The Kings Fund

Ideas that change health and care

Cardiovascular disease in England

Supporting leaders to take actions

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November 2022

About this project

The work for this project was sponsored by Daiichi Sankyo and Edwards Lifesciences. This output was independently developed, researched and written by The King's Fund. The sponsors have not been involved in its development, research or creation and all views are the authors' own.

The report is informed by an analysis of published data on cardiovascular disease (CVD) and a literature review of current policy and evidence relating to CVD. It also draws on the rich feedback that we received from a workshop attended by, and interviews with, a wide range of external stakeholders, including the Department of Health and Social Care (DHSC), NHS England, integrated care systems (ICSs), directors of public health, providers, clinical networks, academics, third sector and patient organisations. We are grateful for the time and expertise the stakeholders generously provided for this project. While this was not a nationally representative sample, the views expressed provide qualitative insights into why CVD needs to be a priority now, and the challenges and opportunities facing the health and care system.

The report includes six case studies on projects in various locations that are addressing CVD locally in a variety of different ways.

Contents

Key messages

Why prioritise cardiovascular disease?

- Despite being largely preventable, cardiovascular disease (CVD) is a leading cause of morbidity, disability and mortality in England.
- CVD is among the largest contributors to health inequalities. People in England's most deprived areas are four times more likely to die prematurely from CVD than those in the least deprived areas.
- The pandemic has added urgency to the need to tackle CVD because CVD significantly increases the risk of severe disease and death from Covid-19.
- The pandemic significantly disrupted care for CVD and its risk factors, especially early detection and management. Unless steps are taken to address missed CVD diagnoses, treatment initiations and planned operations, preventable morbidity and deaths are inevitable.
- Concerted action nationally and locally by integrated care systems (ICSs) to tackle CVD can help to reduce the unprecedented demand, workload and cost pressures the health and care system is facing, as much of CVD is potentially preventable.
- The risk factors for CVD are also risk factors for other leading causes of morbidity and mortality, including diabetes, cancer, dementia and Alzheimer's disease, and Covid-19. An increased focus on CVD prevention and management therefore gives many 'bangs for your buck', with significant potential for improving overall population health and narrowing health inequalities.
- A strong focus on primary and secondary prevention of CVD can improve population health, reduce health inequalities, and mitigate against escalating demand and costs leading to unsustainable pressures on the health and care system.

What needs to be done?

Actions for national leaders

- The current CVD policy landscape is fragmented and does not fully realise the potential that tackling CVD offers for improving population health, narrowing health inequalities, and reducing NHS and social care workloads and costs. There is a strong case for greater co-ordination between national agencies and a comprehensive national CVD strategy that articulates this potential and describes how it can be achieved, nationally and locally.
- Much more can be done at a national level around primary prevention of CVD. Bolder, evidence-based policies are needed to reduce risk factors such as smoking, poor diets and obesity, which would also reduce prevalence of other leading causes of morbidity and mortality (such as cancer, dementia and diabetes).
- Waiting times and delays in diagnosis and treatment can be life-threatening for many people with CVD, so action to address workforce shortages and deliver timely care is critical. Detection and management of CVD and its risk factors earlier in the pathway would reduce pressures on acute and emergency services and improve health outcomes.
- The scale of and trends in post-pandemic health inequalities call for an ambitious, co-ordinated cross-government policy for reducing these inequalities. Tackling CVD needs to be at the heart of this policy given that it is a leading contributor to health inequalities.

Actions for local leaders

- Everyone in a local public health, health and care system has a role to play in preventing CVD and delivering timely, co-ordinated care to those who develop it. The advent of ICSs brings new opportunities to tackle CVD by developing and implementing locally tailored CVD strategies at scale and at population level.
- This will require leadership at all levels of the system and strong partnerships to deliver a system-wide approach to the use of digital technologies and intelligence on population health and clinical care in order to plan and deliver CVD services, engage communities and maximise community assets.
- The NHS, public health services and local authorities need to work jointly to address the wider determinants of health and inequalities, to reduce behavioural risk factors, and to strengthen prevention and early detection of CVD.
- For those with long-term cardiovascular conditions, ensuring timely, co-ordinated, personalised care and enabling people to self-manage their conditions will be key not just to reducing the risk of recurrences and demands on services but also to improving outcomes.
- There is significant potential for reducing the large, unwarranted variations in the quality of clinical care for CVD.

1 Why should cardiovascular disease be a priority now?

The Covid-19 pandemic has added urgency to the need for concerted action to tackle cardiovascular disease (CVD)[1] because it has amplified the impact of CVD as a leading cause of morbidity, disability, mortality and health inequalities in England. The need for health systems to tackle CVD in post-Covid recovery plans is recognised globally.

The NHS in England was overstretched and under-resourced prior to the pandemic. It now faces even greater challenges of large numbers of people with undiagnosed disease, large and growing backlogs of care, an under-resourced social care sector, and the increasing health and care needs of an ageing population – all against the backdrop of continuing resource constraints, staff shortages and ongoing waves of Covid-19. All sectors in the health and care system face pressing and competing demands on multiple fronts.

While recognising the very real challenges that policy-makers and the newly formed integrated care systems (ICSs) face, and that staff working in health and care services are dealing with, we outline the case for policy-makers, ICSs and other national and local organisations to prioritise CVD in post-Covid recovery plans. This means addressing the current deficits in health care provision for people at risk of or with CVD while also reducing the burden of disease on individuals, services and the economy through CVD prevention.

[1] Cardiovascular disease (CVD) is a general term for conditions affecting the heart or blood vessels. Common comorbidities associated with CVD include, for example, high blood pressure, atrial fibrillation and diabetes.

2 Introduction

CVD includes some of the most widely prevalent diseases in England such as heart disease and stroke. Although it is largely preventable through the reduction and management of risk factors, and despite CVD mortality rates having almost halved over recent decades, it remains a leading cause of morbidity, disability and mortality, and a key driver of health inequalities, with significant costs to the health system and the economy. Early indications are that CVD and diabetes are major contributors to the rise in excess deaths in England and Wales since April 2022. The heavy disease, death and cost burden of CVD could be reduced substantially if readily available, cost-effective interventions for prevention and treatment were more widely used.

The Covid-19 pandemic has added urgency to the case for tackling CVD because it significantly increases the risk of severe disease and death from Covid-19. As Covid-19 remains a threat for the foreseeable future, reducing high-risk comorbidities such as CVD is critical for reducing its impact on health, the economy and society.

The leading role played by CVD in disease, disability and death across high-income countries, and its role in the Covid-19 pandemic, has led to calls globally for urgent action to tackle it (**European Alliance for Cardiovascular Health 2022**; **Rittiphairoj *et al* 2022**; **Karnad *et al* 2022a**; **Roth *et al* 2022**; **European Heart Network 2021**; **OECD and The King's Fund 2020**).

Reducing the impact of CVD requires a coherent governmental strategy, with clear goals and with the resources, mechanisms and milestones for achieving them. It also requires action at the local level. With the transition to ICSs, local health and care systems are in the process of forming new structures and partnerships. This creates opportunities to address CVD prevention and management in their plans for improving population health and reducing inequalities. The arguments in support of ICSs prioritising CVD in their local strategies are compelling because the benefits speak directly to the core aims of ICSs.

Why should CVD be a national and local priority in England now?

Morbidity

- In England there are 6.8 million people living with CVD and even more with comorbidities or common, treatable risk factors that significantly increase the risk of developing CVD:
    - High blood pressure affects 1 in 4 adults (about 12.5 million in total), of whom half are undiagnosed or not receiving treatment.
    - Nearly half of adults have cholesterol levels that are above the recommended guidelines.
    - About 1.4 million people have atrial fibrillation and 270,000 people over 65 have undiagnosed atrial fibrillation.
- Almost 100,000 people have a stroke each year, and there are 1 million stroke survivors. Two-thirds of stroke survivors leave hospital with a disability.
- CVD increases the risk of dementia, which affects about 680,000 people in England. The number of people with dementia needing care is projected to increase to 1.2 million by 2040.

Mortality

- CVD causes about 136,000 deaths in England annually – 1 in 4 of all deaths and premature deaths.
- People with CVD and related risk factors have a 3.9 times higher risk of getting severe Covid-19 and a 2.7 times higher risk of dying from it.
- Early indications are that CVD and diabetes are major contributors to the current rise in excess deaths in England and Wales.

Inequalities

- CVD is among the largest contributors to health inequalities, accounting for one-fifth of the life expectancy gap between the most deprived and the least deprived communities in England, while people from South Asian and Black groups are at highest risk of CVD.

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Why should CVD be a national and local priority in England now?
continued

Preventability

- Modifiable risk factors explain 90 per cent of CVD incidence, and up to 80 per cent of premature deaths from CVD are preventable.
- The risk factors for CVD are also risk factors for other leading causes of morbidity and mortality such as diabetes, cancer, dementia and Alzheimer's disease, and Covid-19. CVD prevention and management therefore has significant potential for reducing the burden and costs to society of overall morbidity and mortality.

Potential for cost savings

- There were about 1 million hospital admissions for CVD in England in 2019/20, leading to 5.5 million bed days.
- CVD costs the health system an estimated £7.4 billion and the economy an estimated £15.8 billion a year.

This report makes the case for urgently addressing CVD, and describes how to accelerate progress in tackling CVD. It aims to inform and support national and local leaders to take action to address CVD in their Covid-19 recovery plans. It also provides an inventory of the extensive data sources and tools that are available to ICSs on CVD prevalence, diagnosis, treatment, outcomes and inequalities.

3 What is CVD?

CVD is a general term for conditions affecting the heart or blood vessels (NHS 2022). Some of the main conditions are as follows.

- **Coronary heart disease** – occurs when blood flow to the heart is blocked or reduced, leading to angina, heart attacks and heart failure.
- **Strokes and transient ischaemic attacks (TIAs)** – occur when blood flow to the brain is cut off, which causes stroke or TIAs ('mini-strokes').
- **Peripheral arterial disease** – occurs when fatty deposits in the arteries restrict blood supply to the arms or legs.
- **Aortic disease** – a group of conditions affecting the aorta, including aortic aneurysms.

Other types of CVD include heart failure, heart valve disease and vascular dementia. In this paper we refer to CVD as covering the range of diseases associated with the term.

Comorbidities that increase the risk of CVD include:

- high blood pressure (hypertension)
- high or abnormal cholesterol levels or dyslipidaemia
- irregular heartbeat (atrial fibrillation)
- high blood glucose levels
- diabetes
- chronic kidney disease.

The major modifiable risk factors for developing CVD listed below are also risk factors for many other common conditions such as cancer, diabetes and dementia:

- smoking
- inadequate physical activity
- unhealthy diet
- obesity
- excess alcohol consumption.

Some risk factors for CVD are non-modifiable, such as:

- age (the risk of developing CVD increases with age)
- gender (men have a higher risk of CVD than women)
- ethnic background (people from South Asian and Black groups have an increased risk of CVD and diabetes)
- a family history of CVD.

4 Why should CVD be a priority?

CVD has major impacts on population health

CVD is among the leading contributors to the national burden of morbidity, disability and mortality. There is robust evidence about what causes CVD and how to prevent and manage it. There is also excellent national and local data on CVD risk factors and prevalence, as well as access to CVD care and the quality and outcomes of care. All this data can be used to inform and support initiatives to reduce CVD.

Morbidity

There are 6.8 million people in England living with CVD and even more with comorbidities or treatable high-risk factors that significantly increase the risk of developing CVD (Public Health England 2019). For example, it is estimated that:

- smoking, high blood pressure and high body mass index (BMI) together account for 25 per cent of the disease burden in England (Public Health England 2020b)
- high blood pressure affects 1 in 4 adults, about 12.5 million in total (Public Health England 2017), of whom half are undiagnosed or not receiving treatment (Public Health England 2019). Only 60 per cent of people under 80 years of age diagnosed with high blood pressure have achieved a blood pressure within the recommended target level (CVDPREVENT undated b)
- nearly half of all adults have cholesterol levels that are above the recommended guidelines (NHS Digital 2020a)
- an estimated 1.4 million people have atrial fibrillation, of whom almost 500,000 are undiagnosed and untreated (NICE 2022) The risk of stroke is five times greater for people with atrial fibrillation

- about 100,000 strokes occur annually and there are 1 million stroke survivors (**Stroke Association 2022**)
- an estimated 5 million people in the United Kingdom (UK) have diabetes, another 1 million are undiagnosed, and 14 million are at risk of developing it (**Diabetes UK 2021**)
- the prevalence of some CVD-related conditions (such as atrial fibrillation, stroke, heart failure and diabetes) is increasing.

Reducing the morbidity associated with CVD is key to realising the ambitions of healthy ageing (**Department for Business, Energy and Industrial Strategy 2018**) and rising healthy life expectancy (**Department for Levelling Up, Housing and Communities 2022**).

Disability

Because most CVDs are chronic, long-term conditions, they can cause significant ill health and disability. For example, heart failure and heart disease can cause symptoms such as breathlessness and chest pain that make it difficult or impossible to work.

