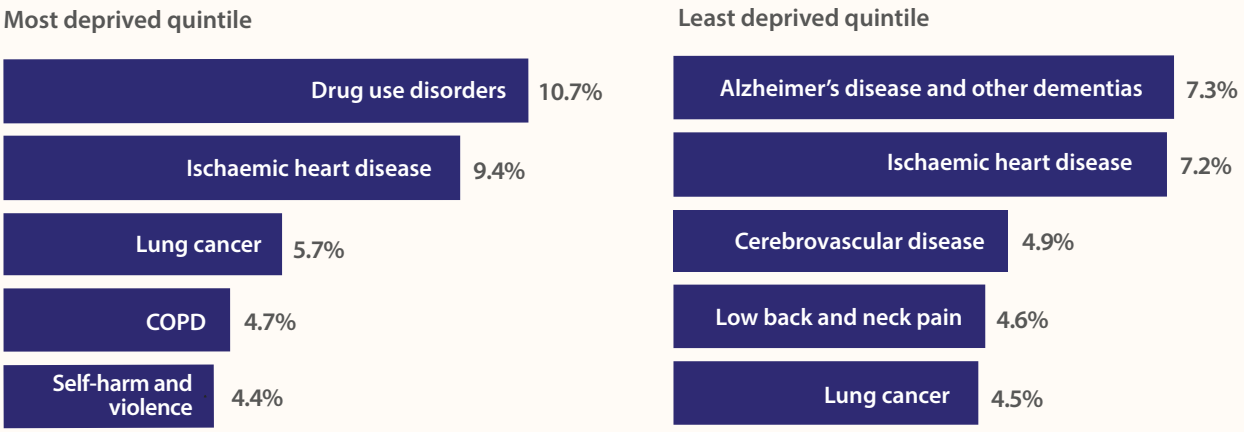
While gender inequalities indicate that some conditions have higher premature mortality among men, deprivation-related inequalities are consistently evident across all CVD conditions. As illustrated in Graph 15, the most deprived quintile experiences substantially higher premature mortality, with rates 2.52 times higher for ischaemic heart disease and 2.79 times higher for cerebrovascular diseases compared to the least deprived quintile[4].



Graph 15: Ratio of premature crude mortality rate in most deprived quintile to mortality rate in least deprived quintile by cause (2015-24)[4]

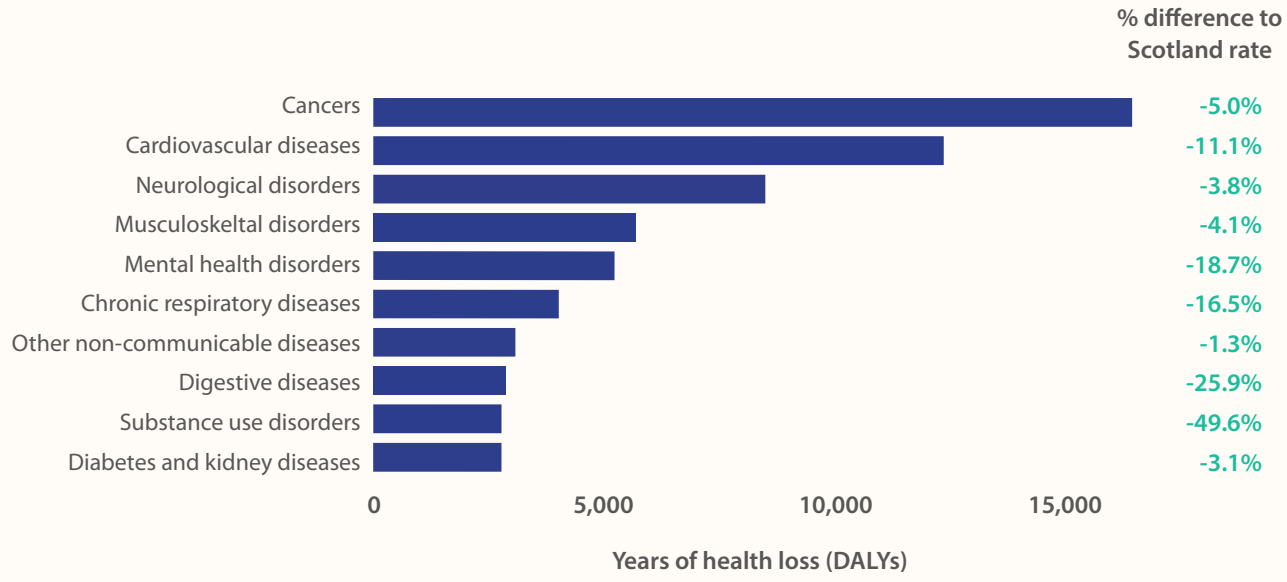
Health Loss

In the North region of Scotland, CVD accounts for a significant proportion of health loss, (Graph 16). Public Health Scotland (PHS) estimate that if the conditions experienced by the most deprived quintile were experienced at the same rates as within the least deprived quintile, then 45% of health loss could be avoided[20].



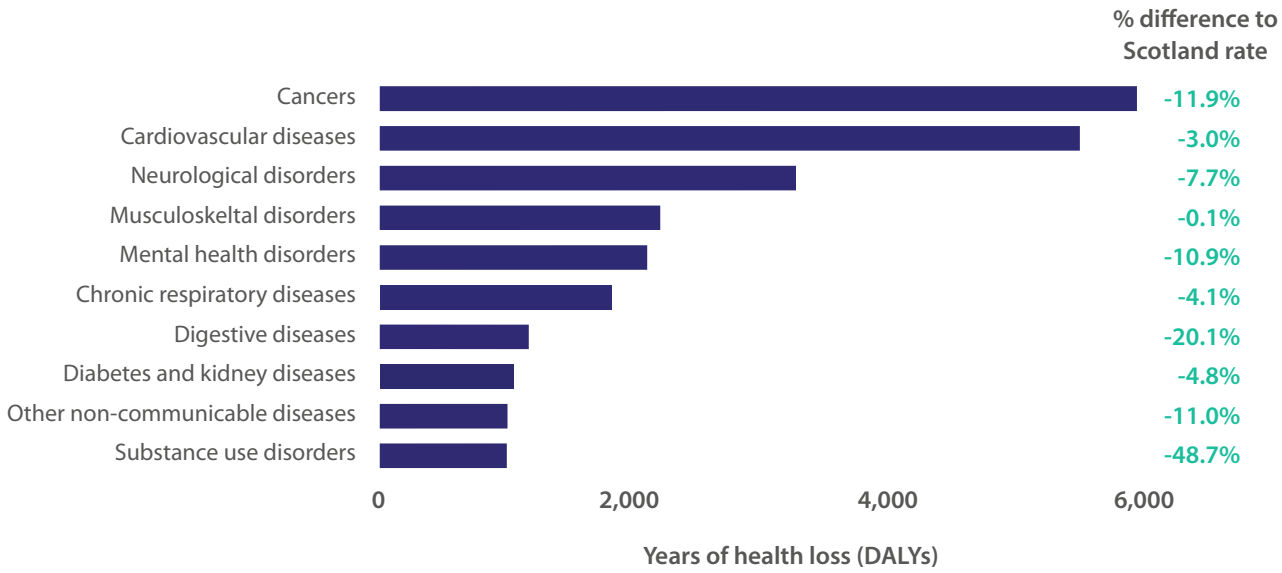
Graph 16: Leading individual causes of ill health and early death by proportion in the most and least deprived quintiles in North Scotland[20]

A disability adjusted life year (DALY) measures the number of years lost due to ill health, disability, or premature death. As shown in Graph 17, the three leading causes of DALYs in Aberdeenshire in 2019 were cancers, CVDs, and neurological disorders. Collectively, these conditions accounted for 51% of the total burden of health loss[21].



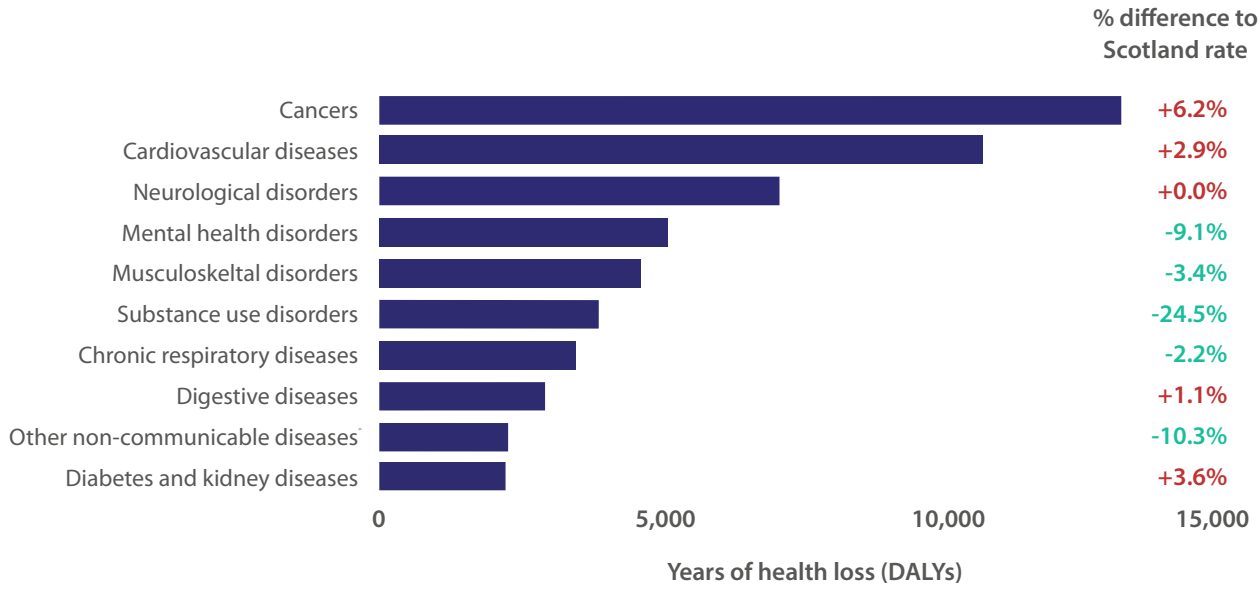
Graph 17: Leading grouped causes of ill health and early death in Aberdeenshire 2019[21]

A similar picture was seen in Moray, Graph 18, however, while CVD disease burden remained lower than the Scottish rate, the gap was narrower than that observed in Aberdeenshire[22].



Graph 18: Leading grouped causes of ill health and early death in Moray 2019[22]

In Aberdeen City, both cancers and CVDs were the most likely causes of DALYs and had higher rates than Scottish averages[20].



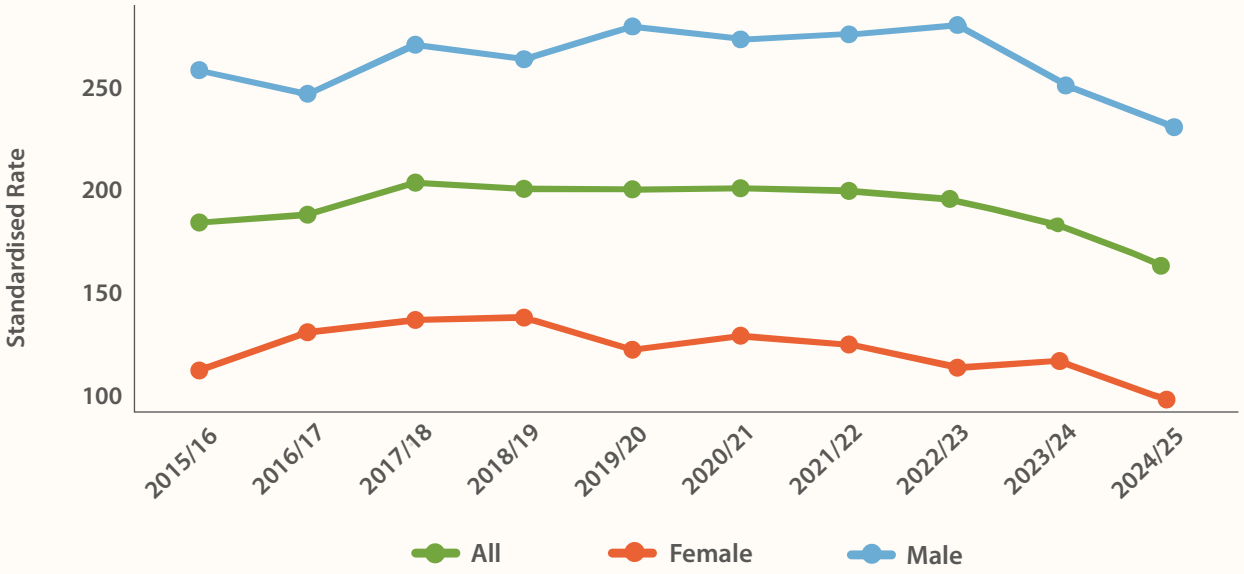
Graph 19: Leading grouped causes of ill health and early death in Aberdeen City 2019[20]

Incidence of Specific Cardiovascular Diseases

The Scottish Cardiac Audit Programme[19] (SCAP) was established to support the Scottish Government's Heart Disease Action Plan[13]. It summarises outcomes across key areas of cardiac care, including heart attack treatment, cardiac surgery, rhythm management, pre hospital care, heart failure, and cardiac imaging. Rates of selected CVD are reported by NHS health board, and the following graphs are drawn from this audit.

