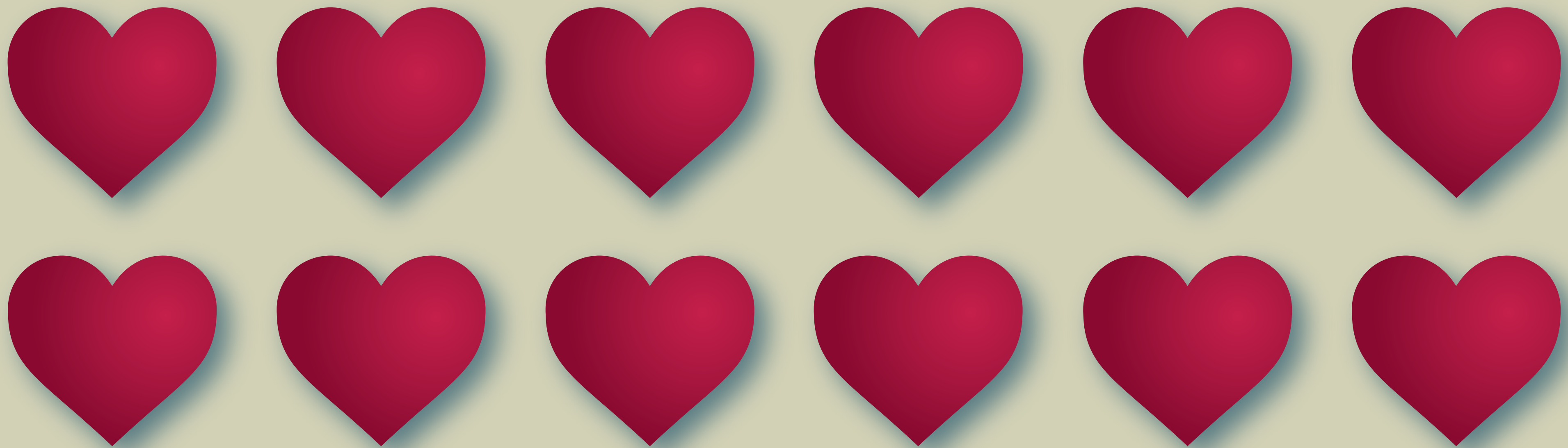
Public Health England

Protecting and improving the nation's health

Action on cardiovascular disease: getting serious about prevention



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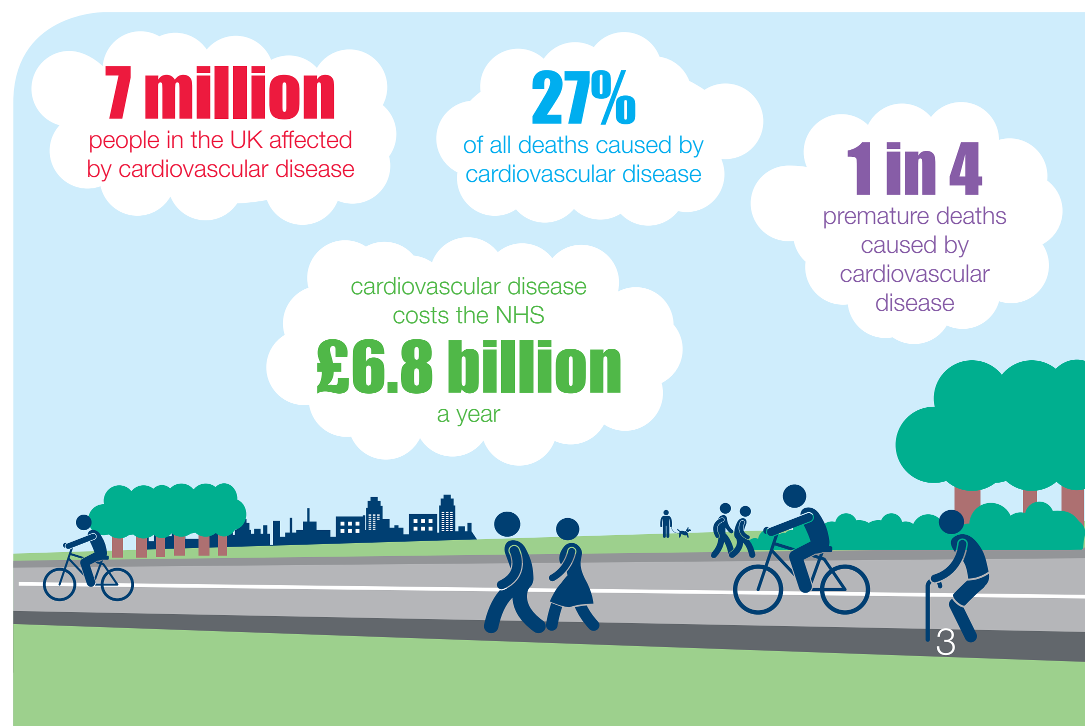
Introduction