Stroke is the largest cause of complex disability (**NHS England 2019b**). Two-thirds of stroke survivors leave hospital with a disability (**Stroke Association 2018**). More than a third (38 per cent) of first-time strokes occur in adults aged 40–69 years (**Public Health England 2018b**). And more than a third of working-age stroke survivors are unable to return to work (**NICE 2019**).

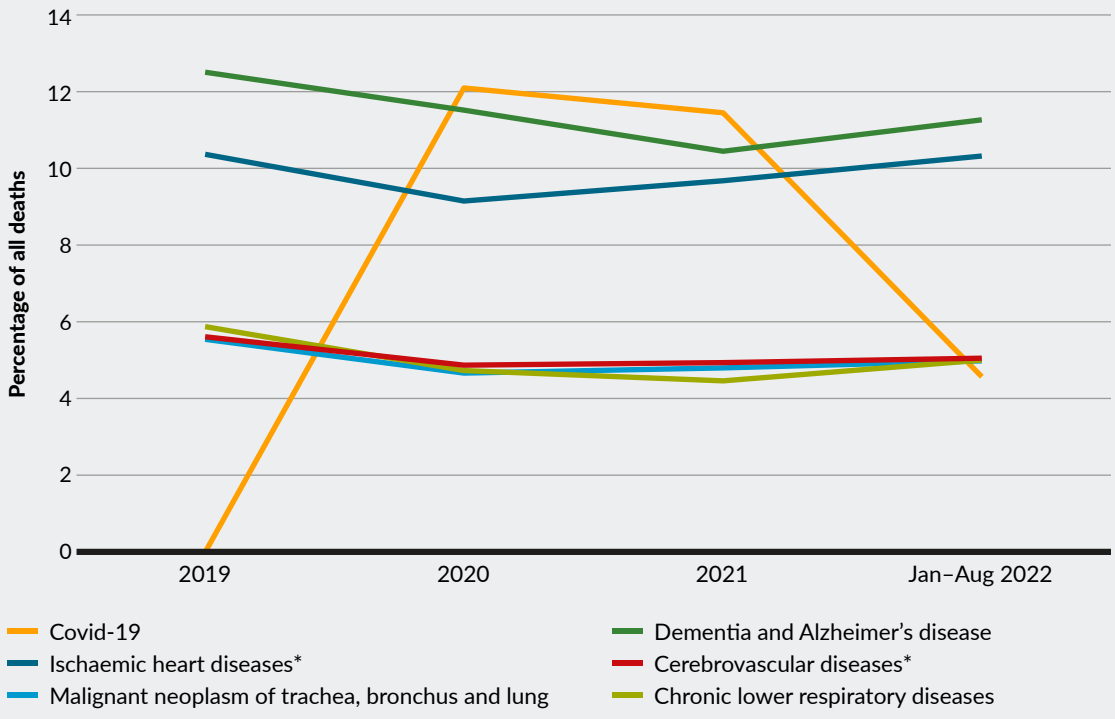
The risk of dementia increases with CVD, but CVD prevention can reduce its incidence (**NICE 2021a**). About 680,000 people in England have dementia (**NHS England undated b**) – a figure that is projected to rise to 1.2 million by 2040.

Mortality

Progress in tackling CVD risk factors (notably smoking) and medical advances in its prevention and management succeeded in reducing CVD mortality in England and Wales by half between 1990 and 2013 (Bhatnagar *et al* 2016). However, improvements stalled after 2010 (Public Health England 2018a, 2018c) and CVD remains a leading cause of death, accounting for 1 in 4 total and premature deaths (Public Health England 2019). In 2020, premature CVD mortality in England and Wales increased by 6 per cent – the first such rise in half a century (NHS Digital 2022c).

In 2020 and 2021, Covid-19 assumed primacy as the leading cause of death in England and Wales (Figure 1). CVD and associated risk factors (eg, obesity, hypertension and diabetes) significantly increase the risk of adverse outcomes from

Figure 1 Leading causes of death in England and Wales, 2019–22



* Ischaemic (or coronary) heart disease is caused by reduced blood supply to the heart because of narrowed coronary arteries. Cerebrovascular diseases affect the flow of blood through the brain and are a leading cause of stroke. Both are major components of CVD.

Source: Office for National Statistics 2022c

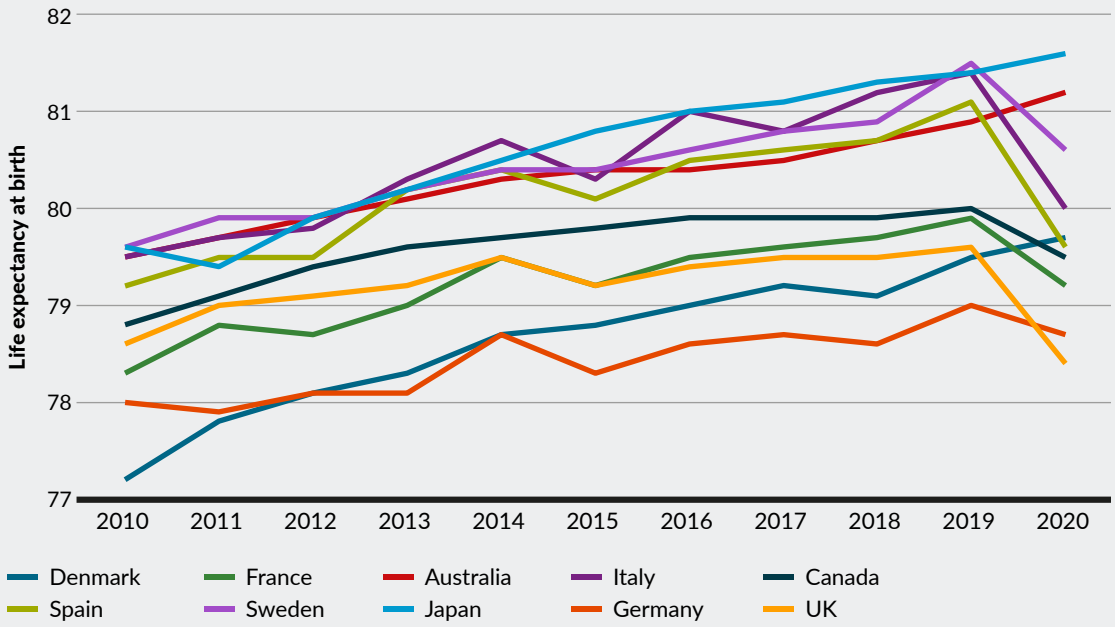
Covid-19. In addition to their large direct contribution to overall mortality, they contributed to 75 per cent of Covid-19 deaths in 2020 and 2021 (Office for National Statistics (ONS) 2022c).

With Covid-19 deaths subsiding in 2022, there has been a return to pre-pandemic mortality patterns, with heart disease and stroke again among the leading causes of death in 2022 (Figure 1).

After 2010, improvements in life expectancy stalled, with the slowdown in CVD mortality improvements being a significant factor (Raleigh 2022b; Public Health England 2018c; Public Health England 2018e). In 2020, the pandemic caused a sharp fall in life expectancy. Reducing CVD mortality will be key to improving life expectancy again, especially with the ongoing risk of resurgences in Covid-19.

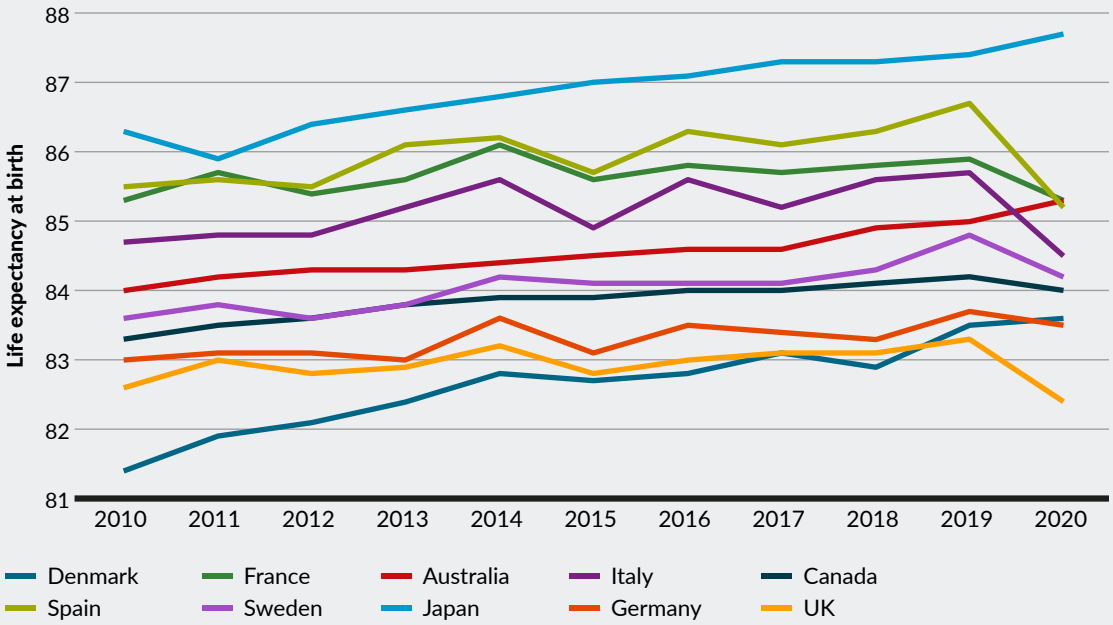
The UK's life expectancy compares unfavourably with many comparator countries (*see* Figures 2 and 3) (Raleigh 2022b), especially for females, and the UK has seen the least improvement since 2010. It has also seen larger falls during the pandemic relative to several comparator countries, slipping further behind.

Figure 2 Life expectancy at birth in selected OECD countries, males, 2010–20



Source: OECD 2022

Figure 3 Life expectancy at birth in selected OECD countries, females, 2010–20



Source: OECD 2022

CVD is a major contributor to health inequalities

CVD is a major contributor to health inequalities and the pandemic has amplified health inequalities even further (Raleigh 2022). However, CVD can also help to reduce inequalities: whereas most causes of death contributed to the widening of inequalities in life expectancy in England from 2001 to 2016, inequalities in mortality from ischaemic heart disease narrowed, and therefore its contribution to inequalities in life expectancy declined (Bennett *et al* 2018).

Gender

Although CVD affects men more than women overall, there are gender differences in the diagnosis and management of CVD. International evidence shows that women at risk of or with CVD are less likely to be prescribed medication (Zhao *et al* 2020); they are also more likely to be misdiagnosed, have a worse prognosis and higher mortality than men after acute CVD events (Wenzl *et al* 2022; Gao *et al* 2019). Data for England also shows gender differences in prescribing for CVD and

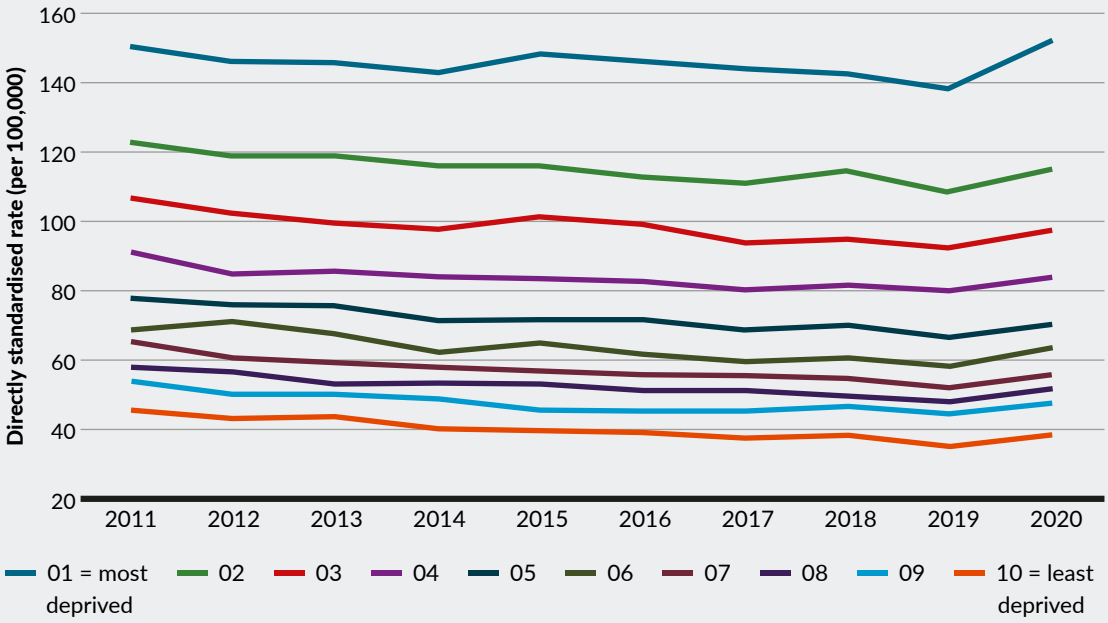
related conditions (Healthcare Quality Improvement Partnership 2022; Bostock 2021; Pinho-Gomes *et al* 2021), and lower uptake of cardiac rehabilitation (British Heart Foundation (BHF) 2020).