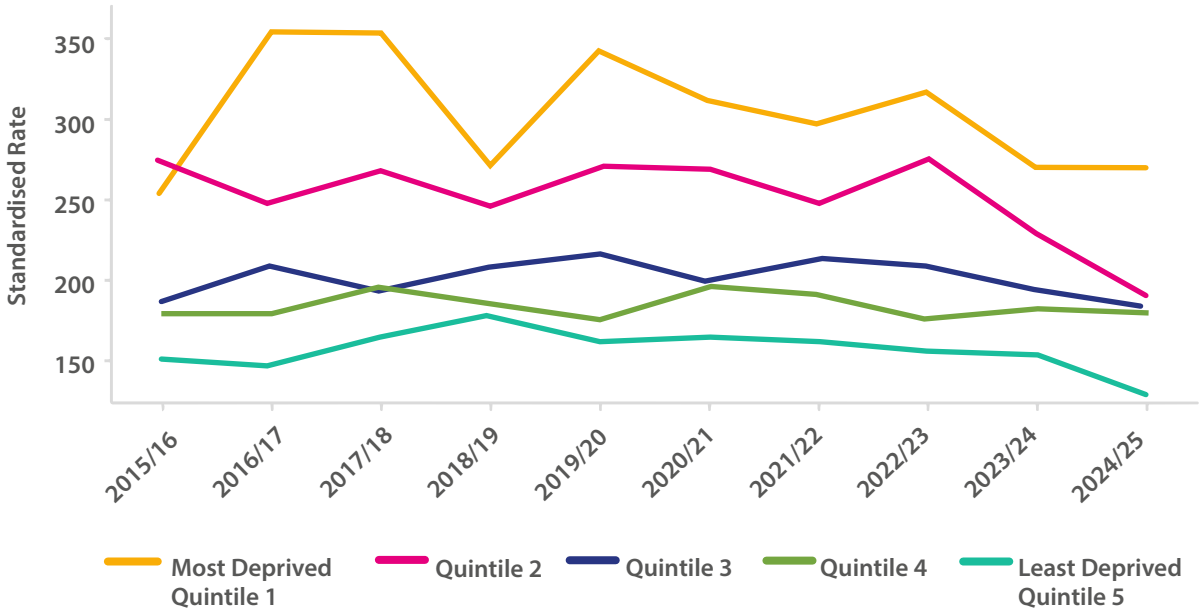
Heart attack

Graph 20 shows that since 2023 the rates of heart attacks in Grampian have decreased slightly but remain high, particularly in men[19].



Graph 20: Heart attack age and sex adjusted incidence rates per 100,000 population in NHS Grampian[19]

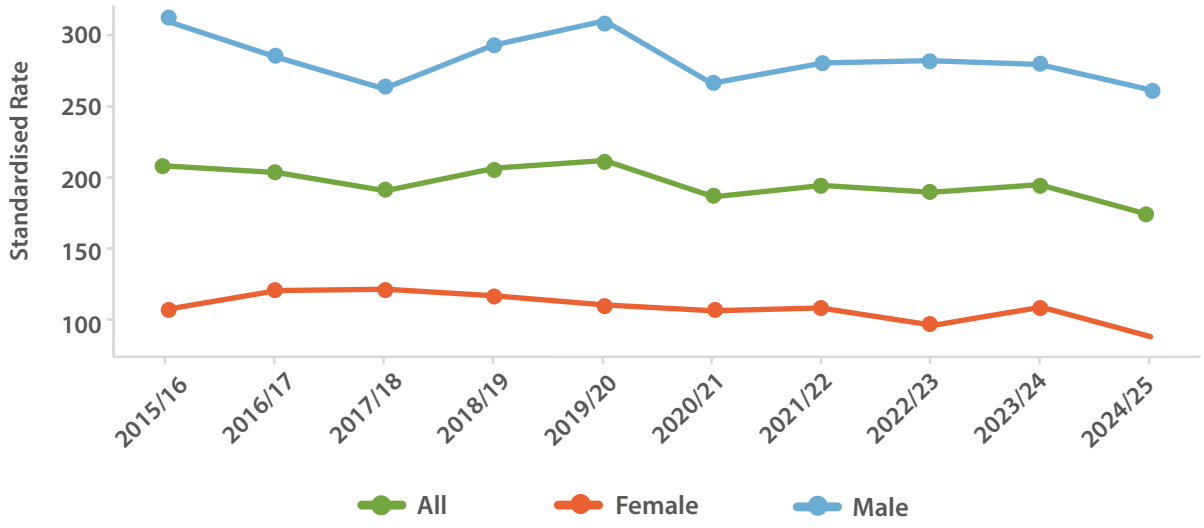
Graph 21 highlights a clear social gradient in heart attack incidence within Grampian. People living in the most deprived SIMD quintiles are substantially more likely to experience a heart attack, and while incidence has improved in recent years, rates have declined more slowly in the most deprived group[19]



Graph 21: Heart attack incidence rates per 100,000 population by deprivation quintiles in NHS Grampian[19]

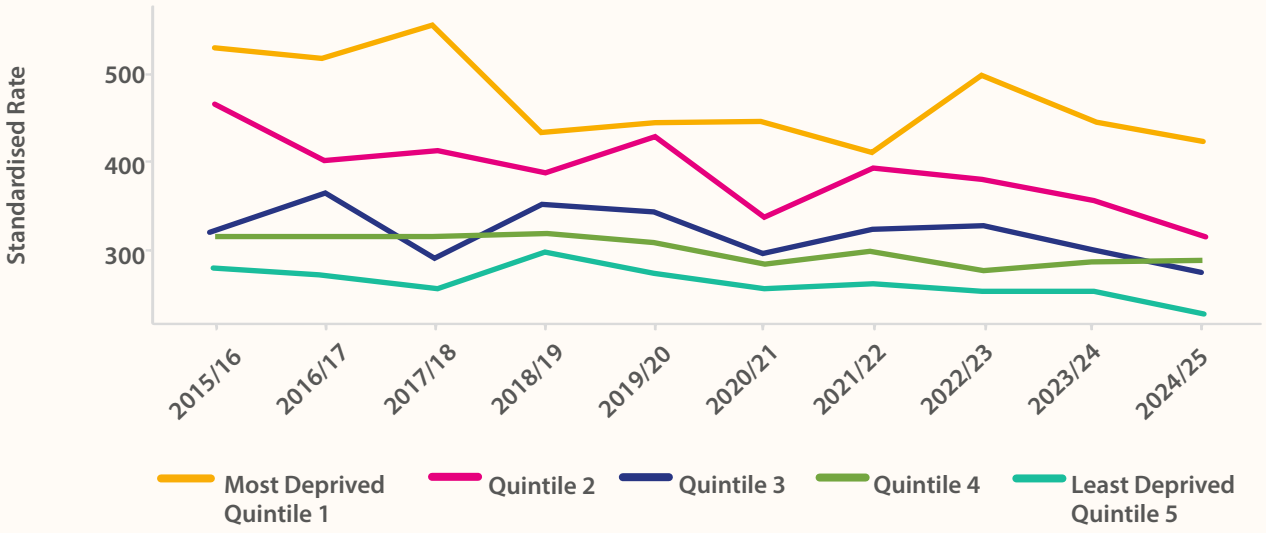
Coronary heart disease

Coronary heart disease (CHD) is a precursor to heart attacks and is caused by narrowing of the blood vessels that supply the heart. Graph 22 shows that men under 75 are more likely to have CHD than women of a similar age[19].



Graph 22: Coronary heart disease in those under 75 years sex adjusted incidence rates per 100,000 population in NHS Grampian[19]

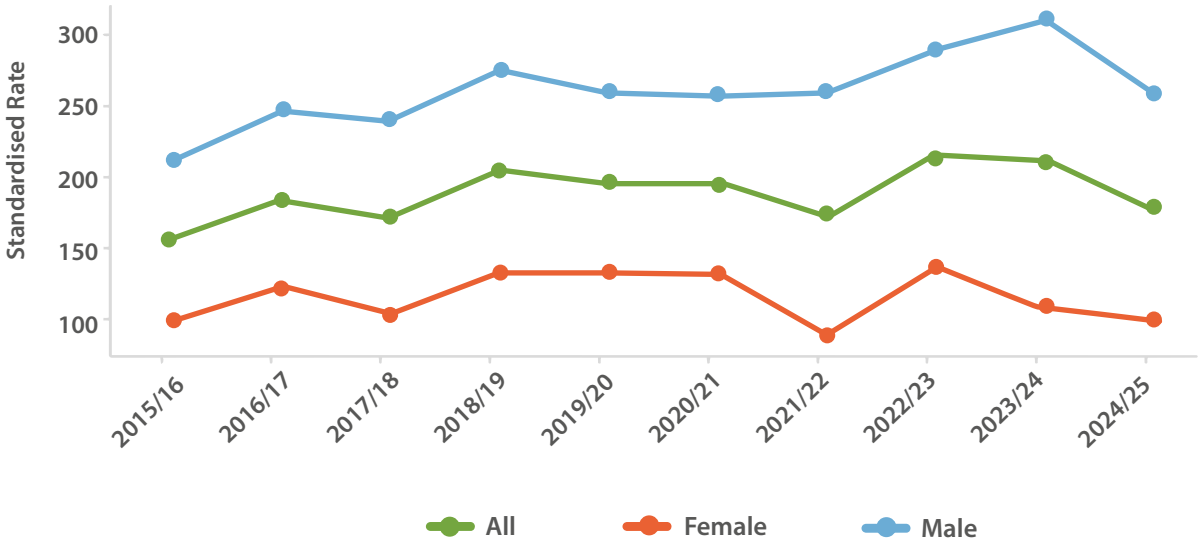
A clear social gradient is also observed in CHD diagnosis, with higher prevalence among individuals living in the most deprived areas compared with those in the least deprived areas[19].



Graph 23: Coronary heart disease incidence rates per 100,000 population by deprivation quintiles in NHS Grampian[19]

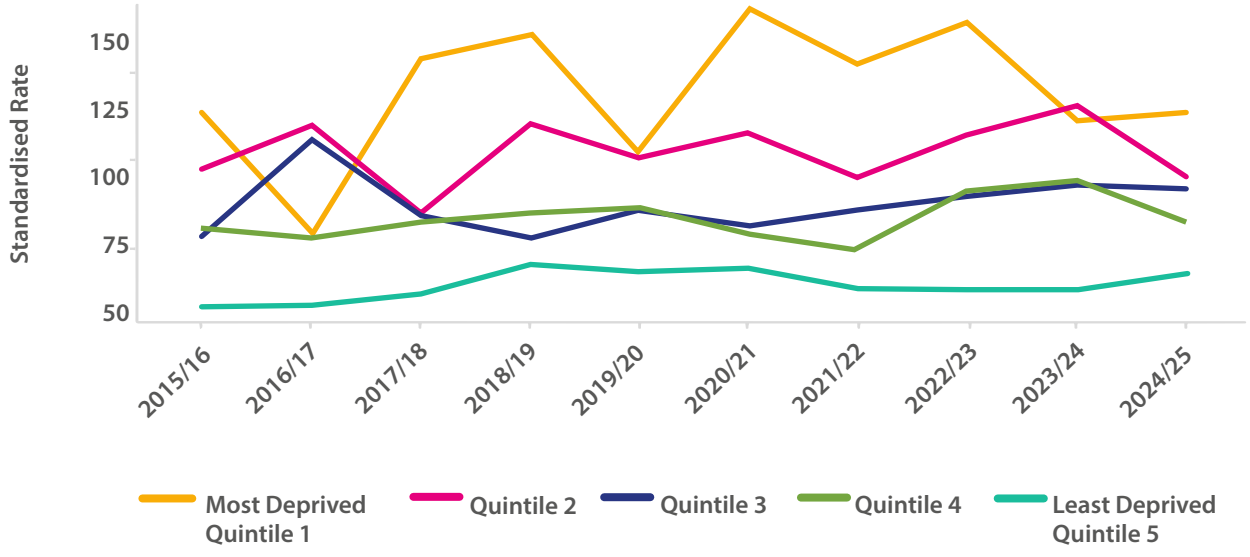
Heart Failure

Heart failure occurs when the heart muscle is unable to pump blood effectively, often because of damage to the heart muscle following a heart attack. As shown in Graph 24, the rate of heart failure in Grampian has been increasing gradually over time and is particularly prevalent among men[19].



Graph 24: Heart failure age and sex adjusted incidence rates per 100,000 population in Grampian[19]

Graph 25 shows that while the social gradient in heart failure diagnosis is less pronounced than for other cardiovascular conditions, it remains evident, with higher rates among people living in more deprived areas[19].



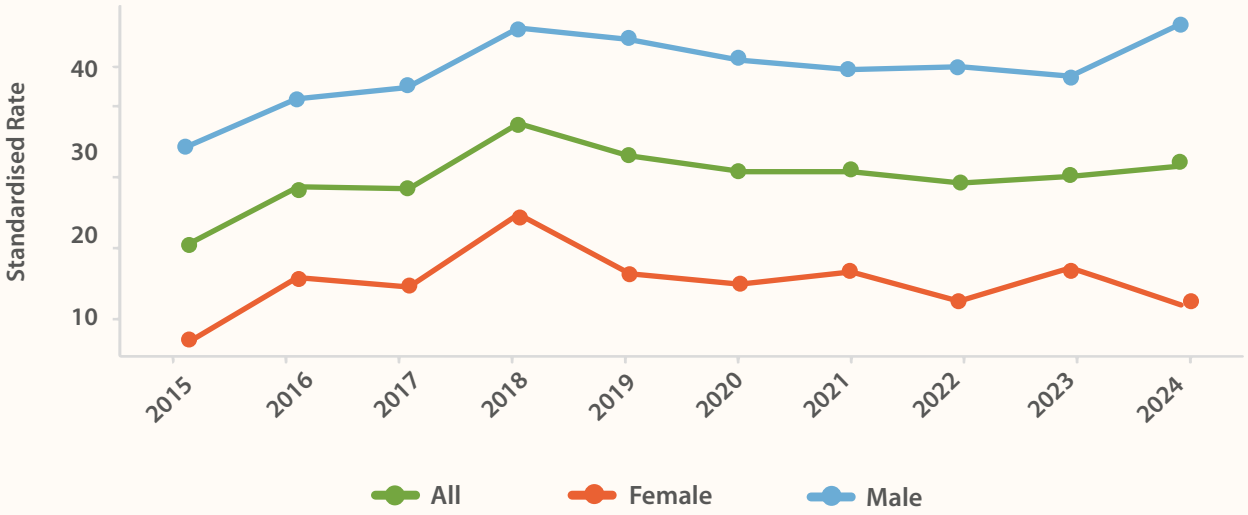
Graph 25: Heart failure incidence rates per 100,000 population by deprivation quintiles in NHS Grampian[19]

Mortality of Specific CVD Conditions

The Scottish Cardiac Audit also compares rates of mortality from different CVDs which have been summarised here for Grampian.