Cardiovascular disease affects around seven million people in the UK and is a significant cause of disability and death, affecting individuals, families and communities.[1] The NHS spent about £6.8 billion on cardiovascular disease in 2012/13.[2]

Although there has been a significant reduction in deaths from cardiovascular disease in the past 20 years, it remains the second highest cause of death in England and was responsible for 27% of all deaths (126,682) in 2014.[3] A significant proportion of these deaths are premature: 25% in men and 17% in women under the age of 75.[4] Within each clinical commissioning group or local authority, cardiovascular disease will account for around 1 in 4 of the total premature deaths before the age of 75.

NHS England's 'Five Year Forward View'[5], together with PHE's publication 'From evidence into action: opportunities to protect and improve the nation's health'[6], make it clear that the system must 'get serious about prevention'. Both reports highlight the relevance of prevention of cardiovascular disease as well as the need to work across the system and care pathways.

This document aims to highlight the ongoing impact of cardiovascular disease, provide an overview of PHE's wide-ranging work in relation to cardiovascular disease and underline our key role in providing leadership and support to the NHS and wider partners. PHE is committed to continuing to develop this matrix of work to support local and national partnerships to reduce the burden of cardiovascular disease in England. The document is intended for those involved in the commissioning and provision of services for cardiovascular disease and its prevention, including clinicians, local authorities, service commissioners, public health specialists, the third sector and PHE staff.



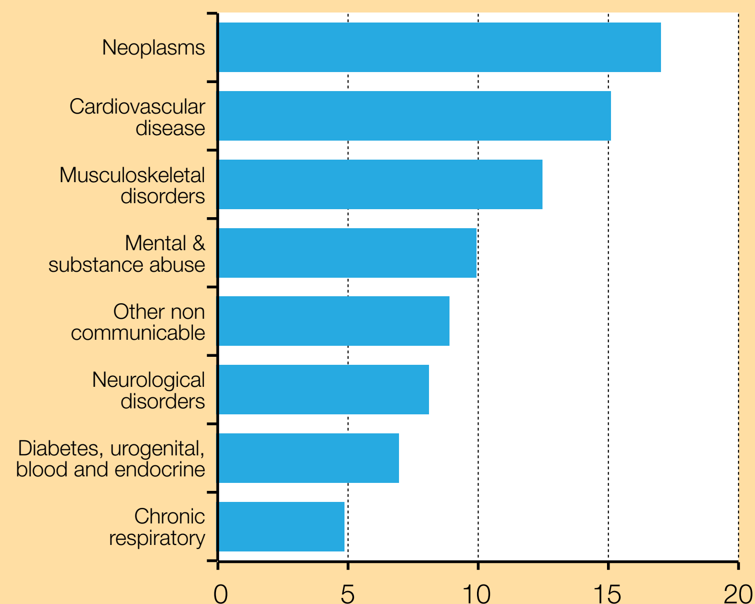
Cardiovascular disease in England today – why we must improve