Deprivation

People in the most deprived areas of England are four times more likely to die prematurely from CVD than those in the least deprived areas (Figure 4) (Public Health England 2019). CVD is the largest contributor (one-fifth) to the life expectancy gap between the most deprived and least deprived communities (Figure 4), equivalent to a reduced life expectancy for the most deprived groups of nearly 2 years for males and 1.4 years for females.

Higher CVD prevalence among deprived communities also contributed to higher mortality from Covid-19 among those communities – 2.6 times higher in the most deprived compared with the least deprived decile of areas (Office for Health Improvement and Disparities 2022a).

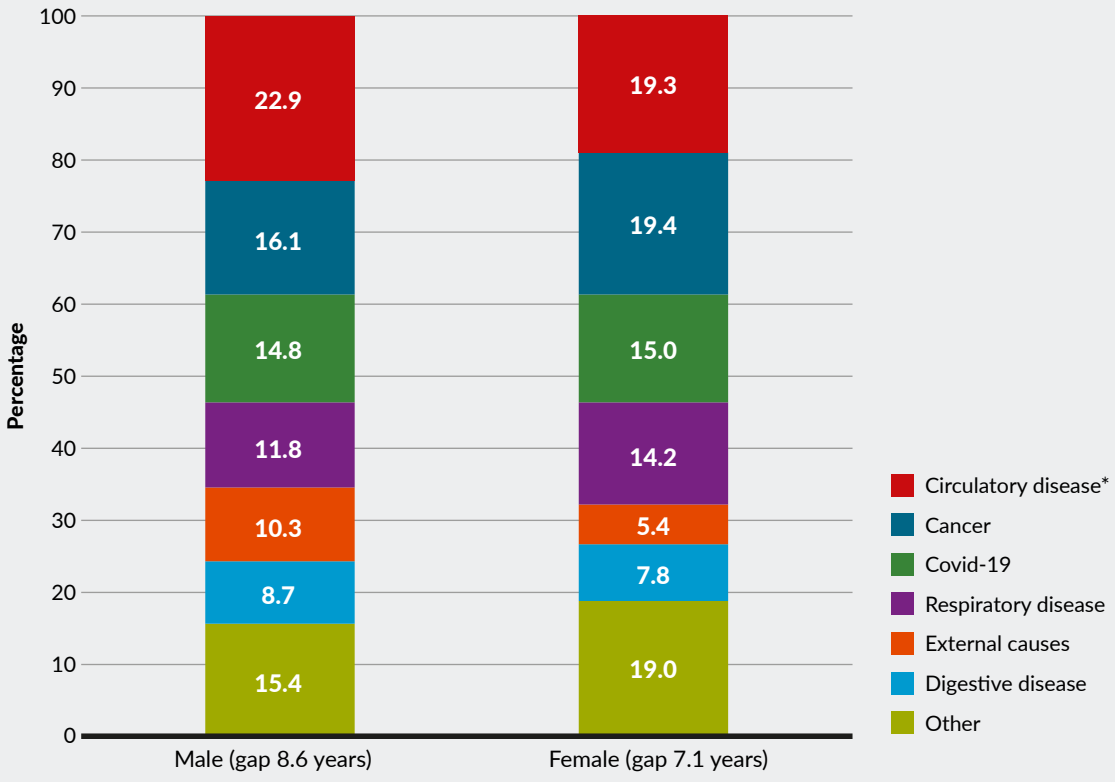
Figure 4 CVD age-standardised mortality rates per 100,000 population at ages under 75 by deprivation decile, England, 2011–20



Source: OHID 2022a

Higher CVD prevalence in deprived communities reflects the higher prevalence of risk factors among those communities. For example, people in the most deprived communities are 30 per cent more likely to have high blood pressure (Public Health England 2019) and smoking prevalence is 27 per cent in the lowest income quintile compared with 10 per cent in the highest (NHS Digital 2020b). To illustrate: CVD mortality in Blackpool – one of the most deprived local authorities in England – is nearly double that in Westminster, at 300 compared to 160 deaths per 100,000. The prevalence of smoking and hypertension in Blackpool Clinical Commissioning Group (CCG) is 24.6 per cent and 17.9 per cent respectively, whereas in North Central London CCG (which includes Westminster), prevalence is 16.5 per cent and 10.7 per cent respectively.

Figure 5 Breakdown of life expectancy gap between the most deprived and least deprived quintile of areas by cause of death, England, 2020–21



* The term 'circulatory disease' has a slightly broader definition but is largely synonymous with CVD. It is covered by Chapter 9 in the World Health Organization's (WHO) *International Classification of Diseases 10*, which is used internationally for classifying the causes of morbidity and death.

Source: OHID undated d

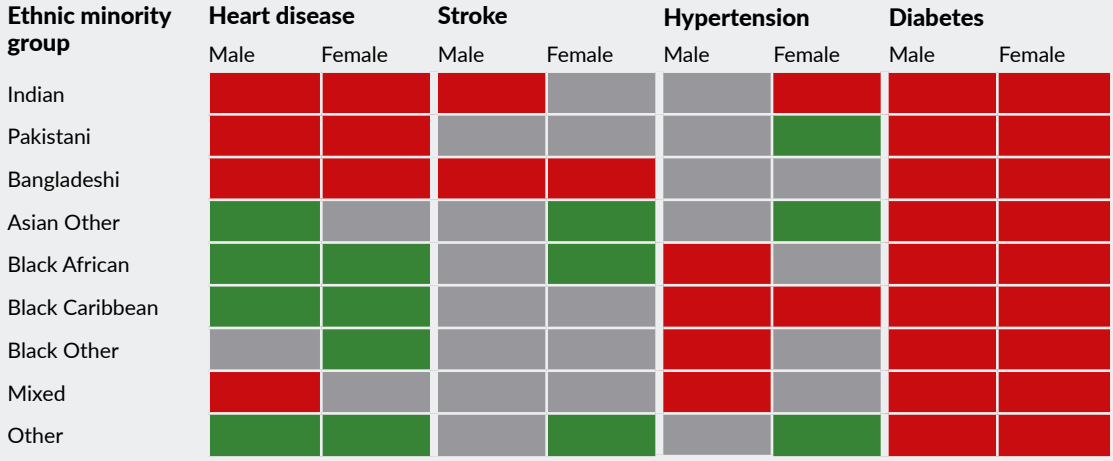
Ethnicity

South Asian and Black groups are at higher risk of CVD compared with white groups, but there are significant differences even within these minority groups (Figure 6). For example, in England and Wales:

- mortality from heart disease is highest among Bangladeshi, Pakistani and Indian groups (ONS 2021c). South Asians globally have a higher risk of heart disease (Franke *et al* 2021; Bhopal 2019)
- stroke mortality is highest among the Bangladeshi group (ONS 2021c)
- Black Caribbean, Black African and Black Other groups have the highest mortality from hypertensive disease (ONS 2021a)
- diabetes prevalence and mortality is highest in all South Asian and Black groups (ONS 2021c; Raleigh and Holmes 2021).

The higher prevalence of CVD and risk factors in these communities contributed to their significantly higher mortality from Covid-19 throughout the pandemic (ONS 2022e).

Figure 6 Ethnic differences in age-standardised mortality rates for selected causes of death: England and Wales, 2017–19



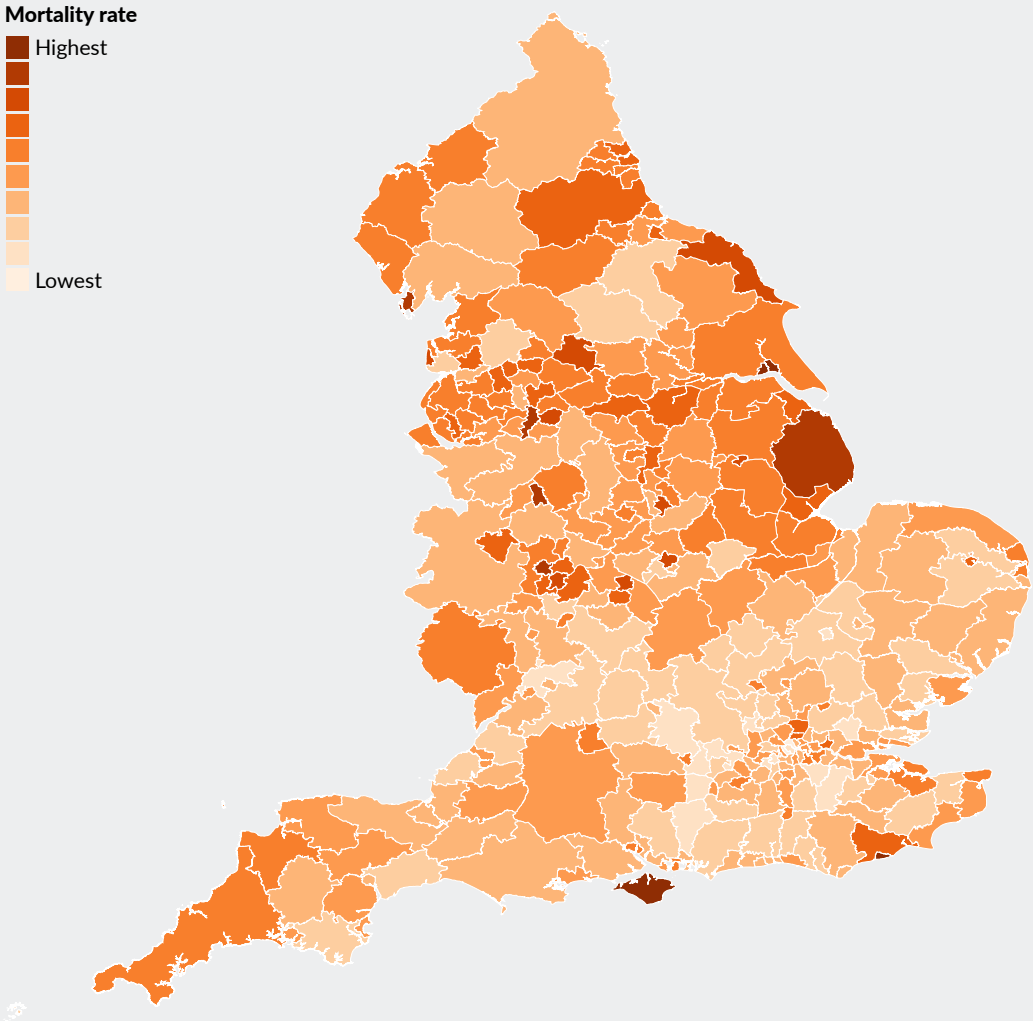
Statistically significant differences from the white group are shown as follows:
Higher mortality Lower mortality No difference.

Source: ONS 2021b

Geography

CVD mortality shows a pronounced north–south gradient in England (Figure 7), broadly reflecting a deprivation gradient. Geographic inequalities also reflect other differences – for example, in the ethnic mix of the population, the prevalence of risk factors, and the quality of local services (Bhatnagar and Townsend 2016; Kumar and Dalton 2013).

Figure 7 Circulatory disease mortality in England: age-standardised mortality rates per 100,000 population by local authority, England, 2020



* The term 'circulatory disease' has a slightly broader definition but is largely synonymous with CVD.

Source: ONS 2022b

Mental illness

Life expectancy among people with severe mental illness is about 20 years lower compared with the general population, with CVD being the biggest cause of their premature mortality (NHS England 2019c). More than 550,000 people with severe mental illness are registered with a GP. Among this group, smoking prevalence is 40.5 per cent compared with 15.9 per cent in the general population; people with severe mental illness also have double the risk of obesity and diabetes, three times the risk of hypertension, and five times the risk of unhealthy cholesterol levels.

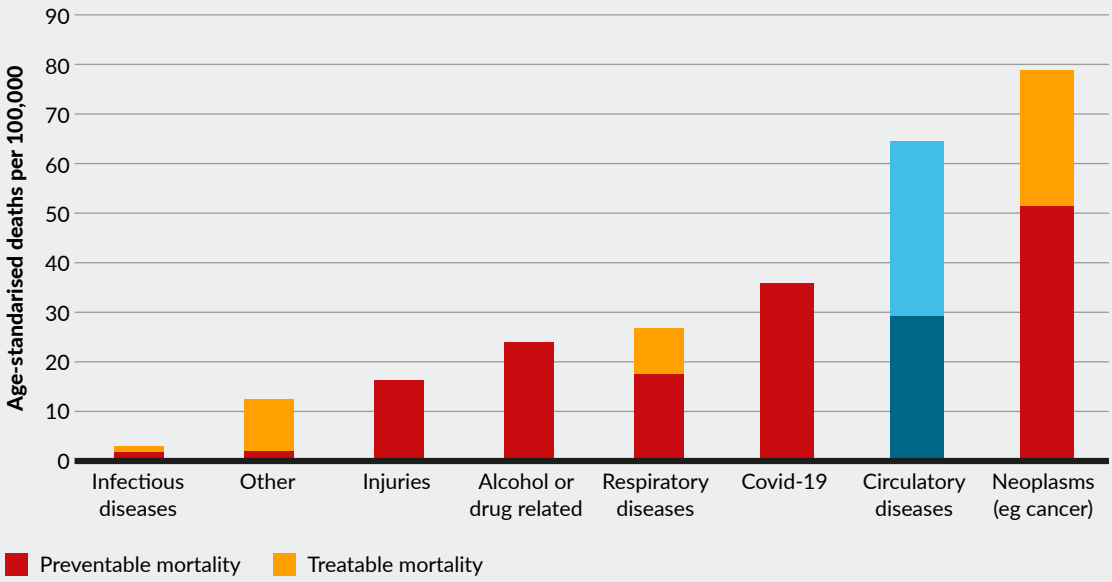
CVD is largely preventable

Most CVDs are long term and progress along pathways, offering many opportunities for intervention to reduce the risk of developing CVD and of disease progression among those who do develop CVD (NICE 2020). Modifiable risk factors explain 90 per cent of CVD incidence (Collins *et al* 2022) and up to 80 per cent of premature deaths from CVD are preventable (Public Health England 2017).