Heart Attack

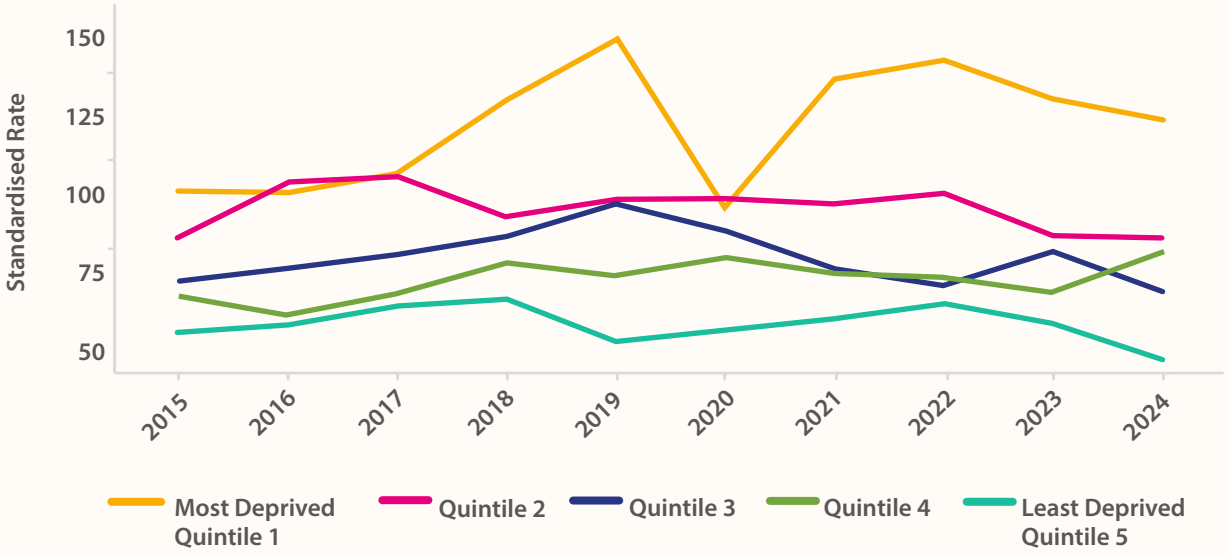
Graph 26 shows that men are more likely to die prematurely from a heart attack than women, and that mortality rates among men have increased over the past decade[19].



Graph 26: Heart attack mortality rates for under 75s per 100,000 population by sex in NHS Grampian

---

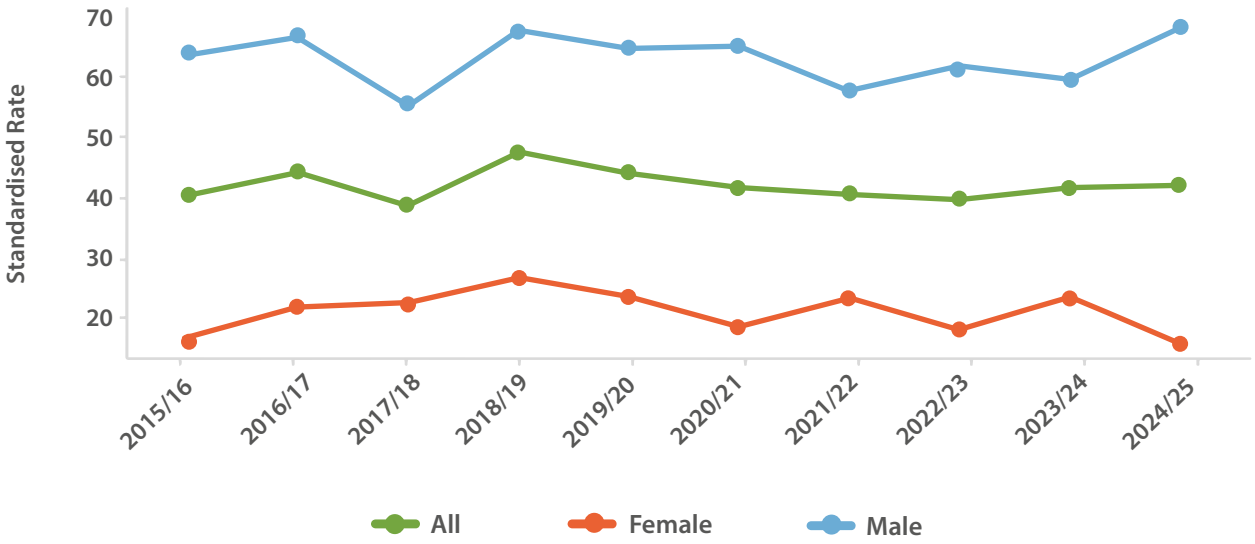
Those living in SIMD 1 are particularly likely to die from a heart attack when compared to all other SIMD groups, as shown in Graph 27.



Graph 27: Heart attack mortality rates per 100,000 population in NHS Grampian by SIMD quintiles

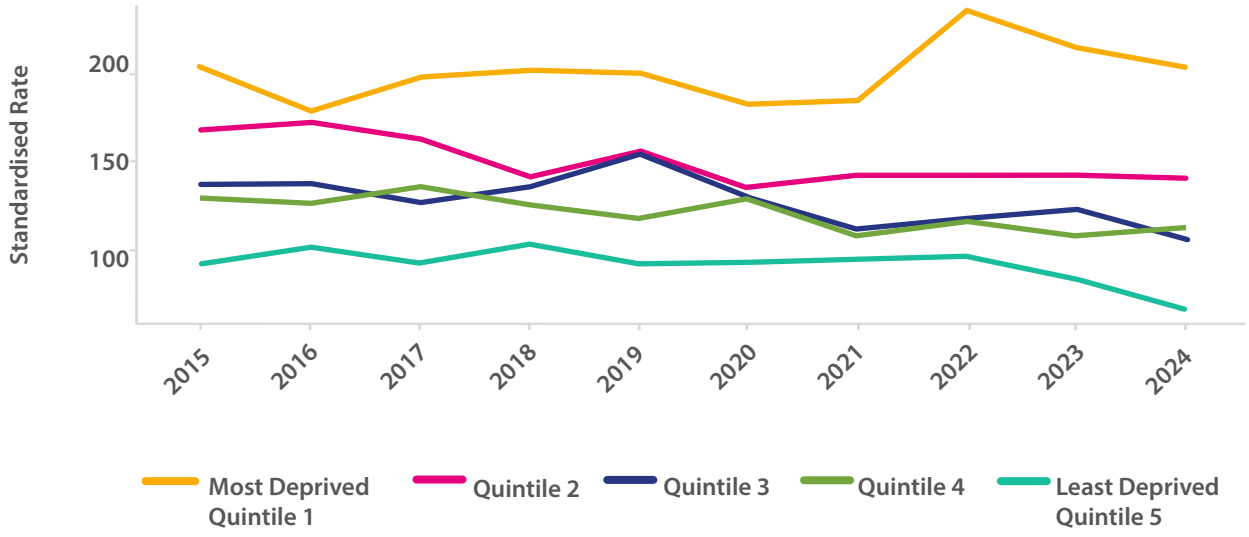
Coronary heart disease

Mortality from CHD remained fairly consistent over the last 10 years, with a rise in mortality in 2024 among men and a slight decrease in women, Graph 28[19].



Graph 28: Coronary heart disease mortality of under 75s rates per 100,000 population by sex and age group in NHS Grampian[19]

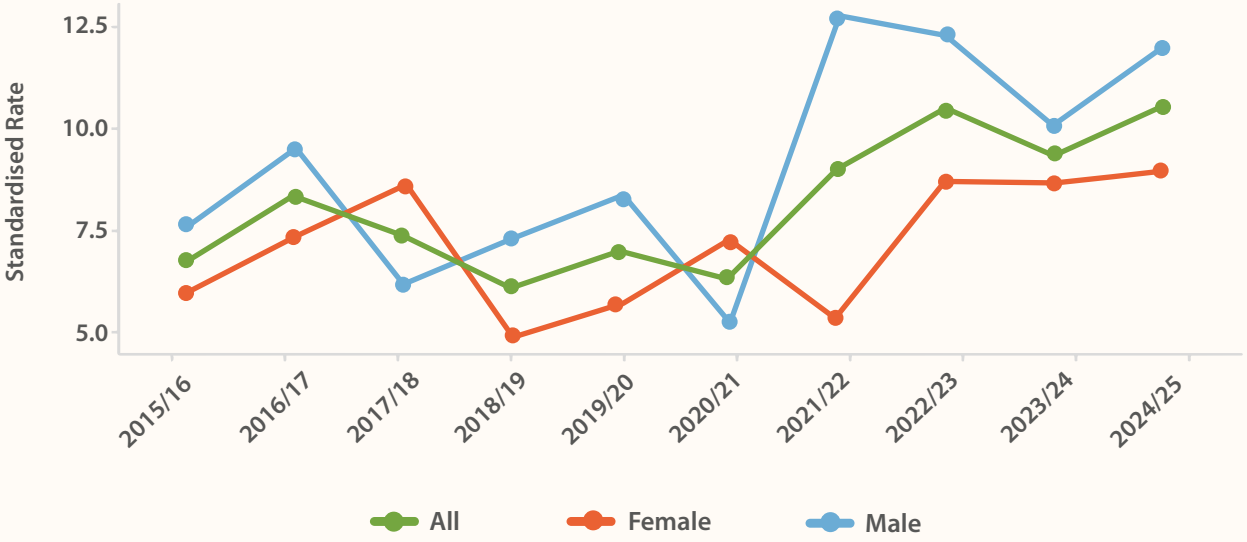
Again, those living in SIMD 1 are significantly more likely to die from CHD than any other deprivation quintile, Graph 29[19].



Graph 29: Coronary heart disease mortality rates per 100,000 population by SIMD quintiles in NHS Grampian[19]

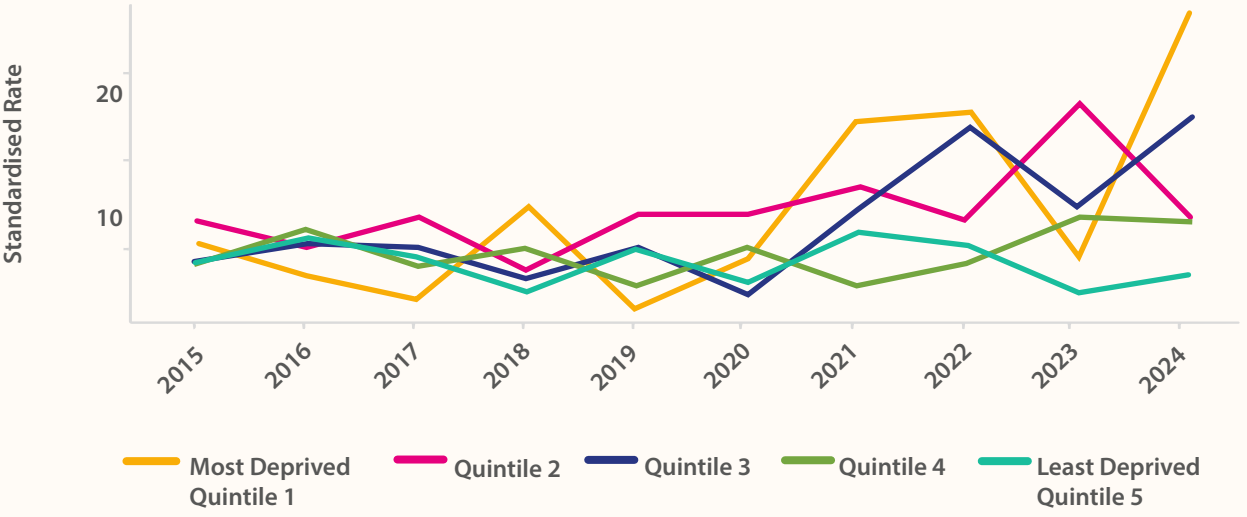
Heart Failure

Mortality from heart failure in Grampian has increased since 2020. Although gender differences were previously relatively small, recent data shows a more marked rise in mortality among men (Graph 30)[19].



Graph 30: Heart failure mortality rates per 100,000 population by age and sex in NHS Grampian[19]

Graph 31 shows that the social gradient in heart failure mortality was relatively flat until 2020, after which a steeper increase in mortality emerged among the most deprived groups compared with the least deprived[19].



Graph 31: Heart failure mortality rates per 100,000 population by SIMD quintiles in NHS Grampian[19]

Risk Factors

CVD risk is shaped by a complex set of multidimensional and interdependent factors. Many risk factors both contribute to and are exacerbated by others, for example obesity and poor diet increase the risk of hypertension, which in turn raises the risk of CVD. Understanding this interconnected risk profile, and the burden of these factors in Grampian, will support more targeted and preventative action.

CVD risk is influenced by social and environmental factors across the life course, with key mediators outlined in Table 2. These risk factors can be broadly grouped into biological, behavioural, and environmental categories. However, behavioural risks are often shaped by wider social and physical conditions rather than being solely the result of individual choices. Reducing CVD therefore requires a comprehensive approach that addresses the full range of influences, rather than targeting single risk factors in isolation[6].

Mediator	Example
Exposure in early life	Intrauterine growth restriction
Housing conditions and living environment	Neighbourhood social disorder
Working conditions	Lack of autonomy and control
Health care	Poor access to services
Health behaviours	Increased smoking rates

Table 2: Mediators of socioeconomic status and CVD risk[6]

Table 3 summarises key CVD risk factors, their local burden in Grampian, and how inequalities influence their distribution. For almost all of the following risk factors there is a higher burden within more deprived communities.