Deaths from cardiovascular disease have fallen in England but it remains responsible for about a quarter of deaths each year. Higher levels of obesity have also led to an increase in the prevalence of type 2 diabetes (with a further 15% increase expected by 2020). By 2022, the number of people with a higher than 20% risk of cardiovascular disease could rise from 3.5 million in 2010 to 4.2 million.[7]

Cardiovascular disease can also have a serious impact on quality of life and cause considerable disability. Stroke survivors may lose their speech and have impaired mobility; those with peripheral arterial disease may lose a limb. The breathlessness and exhaustion of severe heart failure can preclude even minimal daily activities and all of these can prevent people returning to employment.

Cardiovascular disease is one of the conditions most strongly associated with health inequalities. Risk factors such as smoking, physical inactivity and obesity are greater in lower socio-economic groups and the burden of morbidity and mortality is disproportionately shouldered by the most deprived.[8] CVD mortality rates vary markedly by levels of deprivation. People in the most deprived decile experienced under-75 mortality rates of 105 per 100,000 from cardiovascular disease compared with a rate of 59 per 100,000 in the least deprived decile in 2012-2014.[9]

The Global Burden of Disease (GBD) Study 2013[10] shows that cardiovascular disease accounts for more than 15% of total disability adjusted life years (DALYs) in England, the second largest disease burden in the country.



Cardiovascular disease and public health

Cardiovascular disease is an overarching term that describes a family of diseases with a common set of risk factors and that result from atherosclerosis (furring or stiffening of artery walls), particularly coronary heart disease, stroke and peripheral arterial disease. It also covers other conditions such as vascular dementia, chronic kidney disease, cardiac arrhythmias, type 2 diabetes, sudden cardiac death and heart failure. These conditions often share common risk factors or have a significant impact on cardiovascular disease mortality or morbidity.

The public health approach to prevention of cardiovascular disease cuts across all levels of prevention:

- primary prevention: designed to reduce the instances of an illness in a population and to reduce their duration
- secondary prevention: aimed at detecting and treating pre-symptomatic disease
- tertiary prevention: activities aimed at reducing the incidence or recurrences of chronic incapacity among those with symptomatic cardiovascular disease