The heavy disease and mortality burden of CVD can be significantly reduced by wider and more uniform use of interventions for preventing and managing it. For example, mortality reductions can occur within 1 to 3 years of dietary changes and within months of decreased smoking (Capewell and O'Flaherty 2011); and reducing salt consumption by 1 gram per day could prevent 1,500 premature deaths from heart attacks and strokes, and save the NHS more than £140 million annually (NHS England 2019a).

Despite being largely preventable, CVD is the second largest contributor to avoidable (ie, preventable and treatable) deaths in England (Figure 8). In 2020, it caused nearly 1 in 5 preventable deaths and 1 in 2 treatable deaths (ONS 2022a).

Figure 8 Causes of avoidable deaths: age-standardised preventable and treatable deaths per 100,000 population, England 2020



* The term 'circulatory disease' has a slightly broader definition but is largely synonymous with CVD.

Source: ONS 2022a

CVD increases the risk of severe illness and death from Covid-19

People with CVD and associated risk factors (eg, obesity, diabetes and hypertension) have a 3.9 times higher risk of developing severe Covid-19 and a 2.7 times higher risk of dying from Covid-19 (Bae *et al* 2021; Bueno 2021; NHS Health Check 2021; Thompson and Thompson 2021).

Covid-19 also increases the risk of subsequent cardiovascular problems, including heart attack and stroke, and long-term damage to the CVD system (Sidik 2022; Cenko *et al* 2021; NHS Health Check 2021; Raisi-Estabragh *et al* 2022; The Lancet Regional Health Europe 2021). An estimated 2 million people in the United Kingdom have long Covid, prevalence being highest among people aged 35–69, among deprived groups and those with another health condition or disability (ONS 2022d).

Reducing the prevalence of CVD is vital for mitigating the potential adverse health impacts of 'living with Covid' – given that the risk of further resurgences and virulent mutations of the virus remains for the foreseeable future.

Missed care and backlog of care for CVD

The pandemic significantly disrupted care for non-Covid conditions, including CVD, and has made waiting lists and times even longer than they were pre-pandemic. GP consultations and referrals to specialist services, accident and emergency (A&E) attendances, and hospital admissions for CVD-related conditions fell significantly during the pandemic (Patel *et al* 2021; National Institute for Cardiovascular Outcomes Research (NICOR) 2020; Public Health England 2020a).

Opportunities for CVD prevention and early detection were missed and there is a large backlog of people needing CVD care, with long waiting times. This leaves many people at high risk of heart attack and stroke, which may even be fatal. The following statistics illustrate the scale of the challenge.

- There was a significant fall in the number of NHS Health Checks (Thompson and Thompson 2021).
- Compared to 2019, between March 2020 and December 2021, fewer new cases were recorded: coronary heart disease 65,000; atrial fibrillation 59,000; stroke and transient ischaemic attacks (TIAs) 26,000; heart failure 17,000 (Department of Health and Social Care 2022a).
- It is estimated that almost half a million fewer people initiated antihypertensive treatment across England, Scotland and Wales from March 2020 to May 2021 compared to 2019, which could result in almost 14,000 CVD events, including heart attacks and strokes (Dale et al 2022).
- Regions with high heart disease mortality have experienced some of the steepest falls in diagnostic tests, which means the large backlog is also unequally distributed (Patel *et al* 2021).
- Cardiac waiting lists in England grew to almost 320,000 by April 2022 (Blake 2022c), with patients waiting longer for diagnostic tests and treatment, including potentially life-saving procedures.
- The proportion of people with type 2 diabetes receiving all nine care processes fell from 52 per cent in 2019/20 to 21 per cent in 2020/21, and only 37 per cent met the treatment targets for blood pressure, blood sugar and statins prescribing (NHS Digital 2022a).

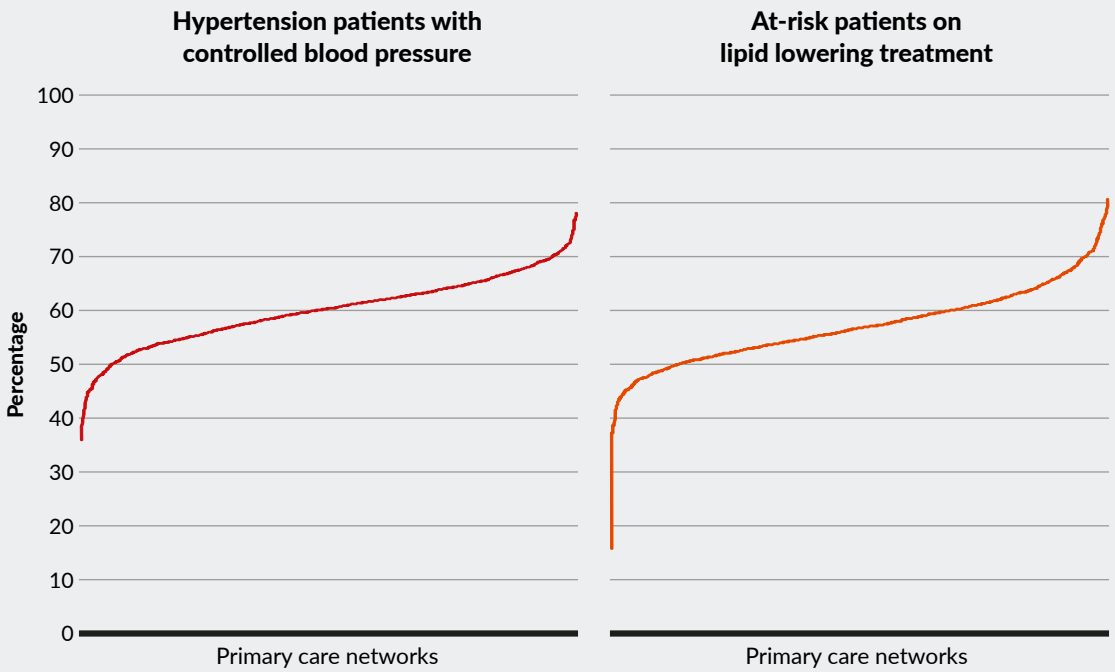
CVDs are long-term conditions, and most of the service disruption during the pandemic has been to early detection and secondary prevention, which means that the biggest impacts are yet to unfold. Unless steps are taken now to address missed CVD diagnoses, treatment initiations and elective procedures, preventable morbidity and deaths are inevitable.

Prompt cardiac care can be a matter of life and death. There is growing evidence that the deficits in CVD care and pressures on emergency (A&E and ambulance) services are causing harm to patients and even resulting in deaths. For example, there are indications that CVD and diabetes are major contributors to the rise in 'excess' deaths in England and Wales since April 2022 compared with previous years (**McDonald 2022**; **Raleigh 2022a**; West 2022). The category 2 ambulance response time target for suspected heart attack and stroke patients is 18 minutes; the average response time in July 2022 was 1 hour (**Association of Ambulance Chief Executives 2022**). Call to arrival at hospital time for strokes in April 2022 was 30 minutes longer on average compared to 2019/20 (**NHS England 2022a**). Deaths at home have increased sharply during the pandemic, and ischaemic heart disease is a leading cause of death among those dying at home (**ONS 2021a**) – which could reflect an unwillingness or inability to access NHS care in an emergency.

There are significant local variations in clinical care for CVD

There is wide local variation in care for people with CVD, and late diagnosis and under-treatment are common. This means there is significant potential for reducing clinical variations locally. For example: the uptake of NHS Health Checks fell during the pandemic, with only 40 per cent of the 1.4 million people invited in 2021/22 taking up the checks, and with wide variations locally (**Office for Health Improvement and Disparities 2022b**). There are also wide variations in treatment for high cholesterol levels and blood pressure control (*see* Figure 9).

Figure 9 Local variation in blood pressure control and lipid treatment, per cent of adults by primary care networks, England, March 2022



Source: CVDPREVENT undated b

Trends in key risk factors for CVD are worsening

The pandemic has exacerbated adverse trends in key CVD risk factors, as the following statistics illustrate.

- *Obesity*: The pandemic has seen a sharp rise in obesity and overweight prevalence to 40 per cent in children aged 10–11 years (Office for Health Improvement and Disparities 2021b). Although data on adult obesity pre-dates the pandemic, it showed a rising trend, with about two-thirds of adults being overweight or obese in 2019 (Office for Health Improvement and Disparities 2021a). Socio-economic inequalities in obesity are large and widening (NHS England 2019b). The United Kingdom has the fourth-highest number of overweight and obese adults in Europe (World Health Organization 2022).

- *Smoking:* Prevalence continues to decline but is still at 15 per cent of adults and there are marked socio-economic gradients – 1 in 4 people in routine and manual occupations smoke compared with 1 in 10 in managerial and professional occupations (ONS 2020).
- *Alcohol consumption:* Drinking among adults and the proportion of heavy drinkers in the United Kingdom is higher than the OECD average (OECD 2021). Excess alcohol consumption was rising pre-pandemic and increased during the pandemic, leading to a 21 per cent rise in alcohol-related deaths in 2020 (BMA 2022; Roberts 2022; Patel *et al* 2021; Public Health England 2021). Alcohol-related hospital admissions and deaths are significantly higher among deprived communities (Everest *et al* 2022).
- *Physical activity:* The pandemic had a negative impact on physical activity in some groups at risk of poor health, such as people with a higher BMI, on lower incomes, from ethnic minority groups, and with high-risk medical conditions (BMA 2022).
- *Diabetes:* Diabetes prevalence is rising; it is higher in deprived areas and up to six times higher among South Asian and Black communities (NHS England 2019b).

There is potential for large cost savings and economic gains

CVD adds significantly to NHS and social care workloads and costs, and has wider economic costs to society. For example, hypertension accounts for 12 per cent of all GP visits, at an estimated annual cost of more than £2 billion (Public Health England 2019); it leads to 1 million disability-adjusted life years and almost 180,000 years of life lost (Public Health England 2019). There were about 1 million hospital admissions for CVD in England in 2019/20 (NHS Digital 2020c), leading to 5.5 million bed days. The overall health care costs of CVD in England are estimated at £7.4 billion annually (Public Health England 2019), and the cost to the wider economy is estimated at £15.8 billion.

As cardiovascular diseases are often long term and debilitating, people with CVD sometimes need rehabilitation or long-term care. It is estimated that 1 in 6 people will have a stroke during their lifetime (Public Health England 2018d); social care costs of stroke survivors to the UK economy are estimated at £5.2 billion annually (Patel *et al* 2020), not including the costs of informal social care.

CVD is also a risk factor for dementia. The total annual cost of dementia is estimated at £24.2 billion for 2015, including £10.1 billion attributable to unpaid care (Wittenberg *et al* 2019). Sixty per cent of people receiving domiciliary care and 69 per cent of care home residents have dementia (**Alzheimer's Research UK undated**).

CVD and its risk factors (such as diabetes and obesity) are associated with worse employment prospects, wages and labour productivity (**Smith *et al* 2022**; **Devaux and Sassi 2015**). In an ageing society, reducing the impact of chronic disease can lead to a larger, healthier and more productive workforce. But despite an increase in life expectancy to 2017–19, the proportion of life spent in good health has fallen since 2009–11 for males and females in England; disability-free life expectancy is also falling (**ONS 2021b**).

The total cost of CVD incidence in England and Wales continuing to plateau at the 2011 level, as compared with a decline in line with the pre-2011 trend, is estimated at approximately £54 billion by 2029 – of which £13 billion is health care costs, £1.5 billion social care costs, £8 billion informal care, and £32 billion value of lost quality-adjusted life years (Collins *et al* 2022).

5 What is the current context? Accelerating progress on CVD during post-Covid recovery

Having argued for prioritising the reduction and effective management of CVD nationally and locally, we now outline how progress on tackling CVD can be accelerated.

The challenging post-Covid-19 environment

The health and care system is facing unprecedented challenges. Years of funding shortfalls and workforce shortages, combined with increasing demand, were leading to rising waiting times and pressures on all services even before the pandemic (The King's Fund 2022). The pandemic created additional pressures. NHS capacity is even more overstretched now, with unprecedented backlogs of care and undiagnosed disease leading to competing demands, in addition to the requirements of an ongoing pandemic and an ageing population.