Risk Factor	Why it matters for CVD	Local Picture	Inequalities
Demographic			
Sex	Men have higher mortality and premature death from CVD[7]. Women may present atypically, increasing the risk of underdiagnosis[9]	Over 100 more men aged under 75 die each year in Grampian from heart diseases compared with women under 75[4]	Men, particularly from more deprived areas, have the highest risk of CVD[4]. Women are less likely to be referred for diagnosis and experience poorer outcomes in acute coronary syndrome[9]
Ethnicity	Black African, African Caribbean, and South Asian populations in the UK have higher risk of developing hypertension and type 2 diabetes compared with White Europeans[23]	Over 28,000 people in Grampian identify as Asian, African, Black, or Caribbean ethnicity[24]	Ethnic minority groups experience higher rates of key risk conditions, contributing to increased CVD risk; inequalities widened during COVID-19[23]
Social and Economic			
Poverty/ Income	Increases exposure to multiple risk factors (e.g. smoking, diet, obesity) and creates barriers to prevention and treatment[6]	Over 10% of children (aged 0-15) in each local authority area in Grampian were living in relative poverty after housing costs in 2024/25, Moray has the highest rates (15.1%)[25]	There is a strong social gradient in CVD, with worse outcomes in more deprived communities[4]
Lifestyle Factors			
Smoking and Vaping	Smoking increases adhesion of fatty deposits in the blood vessels and increases the risk of heart attacks and strokes[26]	14% smoking prevalence (similar to Scotland)[18], with lower quit success in deprived areas[27]. 8% of pregnant women are recorded as currently smoking at their booking appointment[28]	Smoking is a leading preventable cause of health inequalities[29]. People not in employment are more than twice as likely to smoke and nearly 1 in 3 people in social housing in Grampian smoke[26]
Diet and Physical Activity	Exercising regularly can reduce the risk of heart and circulatory diseases by up to 35% [30]. Salt, saturated fat, and industrially produced trans fats are linked to high blood pressure and resultant CVD risk[31]	69% of people meet recommended physical activity guidelines in Grampian[32].	Men are more likely to meet physical activity recommendations than women as are those in least deprived areas. Healthier diets are less accessible in deprived area[29]

Overweight and Obesity	Excess weight can lead to fatty deposits in arteries and cause rise in blood pressure, high cholesterol, type 2 diabetes, and increase the risk of heart attack and stroke[33]	67% of adults and 23.7% of children are overweight or obese in Grampian (similar to Scottish average)[18]	Rates of obesity are higher in more deprived areas and those accessing private weight management medications is higher in less deprived areas and at a lower weight[34]
Alcohol	While there is inconsistent evidence of small amounts of alcohol on CVD risk, drinking over the recommended intake has a clear association with CVD[35]	293.3 per 100,000 population admissions wholly attributable to alcohol in Grampian (compared to 536.6/100,000 in Scotland)[36]	Alcohol related admission are over 3 times higher in the most deprived quintile compared to the least in Grampian[37]
Breastfeeding	Breastfeeding reduces the risk of maternal CVD and childhood obesity[14],[15]	Breastfeeding rates in Grampian are generally higher than the Scottish average[38]	Breastfeeding is more common among older mothers and mothers from less deprived areas[38]
Environmental			
Air Pollution	Fine particles such as PM2.5 contributes to CVD risk[39]	Aberdeen City has generally low PM2.5 levels however this varies with higher values during the weekend and in March last year[40]	Climate change disproportionately affects those experiencing vulnerability[39]
Clinical			
High blood pressure	More than half of heart attacks and strokes are associated with high blood pressure in Scotland[1]. Reducing blood pressure by 10mmHg reduced major CVD events by 20%[41]	22% of adults in Grampian reported having doctor-diagnosed high blood pressure (excluding pregnancy), this was similar to Scottish average[18]	1.5 million people in Scotland are expected to have high BP with only around 860,000 diagnosed and up to 1.1 million uncontrolled[1]
Diabetes	Adults with diabetes are 2-3 times more likely to develop CVD[1]	Age-adjusted prevalence of diabetes in Grampian is 6.1% which is slightly below the Scottish average of 6.7%[42]	In Grampian, 95.1% of children with Type 1 diabetes use continuous glucose monitoring device and 68.1% use a closed loop pump system (above the Scottish average). For adults with Type 1 diabetes rates are slightly below the Scottish average[42]

High Cholesterol	Around 1 in 5 deaths from CVD in Scotland are associated with high cholesterol levels[1]	In Grampian, 1 in 10 people with a new admission for coronary heart diseases were not already on a statin[11]	In Grampian while those from more deprived areas are more likely to be on CVD treatment this is not proportionate to additional need[11]
Early Menopause	CVD is the leading cause of morbidity and mortality in postmenopausal women. Oestrogen levels drop during menopause, and this can reduce its protective factor on the heart[43]	Menopause usually occurs between 45 and 55 but can happen early in some women[43]	Hormone replacement therapy may reduce the risk of CVD in some women[43], but use varies across the population[44]
Mental Health	Mental health and CVD have a bidirectional relationship, with each increasing the risk of the other[45]	WEMWBS (mental wellbeing) scores in Grampian are similar to the Scottish average[18]	Adverse CVD outcomes are estimated to be between 50% to two times higher in those with a mental health disorder[45]
Pregnancy Risk Factors	Overweight and obesity increase the risk of pregnancy complications including pre-eclampsia and gestational diabetes which are associated with CVD in later life[46]	Maternal BMI has been increasing in Grampian since 2010 among all SIMD quintiles and inequalities are widening[37]	Women in more deprived areas are more likely to experience overweight and obesity during pregnancy[37]. South Asian and Afro-Caribbean ethnicities have higher risk of gestational diabetes[47]

Table 3: CVD Risk Factors and their prevalence in Grampian



Objective 3

Current Work

Table 4 summarises some of the key programmes aimed at targeting CVD and its risk factors across the system in Grampian, from primordial through to tertiary prevention.

System Level	Focus/Risk Factors	Stakeholder Groups	Current Work
Wider determinants	Poverty	Health & Social Care Partnerships (HSCP) Housing options Homelessness support Torry Men's shed Community Planning Partnerships (CPPs) Healthpoint Maternity services Poverty Alliance Citizens Advice Bureau	NHSG anchor organisation Community information points Confidence to cook Soup and sannies Cash first schemes Community support hubs School uniform swaps Employability support Travel support to hospital/GP appointments Free/low-cost activities for families Financial inclusion pathways Just in time HENRY Food pantries Parent groups Debt support

Risk Factors	Healthy weight (diet and physical activity)	HSCP Community Planning Partnerships (CPP) Healthy weight Grampian Weight management services Healthy helpings Sport Aberdeen Aberdeen Football Club Live life Aberdeenshire Moray council sport and leisure centres Primary care Dietetics Schools Bariatric surgeons Community wellbeing and development team (ageing well)	Whole system approaches to healthy weight Healthy Eating Active Living Social prescribing Nature prescribing Greenways project Health walks Food champions Food in focus Grow well choices PEEP healthier families School based programmes Increase options for active travel Active ageing Tiered weight management service Think Well, Eat Well Be Active Life Long Sing, Exercise and Tea groups Mens shed Stand up to falls Functional fitness MOTs Fit Life Cycle safety classes
	Smoking	Smoking cessation services HSCP ASH Scotland Community Planning Partnerships (CPP) Alcohol and Drug Partnerships (ADPs) Schools/education services Healthpoint Tobacco strategy group Maternity services	Free access to nicotine replacement Integrated smoking cessation pathway in primary care Impact training E-learning resources School based education Reducing smoking in pregnancy awareness sessions Youth focused sessions for vaping Helpline for smoking cessation

	Mental health	HSCP Primary care Community third sector organisations Mental health services Moray wellbeing hub Arrows service Scottish Action for Mental Health (SAMH)	Nature prescribing Mental Health Community Appointment Day Supporting third sector organisations Sharing apps Promoting Grampian Wellbeing Festival Social prescribing Raise awareness Wellbeing campaigns
Primary Prevention	Early identification	Primary care Chest Heart Stroke Scotland (CHSS) Healthpoint	CVD risk factor screening (DES) AAA screening programme Healthy heart clinics Chronic disease clinic Community BP checks Get Active Northfield Grampian Health Hub
Secondary Prevention	People living with clinical risk factors	Weight management services Diabetes services	Weight loss programmes for adults with T2DM Control IT Second Nature
Tertiary Prevention	Support following CVD event	Cardiology/medical and nursing teams Stroke services Heart failure (HF) nurses Occupational therapy Physiotherapy Speech and language therapy Dieticians Pharmacists Community rehabilitation services Social care Chest Heart Stroke Scotland (CHSS)	Cardiac rehabilitation Stroke rehabilitation Cholesterol resistance testing 6-month stroke review Mental health screening in diabetic service Community heart failure service

Table 4: Summary of stakeholders and current work within NHS Grampian

A selection of programmes are explored in greater depth below.

AAA Screening

An Abdominal Aortic Aneurysm (AAA) is a swelling of the aorta, the main artery in the body, as it passes through the abdomen. As some people get older, the wall of the aorta in the abdomen can become weak and balloon out to form an aneurysm. Large aneurysms are uncommon but can be very serious. As the wall of the aorta stretches, it becomes weaker, and it can rupture. If the aneurysm ruptures, this leads to life-threatening internal bleeding and, in 8 out of 10 cases, death[48].

The AAA screening programme aims to reduce deaths associated with aneurysm rupture. Men aged 65 and over are invited to screening as the condition is more common within this group. If an AAA is identified it may be monitored or require surgery depending on the size[48].

In 2024, 88.1% of eligible men in Grampian took up AAA screening before the age of 66. However, coverage was different between SIMD groups as shown in Table 5[49].

Deprivation Quintile	Percentage Coverage of Eligible Population
1	81.2
2	80.8
3	87.7
4	89.5
5	91.5

Table 5: Percentage of eligible population who are tested before age 66 and 3 months by Scottish Index of Multiple Deprivation (SIMD) quintile in Grampian[49]

Weight Management Services and Whole System Approach (WSA)

NHS Scotland has published standards for all NHS boards to deliver an effective evidence-based tier 2 and tier 3 weight management service. It is an essential criterion that this is available for adults with a BMI over 30 and is desirable for individuals with a BMI over 25. A description of the tiered system is outlined in Figure 2[50].

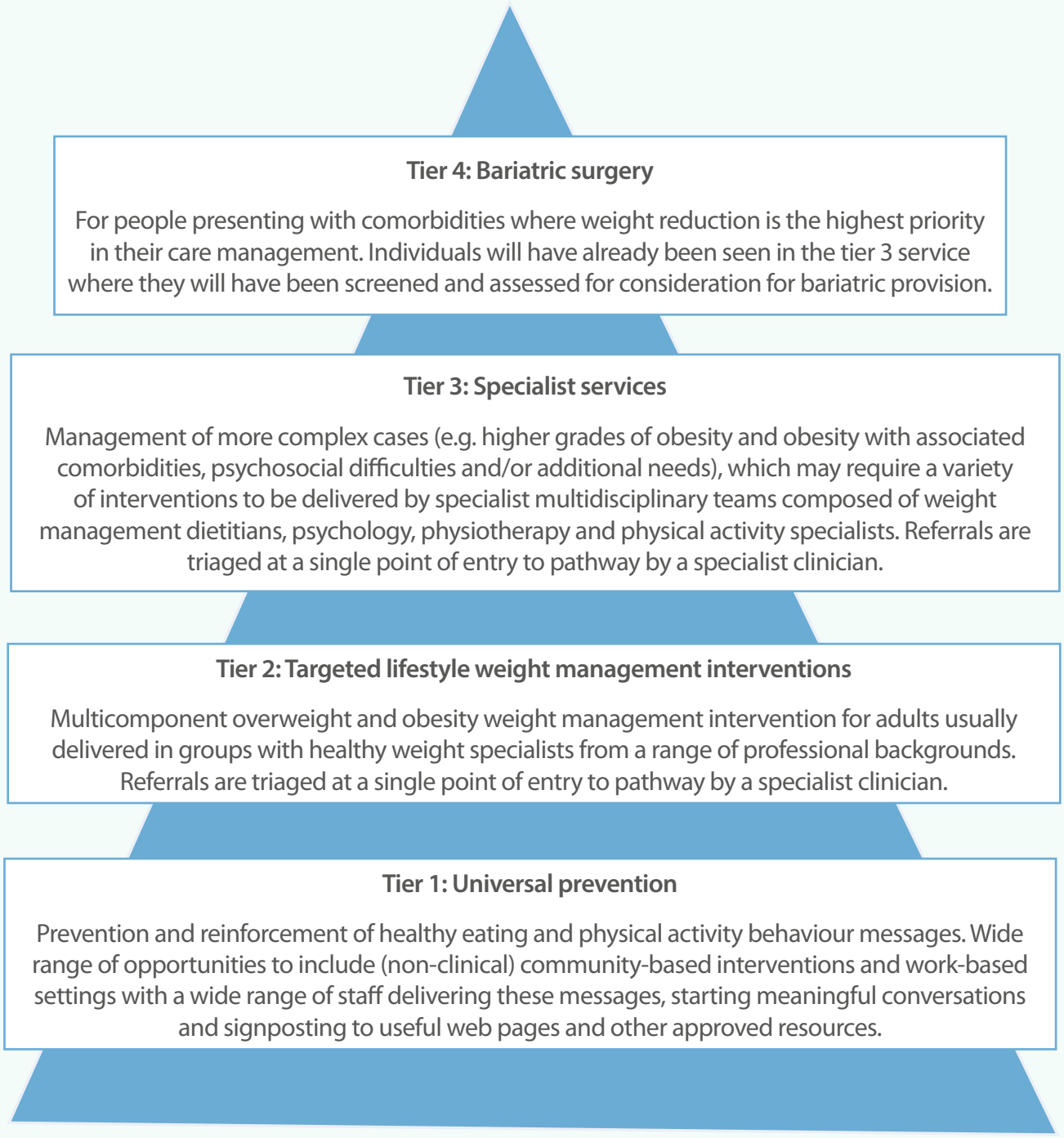


Figure 2: NHS Standard for tiered weight management services[50]

Weight management programmes offered in Grampian are summarised in Table 6 and align with the tiered approach above.