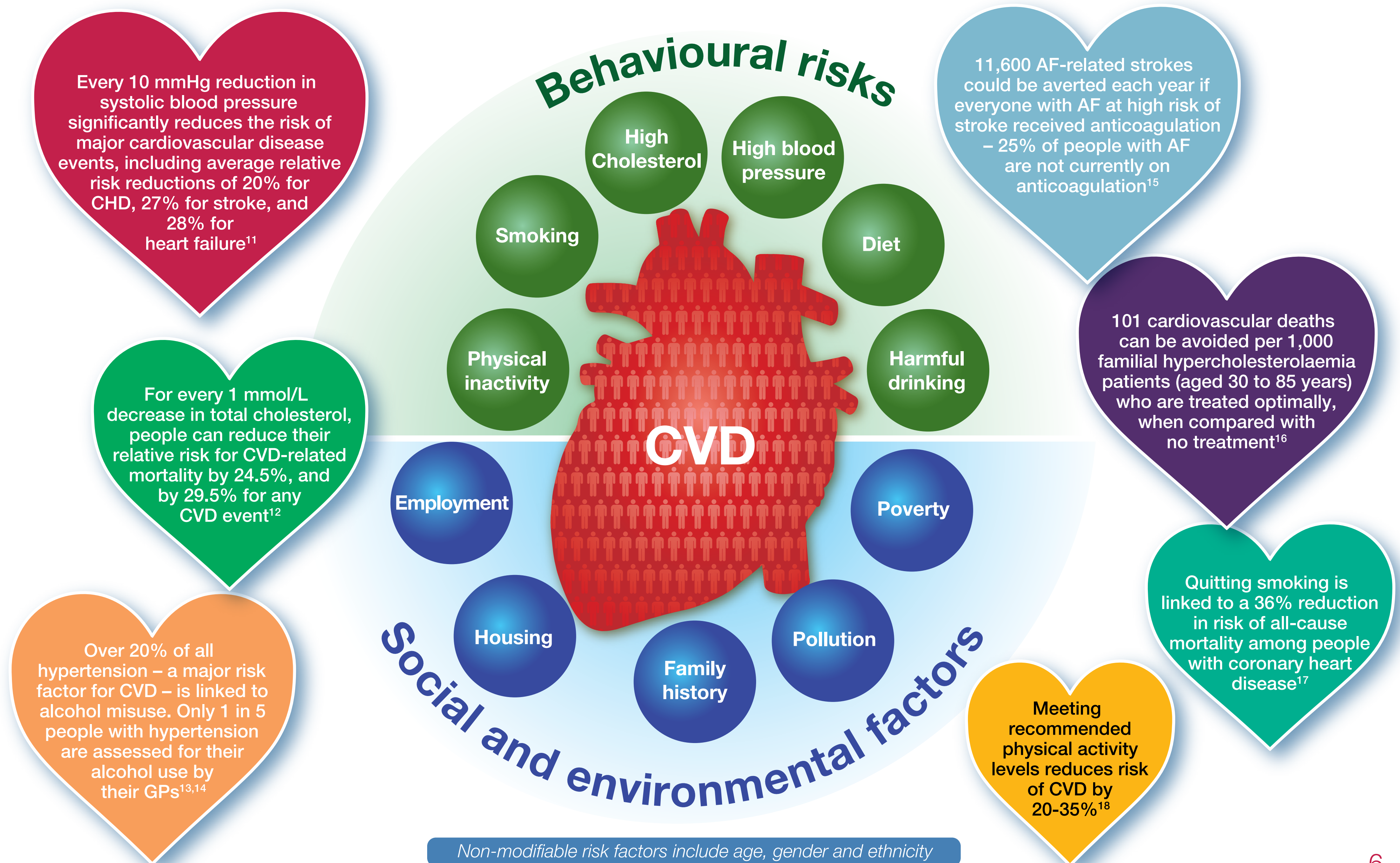
A life course approach recognises the opportunities for health gains at each stage of a person's life, and conversely, the impact poor health and inequalities have on the next life stage.

With activity at all three levels of prevention, PHE is adopting a population health systems approach across the life course. This encourages us to think of the components within a care pathway as a whole unit. Rather than focusing on individual parts of the system, we look at the overarching aim and how a care pathway in its totality might work, addressing issues such as bottlenecks that hinder the overall system's operation.