However, while there is a very clear and urgent need to address the significant capacity deficits in the NHS, there is also significant unrealised potential to reduce demand-side pressures by tackling CVD more vigorously. This is because, as already stated, much of CVD is preventable, including by reducing risk factors that are also major contributors to morbidity and mortality from other conditions. The stakeholders we spoke to were optimistic about the prospects for addressing CVD and stressed that it was key to reducing demand pressures on the health and care system and making cost savings. They wanted a stronger focus on primary and secondary prevention of CVD, in particular, as areas that saw significant setbacks during the pandemic but also offer potential for significant health gain.

The CVD pathway and opportunities for intervention

Most CVDs are long term, and so there are many opportunities for intervention by national and local leaders – from reducing the risk of a person developing CVD to slowing disease progression among those who do develop it (*see* box).

CVD pathway: opportunities for improving health outcomes

Primary prevention

Progress in tackling CVD must start with reducing the risk factors that cause it, such as smoking, lack of physical exercise, unhealthy diet, obesity and excess alcohol consumption. These are also risk factors for other leading causes of morbidity and mortality, such as diabetes, cancer, dementia and Alzheimer's disease, mental health problems, liver and respiratory disease, and Covid-19. A reduction in these drivers will improve overall population health and life expectancy, reduce inequalities, and decrease workloads and costs for health and social care services. While local authorities and public health teams have a key role to play in primary prevention, the NHS also has significant opportunities for promoting healthy behaviours.

Secondary prevention

Secondary prevention is about detecting and managing risk factors and comorbidities to reduce the risk of people developing CVD, and of managing CVD among those who do develop it. It is delivered largely within primary care. Early detection, management and treatment of common risk factors such as high blood pressure and cholesterol, atrial fibrillation and diabetes is key for reducing the risk of acute events or recurrences in people with CVD such as heart disease, stroke, heart failure and heart valve disease.

Acute, emergency and specialist care

Some people will unavoidably progress to more advanced disease – for example, due to ageing – and will require emergency care or medical and/or surgical interventions (eg revascularisation for restoring blood flow in blocked arteries or veins, care for stroke or heart failure, or interventions for heart valve disease). The impact of acute

continued on next page

CVD pathway: opportunities for improving health outcomes *continued*

manifestations of CVD can be mitigated by access to timely, evidence-based health care. Secondary care providers also play a role in secondary prevention – for example, in care for patients discharged from hospital after a heart attack or stroke.

Post-discharge and long-term care

Timely, co-ordinated care after an acute CVD event can reduce the risk of recurrence, hospital admission, disability and death. Many people with long-term CVD conditions will have comorbidities and require care by multidisciplinary teams, co-ordinated across multiple providers and services. Access to cardiac rehabilitation services (for instance, for those with a heart attack, stroke or heart failure) can improve quality of life and reduce hospital admissions for recurrences.

6 Accelerating progress on CVD: the role of national leaders

Where are we now at a national level?

The CVD goals in the NHS Long Term Plan (NHS England 2019b) include an ambition to prevent 150,000 strokes, heart attacks and dementia cases over 10 years by improving the detection and treatment of 'ABC' (atrial fibrillation, high blood pressure and high cholesterol). They also aim for earlier diagnosis in primary care of heart failure and heart valve disease, improved support by multidisciplinary teams and improved access to cardiac rehabilitation services. The NHS Long Term Plan is due to be updated.

Other CVD-related national policies and programmes include: NHS Health Checks (NHS 2019); the Cardiac Pathways Improvement Programme (NHS 2021); CVDPREVENT audit (CVDPREVENT undated a); and the CVD Prevention Recovery Programme (NHS England 2022b), which includes Blood Pressure @home (NHS England undated c) and Making Every Contact Count (NHS Health Education England undated).

Guidelines and standards for CVD care include: the National Institute for Health and Care Excellence (NICE) range of guidance and quality standards (NICE 2021b); NHS RightCare's pathway guidance (NHS England 2016) and stroke toolkit (NHS RightCare 2022); and the Getting It Right First Time (GIRFT) programme's cardiology workstream (GIRFT undated). The Quality and Outcomes Framework (QOF) (NHS England and NHS Improvement 2022b) for primary care includes measures on CVD and related conditions, and a Directed Enhanced Service (DES) relating to CVD was added for 2022/23 (NHS England 2022d).

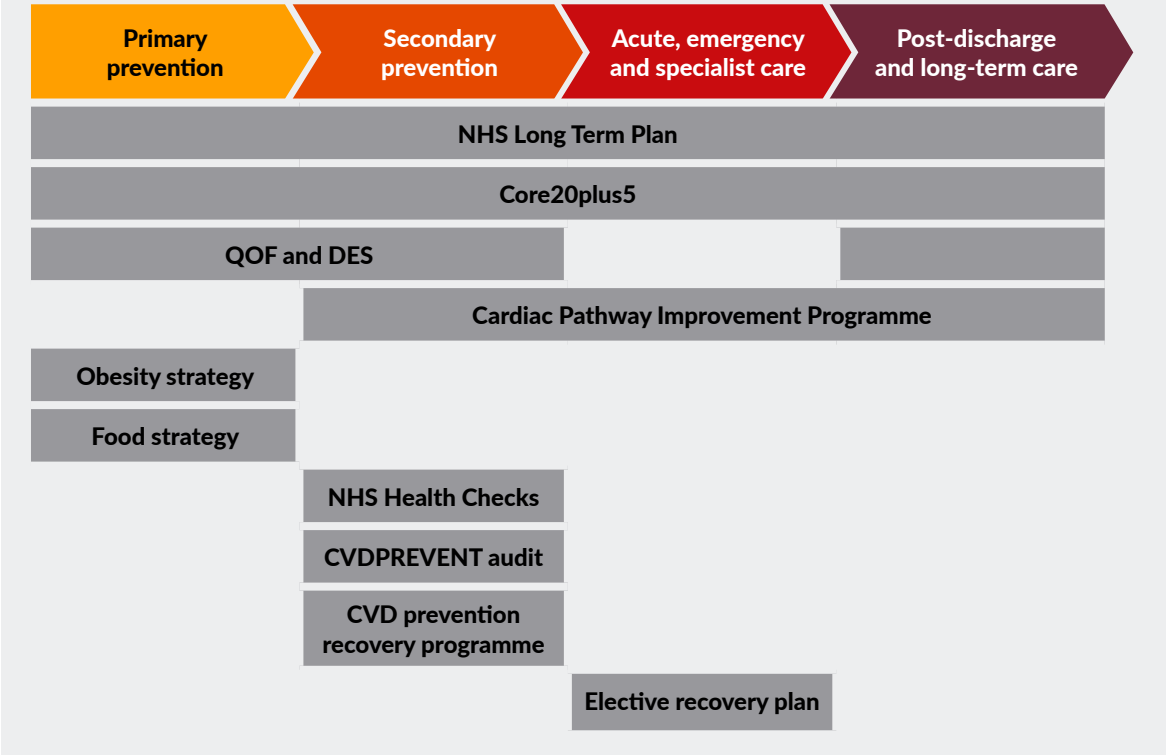
Proposed priorities for national CVD strategies

Our review of the evidence and current state of play with CVD, and the feedback from stakeholders, shows that the following should be urgent priorities for the government, the Department of Health and Social Care, NHS England and other national bodies if the challenge of CVD is to be addressed.

Delivering a coherent national CVD strategy

Current policies and guidance (*see* Figure 10) are helping to create a national focus on CVD. Stakeholders we spoke to were largely positive about the national landscape but almost unanimous that it was 'fragmented', 'siloed' and lacking an overall structure, and that there was insufficient alignment between the multiple initiatives and links with related conditions (eg, diabetes). Some stakeholders also spoke of funding for CVD initiatives being similarly fragmented, which was hindering progress.

Figure 10 Policies relating to CVD



The current CVD policy landscape is not ambitious enough to realise the full potential that improved CVD prevention and care offers for promoting population health, narrowing health inequalities, and reducing NHS and social care workloads and costs. To achieve this requires a comprehensive national CVD strategy that articulates this potential, how it can be achieved nationally and locally, and defines accountability for delivery. The strategy needs to cover the CVD pathway, including primary prevention, given ICSs' statutory responsibilities for improving population health and reducing inequalities.

Reducing CVD and the demand for health and social care

Bolder, evidence-based policies are needed to reduce CVD risk factors, which cause an enormous and unequal burden of morbidity, disability and mortality, not just from CVD but also many other non-communicable diseases, and now also Covid-19. Stakeholder feedback was virtually unanimous that primary and secondary prevention of CVD needs to be a priority. Unless this happens, the disease burden and costs facing the NHS, social care and society will continue to rise and inequalities will widen further.

There is sound evidence that fiscal, regulatory and statutory measures can be effective in tackling CVD risk factors, and are often supported by the public (**Everest *et al* 2022**; **Beech *et al* 2020**; **OECD and The King's Fund 2020**; **OECD 2019**; **Public Health England 2018e**). Such measures need to be supplemented by targeted support for disadvantaged communities and individuals who may face particular challenges in adopting healthier lifestyles (**Lawson 2018**). The government's soft drinks industry levy on sugar introduced in 2018 reduced sugar consumption (Pell *et al* 2021) and there is far greater scope for such measures. However, the evidence suggests that current policies and strategies are not bold enough (**BMA 2022**; **Everest *et al* 2022**).

The government has failed to follow the evidence and recommendations of independent reviews of measures designed to reduce risks to public health. So far, it has: decided against recommendations for additional taxes on salt and sugar (**Department for Environment, Food and Rural Affairs 2022**; **National Food Strategy 2021**); pushed back on key initiatives in the obesity strategy (**Department of Health and Social Care 2022b**); and is yet to respond to recommendations in the Khan review of smoking (**Khan 2022**). There are indications that the rollback of public health measures designed to protect and promote health may continue.

Tackling the backlog of and emergency care for CVD

People with CVD and diabetes are suffering harm and excess mortality caused by missed routine checks during the pandemic, long delays for ambulances and other emergency care, and waits for elective care (**Association of Ambulance Chief Executives 2022**; **Blake 2022b**; **McDonald 2022**; West 2022).

While there are signs of some catch-up on routine CVD tests that were missed, there has been much lost ground in detecting and managing the large numbers of people with (for example) undiagnosed and uncontrolled 'ABC', and those with diabetes or heart failure. Primary care has a key role in secondary prevention but is under unprecedented pressures as it is coping with large backlogs of care, delivering a record number of appointments, and facing a large and growing shortage of GPs. Adequate government support for general practice is imperative for reducing potentially avoidable CVD events that would increase the burden of ill health and add to pressures on acute and emergency services.

There are no signs of the pressures on emergency services abating and, despite new ambitions in the elective recovery plan (**NHS England 2022f**), elective waiting lists and waiting times for CVD care continue to grow (**Blake 2022a**; **NHS England 2022c**).

Stakeholders reinforced calls for the government to address the funding and workforce crisis in health and social care (**The King's Fund 2022**, **2021**). While we recognise that these are chronic, systemic issues, delays in CVD care can be life-threatening. There is therefore an urgent need for rapid progress on the elective recovery plan and wider roll-out of shorter-term initiatives to improve access to services, such as community diagnostic centres; a specific protocol for CVD risk factor detection in Making Every Contact Count; surgical hubs; and NHS England's 2021 commitment to introduce 'health MOTs' including blood pressure, heart-rhythm and cholesterol checks at vaccine appointments (**NHS England 2021**).

Reducing health inequalities caused by CVD

The pandemic has shone a light on the large and widening health inequalities in England. A systematic review shows that it is possible to reduce health inequalities in England through long-term, multi-agency government action (Holdroyd *et al* 2022). CVD is the largest contributor to health inequalities in England, but its potential for reducing health inequalities (Bennett *et al* 2018) can be exploited further.

Tackling inequalities is central to the triple aim duty on NHS organisations in the Health and Care Act 2022. NHS England's flagship policy on inequalities is the Core20PLUS5 framework (**NHS England undated a**). The populations identified in this framework are disproportionately affected by CVD, and hypertension is one of the five clinical priority areas identified in the framework.

Stakeholders we spoke to considered Core20PLUS5 a useful framework for addressing health inequalities associated with CVD. However, the scale of health inequalities, and post-pandemic trends, call for a more ambitious, co-ordinated, cross-government policy for reducing health inequalities, with clear goals, timelines and accountability mechanisms at national and local levels (**Lewis *et al* 2022**). If inequalities are to be addressed, tackling CVD needs to be at the heart of this policy, given its impact on population health and inequalities. It would be a missed opportunity if the delayed White Paper on disparities does not follow the evidence by taking a strong lead on reducing the underlying risk factors that drive ill health and health inequalities, and the burden of potentially preventable morbidity – including from CVD – that the NHS has to deal with as a consequence.

7 Accelerating progress on CVD: the role of local leaders

Where are we now at a local level?