Tiered Level	Programme/ Intervention	Description
Tier 1 Universal provision	Healthy Weight Grampian	Website providing a range of information to help people achieve and maintain a healthy weight.
	Healthy Helpings	Online NHS Grampian 12-week weight management programme that covers information of healthy eating, physical exercise, diet, alcohol and support services.
Tier 2 Targeted lifestyle weight management	Second Nature Weight Management	A 12-week digital 1:1 weight management programme with personalised daily support from dietitians and nutritionists via an app.
	Healthy Helpings Groups	A 12-week weight management programme delivered via Near Me, supported by one of our community dietetic team for those who do not wish to undertake Healthy Helpings by themselves.
	Optional 3 month Leisure Membership for those engaging with Tier 2 programmes	Access to a variety of leisure facilities Grampian wide for those wishing to improve physical activity levels alongside dietary advice.
Tier 3 Specialists services	Think Well, Eat Well	12-week NHS Grampian programme delivered by specialist dieticians and psychological support offered to people with more complex needs, follow up support for one year.
	Counterweight Plus Remission	One-year intensive weight management programme, with psychology support, aiming to help those living with type 2 diabetes to achieve and maintain a healthy weight.
Tier 4 Bariatric Surgery	Gastric band, bypass and sleeve gastrectomy	Prior to being added to the waiting list people will undergo psychological assessment and pre-surgery education.

Table 6: NHS Grampian Tiered Weight Management Service

In addition to this tiered approach each Health and Social Care Partnership in Grampian is undertaking a WSA to healthy weight. The approach recognises that healthy weight is influenced not only by individual behaviours but the wider social and physical environment. It brings partners together to understand local drivers and co-produce coordinated, sustainable, system wide actions.

The Local Levers to Diet and Healthy Weight Framework[51] identifies seven key areas where local authorities and the NHS can work together to effectively deliver a WSA:

- Restricting advertising of products high in fat, sugar or salt.
- Using planning policy to shape healthier local food environments.
- Strengthening public-sector food procurement standards.
- Working with the out of home sector to reduce calories on menus.
- Increasing uptake of school meals.
- Promoting and supporting physical activity.
- Protecting, promoting and supporting breastfeeding and healthy early diets.

Each local authority area has undertaken engagement and is developing action plans incorporating these levers.

Social Prescribing

Social prescribing works differently within each local authority area, Table 7. Link Workers are professionals who assess referrals and can signpost people to appropriate support. Social prescribing works slightly differently in each local authority area, however most referrals are made by primary care or self-referrals.

Local authority area	Provider	Appointments
Aberdeen City	Third sector – SAMH	One appointment to understand need followed by another to create plan
Aberdeenshire	NHS with additional Primary Care Improvement Funding	Two initial appointments with potential for 8 appointments in total
Moray	NHS	One 45minutes –1 hour appointment to assess need and develop a plan

Table 7: Social prescribing structure in each local authority area

In Grampian, work is underway to develop a social prescribing toolkit to support partners establishing new initiatives, including guidance on information governance and practical implementation.

CVD Risk Factor Assessment

The Scottish Government's Cardiovascular Disease Risk Factors Programme,[52] aims to reduce avoidable CVD deaths in Scotland by 20% over 20 years through earlier identification and management of major cardiovascular risk factors. As part of this programme, the CVD Directed Enhanced Service (DES) offers adults aged 35–60 who have not received a full set of CVD risk factor checks within the previous three years an assessment covering:

1. Blood pressure
2. Lipid profile
3. Weight/BMI
4. Glycaemic control (e.g. blood glucose or HbA1c)
5. Smoking status

In Grampian, public health is working with GPs to increase uptake of screening. This has included developing an animation to support practices in explaining why people have been invited to attend. A Healthpoint referral scheme is also being piloted, allowing GPs to refer patients for holistic lifestyle consultations to support risk reduction.

The Scottish Government allocates funding to GP practices for a fixed number of screening places. The eligible population is therefore defined as the number of patients covered by this funding. Eligible populations have increased for the next year although this increase has not been substantial. As of mid-April 2026, the percentage uptake of eligible populations was 78%. Breakdown by age, SIMD, and ethnicity is expected to be published by PHS later this year.

Some practices within Grampian are testing innovative approaches to increase screening uptake among underserved populations. For example, one cluster is inviting targeted patients to a community-based appointment day that runs until 8pm. This model aims to improve accessibility and increase engagement with screening and wider support services. An evaluation of this approach is planned, and if successful, it could be expanded to other areas.

Cardiac Rehabilitation

In line with NICE guidelines[53], the cardiac rehabilitation programme in Grampian is designed for patients recovering from heart attacks, unstable angina or transcatheter aortic valve implantation (TAVI) and covers a range of behavioural and exercise components. Patients are identified and offered this programme through monitoring of in-hospital TRAK systems and via discharge letter from hospital. If a patient decides to opt for cardiac rehabilitation later a third sector charity run a programme for those post 3 months after an event.

Heart Failure

The community heart failure (HF) service is a Grampian wide service of specialist nurses who review patients with a confirmed diagnosis of heart failure with an ejection fraction <40%. The aim of the service is to establish patients on evidenced based therapies, monitoring their progress, and titrate to individual optimal tolerated doses. The HF nurses also fulfil an educational role for both patients and health professionals and linking role between Primary and Secondary Care clinicians.

On average the service receives 60 referrals a month and has 550 patients under their care. The Community Heart Failure Service is hosted by Aberdeenshire HSCP and paid for by all 3 Grampian HSCPs (Aberdeenshire 40%, Aberdeen City 40%, Moray 20%). While most of the referrals are from secondary care the service would welcome more referrals from general practice[54].

Future Opportunities

Table 8 summarises suggestions from wider partners to embed CVD prevention across the system. This section will be further developed during two planned workshops, one with secondary and primary care and an additional with wider partners.

System Level	Future Opportunities	Dependencies/Enablers
Wider determinants	Financial inclusion pathways embedded in other services	Relationships with services and development of pathways
	Financial support prompts given within screening and care pathways	Staff training and clear pathways for referral
	Embed preventative and support services within community settings where unmet need is highest, such as integrating smoking cessation and financial support into food banks	Relationships with third sector
	Cooking skills and food security support is targeted to high-risk groups	Closer links with clinical practice to identify those in need of financial support or cooking skills to make healthier choices
	New community information points, advertising CVD risk factor assessments	Resources available to advertise CVD risk factor assessments
	Strengthening population health input within locality planning	Effective partnership working between CPP and third sector
	Increase social and nature prescribing to maximise mental and physical wellbeing	More explicit linking of mental wellbeing and CVD risk within prevention strategies
	Increase safety for children walking to school	Volunteer crossing patrollers and increased road safety classes

Primary Prevention	Extended smoking cessation support for women identified through maternity services	Staff capacity
	CVD risk factor assessments for staff groups most at risk	Funding and primary care capacity
	Integrate CVD risk factor assessments into high-risk programmes such as weight management programmes	Funding and primary care capacity
	Use community appointment days to offer CVD risk factor assessments	Increased links with third sector support. Trusted voices within minority ethnic groups
	Increase CVD risk factor assessments in areas people from more deprived areas are likely to attend e.g. supermarkets	Funding and primary care capacity
	Healthpoint referral pathway for support of high-risk patients	Relationship with GP practices
	Streamline third sector BP checks to reduce workload for primary care	Understanding of primary care BP monitoring systems

Table 8: Stakeholder suggestions to embed CVD across the system



Objective 4

Evidence Based Interventions

Good CVD prevention requires a whole-system approach that integrates population-level action on risk factors with evidence-based clinical care[55]. Post-pandemic, UK Chief Medical Officers emphasise strengthening secondary prevention through improved optimisation of care, greater reach to underserved groups, and evidence-based approaches[56]. This aligns with NHS England's framework, which organises high-impact interventions into three areas: modifiable risk factors, case finding, and optimisation of treatment[57].

1. Managing Modifiable Risk (Primary prevention)

- Address poverty, housing, employment, and education
- Reduce structural inequalities
- Improve diet and physical exercise
- Reduce smoking and harmful alcohol use

2. Case Finding (Early Detection)

- Identify undiagnosed hypertension, cholesterol, and diabetes
- Target high risk and underserved populations

3. Optimising Treatment and Care (Management)

- Deliver evidence-based treatment (e.g. statins, antihypertensives)
- Improve long-term condition management and adherence
- Strengthen secondary and tertiary prevention to reduce recurrence and complications[57]

Managing Modifiable Risk Factors

Poverty

CVD is strongly associated with socioeconomic deprivation with death rates from CVD 80% greater in the most deprived areas of Scotland compared to the least deprived areas[7].

Although major economic levers such as taxation and welfare operate at a national level to address economic inequality, there are important opportunities for action locally.

Table 9 focuses on interventions relevant to the NHS, including its role as part of a wider system. This includes both actions delivered within healthcare services and those requiring partnership with other organisations. As such, it is relevant to NHS organisations and system partners.

Poverty contributes to CVD risk through both direct and indirect pathways. Direct impacts include poor living conditions and limited access to resources that influence diet and physical activity. Indirectly, poverty can reduce individuals' ability to engage with healthcare, for example due to constraints on time, transport, or health literacy[58].

The table categorises interventions according to where they act on the CVD prevention pathway:

- **Upstream (risk exposure):** addressing root causes such as income, employment, and living conditions
- **Access:** reducing barriers to services
- **Uptake:** increasing engagement with and use of services
- **Effective treatment:** delivering best possible outcomes once receiving care

While many interventions operate across more than one of these domains, they are categorised according to their primary points of impact.

Intervention	NHS Role	CVD Pathway Link	References
System Partner			
Recognise and support external levers to address poverty	System Partner	Upstream	**59**
Increase third sector capacity within the NHS	System Partner	Access, uptake	**59**
Support grassroots partnership working	System Partner	Access, uptake	**59**
Early years programmes (e.g. Sure Start)	System Partner, Pathways	Upstream, access, uptake	**60,61**
Integration of IT systems and information sharing	System Partner	Access	**62,63**
Community based food aid projects	System Partner	Upstream	**64,65,66**
Cash transfer schemes (e.g. direct financial support)	System Partner	Upstream	**67**
Anchor Organisation			
Adopt inclusive employment practices	Anchor	Upstream	**59,66,68**
Use social value in procurement	Anchor	Upstream	**59,66,68**
Support NHS staff in poverty	Anchor	Upstream	**63**
Pathways of Care			
Proportionate universalism (e.g. subsidised food and travel)	Pathways	Access	**59,61,62,68, 69,70**
Co-located welfare and social support within healthcare pathways	Pathways	Access, upstream	**59,61,66,68,71, 72, 73,74**
Routine financial screening in healthcare pathways and signposting to cost-of-living support	Pathways	Access, upstream	**61,63,68, 70,71**
Food voucher support within clinical care	Pathways	Upstream	**75,76**
Community health workers	Pathways/ System Partner	Uptake	**61**
Co-production with communities	Pathways/ System Partner	Access, uptake	**59,66,68, 69**
Outreach (e.g. community venues/places of worship)	Pathways	Access, uptake	**61,66,70, 71**
Flexible appointments	Pathways	Access, uptake	**66,70,71**

Table 9: Evidence based interventions to tackle poverty

Behavioural risk factors

It is widely recognised that behaviours influencing CVD risk are established early in life and shaped by wider environmental and social factors. A life-course approach to CVD prevention is therefore essential, with action on upstream determinants such as poverty also supporting healthier behaviours[55].

Tobacco

Table 10 summarises key NICE recommendations[77] for smoking prevention, cessation, and treatment of tobacco dependence. Similar to Table 9, the interventions focus on the role of the NHS while recognising that many require partnership working across the wider system.

Intervention	NHS Role	CVD Pathway Link
Preventing Uptake		
Develop local mass-media campaigns, that integrate with national campaigns, targeted at young people and groups where smoking prevalence is higher	System Partner	Upstream
Provide retailers with training and guidance on how to avoid illegal sales	System Partner	Upstream
Coordinated approach to school-based interventions and whole school smokefree policies	System Partner	Upstream
Include smoking harms in school curriculum, including e-cigarettes	System Partner	Upstream
Peer-led interventions in school	System Partner	Upstream
Promoting Quitting		
Stop smoking support should be advertised through communication strategies, in schools and by employers	System Partner, Anchor	Access, uptake
Work in partnership with existing community initiatives to raise awareness of local smokeless tobacco and cessation services	System Partner	Access, uptake
Use local South Asian networks and events to target quit services to this group	Pathways, System Partner	Access, uptake
Raise awareness of smokeless tobacco use with those who work with children and young people	Pathways	Uptake

Treating Tobacco Dependence		
Routinely ask people if they smoke or have recently stopped smoking at every encounter	Pathways	Uptake
Personalised stop smoking conversations	Pathways	Uptake
Offer advice on using nicotine containing products, including nicotine replacement therapy (NRT) and nicotine containing e-cigarettes	Pathways	Effective treatment
Encourage future quit attempts in those not ready to stop	Pathways	Uptake
Identify smoking among carers, family members and households, and provide information on second-hand smoke (including for pregnancy and infants)	Pathways	Access, uptake
Ensure smoking cessation services include behavioural and medical support	Pathways	Effective treatment
Provide pharmacotherapy (e.g. NRT); cytisine, varenicline and bupropion should not be offered to those under 18	Pathways	Effective treatment

Table 10: NICE guidelines on smoking cessation[77]

Obesity

Similar to smoking, obesity is influenced by a wide range of social, environmental, and genetic determinants. It is therefore important that these factors are considered and appropriately contextualised when discussing weight with individuals. NICE guidance[78] emphasises that conversations about overweight, obesity, and central adiposity should be conducted sensitively. Healthcare professionals should seek permission before initiating discussions and respect an individual's choice if they do not wish to engage, with the option to revisit the conversation at a more appropriate time. Where appropriate, reasons for hesitancy should be explored.