PHE's role

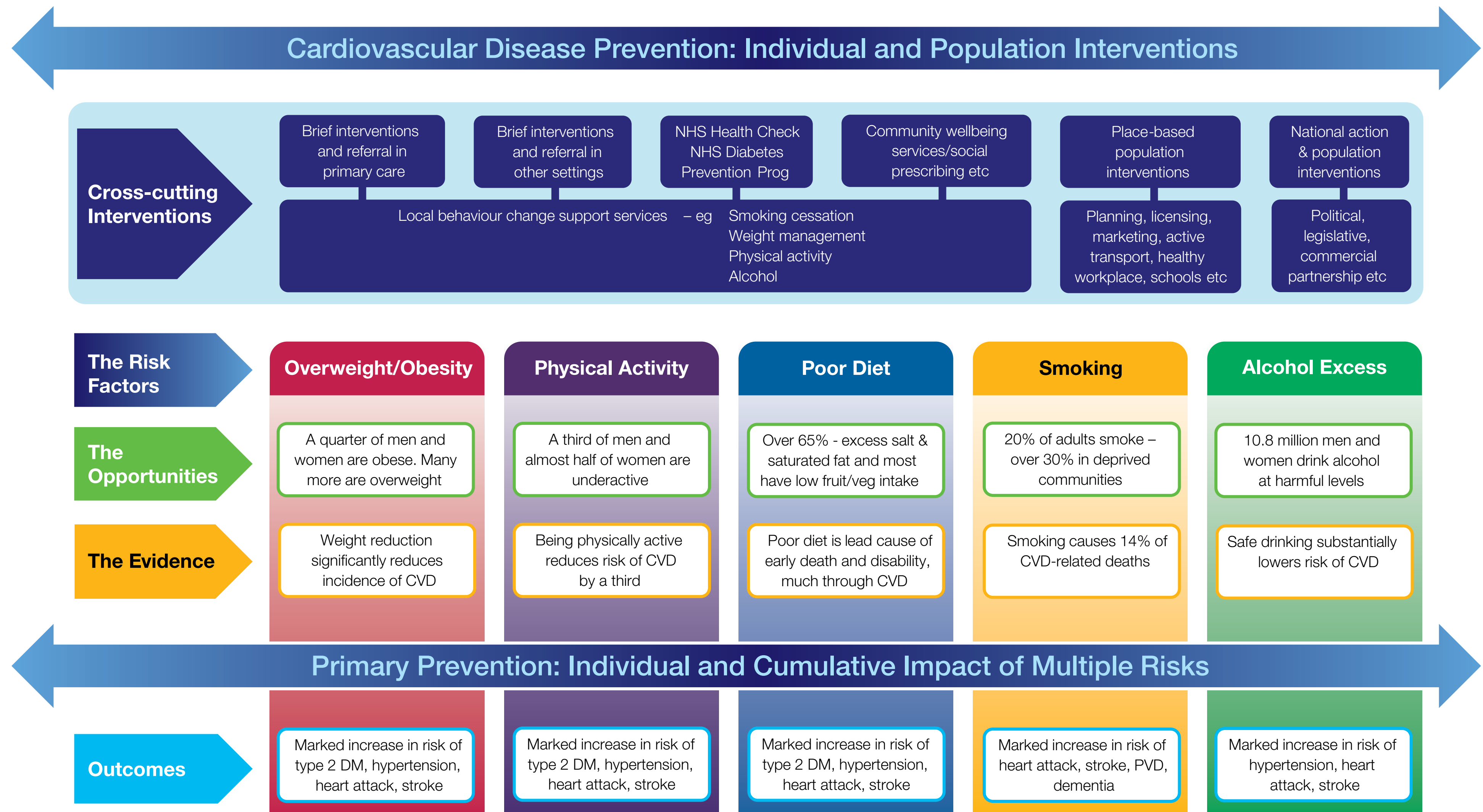
- review the evidence for what works in cardiovascular disease prevention
- develop evidence-based programmes that address the risk factors for cardiovascular disease
- work with partners to implement and evaluate effective programmes
- advocate effective prevention policies to improve population health
- work to tackle inequalities linked to cardiovascular disease