CVD exemplifies why local integrated care is so important. Everyone in a local public health or health and care system has a role to play in addressing CVD, both in terms of preventing it and because people with CVD are likely to interact with several parts of the system over the course of their lifetime. The advent of ICSs, with their partnerships across multiple local stakeholders, therefore brings new opportunities to address CVD by developing locally relevant CVD strategies that can be implemented at scale and at population level.

There are compelling arguments for all ICSs to prioritise CVD in their local strategies because the benefits speak directly to their core aims (*see* Table 1) (NHS England 2022g).

Table 1 Core aims of integrated care systems

Core aim of ICSs	Impact of CVD
Improve outcomes in population health and health care	CVD is a major contributor to morbidity, disability, mortality and premature mortality, despite much of it being preventable and treatable. CVD risk factors are common to other major conditions such as cancer and dementia, and account for a high proportion of overall morbidity.
Tackle inequalities in outcomes, experience and access	CVD accounts for one-fifth of the life expectancy gap between the least deprived and most deprived areas; South Asian and Black groups are at high risk of CVD; and there are marked inequalities in access to, uptake and outcomes of CVD services.
Enhance productivity and value for money	Reducing the impact of CVDs has significant potential for reducing NHS and social care workloads and costs. For example, social care for stroke survivors costs the UK economy £5.2 billion annually.
Help the NHS support broader social and economic development	Given the high prevalence of CVD, improvements in prevention and management will mean that many people live longer, healthier and more productive lives, which benefits (and can bring significant savings to) the economy and wider society. CVD costs the economy an estimated £15.8 billion a year.

Source: NHS England 2022g

Our proposals below for CVD are relevant for integrated care partnerships (ICPs) and integrated care boards (ICBs) who are currently developing their integrated care strategies and five-year system plans (Department of Health and Social Care 2022c). When forming and delivering CVD strategies, ICSs will need to consider the best footprint to work at: CVD initiatives could be at regional, ICS, place or neighbourhood level as appropriate, within a clear overall plan for CVD that defines roles, responsibilities and accountabilities.

Proposed priorities for local CVD strategies

Local CVD strategies will need to reconcile national ambitions and priorities with local population need and ambition. ICSs can incorporate their ambitions for CVD into their ICP integrated care strategies, which can be aligned with other local plans, such as the joint health and wellbeing strategies of health and wellbeing boards (Department of Health and Social Care 2022c). Below we identify some priorities that are likely to be relevant for all areas.

Reducing CVD and the demand for health and social care

CVD prevention should be core business for ICSs – in particular local authorities and local public health teams – given the significant potential for population health gain, reducing inequalities, and cost savings from reduced demand. Local leaders can supplement national strategies by making prevention everyone's business – for example, ensuring that all NHS and social care organisations address risk factor reduction, working with local authorities and their public health teams. Joint commissioning of CVD prevention by the NHS and local government could be cost effective and high impact.

Tackling the backlog of and emergency care for CVD

Improving the detection and management of CVD risk factors – for example, by opportunistic testing at health care contacts where possible, extending invitations for NHS Health Checks, applying the NHS RightCare CVD prevention pathway and similar tools, and by using community-based options – needs to be an urgent priority. Many people with undiagnosed heart failure could be diagnosed earlier: 80 per cent of heart failure is diagnosed in hospital but 40 per cent of people have symptoms that should have triggered an earlier assessment in primary care (NICE 2021b).

Primary care has a key role to play in primary and secondary prevention of CVD. The Directed Enhanced Service (DES) for CVD prevention and diagnosis that came into effect for primary care networks (PCNs) from April 2022 (NHS England 2022e) incentivises earlier detection and management of CVD risk factors and heart failure, and should help alleviate the setbacks to CVD care in general practice caused by the pandemic. PCNs are encouraged to nominate a lead for delivering the CVD requirement. Additionally, the Quality and Outcomes Framework includes physical health checks for CVD risk factors for patients with psychosis (NHS England and NHS Improvement 2022b), offering significant opportunities for early risk factor detection and management in a high-risk group.

NHS England's CVD Prevention Recovery Programme outlines how the diagnosis and treatment of CVD will be facilitated locally in the aftermath of the pandemic (NHS England 2022b). Local strategies for reducing delays in emergency care and the backlog of care for CVD can mirror national plans while also devising local solutions, such as using digital solutions to improve access to cardiac rehabilitation services (Chan 2019), and provider collaboratives for sharing and making efficient use of resources and tackling waiting lists (NHS England and NHS Improvement 2022a). Stakeholders noted that, in conjunction with local authorities, supporting people to be 'waiting well' offers opportunities to optimise health among the large numbers of people waiting for cardiac care.

Integrated care systems need to ensure that they address inequalities in these overdue CVD care needs among deprived and ethnic minority communities, for example.

Reducing clinical variation in CVD care

Many people are not receiving care in line with recommended guidance (NICE 2021b), with NICE and other standards and pathways being under-utilised, leading to unwarranted variations in clinical outcomes and inefficiencies. CVDPREVENT, the Quality and Outcomes Framework and clinical audit data all show that there is significant potential for reducing the wide local variations in CVD clinical process and outcome measures. Audit, peer review and support for underperforming teams can, as our case studies illustrate (*see* below), improve and reduce variations in the quality of care for CVD. Local strategies need to address

provider adherence with national standards and recommended pathways, using the rich CVD data available for benchmarking providers and learning from good practice examples. Cardiac networks also have a role to play in reducing clinical variation and inequalities.

Addressing comorbidities and co-ordination of care

Many people with CVD have multiple and sometimes complex comorbidities, requiring integrated continuity of care across multiple providers and services. Although clinical guidelines and practice often focus on individual conditions, integrated working – including through multidisciplinary teams and across clinical boundaries – can improve patient-centred care and outcomes. The NHS Long Term Plan states that people with heart failure and heart valve disease will be better supported by multidisciplinary teams as part of PCNs (**NHS England 2019b**), and NICE notes the need for improved access to and uptake of cardiac rehabilitation services (**NICE 2021b**).

Reducing health inequalities caused by CVD

Although CVD prevalence varies locally, given how widespread CVD is and the scale of health inequalities, it will be a major determinant of local population health and inequalities almost universally. Identifying and targeting high-risk communities to reduce CVD risk factors and to ensure that access to and uptake of care along CVD pathways is commensurate with need can reduce local health inequalities and improve overall population health. High-risk groups include women, people from deprived areas, South Asian and Black communities, and people with serious mental illness. Community outreach programmes for socially excluded populations – as during the pandemic – can improve access and uptake. The role of local authorities and their public health teams will be key, given their broader role in addressing the wider determinants of health by creating healthier local environments. Reducing inequalities should be everyone's business, including all health and care providers.

Supporting people to self-manage CVD and its risk factors

Supporting and empowering patients with CVD to manage their own care in line with personalised care plans – including remotely and by providing equipment as required – will enable patients to play a more active role in their care and release time for staff to support patients with more complex needs. A study of patients with long-term conditions found that if those least able to manage their conditions themselves were supported to manage them as well as the most able, there would be about 440,000 fewer emergency admissions and 700,000 fewer A&E attendances in England (**Deeny *et al* 2018**).

Increasing public awareness of CVD risk factors

To maximise impact, local strategies should raise public awareness about CVD risk factors and the need for timely health care, especially in high-risk communities. An example is Know Your Numbers, a campaign to raise public awareness of the need to measure one's blood pressure (**Blood Pressure UK undated**). Public awareness of some CVD risk factors that may not display symptoms (such as atrial fibrillation and hypertension) may be particularly poor.

Delivering local strategies

This section describes some key requirements for delivering effective CVD strategies locally.

Leadership

Tackling CVD requires strong local leadership and partnerships in delivering a system-wide approach to the use of population health and clinical intelligence to plan and deliver services, engage communities, and maximise the use of community assets. This includes the NHS and local government working jointly and with other local partners to address the wider determinants of health, behavioural risk factors and early detection of CVD risk factors.

Identifying CVD leads and champions

Integrated care systems need CVD leaders at all levels. The CVD Prevention Recovery Programme provides funding for CVD leadership posts in ICSs and local networks of clinical specialists to help co-ordinate care pathways (**NHS England 2022b**). Many ICSs now have dedicated CVD leads, but they also need leaders and champions across the whole system – for example, in PCNs, acute trusts, cardiac networks, social care providers, local authorities, and in communities themselves.

These CVD leads need to represent and champion the whole CVD pathway. We heard from stakeholders that local CVD leadership can be disproportionately drawn from the acute sector, which puts systems at risk of undervaluing CVD prevention. A member of a cardiac network who we spoke to recognised this issue in their own network and reset the balance by strengthening engagement with primary care.

Understanding your population's CVD needs

CVD risk factors and health status vary according to a range of factors, including gender, geography, deprivation, ethnicity and disability. How these characteristics intersect will differ for each ICS and for footprints within an ICS. There is rich data on CVD (*see* appendix). An important first step is to profile the prevalence of CVD and its risk factors, CVD health care needs, inequalities, and how all these have been impacted by the pandemic. Local CVD strategies will need to be tailored accordingly – for example, targeting outreach programmes in deprived areas and in South Asian and Black communities, given their high risk of CVD. Local public health teams, health and wellbeing boards, and partnerships with organisations that understand local populations and their health needs (including community groups, and voluntary, community and social enterprises) can provide relevant insights.

Defining CVD goals, strategies and accountabilities

It is vital that ICSs set clear CVD goals and priorities that bring together stakeholders from across the local system and create a joint purpose – or, as one interviewee described it, 'one version of the truth on CVD'. These goals need to align with national priorities, but also be specific to local circumstances, as each area will be starting from a different point and have different health needs to cater for.

Defining clear roles and lines of accountabilities will be important, as multiple organisations may be working towards the same goal. For example, directors

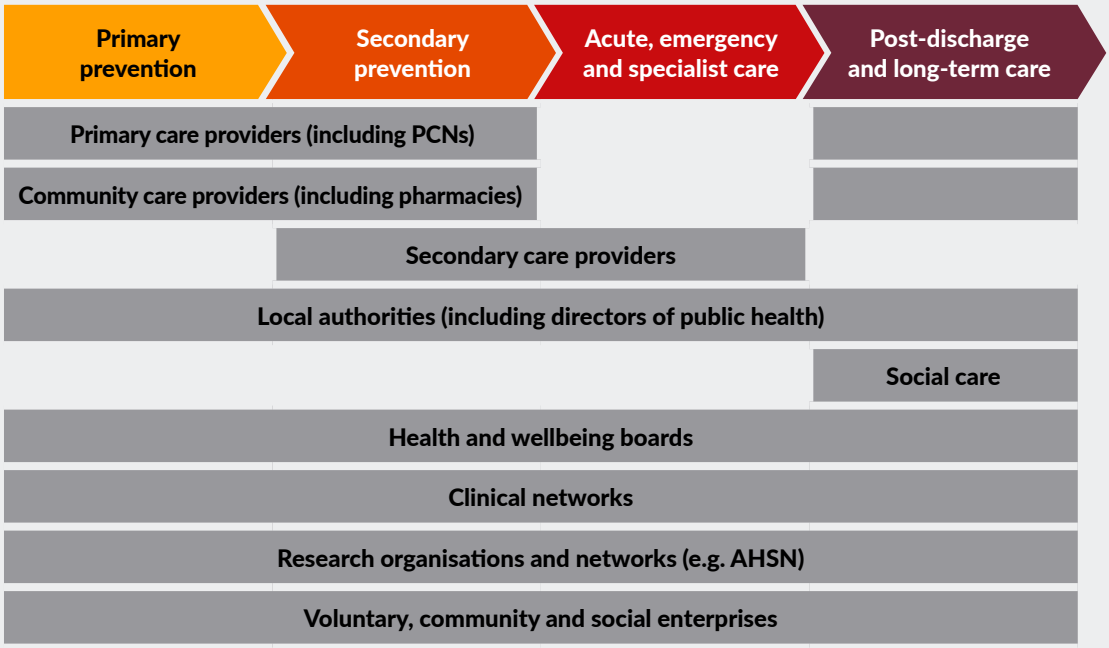
of public health, primary care networks, and voluntary, community and social enterprises may all be working on prevention initiatives like blood pressure monitoring, and a lack of accountability may lead to duplication or parts of the system thinking that prevention is 'someone else's job'.

Understanding the local CVD landscape and forming partnerships

Many local systems, partnerships and priorities are still in development and – according to the stakeholders we spoke to – the many different players are not always aligned on CVD. However, as systems bed down, and in developing their integrated care strategies, the new ways of working offer ICSs significant opportunities for implementing CVD prevention and management strategies that will support progress on their core aims.

Designing an effective local CVD prevention and management strategy and operational plan will require co-ordination and partnership-building with the many players on the CVD landscape (illustrated in Figure 11). This will enable ICSs to

Figure 11 Local organisations with a role in CVD prevention and care



identify opportunities to be creative, align strategies, pool resources, reduce duplication and address gaps. These partnerships offer unique opportunities for integrated working to deliver strategies that span the CVD pathway because each has something unique to bring to the CVD agenda.