When discussions take place, agreed actions should be clearly documented to support continuity of care. Communication should avoid stigmatising language and remain supportive. For children and young people, discussions should be tailored to developmental stage and level of understanding, with awareness of potential vulnerability to eating disorders. Behavioural changes, particularly for children under 12, should primarily involve families and carers[78].

Interventions

Table 11 summarises key NICE-recommended interventions to prevent overweight and obesity, and support individuals to achieve and maintain a healthy weight[78].

Intervention	NHS Role	CVD Pathway Link
Prevention (reducing obesity risk)		
Encourage self-monitoring behaviours (e.g. weight and physical activity tracking)	System Partner, pathways	Upstream
Promote sustainable diet and physical activity changes, avoiding extreme approaches	System Partner, Pathways	Upstream
Highlight the benefits of small, achievable lifestyle changes	System Partner, Pathways	Upstream
Provide guidance to families and carers on diet, exercise and sleep	System Partner, Pathways	Upstream
Provide guidance on managing weight during higher-risk periods (e.g. pregnancy, smoking cessation)	System Partner, Pathways	Upstream
Support and promote community-based weight management schemes	System Partner	Upstream
Deliver family-based programmes with tailored support	System Partner, Pathways	Upstream
Develop whole system approaches to obesity that focus on local need	System Partner	Upstream
Optimise workplace environments to support healthy eating and physical activity	Anchor	Upstream
Engage with communities to address environmental barriers (e.g. planning, transport and leisure service)	System Partner	Upstream
Encourage local retail and catering settings to provide healthier food options	System Partner	Upstream
Use incentive schemes (e.g. travel subsidies) to support healthier choices	Anchor	Upstream
Implement whole-school approaches to promote healthy eating, physical activity, wellbeing, and positive body image	System Partner	Upstream
Encourage increased physical activity and a healthier diet, even where these do not result in weight loss	System Partner, Pathways	Upstream
Identification and Referral		
Ensure clear local referral pathways for obesity management in primary care	Pathways	Access
Improve healthcare professional confidence in discussing weight	Pathways	Uptake
Offer specific advice to people from ethnic minority backgrounds with a higher risk of chronic weight related health conditions	Pathways	Access, uptake
Encourage adults with a BMI below 35kg/m2 to measure their own weight to height ratio	Pathways	Uptake
Use opportunistic contacts to measure and record weight of children and young people (with consent)	Pathways	Uptake

If individual refuses referral give information on other ways to improve weight and offer re-referral as needed	Pathways	Access
Behavioural Weight Management interventions		
Ensure community and NHS weight management programmes are tailored to participants needs and concerns	System Partner, Pathways	Uptake
Address the drivers of overweight and obesity e.g. referral to social care or physiotherapy	Pathways	Effective treatment
Discuss and agree realistic goals	Pathways	Uptake
Refer to an in-person individual or group intervention, or digital services according to preference and availability	Pathways	Access
Give information about long-term community support	Pathways	Uptake
Offer a high level of intervention to people with weight related comorbidities	Pathways	Effective treatment
Regularly review progress	Pathways	Effective treatment
With permission discuss to relevant household members about the intervention and encourage all family members to eat healthily and be active regardless of weight	Pathways	Effective treatment
Focus on diet and behavioural change strategies	Pathways	Effective treatment
Consistency of staff throughout each cycle of the intervention	Pathways	Effective treatment
Give children and young people opportunities to discuss issues such as self-esteem, self-perception	Pathways	Effective treatment
Offer flexible follow up once the intervention is complete	Pathways	Effective treatment
Use outcome data (weight, wellbeing, fitness) to provide ongoing tailored support	Pathways	Effective treatment
Reassess and offer re-referral or alternative interventions if progress is not sustained or needs change	Pathways	Effective treatment
Consider low and very low energy diets only as part of multi-components management strategy with weight management services	Pathways	Effective treatment
Interventions last at least 3 months, with weekly or fortnightly sessions	Pathways	Effective treatment
Include multidisciplinary (nutrition, behaviour change, physical activity, clinical)	Pathways	Effective treatment
Clinical Treatment (medicines and surgery)		
Medicines used alongside and after diet, exercise and behavioural approaches	Pathways	Effective treatment

Semaglutide and liraglutide in specialist services (typically up to 2 years)	Pathways	Effective treatment
Monitor effect of medicines and reinforce behavioural advice and adherence through regular review	Pathways	Effective treatment
Offer referral for bariatric surgery assessment	Pathways	Effective treatment
System Approaches		
Identify an obesity partnership group to work on joint approaches	System Partner	Upstream
Engage businesses and workplaces to promote healthy diet and physical activity	Anchor	Upstream
Ensure partners have shared vision and use consistent public messaging and campaigns	System Partner	Upstream
Equitable services with no BMI or age limits	Pathways	Access

Table 11: Summary of NICE guidelines to prevent and manage overweight and obesity[78]

Case Finding

The NHS health check (NHSHC) was started in 2009 in England and invites 40-74 years olds for a CVD risk factor check. 1 in 4 of those attending were identified as at risk of CVD and compared to those who did not attend for a check, attendees had a significantly lower likelihood of hospital admissions for CVD and T2DM, death from CVD, and all causes over 1,3, and 5 years after attending the check[79].

The CVD Directed Enhanced Service (DES), described in more detail above, was commissioned by the Scottish Government last year and aims to perform CVD checks on people aged 35-60[52]. Additional evidence-based interventions for CVD case findings have been summarised in Table 12.

Intervention	NHS Role	CVD Pathway Link	References
CVD Risk Factor Assessments			
Asymptomatic CVD risk factor assessments	Pathways	Access	79
Cholesterol search and risk stratification in people with high-risk CVD conditions, post-acute CVD event and with familial hypercholesterolaemia	Pathways	Access	79
Set aside adequate time during the consultation to provide information on risk assessment	Pathways	Upstream	80
Community Based Screening			
Community pharmacy hypertension case finding	System Partner, Pathways	Access	79

Table 12: Evidence based intervention focused on case finding

Optimising Treatment

The interventions in Table 13 are drawn from the DynaMed summary[81] of secondary prevention of CAD and NICE guidelines[53]. For detailed, condition-specific management, please refer directly to national guidelines.

Evidence for interventions to optimise treatment in CVD is variable. There is strong and consistent evidence supporting cardiac rehabilitation, pharmacological management, and coordinated multidisciplinary care in improving outcomes and reducing hospital admissions[81]. Evidence for community-based, telehealth, and self-management interventions is more mixed, with some studies demonstrating improvements in risk factors, but less consistent impact on clinical endpoints such as mortality[82]. This highlights the importance of combining evidence-based clinical interventions with tailored approaches to support adherence and long-term management.

Intervention	NHS Role	CVD Pathway Link	References
Cardiac Rehabilitation			
Provide structured cardiac rehabilitation including education, lifestyle advice, stress management, and exercise and allow patient choice	Pathways	Effective treatment	53,81
Ensure timely referral to cardiac rehabilitation (within 10 days post MI)	Pathways	Effective treatment	53
Multidisciplinary Care			
Ensure clear communication with primary care following discharge, including treatment plans and monitoring	Pathways	Effective treatment	53
Deliver MDT programmes targeting CVD risk factors	Pathways	Upstream	81
Assess for and manage complications of MI, such as depression	Pathways	Effective treatment	53
Provide support for wider needs (e.g. welfare and housing) following cardiac events	Pathways	Effective treatment	53
Risk Factor Management			
Reinforce lifestyle advice including diet, physical activity, alcohol consumption and smoking	Pathways	Effective treatment	53
Deliver community-based programmes targeting CVD risk factors (particularly for older adults)	System Partner, Pathways	Upstream	81
Optimise blood pressure and diabetic control	Pathways	Effective treatment	53
Medicines			
Encourage annual influenza immunisation	Pathways	Upstream	53
Secondary prevention drug treatments initiated in hospital after an acute event. The hospital discharge summary should detail the medications, dosages, and necessary titrations or monitoring requirements.	Pathways	Effective treatment	53

Table 13: Interventions to optimise treatment of CVD

Medication Updates

Sodium-glucose co-transporter-2 (SGLT-2) inhibitors were incorporated into NICE guidance for type 2 diabetes management in 2026 as a first-line treatment alongside metformin. For individuals with atherosclerotic CVD and type 2 diabetes, or early-onset diabetes, NICE recommends considering additional subcutaneous semaglutide due to demonstrated cardiovascular, renal, and glycaemic benefits[83].

Implications of Lung Cancer Screening

The UK National Screening Committee recommended targeted lung cancer screening for high-risk individuals aged 55–74 in 2022, with implementation currently under consideration in Scotland[84].

The LungScot study, conducted in NHS Lothian with 1,528 participants, explored the implications of introducing low-dose CT screening. Among those screened, 52.8% were found to have CAD, highlighting the potential for screening programmes to identify previously undiagnosed CVD. Qualitative findings indicated an increase in primary care workload associated with managing incidental findings. However, there was also recognition that earlier identification of disease may support improved long-term outcomes and prevention[85].

Cost effective Interventions

Interventions included in NICE guidelines are considered cost-effective. Additional evidence on the economic impact of selected interventions is summarised in Table 14. NICE generally uses a cost-effectiveness threshold of £25,000–£35,000 per QALY when judging whether interventions provide value for money in the NHS, following updates confirmed for implementation from 2026[86].

Intervention	Cost-effectiveness/Economic Impact	Reference
Deliver NHS Health Check	At 50% uptake, every £1 spent generates £2.93. Increasing uptake to 60% could increase this to £3.55 per £1, with further improvements through enhanced follow-up (£5.18 per £1).	74
Community Pharmacy hypertension case finding	A 20% improvement in hypertension control (to 140/90 mmHg) is estimated to save ~£14 per patient per year over five years.	74
Optimising treatment for heart failure through annual reviews	Early detection and management of deterioration in heart failure can reduce hospitalisations by up to 45%, potentially saving ~£50m annually across the NHS.	74
Face to face dietician appointments providing information and support to patients with CVD risk factors	Cost per QALY: £14,480	87
High-risk patients and families offered programmes by specialist nurse	Cost per QALY: £5,539	87

Table 14: Additional cost-effectiveness interventions

Taking a Whole System Approach

Effective CVD reduction requires coordinated action across these prevention, early detection and treatment. Interventions must target multiple points along the pathway, from upstream determinants to clinical care.

Evidence demonstrates that both prevention and treatment have made substantial contributions to improvements in outcomes. Between 2000 and 2010, CHD mortality in Scotland fell by approximately 40%, with treatment accounting for around 43% of the reduction and changes in risk factors contributing 39%.[88]

Population-level reductions in blood pressure and cholesterol had the largest impact. For example, a small reduction in systolic BP (2 mmHg) in the general population led to ~37% fewer deaths, compared with treatment of hypertension with medication which resulted in a much smaller decrease (~3%). Statins were the most effective treatment (13.3% mortality reduction). However, some gains in CVD mortality have been offset by increases in obesity and diabetes[88].

Together this evidence reinforces that neither prevention or early treatment alone is sufficient, and maximising impact requires action at all levels of the system.

Applying the Three-Horizon Model

The three-horizon model provides a framework for delivery this WSA over time, balancing immediate improvements with longer-term prevention.

- **Horizon 1 (Short-term) Optimise current care**
    - Improve detection, treatment and management of CVD and high-risk conditions through existing services
- **Horizon 2 (Medium-term) Scale prevention and reduce inequalities**
    - Expand community-led interventions and target high risk populations
- **Horizon 3 (Long-term) Shape Healthy Environments**
    - Environments that support healthy living and result population risk

Framework for Delivery

Figure 3 outlines a framework for a whole-system approach to preventing and managing CVD, bringing together action across NHS services, primary care, and community partners. It reflects the need to address both clinical care and the wider determinants of health.

The actions outlined here represent a current position and will be updated following two planned workshops: one with primary and secondary care, and one with third sector and community organisations. These sessions will be used to test, refine, and expand on the proposed actions to ensure they are practical and aligned with local need.

Preventing Cardiovascular Disease in Grampian	 How we Deliver Services as an Organisation	 Prevention-Specific Services	 Opportunistic Prevention (embedded in services)	 Services for Modifiable Risk Factors	 Disease-Specific prevention
Programmes of work already in place (strategic alignment)	Whole System Approach to Healthy Weight Anchor / Community Wealth Building (PHF)	Abdominal Aortic Aneurysm Screening (PHF)	Risk Factor Identification and treatment Primary Care – DES GIRFE (OIP, SRF, PHF)	Smoking cessation Adult Weight Mgmt GLP1 pathway T2 Diabetes wt mgmt Child Healthy Wt (OIP, SRF, PHF)	Haematology services Precision medicine Resistance to clodiprogel (OIP)
Where is this being done	HSCPs, CPPs, NEPHA	Public Health, Acute	General practice, Public Health, Acute	Public Health, HSCP, AHP, Psychological Therapies, Pharmacy	Acute
What we need to progress	Agree plan in each area for WSA healthy eating	Progress actions in screening equity plan	Increase patient uptake, healthpoint referral, waiting well, GIRFE	Agree and implement GLP1 pathway	
Performance monitoring indicators	TBC once workplans agreed	Nationally agreed KPIs including uptake	Uptake of risk factor identification programme	Smoking cessation uptake, Tier 2/3 wt mgmt. referrals and uptake	Emergency admissions for CVD
Population health outcomes (by SIMD)	Obesity prevalence	Smoking prevalence (by population groups)	Cardiovascular disease prevalence	Cardiovascular mortality (avoidable and all)	

Figure 3: Framework for whole system approach to CVD



Objective 5

Recommendations

Collectively, these recommendations highlight the need for a coordinated, whole-system approach to CVD prevention and management, addressing both upstream determinants and access to effective care. Reducing inequalities in CVD outcomes will require sustained action across all partners, with a particular focus on deprived and underserved populations.