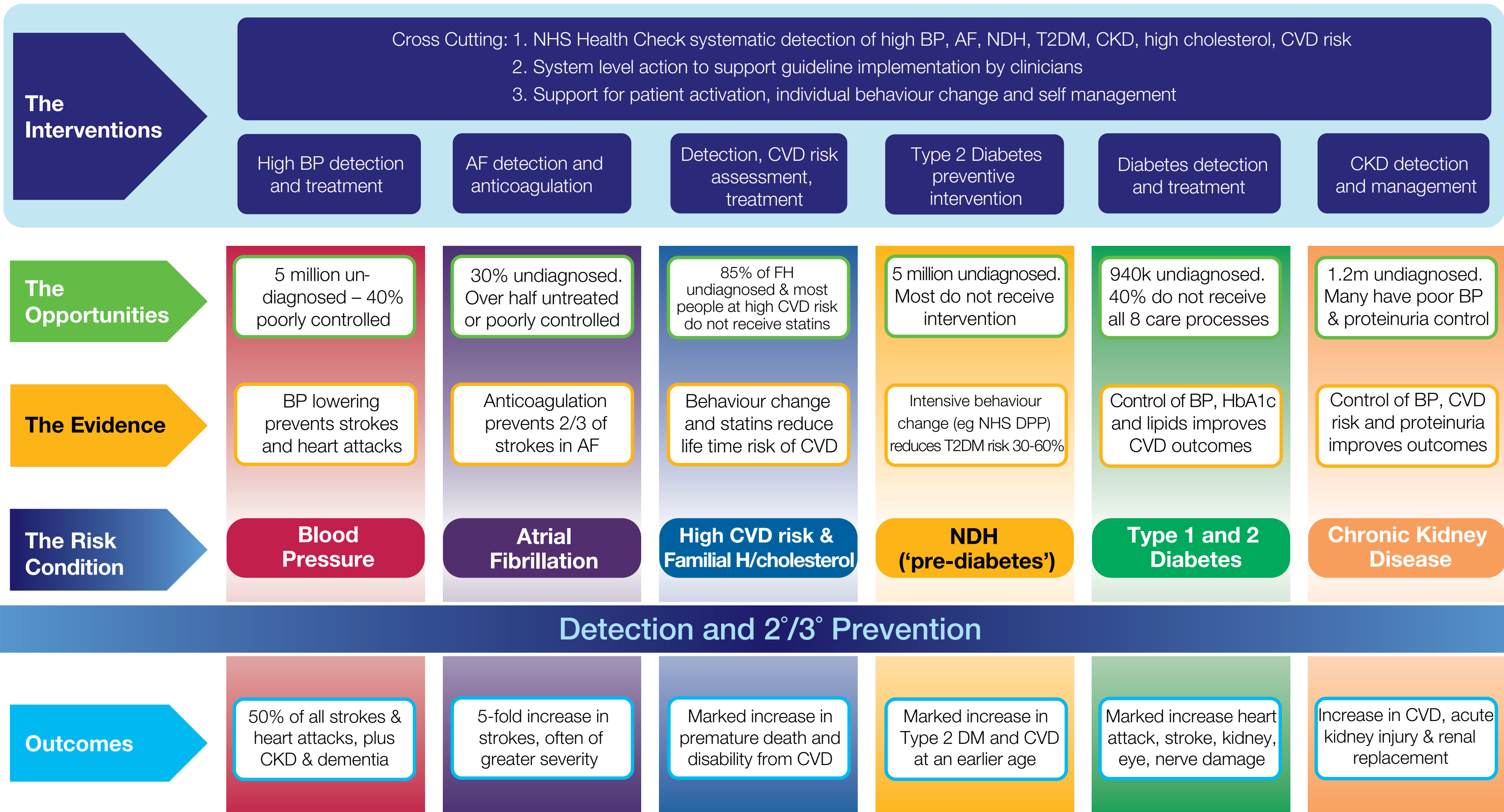
The key risk factors for cardiovascular disease



The key interventions for cardiovascular disease

The next two pages highlight different individual and population level interventions and their impact on cardiovascular risk factors, as well as opportunities for risk detection and management in primary care. The interventions highlighted have a strong evidence base linked to risk reduction and improved outcomes.





Cardiovascular Disease Prevention: Risk Detection and Management in Primary Care
The Interventions
Cross Cutting: 1. NHS Health Check systematic detection of high BP, AF, NDH, T2DM, CKD, high cholesterol, CVD risk
2. System level action to support guideline implementation by clinicians
3. Support for patient activation, individual behaviour change and self management
High BP detection and treatment
AF detection and anticoagulation
Detection, CVD risk assessment, treatment
Type 2 Diabetes preventive intervention
Diabetes detection and treatment
CKD detection and management
The Opportunities
5 million un-diagnosed – 40% poorly controlled
30% undiagnosed. Over half untreated or poorly controlled
85% of FH undiagnosed & most people at high CVD risk do not receive statins
5 million undiagnosed. Most do not receive intervention
940k undiagnosed. 40% do not receive all 8 care processes
1.2m undiagnosed. Many have poor BP & proteinuria control
The Evidence
BP lowering prevents strokes and heart attacks
Anticoagulation prevents 2/3 of strokes in AF
Behaviour change and statins reduce life time risk of CVD
Intensive behaviour change (eg NHS DPP) reduces T2DM risk 30-60%
Control of BP, HbA1c and lipids improves CVD outcomes
Control of BP, CVD risk and proteinuria improves outcomes
The Risk Condition
Blood Pressure
Atrial Fibrillation
High CVD risk & Familial H/cholesterol
NDH ('pre-diabetes')
Type 1 and 2 Diabetes
Chronic Kidney Disease
Detection and 2°/3° Prevention
Outcomes
50% of all strokes & heart attacks, plus CKD & dementia
5-fold increase in strokes, often of greater severity
Marked increase in premature death and disability from CVD
Marked increase in Type 2 DM and CVD at an earlier age
Marked increase heart attack, stroke, kidney, eye, nerve damage
Increase in CVD, acute kidney injury & renal replacement