Some partnerships may transcend ICS boundaries. For example, cardiac and stroke networks can be a useful intermediary between national and ICS strategies. Likewise, research organisations and networks can provide analytical insights and share best practice in CVD across ICSs. Examples include academic health science networks (AHSNs), who have their own CVD management programmes, and clinical effectiveness groups (**AHSN Network undated**).

Case study 1: Taking a partnership approach to CVD prevention

Location: Frimley Integrated Care System

Context: As part of its Living Well Strategic Ambition, Frimley ICS is aiming to increase healthy life expectancy and reduce health inequalities. The pandemic impacted 'ABC' (atrial fibrillation, high blood pressure and high cholesterol) detection and management negatively: hypertension patients with blood pressure controlled within the target range fell from 69.7 per cent in 2019/20 to 47.8 per cent in 2020/21, which could lead to an estimated additional 147 heart attacks and 220 strokes over three years. Frimley's focus is on hypertension, aiming to prevent up to 300 strokes and 230 heart attacks per year.

Solution: Each of the five places that make up the ICS is developing a tailored partnership plan to tackle hypertension over the course of 2022/23. Frimley's system leadership approach to hypertension aims to revolutionise the way CVD is prevented through cross-sector collaboration beyond just health partners and the integration of services. The Living Well Strategic Ambition has inspired a wider range of partners to collaborate on tackling high blood pressure within their area of scope. Collaboration has been made possible through diverse and multiple layers of distributed leadership at all levels, including clinical, professional and administrative leadership.

continued on next page

Case study 1 *continued*

The ICS is working with:

- communities – to raise awareness of hypertension and the importance of knowing their numbers, to educate and empower people to make lifestyle changes that can reduce high blood pressure
- PCNs – to provide support, develop joint plans, and align actions and pathways
- local authorities – to tackle the wider determinants of health and enable joint commissioning with the NHS
- pharmacies – to increase early detection by conducting blood pressure measurements.

Patient targeting and quality improvement, underpinned by routine use of Shared Care Record data from Connected Care, is embedded within the programme, which also aims to share best practice both from within Frimley and elsewhere.

Engaging communities in CVD

National voluntary organisations (such as the British Heart Foundation, Heart UK, Stroke Association, and Arrhythmia Alliance) and local voluntary organisations and charities, as well as those serving particular communities (eg, the Caribbean and African Health Network, and the South Asian Health Foundation), alongside community leaders, can play a key supportive role in delivering the CVD agenda – for example, by providing direction and guidance to ICSs, giving insights into different populations, helping to deliver initiatives and increasing public engagement.

There is widespread consensus and evidence that engaging and working with local communities is critical for understanding and addressing local health needs (**Buck *et al* 2021**; **Thorstensen-Woll *et al* 2021**). Community organisations and leaders will know best about (for example) how to raise awareness of CVD risk factors, communicate with and reach those with undiagnosed or uncontrolled risk factors, and encourage follow-up with GPs and compliance with medication or lifestyle changes. Community engagement is especially vital for engaging high-risk and socially excluded groups.

Case study 2: Addressing heart valve disease in Black African and Black Caribbean communities

Location: South East London

Context: Clinicians in the South London Cardiac Operational Delivery Network tackle the under-representation of Black African and Black Caribbean communities in South East London in the diagnosis and treatment of heart valve disease.

Solution: The Operational Delivery Network devised a service improvement project to understand beliefs, behaviours and perceptions of health services among these communities. They worked with Mabadiliko, a local community interest company with expertise in developing culturally sensitive information, to co-design a project targeting these communities, ensuring that the Mabadiliko team had a thorough understanding of heart valve disease. The project used qualitative and quantitative methods to gain insights into the beliefs, behaviours and perceptions of these communities and an evidence-based model for understanding health behaviours. The team has:

- developed culturally appropriate promotional materials to raise community awareness of heart valve disease, its symptoms and treatment; to improve service uptake; and to provide guidance for clinicians
- organised a mobile screening programme within the two communities
- collaborated with the UK charity Heart Valve Voice to help increase awareness of heart valve disease.

The team is analysing data to make and monitor service improvements. A report with recommendations will be produced in autumn 2022.

Expediting the task

It is possible to expedite the task of tackling CVD even within the unprecedented systemic constraints that health and care services are currently facing. We outline some suggestions below. Local organisations will also have other creative ways of addressing the challenges.

Use data and tools

The extensive and rich data from multiple sources on CVD risk factors, prevalence, mortality, clinical management, outcomes and inequalities available at geographical (eg, ICS and local authority), provider (eg, practice and trust) and patient levels (*see* appendix) surpasses data available for most other conditions. Examples are: NHS Digital's population-level public health data on CVD; the Office for Health Improvement and Disparities' CVD profiles and health inequalities monitoring tools; NHS England's CVDPREVENT clinical audit data for practices; data for hospitals from the Sentinel Stroke National Audit Programme; and the six clinical audits in the National Cardiac Audit Programme.

These datasets and tools can be used by many agencies and professionals, at different levels and for multiple purposes, in assessing CVD health needs and delivering care. For example:

- at population level for health needs assessments, identifying inequalities and high-risk populations, setting goals and monitoring progress
- at provider level for measuring access, quality improvement, benchmarking against peers, clinical variation, inequalities
- at patient level for risk stratification of patients and targeting clinical interventions
- integrated, interoperable records and record linkage in some local areas (for example, across primary, inpatient, outpatient, A&E services and mortality) is enabling clinicians to have a better understanding of patient needs and the quality of care along CVD pathways.

There is a plethora of examples of CVD data being used to target and improve the quality of care and outcomes for CVD, and for many the capability already exists across different teams – for instance, within clinical networks, PCNs, local

authorities and AHSNs. 'Sweating these assets' should be a core element in local plans for reducing the impact of CVD and improving clinical management of it. However, stakeholders noted that the data and tools were not always used to their full potential and there can be impediments and delays in sharing data nationally and between different parts of the system. Local leaders will need to support and facilitate the sharing of data and good practice examples of its use across local partners if the power of data and digitalisation is to be fully exploited for reducing the burden of CVD and improving the quality and delivery of care.

Case study 3: Using CVDPREVENT data for quality improvement in general practice

Location: Hampshire and Isle of Wight Integrated Care Board

Context: Medicines Optimisation teams optimise the treatment of high blood pressure, high lipids, and inherited high cholesterol (familial hypercholesterolaemia) in practices in their local area.

Solution: The Pharmacy CVD Prevention sub-team facilitates multidisciplinary educational outreach meetings in practices across the ICB. This involves:

- sharing local data from the CVDPREVENT audit with practices to highlight areas for improvement
- discussing resources and tips for enabling change
- sharing an action plan template to identify priorities and timescales for quality improvement
- getting local practices to appoint leads for the action plan
- organising a follow-up visit to facilitate progress
- monitoring outcomes using CVDPREVENT audit data.

So far, the educational outreach activities have reached 43 PCN or practice teams, with commitment from all to drive forward improvements in long-term condition management in primary care.

Create learning environments

Integrated care systems can learn from initiatives and innovative ways of delivering services across the CVD pathway locally and elsewhere that have made progress in preventing and managing CVD. While local circumstances differ, many interventions for reaching communities, delivering services, improving the quality of care, reducing waste and supporting patients are transferable, if implemented as appropriate to the local context. Likewise, innovative approaches to managing demand, prioritising patients and reducing waiting lists (**NHS England and NHS Improvement 2022a**) can be adopted more widely. There will be variations in care within ICSs, given their large footprints; while this presents challenges, centralised decision-making across multi-agency partnerships can, where appropriate, offer ICSs opportunities to share best practice and implement change. There is also learning available from international experience (**Karnad *et al* 2022b**; **Solutions for Public Health *et al* 2018**).

Case study 4: Clinical Effectiveness Group approach to quality improvement in primary care

Location: North East London, covering 2 million people, 300 practices and 1,500 GPs

Context: North East London has some of the most ethnically diverse and deprived populations in England, with a high prevalence of CVD and diabetes. The Clinical Effectiveness Group (CEG) at Queen Mary University of London supports practices, PCNs and the ICS to manage long-term conditions and improve medicines safety and optimisation, including for CVD.

Solution: The CEG's approach involves the following:

- Making it easier to do the right thing – digital decision-support and review tools, searches, prompts, and smart data entry templates support practices to deliver programmes effectively and equitably.
- Providing actionable digitally supported insight and tailored local analysis, 1:1 support from the CEG's primary care facilitators, and dashboards with integrated, real-time and accessible data – the digital infrastructure being an essential component.
- Motivating teams – use of financial targets, encouraging practices to benchmark performance against peers, facilitating discussions on quality improvement, and working with partners, including commissioners and secondary care clinicians.

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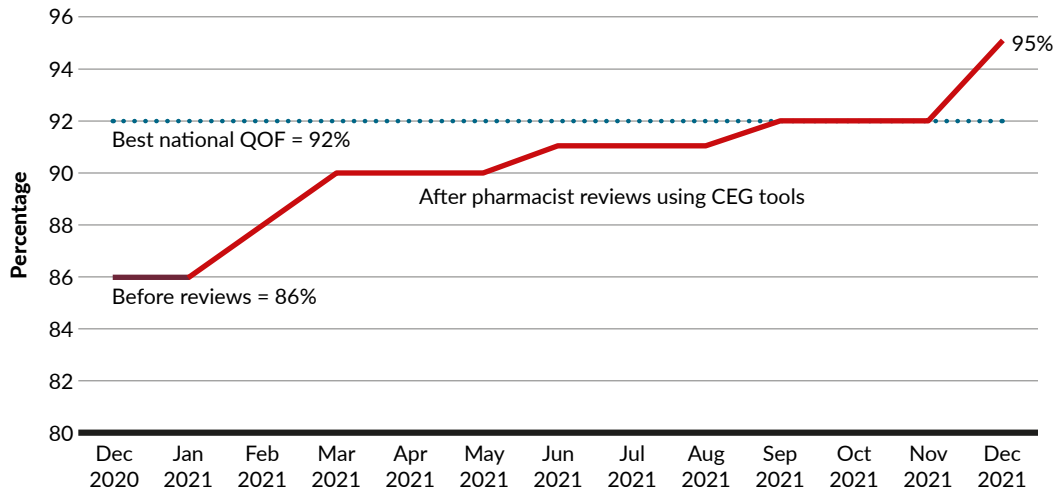
Case study 4 *continued*

- Innovation – the CEG has pioneered new software tools for evidence-based ways of working, including self-reported ethnicity recording, risk stratification tools, and rapid access to guidance from specialists by enabling data-sharing between primary and secondary care.
- Dashboards and reports of practice achievement to monitor equity and inequalities – an integral part of targeted improvement.

Achievements include the following:

- North East London STP (sustainability and transformation partnership) was the highest-performing STP nationally on the 2019/20 Quality and Outcomes Framework, with the highest rates of statin and blood pressure control in people with ischaemic heart disease, stroke, hypertension and diabetes.
- A software tool was used to review the medication of 10,000 patients with atrial fibrillation in Barking and Dagenham, Havering and Redbridge, increasing prescribing of anticoagulants from 86 per cent to 95 per cent, above the national target of 90 per cent. This is expected to prevent around 200 heart attacks or strokes in Redbridge in the next five years.

Figure 12 Percentage of atrial fibrillation patients on anticoagulant medication (Barking and Dagenham, Havering, Redbridge)



Source: North East London Clinical Effectiveness Group 2022

Enhance capacity

Local systems can enhance capacity by using resources differently. The pandemic has illustrated new models of provision to communities, including those that are socially isolated. Examples include the following:

- Stratification of patients by risk, with high-risk groups being managed by GPs or pharmacists and lower-risk groups by practice nurses and health care assistants.
- Utilising community-based organisations like pharmacies, dental practices, workplaces, places of worship, supermarkets and voluntary organisations for 'low-effort, high-impact' interventions such as blood pressure monitoring, pulse checks, and using portable devices to detect atrial fibrillation (AF).
- Reducing inequalities by conducting health checks digitally and in community settings to improve detection in under-represented groups.
- Using Covid-19 and flu vaccination contacts to conduct checks for blood pressure and AF or signpost patients to locations where heart health checks are available. It is estimated that one stroke will be prevented in the first year for every 5,000 people aged 65 years and above offered a rhythm check for AF, and such targeted testing in Covid-19 vaccination clinics has been effective in detecting AF (**Getting It Right First Time and Oxford AHSN 2021**).
- The wider roll-out of remote monitoring programmes like NHS England's Blood Pressure @home programme.
- Engaging employers (including NHS and social care) to do workplace health assessments and encouraging people to know their 'ABC'.
- Making every contact count – opportunistic detection of CVD risk factors such as hypertension and AF during routine NHS contacts needs to be encouraged across all care settings, especially among high-risk groups (such as women, people in deprived areas, and South Asian and Black communities). The high prevalence of CVD means that most health care professionals will have some interactions with people at risk of or with CVD.