These recommendations will be further refined through planned stakeholder workshops, including sessions with primary and secondary care, and with community and third sector partners.

Cross-System

1. Position CVD as a shared strategic priority across all partnerships, recognising its central role in driving health inequalities and the projected increase in prevalence.
2. Align and integrate action plans across organisations to maximise collective resources, reduce duplication, and focus effort on high-impact interventions.
3. Address poverty as a core CVD risk factor.
4. Continue to develop and embed whole-system approaches to obesity, ensuring alignment with wider CVD prevention, learning from existing models of good practice.
5. Strengthen data sharing and integration across partners to enable patient tracking, improve continuity of care, and enhance the quality and use of risk factor data for targeted intervention.
6. Shared outcomes and evaluation frameworks that target high level outcomes such as CVD premature mortality.
7. Establish a Grampian CVD Prevention Board or Programme Group with annual reporting against agreed outcomes.

NHS

1. Leverage the NHS role as an Anchor Institution to influence economic, social, and environmental determinants of CVD, including through workforce wellbeing and local procurement.
2. Scale and embed social prescribing models, improving referral pathways into community-based physical activity, financial advice, and wellbeing services.
3. Integrate income maximisation and social support into all care pathways, supported by staff training to increase confidence in asking about and responding to social need.
4. Expand equitable access to GLP-1 medications, aligned with NICE guidance, ensuring delivery is targeted and combined with behavioural support.
5. Develop targeted weight management interventions for women of childbearing age, particularly in deprived communities, to support preconception health.
6. Extend and scale the opt-out smoking cessation model, extending support in maternity services and expanding to be embedded within multiple clinical pathways.
7. Continue to develop multidisciplinary models of care, integrating physical, mental, and social support within CVD pathways.
8. Build on approaches (e.g. diabetes services) to integrate mental health support within CVD care pathways.
9. Use deprivation data proactively to target support to GP practices delivering DES and other prevention programmes.
10. Expand community-based CVD risk factor screening, including delivery through trusted third sector partners to reach underserved populations.
11. Develop targeted prevention and engagement approaches for men, particularly those in deprived communities.
12. Develop a Grampian-wide hypertension improvement programme targeting diagnosis, treatment optimisation and control in deprived populations.
13. Consider developing targeted place-based prevention initiatives in high-burden localities, including Moray.
14. Strengthen links between primary care and public health data systems to better identify unmet need and target interventions.

Health and Social Care Partnerships

1. Leverage strong relationships with third sector organisations to improve reach, engagement, and trust within communities, particularly those most at risk.
2. Support integrated, community-led approaches that address wider determinants of CVD (e.g. housing, social isolation, financial insecurity).

Community Planning Partnerships

1. Work with transport, planning, and infrastructure partners to improve active travel environments, including safer walking and cycling routes.
2. Address perceived and actual road safety barriers, and other infrastructure deficits particularly in deprived areas, to enable increased physical activity.

Local Authority

1. Use local policy levers (e.g. planning and licensing) to reduce exposure to tobacco and vape marketing, particularly around schools and youth settings.
2. Strengthen smoking and vaping prevention programmes in schools, ensuring consistent, evidence-based messaging.
3. Provide early access to smoking cessation support for young people, including targeted interventions where risk is highest.
4. Work with housing partners to improve housing quality and reduce fuel poverty, recognising their impact on cardiovascular risk and winter morbidity.
5. Improve access to affordable and reliable transport to reduce barriers to healthcare access, particularly in rural and deprived communities.



Glossary & References

Glossary of Terms and Abbreviations

Term / Abbreviation	Definition
AAA	Abdominal Aortic Aneurysm. A swelling of the aorta in the abdomen that can rupture if left untreated.
ACC	Aberdeen City Council.
AF	Atrial Fibrillation. An irregular heart rhythm associated with increased stroke risk.
Anchor Institution	A large organisation, such as the NHS, that can influence population health through employment, procurement, and community investment.
BMI	Body Mass Index. A measure used to assess whether an individual is underweight, healthy weight, overweight, or obese.
BP	Blood Pressure. The force of blood against artery walls. High blood pressure is a major risk factor for CVD.
CAD	Coronary Artery Disease. Narrowing of the arteries supplying blood to the heart.
Cardiac Rehabilitation	A structured programme of exercise, education and support for people recovering from cardiac events.
CHD	Coronary Heart Disease. A condition caused by narrowed coronary arteries reducing blood flow to the heart.
CHSS	Chest Heart & Stroke Scotland.
Community Planning Partnership (CPP)	A partnership of public, voluntary, community and private organisations working together to improve local outcomes.
Continuous Glucose Monitoring (CGM)	Technology that continuously measures blood glucose levels.
CVD	Cardiovascular Disease. An umbrella term for conditions affecting the heart and circulatory system.
DALY	Disability-Adjusted Life Year. A measure of overall disease burden combining years lost through ill health, disability, or premature death.
DES	Directed Enhanced Service. In this report, the Scottish Government CVD Risk Factors Programme delivered through General Practice.
Diabetes Mellitus (Type 1 and Type 2)	Long-term conditions affecting the body's ability to regulate blood glucose.
Ejection Fraction	The percentage of blood pumped out of the heart with each contraction.
GLP-1	Glucagon-Like Peptide-1. A class of medicines used for weight management and diabetes treatment.
GIRFE	Getting It Right For Everyone. Scotland's approach to delivering personalised and coordinated care and support.

HbA1c	Glycated Haemoglobin. A blood test used to assess average blood glucose levels over approximately three months.
HENRY	Health, Exercise and Nutrition for the Really Young. A programme supporting healthy early years development.
HF	Heart Failure. A condition where the heart cannot pump blood effectively around the body.
HNA	Health Needs Assessment. A systematic process used to identify health needs and inform planning and prioritisation.
HSCP	Health and Social Care Partnership. Organisations responsible for integrated health and social care services.
Hypertension	High blood pressure.
KPI	Key Performance Indicator. A measure used to assess performance against objectives.
Levels of prevention	The stages at which action can prevent disease or reduce its effects. See the Prevention Terminology table below.
Link Worker	A professional who supports social prescribing by connecting people to community-based services and support.
MDT	Multidisciplinary Team. A group of professionals from different disciplines working together to support patient care.
Morbidity	Ill health or disease within a population.
Mortality	Death within a population.
Near Me	NHS Scotland's video consultation platform.
NEPHA	North East Population Health Alliance.
NICE	National Institute for Health and Care Excellence. The organisation that produces evidence-based health and care guidance.
Non-elective Admission	An unplanned or emergency hospital admission.
NRT	Nicotine Replacement Therapy. Products used to help people stop smoking.
NHS Health Check	A cardiovascular risk assessment programme used in England and referenced as evidence within the report.
Operational Improvement Plan (OIP)	A plan setting out specific actions, responsibilities and timescales to improve how services are delivered and monitored.
PHF	Population Health Framework. Scotland's national framework for improving population health and reducing inequalities.
PM2.5	Fine particulate air pollution measuring less than 2.5 micrometres in diameter.
Premature Mortality	Death occurring before the age of 75 years.
Proportionate Universalism	An approach where services are available to everyone but delivered at a scale and intensity proportionate to need.
Public Health Scotland (PHS)	Scotland's national public health agency.
QALY	Quality-Adjusted Life Year. A measure combining length and quality of life used in health economic evaluations.

Risk Factor	A characteristic or behaviour that increases the likelihood of developing disease.
SAMH	Scottish Action for Mental Health.
SCAP	Scottish Cardiac Audit Programme.
Screening	The process of identifying disease or risk factors in people who do not yet have symptoms.
Service Renewal Framework (SRF)	A structured approach to reviewing and redesigning services so they remain sustainable, effective and responsive to changing needs.
SIMD	Scottish Index of Multiple Deprivation. Scotland's official measure of area-based deprivation.
SGLT-2 Inhibitors	Sodium-Glucose Co-Transporter-2 inhibitors. Medicines used to treat diabetes and reduce cardiovascular risk.
Social Prescribing	A way of linking people to non-medical support in the community to improve health and wellbeing.
Statin	A medicine used to lower cholesterol and reduce cardiovascular risk.
Tableau	Data visualisation software used for dashboards and reporting.
TAVI	Transcatheter Aortic Valve Implantation. A minimally invasive procedure to replace a diseased heart valve.
Type 2 Diabetes Mellitus (T2DM)	A chronic condition characterised by elevated blood glucose due to insulin resistance.
WEMWBS	Warwick-Edinburgh Mental Wellbeing Scale. A measure of mental wellbeing.
Whole System Approach (WSA)	A coordinated approach involving multiple organisations and sectors to address health issues and their underlying determinants.

Prevention Terminology	
Level	Explanation
Primordial prevention	Action to prevent the social, economic, commercial and environmental conditions that give rise to cardiovascular risk factors, for example through healthier food, tobacco-control and active-travel policies.
Primary prevention	Action to prevent cardiovascular disease developing in people without established CVD by reducing modifiable risks, such as smoking, high blood pressure, raised cholesterol, diabetes, physical inactivity and obesity.
Secondary prevention	In cardiovascular care, action for people with established CVD to prevent further events or disease progression through evidence-based treatment, risk-factor management and ongoing support.
Tertiary prevention	Action to reduce disability, complications and the wider impact of established CVD, and to improve function and quality of life, including rehabilitation and long-term condition management.

References

[1] British Heart Foundation (2026). Scotland Cardiovascular Disease Factsheet. Available at: BHF Scotland Cardiovascular Disease Factsheet

[2] NHS Grampian. Mortality dashboard. Available at: Mortality: Top Causes of Death - Tableau Server

[3] Scottish Government (2025). Scotland's Population Health Framework. Available at: Scotland's Population Health Framework - gov.scot

[4] NHS Grampian. Cardiovascular Admissions and Mortality. Available at: Public Health - Tableau Server

[5] British Heart Foundation (2026). UK Cardiovascular Disease Factsheet. Available at: BHF UK Cardiovascular Disease Factsheet

[6] OECD/The King's Fund (2020). Is Cardiovascular Disease Slowing Improvements in Life Expectancy?: OECD and The King's Fund Workshop Proceedings. OECD Publishing, Paris. https://doi.org/10.1787/47a04a11-en

[7] The Scottish Government. Cardiovascular Disease Summary Paper. Available at: www.gov.scot/binaries/content/documents/govscot/publications/foi-eir-release/2025/01-e/foi-202400446166/documents/foi-202400446166---information-released---cardiovascular-disease-summary/foi-202400446166---information-released---cardiovascular-disease-summary/govscot%3Adocument/FOI%2B202400446166%2B-%2BInformation%2Breleased%2B-%2BCardiovascular%2Bdisease%2Bsummary.pdf/

[8] NHS Grampian. Joint Strategic Needs Assessments, Grampian population information and how they can inform service planning. Available at: Age breakdown – Hi-Net Grampian

[9] Tayal, H.; et al. (2024) 'Advancing the access to cardiovascular diagnosis and treatment among women with cardiovascular disease: a joint British Cardiovascular Societies' consensus document.' BMJ, 110(22). https://doi.org/10.1136/heartjnl-2024-324625

[10] Health Intelligence NHS Grampian. Energy efficiency in Grampian by tenure: evidence from open data.

[11] Population Health Data Platform at NHS Grampian.

[12] Scottish Government (2025). NHS Scotland Operational Improvement Plan. Available at: NHS Scotland operational improvement plan - gov.scot

[13] Scottish Government (2021). Heart Disease: action plan. Available at: Heart disease: action plan - gov.scot

[14] UNICEF UK. Maternal cancer and illness. Maternal health research. Available at: Maternal Cancer and Illness - Baby Friendly Initiative

[15] UNICEF (2019). Breastfeeding reduces child obesity risk by up to 25%, WHO finds. Available at: Breastfeeding reduces child obesity risk by up to 25%, WHO finds - Baby Friendly Initiative

[16] NICE (2025). Scenario: Immunizations – seasonal influenza. Scenario: Immunizations - seasonal influenza | Management | Immunizations - seasonal influenza | CKS | NICE

[17] Oliveira, C.D.; Watt, R.; Hamer, M. (2010). 'Toothbrushing, inflammation, and risk of cardiovascular disease: results from Scottish Health Survey.' BMJ, 340:c2451. https://doi.org/10.1136/bmj.c2451

[18] Scottish Government (2025). Scottish Health Survey Dashboard. Available at: Scottish Health Survey

[19] Public Health Scotland (2025). Scottish Cardiac Audit Programme Annual report 2024/25. Available at: scotland.shinyapps.io/phs-scap-annual-report-2024-25/

[20] Public Health Scotland (2021). Scottish Burden of Disease Study 2019 Summary of health loss in Aberdeen City. Available at: Microsoft Word - 2021-09-21-ScottishBurdenofDisease-ABERDEEN-CITY-REVISED

[21] Public Health Scotland (2021). Scottish Burden of Disease Study 2019 Summary of health loss in Aberdeenshire. Available at: Microsoft Word - 2021-09-21-ScottishBurdenofDisease-ABERDEENSHIRE-REVISED

[22] Public Health Scotland (2021). Scottish Burden of Disease Study 2019 Summary of health loss in Moray. Available at: Scottish Burden of Disease Study 2019

[23] Scottish Government (2022). Flexible Table Builder. Available at: SuperWEB2 - Log in

[24] British Heart Foundation. How your ethnic background affects your risk of heart and circulatory diseases. Available at: How your ethnic background affects your risk of heart and circulatory diseases | BHF - BHF

[25] NHS Grampian. Child Poverty Dashboard. Available at: Child Poverty: Views - Tableau Server

[26] British Heart Foundation (2026). Smoking. Available at: Smoking and the affect on your heart - BHF