Existing leadership, resources and support from PHE

PHE has a central role to play in influencing evidence-based national policies and providing guidance and tools to support effective intervention and implementation and help measure progress at both national and local levels. The examples shown here illustrate the breadth of action already taking place on cardiovascular disease (CVD) prevention.

Primary prevention

- PHE's updated Local Tobacco Control Profiles are designed to inform commissioning and planning decisions to tackle tobacco use
- we have also published guidance to support local areas to provide smoking cessation support in mental health secondary care settings
- we are working with NHS England to roll out the Healthier You: NHS National Diabetes Prevention Programme
- the One You public health campaign aims to support adults across the country to avoid future diseases caused by everyday habits and behaviours
- we advise local authorities on developing robust nutrition initiatives
- PHE has published guidance to help those who must meet, or voluntarily adopt, the Government Buying Standards for Food and Catering Services
- PHE's social marketing campaigns such as Change4Life and One You support individuals to improve their diet and increase levels of physical activity
- we review healthy eating messages including the Eatwell Guide and 5-a-day logo
- PHE has helped to develop resources for key sectors to increase physical activity, including 'What works' in schools and colleges guidance
- free e-learning resources for health professionals on physical activity are available (including a module on cardiovascular disease)
- Local Alcohol Profiles for England (LAPE) provide data for local government, health organisations, commissioners and other agencies to monitor the impact of alcohol on communities and to monitor the services and initiatives in place to prevent and reduce alcohol harm
- the Healthier Lives: Alcohol & Drugs tool provides data on prevalence and drug use risk for local authorities.

Secondary prevention

- PHE's national NHS Diabetic Eye Screening Programme aims to reduce the risk of sight loss among people aged 12 and over with diabetes
- the NHS Abdominal Aortic Aneurysm Screening Programme (NAAASP) aims to reduce aneurysm-related deaths
- PHE provides national oversight of the NHS Health Check programme
- PHE delivers local Blood Pressure Learning Action events across the country to share latest evidence, tools and resources
- the National Cardiovascular Intelligence Network (NCVIN) provides a range of data and information on cardiovascular disease
- we lead and support partners in applying a population healthcare systems approach model to service planning and delivery e.g. the Blood Pressure, Atrial Fibrillation (AF) and Familial Hypercholesterolaemia Programmes
- we are supporting the development of a cardiovascular prevention pathway (to support NHS Right Care work) to incorporate hypertension, AF, high cholesterol, diabetes, pre-diabetes and chronic kidney disease
- PHE is leading a national AF, stroke and vascular dementia prevention programme in England

Tertiary prevention

- PHE's specialised commissioning consultants support the NHS on commissioning specialised services including complex invasive cardiology
- PHE has partnered with NHS England to deliver a Healthcare Variation and Value Service. This includes the PHE led Atlas of Variation series
- We support and advise NHS Right Care in developing its commissioning for value products, to drive improvements in health service quality and efficiency. e.g. its CVD prevention optimal value pathway
- in partnership with third sector organisations, we have developed a series of Can Do Better resources to support management of key cardiovascular disease conditions