- NHS Health Checks provide a crucial opportunity for identifying people aged 40–74 years at risk of CVD. They have been effective in improving detection and follow-on rates of advice, referrals and testing (**Office for Health Improvement and Disparities 2021c**; Alageel and Gulliford 2019); one review found that more than three-quarters of attendees had at least one elevated risk factor and subsequently had lower levels of hospital admission and death from heart attacks and strokes (**Office for Health Improvement and Disparities 2021c**). But uptake fell during the pandemic and there remain large variations between local authorities in terms of the number of checks offered, uptake and completions. Access can be enhanced through community-based facilities such as pharmacies, outreach programmes in workplaces and communities, and the use of digital options.

Use digitalisation and technology

The use of digital approaches was transformed during the pandemic, demonstrating that technology can be deployed at pace and scale to improve the delivery of health care and with more care delivered virtually. These solutions are particularly useful for non-communicable, progressive diseases like CVD, as they enable monitoring and treatment outside clinical settings.

Enabling people to self-care – for example, through the use of smartphones and other digital devices and apps – can support people to take a more active role in managing their CVD risk and improve access. For example, access to cardiac rehabilitation could be improved through virtual delivery using telehealth and other digital health solutions.

Digital solutions can also enable providers to access better, more timely data to support planning and delivery of patient care, and release NHS capacity. For example, remote monitoring of CVD patients can support out-of-hospital management, delivering efficiencies such as earlier discharge and reduced workloads for outpatient services. Digital data solutions can help streamline patient pathways and reduce waiting times (**NHS undated**).

Case study 5: Using primary care-led initiatives for tackling CVD

Location: Bradford Clinical Commissioning Group and West Yorkshire Integrated Care System

Context: In 2014, Bradford Clinical Commissioning Group (CCG) had the seventh highest CVD mortality rate for under-75s in England. To address this, the CCG created the Bradford Healthy Hearts programme (**bradfordshealthyhearts.co.uk**).

Solution: The Healthy Hearts programme had three clinical workstreams:

- Lipids/statins – changes to statins prescribing resulted in a statistically significant drop in the average cholesterol level in the CCG.
- Atrial fibrillation – the programme reduced GP workloads by pioneering an automated protocol based on a patient's stroke risk.
- Hypertension – the programme increased detection of hypertension by running searches on electronic patient records for uncoded hypertension patients, and by working with the British Heart Foundation to fund screening in the area. The programme also worked with secondary care consultants to create a simplified prescription pathway based on NICE (National Institute for Health and Care Excellence) guidelines, and more patients were treated to target as a result.

The key enablers to success were as follows:

- Local leadership – strong and visible clinical leadership and engagement across primary and secondary care, with GPs and consultants working together, lead clinician in practices, clinical involvement in each workstream, and flexibility.
- Doing things differently – primary care-led solutions owned by practices, working at scale across GP practices, developing workload-light solutions for clinicians, and a proactive patient education programme.
- Clarity of vision – relentless focus, identifying opportunities for improved outcomes, achievable benchmarks of care and reducing unwarranted variation.
- Using data and IT – data-sharing, dashboards, information technology (IT) interventions, and alerts.
- Demonstrating system value – the interventions resulted in an estimated net saving of £1.2 million over 15 months from fewer non-elective admissions, heart attacks and strokes.

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Case study 5 *continued*

Following the programme's success, in 2018 the project was expanded, and West Yorkshire and Harrogate Health and Care Partnership commissioned Yorkshire & Humber AHSN to deliver a Healthy Hearts project to a population of 2.6 million. By addressing hypertension, cholesterol and diabetes, the project aimed to prevent 800 heart attacks and 350 strokes, with estimated savings of £12 million. Following excellent early results, the West Yorkshire and Harrogate Healthy Hearts project won the HSJ 2020 Cardiovascular Care Initiative of the Year award (**HSJ 2020**). The project now covers West Yorkshire ICS and, as of July 2022, 25,000 additional patients have been added to the hypertension register and nearly 13,000 patients have had their statins switched.

Case study 6: Digital enablers supporting home blood pressure monitoring in primary care

Location: Cheshire and Merseyside Integrated Care System

Context: Cheshire and Merseyside Integrated Care System (ICS) has established a digital first programme aimed at tackling hypertension. This was in response to numerous factors: hypertension being identified as an ICS-wide prevention priority, the impact of the Covid-19 pandemic on blood pressure management in general practice, and the need for care to be delivered remotely. During the pandemic, the proportion of people on the hypertension register recorded as 'treated to target' fell from 70.1 per cent in 2019/20 to 44.8 per cent in 2020/21. The programme aims to: scale up recovery from the pandemic; address inequalities; empower patients to play a greater role in managing their condition; and support a sustainable future for general practice by mitigating increasing workloads.

Solution: The digital first programme expanded self- and remote telemonitoring of blood pressure in primary care, as it was shown to be a cost-effective solution that would save GP time and reduce incidence of clinical events such as heart attack, stroke or death. They estimated that regular home blood pressure monitoring across a population of 50,000 patients could prevent up to 300 heart attacks and 477 strokes over three years.

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Case study 6 *continued*

The programme developed digital tools to support at-home and remote management of hypertension patients in primary care. Digital solutions include digital platforms that enable patients to message clinicians and submit readings via the internet or SMS/text message for review and action by clinicians, instead of traditional face-to-face appointments. The programme also developed dashboards and audit tools so that clinicians can easily risk-stratify and identify patients remotely for further management.

The programme supports delivery against the national Blood Pressure @home programme and CVD Prevention Recovery Programme.

8 Conclusion

This report calls for urgent action by government, national and local leaders to tackle the large and unequal burden of disease and mortality associated with CVDs and associated conditions such as diabetes – much of which is potentially preventable through timely, evidence-based public health measures and health care.

Most CVDs are caused by modifiable risk factors such as obesity, smoking and excess alcohol consumption – which are also risk factors for other leading causes of morbidity and mortality such as cancer, diabetes and dementia. Bold public health policies, nationally and locally, to reduce the prevalence of these risk factors could therefore bring significant reductions not just in CVD but also in the overall burden of morbidity and mortality. Rising trends in obesity and diabetes provide further justification for urgent action.

As most CVDs are long-term conditions, there are many opportunities for intervention – from reducing the risk of developing CVD to slowing disease progression among those who do develop it. The NHS – and primary care in particular – plays a significant role in early detection and management of risk factors such as high blood pressure and cholesterol. Timely, evidence-based primary, secondary and emergency care, as well as cardiac rehabilitation for those who develop acute or advanced disease (such as a heart attack or heart failure) is key to preventing further exacerbations and improving quality of life. However, large numbers of people with CVD, or at risk of developing it, remain undetected, untreated and waiting for care.

The Covid-19 pandemic has added urgency to the need to tackle CVD and its risk factors such as obesity, hypertension and diabetes – all pre-existing conditions that significantly increase the risk of severe disease and death from the virus. The pandemic also exacerbated health inequalities by having a disproportionate impact on deprived and ethnic minority communities who have a higher prevalence of these conditions. The future course of the virus is uncertain, and the possibility of resurgences and mutations remains. Reducing the prevalence of CVD and its risk factors is critically important for mitigating potential future risks to health from Covid-19.

NHS capacity was overstretched even prior to the pandemic, which has further exacerbated pressures on all services. To reduce waiting times, the government needs to tackle the funding and workforce deficits in health and social care as a matter of urgency. For the sustainability of services, it is equally urgent to reduce demand-side pressures on health and care services – and therefore costs – by tackling CVD more vigorously. In particular, a much stronger focus on primary and secondary prevention of CVD is called for – areas that experienced significant setbacks during the pandemic and also offer potential for significant health gain. Such measures would improve population health, reduce health inequalities, and mitigate against escalating demand and costs that lead to unsustainable pressures on the health and care system.

For long-term health gains and sustainability of the health and care system, there has to be a shift from repeated short-term fixes to alleviate pressures on services to a strong public health response with an emphasis on disease prevention. CVD can be an exemplar, given its leading contribution to the national burden of morbidity and mortality and the scope for prevention. The government, and national and local leaders, can take action now to prioritise tackling CVD to reduce the impact on individuals, services and the economy.

Appendix

Data sources

Further guidance on data for CVD for local leaders can be found at: www.gov.uk/guidance/cardiovascular-disease-data-and-analysis-a-guide-for-health-professionals

Table 2 CVD data sources

Source	Data	Description
CVDPREVENT undated b	CVDPREVENT	Primary care audit with practice-level data on diagnosis and management of six high-risk conditions that cause stroke, heart attack and dementia: atrial fibrillation (AF), high blood pressure, high cholesterol, diabetes, non-diabetic hyperglycaemia and chronic kidney disease.
NHS Digital 2022d	Quality and Outcomes Framework (QOF) (2020–21)	Practice-level data on CVD-related QOF indicators, including hypertension, heart disease, stroke, heart failure, AF, diabetes and chronic kidney disease.
NHS Digital 2022b, 2014, undated	NHS Compendium – public health indicators, circulatory diseases, mortality from all circulatory diseases	National, regional and local data and trends for several public health, QOF, CVD mortality and other CVD-related indicators.
Office for Health Improvement and Disparities (OHID) undated a	Fingertips area profiles	CVD prevention profiles for STPs and CCGs on three CVD risk factors: hypertension, AF and dyslipidaemia.
OHID undated b	Fingertips CVD profiles	Practice-level data on cardiovascular and cardiovascular-related conditions of heart disease, stroke, diabetes and kidney disease. They include data on mortality, hospital admissions, procedures and disease management.

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Table 2 CVD data sources *continued*

Source	Data	Description
OHID 2022a	CHIME	National- and regional-level data on the contribution of CVD, and other causes of death, to the life expectancy gap between the least deprived and most deprived deciles.
NICE undated	NICE standards and indicators	CCG-level indicators for coronary heart disease, AF, diabetes, heart failure, heart attack and stroke.
National Institute for Cardiovascular Outcomes Research (NICOR) 2022	National Cardiac Audit Programme (NCAP)	Provider-level data on six cardiovascular audit programmes, covering several secondary care pathways, including cardiac surgery and heart failure treatment.
King's College London 2021	Sentinel Stroke National Audit Programme (SSNAP)	CCG-level audit of clinical care for stroke patients and of stroke services.
British Heart Foundation undated	Statistical compendium	Statistics and infographics on CVD morbidity, mortality, treatments, costs and risk factors at national and sub-national level.

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Veena Raleigh is an epidemiologist with several years' research experience in public health, health inequalities, quality and safety, and patient experience. She has published extensively on these subjects. She joined The King's Fund in April 2009, having spent more than seven years at CHI/Healthcare Commission as a fellow in information policy, working on information analysis, policy and research issues, and leading on analyses of patient experience data, safety indicators and inequalities for example.

Prior to that she co-ordinated the production of health-related indicator sets (such as the Compendium of Clinical and Health Outcome Indicators) for the Department of Health and was a reader at the Postgraduate Medical School, University of Surrey.

She is a member of several national committees (the Department of Health's Scientific Reference Group on Health Inequalities, the health inequalities review led by Professor Michael Marmot, the Department of Health's expert group on international quality comparisons, and was also on the Department of Health's Expert Reference Group responsible for developing the Diabetes NSF). In recognition of her contribution to health research, Veena was awarded a Fellowship of the Faculty of Public Health in 2005, and a Fellowship of the Royal Society of Medicine in 2007.

Veena has also worked on health and population issues in developing countries for international agencies, including the Department for International Development, the World Bank, UNFPA and the Ford Foundation. Veena has an undergraduate degree in economics from Cambridge University, and an MSc and PhD in epidemiology and demography from the London School of Economics and Political Science.

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Published by
The King's Fund
11–13 Cavendish Square
London W1G 0AN
Tel: 020 7307 2568

Email:
publications@kingsfund.org.uk

www.kingsfund.org.uk

First published 2022
by The King's Fund

Charity registration number:
1126980

ISBN: 978 1 915303 05 9

A catalogue record for this publication is available from the British Library

Edited by Kathryn O'Neill

Typeset by
Grasshopper Design Company,
www.grasshopperdesign.net

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Ideas that change health and care

Cardiovascular disease (CVD) causes 1 in 4 deaths in England, and is a leading cause of morbidity, disability and health inequalities. The Covid-19 pandemic has added to the urgency of tackling CVD because CVD significantly increases the risk of severe disease and death from Covid-19. CVD is also largely preventable, so what can be done to improve outcomes?

Drawn from analysis of published data, a literature review of current policy and evidence and interviews and workshops with key stakeholders working in health and care, *Cardiovascular disease in England: supporting leaders to take actions* looks at what local and national leaders can do to take action and accelerate progress on tackling CVD. Key actions include bringing together national agencies and local services to co-ordinate efforts; a greater focus on prevention as well as timely detection and management of CVD; a cross-government policy on health inequalities; and improvements in personalised care.

The report concludes that now is the time for a shift from repeated short-term fixes to alleviate pressures on services to a strong public health response with an emphasis on disease prevention, with CVD as an exemplar. The government, and national and local leaders, should take action now to prioritise tackling CVD to reduce the impact on individuals, services and the economy.

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Tel: 020 7307 2568

Charity registration number: 1126980

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ISBN 978-1-915303-05-9