[27] Public Health Scotland (2025). NHS Stop Smoking Services Scotland. Available at: Dashboard - NHS stop smoking services Scotland - April 2024 to March 2025 - NHS Stop Smoking Services Scotland - Publications - Public Health Scotland

[28] ASH Scotland (2026). Smoking Profile in NHS Grampian. Available at: Smoking stats profile NHS 2026

[29] Scottish Government (2025). The Scottish Health Survey 2024 - volume 1: main report. Available at: Summary - The Scottish Health Survey 2024 - volume 1: main report - gov.scot

[30] British Heart Foundation (2025). Staying Active. Available at: Staying Active - BHF

[31] NICE (2010). Cardiovascular disease prevention. Available at: Recommendations | Cardiovascular disease prevention | Guidance | NICE

[32] NHS Grampian Public Health (2025). Director of Public Health report. [Director of Public Health's Annual Report]

[33] British Heart Foundation (2024). Obesity. Available at: Weight and your heart - BHF

[34] The Health Foundation (2026). GLP-1 drug prescriptions for obesity. Available at: GLP 1 drug prescriptions for obesity - The Health Foundation

[35] Healthcare Improvement Scotland (2017). SIGN 149 - Risk estimation and the prevention of cardiovascular disease. Available at: sign149.pdf

[36] Public Health Scotland (2025). Alcohol consumption and harms dashboard. Available at: PHS Alcohol Dashboard

[37] NHS Grampian. Inequalities dashboard. Available at: Alcohol Related Admissions - Tableau Server

[38] Public health Scotland (2025). Infant Feeding Statistics. Available at: Dashboard - Infant feeding statistics - Financial year 2024 to 2025 - Infant feeding statistics - Publications - Public Health Scotland

[39] Marketou, M; Caples, N; Abela, M; Dendale, P; Gökdemir, O; Korzh, O; Kurpas, D; Lin, M.N; Vittoria Mattioli, A; Moholdt, T; Muenzel, T; Palermi, S; Papakonstantinou, P.E; Piepoli, M; Richter, D; Shantsila, E; Sciomer, S; Vaartjes, I; Vecchiato, M; Venturini, E; Abreu, A; Biffi, A. (2026). 'Climate change and cardiovascular risk factors management: emerging challenges and strategies for prevention and adaptation'. European Journal of Preventive Cardiology, https://doi.org/10.1093/eurjpc/zwag229

[40] Hector, D (2025). Aberdeen City Annual Report. Available at: Scottish Air Quality Database Annual Report

[41] 41 Ettehad, D; Emdin, C; Kiran, A; et al. (2015). 'Blood pressure lowering for prevention of cardiovascular disease and death: a systematic review and meta-analysis'. The Lancet, 387(10022), pp. 957-967. https://doi.org/10.1016/S0140-6736(15)01225-8

[42] Scottish Diabetes Group (2024). Scottish Diabetes survey 2024. Available at: Scottish-Diabetes-Survey-2024.pdf

[43] British Heart Foundation (2023). Menopause and your Heart. Available at: Menopause and heart and circulatory conditions - BHF

[44] Hirst, J.A; Mtika, W.M; Coupland, C; Dixon, S; Hippisley-Cox, J; Hillman, S. (2025). 'Inequalities in hormone replacement therapy prescribing in UK primary care: population based cohort study.' BMJ Medicine, 4:e001349. https://doi.org/10.1136/bmjmed-2025-001349

[45] Vaccarino, V.; Prescott, E.; Shah, A.J.; Bremner, J.D.; Raggi, P.; Dobiliene, O.; Gale, C.P.; Bugiardini, R. (2025). 'Mental health disorders and their impact on cardiovascular health disparities.' The Lancet Regional Health – Europe, 56, 101373. doi: https://doi.org/10.1016/j.lanepe.2025.101373

[46] Denison, F.C.; Aedla, N.R.; Keag, O.; Hor, K.; Reynolds, R.M.; Milne, A.; Diamond, A. on behalf of the Royal College of Obstetricians and Gynaecologists (2018). Care of Women with Obesity in Pregnancy. Green-top Guideline No. 72. https://doi.org/10.1111/1471-0528.15386

[47] The Lancet (2019). 'Gestational diabetes in England: cause for concern.' The Lancet, 393(10178), pp 1262. https://doi.org/10.1016/S0140-6736(19)30741-X

[48] NHS Inform (2026). Abdominal aortic aneurysm. Available at: Abdominal aortic aneurysm | NHS inform

[49] Public Health Scotland (2024). Scottish Abdominal Aortic Aneurysm (AAA) screening programme statistics. Available at: 2025-01-aaa-kpis.xlsx

[50] NHS Scotland (2019). Standards for the delivery of tier 2 and tier 3 weight management services for adults in Scotland. Available at: Standards for the delivery of tier 2 and tier 3 weight management services for adults in Scotland

[51] Obesity Action Scotland. Local levers for diet and health weight. Available at: local_levers_for_diet_and_healthy_weight_final.pdf

[52] NHS Scotland (2026). About the Scottish CVD risk factor programme. Available at: About the Scottish CVD Risk Factors Programme | Right Decisions

[53] NICE (2015). Secondary Prevention of Myocardial Infarction. Available at: Quality statement 4: Cardiac rehabilitation – assessment appointment | Secondary prevention after a myocardial infarction | Quality standards | NICE

[54] NHS Grampian Sharepoint. Appendix 1 Community Heart Failure Service. Available at: Appendix 1 - Community Heart Failure Service - did you know doc 2024

[55] The Association of Directors for Public Health. What good cardiovascular disease prevention looks like. Available at: What-Good-Cardiovascular-Disease-Prevention-Looks-Like-FINAL-1.pdf

[56] Witty, C.; Smith, G.; McBride, M.; Atherton, F.; Powis, S.H. (2023). 'Restoring and extending secondary prevention.' BMJ, 380, pp 201. https://doi.org/10.1136/bmj.p201

[57] NHS England. Cardiovascular disease high impact interventions. Available at: NHS England » Cardiovascular disease high impact interventions

[58] British Heart Foundation (2025). Socioeconomic inequalities in heart and circulatory diseases in England: an analysis. Available at: socioeconomic-inequalities-in-heart-and-circulatory-diseases-in-england.pdf

[59] The King's Fund (2021). The NHS's role in tackling poverty. Available at: The NHS's role in tackling poverty

[60] Hayre, J.; Pearce, H.; Khera, R.; Lunn, A.D.; Ford, J.A. (2025). 'Health impacts of the Sure Start programme on disadvantaged children in the UK: a systematic review.' BMJ Open, 15(2), e089983 https://doi.org/10.1136/bmjopen-2024-089983

[61] Health Equity Evidence Centre. Seven high-impact interventions to tackle health care inequalities. Available at: 7-high-impact-interventions.pdf

[62] Health Equity Evidence Centre (2025). What works: how can integrated neighbourhood teams reduce inequalities in health and health care? Available at: What works: How can integrated neighbourhood teams reduce inequalities in health and health care? - Health Equity Evidence Centre

[63] The King's Fund (2024). Illustrating the relationship between poverty and NHS services. Available at: The Relationship Between Poverty And NHS Services | The King's Fund

[64] Podmore Baker, G., Ellis, N. J., Forrester, G., Mankoo, A. S., & Gidlow, C. J. (2025) 'A Scoping Review of Interventions Aiming to Improve Food Security for Low-Income Families with School-Aged Children Outside of School Hours.' Journal of Nutritional Science 14, e76 https://doi.org/10.1017/jns.2025.10047.

[65] Stahacz, C., Alwan, N. A., Taylor, E., Smith, D., & Ziauddeen, N. (2024) 'The Impact of Food Aid Interventions on Food Insecurity, Diet Quality and Mental Health in Households with Children in High-Income Countries: A Systematic Review.' Public Health Nutrition 27(1), e195. https://doi.org/10.1017/S1368980024001769.

[66] NHS Greater Manchester/Resolve Poverty. What can health settings do to tackle poverty? Available at: What can health settings do to tackle poverty?

[67] Yoshino, C. A., Sidney-Annerstedt, K., Wingfield, T., Kirubi, B., Viney, K., Boccia, D., & Atkins, S. (2023) 'Experiences of Conditional and Unconditional Cash Transfers Intended for Improving Health Outcomes and Health Service use: A Qualitative Evidence Synthesis.' Cochrane Database of Systematic Reviews 3, CD013635. https://doi.org/10.1002/14651858.CD013635.pub2

[68] Reducing Inequalities Alliance (Bradford District & Craven) and Bradford District Anti-poverty coordination group (2024) How-can-the-NHS-and-care-organisations-reduce-poverty: Briefing paper on priority areas for action

[69] COSLA. Strengthening Scotland's approach to tackling poverty. Available at: Strengthening Scotland's approach to tackling poverty

[70] Ghanchi, A., Gkiouleka, A., Lamb, D., Loftus, L., Torabi, P., & Ford, J. (2026) 'Designing Health Care Inclusively for People with Low Incomes: A Policy-Focused Evidence Brief.' Public Health in Practice 11, 100768. https://doi.org/10.1016/j.puhip.2026.100768

[71] Health Equity Evidence Centre (2024). What works: Designing health care inclusively for people with low incomes. Available at: What-works-designing-health-care-inclusively-for-people-with-low-incomes.pdf

[72] Hayre, J., Canning, E., Pearce, H., Khera, R., & Ford, J. (2026) 'Public Health Policies and Interventions to Address Health Inequities in High-Income Countries: An Umbrella Review.' BMC Public Health 26(1), 473. https://doi.org/10.1186/s12889-025-25876-2.

[73] Reece, S., Sheldon, T. A., Dickerson, J., & Pickett, K. E. (2022) 'A Review of the Effectiveness and Experiences of Welfare Advice Services Co-Located in Health Settings: A Critical Narrative Systematic Review.' Social Science & Medicine 296, 114746. https://doi.org/10.1016/j.socscimed.2022.114746

[74] Parry, J., Vanstone, M., Grignon, M., & Dunn, J. R. (2021) 'Primary Care-Based Interventions to Address the Financial Needs of Patients Experiencing Poverty: A Scoping Review of the Literature.' International Journal for Equity in Health 20 https://doi.org/10.1186/s12939-021-01546-8.

[75] Merchant, T., Soyemi, E., Roytman, M. V., DiTosto, J. D., Beestrum, M., Niznik, C. M., & Yee, L. M. (2023) 'Healthcare-Based Interventions to Address Food Insecurity during Pregnancy: A Systematic Review.' American Journal of Obstetrics & Gynecology MFM 5(5), 100884. https://doi.org/10.1016/j.ajogmf.2023.100884.

[76] Ohly, H., Crossland, N., Dykes, F., Lowe, N., & Hall-Moran, V. (2017) 'A Realist Review to Explore how Low-Income Pregnant Women use Food Vouchers from the UK's Healthy Start Programme.' BMJ Open 7(4), e013731. https://doi.org/10.1136/bmjopen-2016-013731.

[77] NICE (2025). Tobacco: preventing uptake, promoting quitting and treating dependence. Available at: Promoting quitting | Tobacco: preventing uptake, promoting quitting and treating dependence | Guidance | NICE

[78] NICE (2025). Overweight and obesity management. Available at: Overview | Overweight and obesity management | Guidance | NICE

[79] NHS England. CVD high impact interventions. Available at: B1590-cvd-high-impact-interventions.pdf

[80] NICE (2023). Cardiovascular disease: risk assessment and reduction, including lipid modification. Available at: Recommendations | Cardiovascular disease: risk assessment and reduction, including lipid modification | Guidance | NICE

[81] DynaMed (2026). Secondary Prevention of Coronary Artery Disease. EBSCO Information Services. Available at: Secondary Prevention of Coronary Artery Disease - DynaMed

[82] DynaMed (2026). Cardiovascular Disease Prevention Overview. EBSCO Information Services. Available at: Cardiovascular Disease Prevention Overview - DynaMed

[83] NICE (2026). Type 2 Diabetes in adults: management. Available at: NG28 Type 2 diabetes in adults: visual summary 18/02/2026

[84] UK National Screening Committee (2022). Adult screening programmes, Lung cancer. Available at: Lung cancer - UK National Screening Committee (UK NSC) - GOV.UK

[85] Chief Scientist Office (2023). LUNGSCOT. How should Scotland respond to the challenge of lung cancer screening: A mixed methods feasibility study. Available at: CSO_Template_Alt_Cover

[86] NICE. Changes to NICE's cost-effectiveness thresholds. Available at: Changes to NICE's cost-effectiveness thresholds | NICE

[87] Mistry, H; Enderby, J; Court, R; Al-Khudairy, L; Nduka, C; Melendez-Torres, G.J; et al. (2025). 'Determining optimal strategies for primary prevention of cardiovascular disease: systematic review of cost-effectiveness analyses in the United Kingdom.' Health Technol Assess, 29(37):181–242. https://doi.org/10.3310/QOVK6659

[88] Hotchkiss, J.W; Davies, C.A. Dundas, R (2014). 'Explaining trends in Scottish coronary heart disease mortality between 2000 and 2010 using IMPACTSEC model: retrospective analysis using routine data.' BMJ, 348, p1088. doi: https://doi.org/10.1136/bmj.g1088

Authors and contributors

Lead author

Eveline McGhee, Locum Appointment for Training (LAT) Public Health

Contributing authors

Jonathan Iloya, Consultant in Dental Public Health

Jenni Strachan, Public Health Manager

Melanie Dolan, Advanced Public Health Practitioner

Additional contributions

Richard Slessor, Senior Analyst – dashboard development

Jessica Butler, Lead Health Data Scientist – data

Corri Black, Consultant in Public Health – data coordination

Lyn Mair, Clinical Liaison Librarian – literature review searches

Andrea Gilmartin, Public Health Researcher – CAD data

The authors would also like to acknowledge the wider contribution of colleagues and stakeholders who supported the development of this Health Needs Assessment.

Published in November 2026

This publication is available in other languages and formats on request.
Please call NHS Grampian on 01224 551116 or
email: gram.communications@nhs.scot

Ask for publication MVC 260235