Reducing inequalities

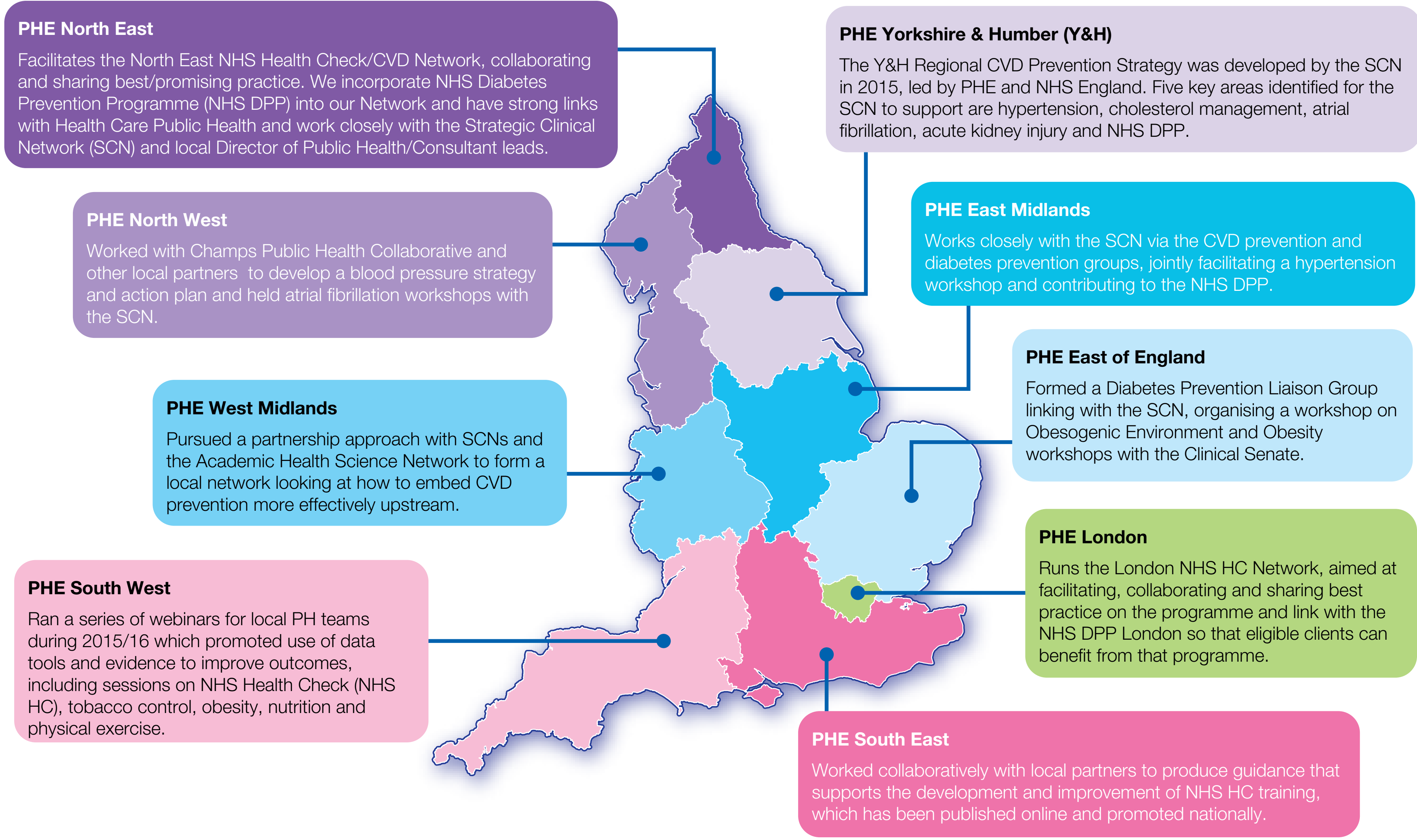
- we provide CLeaR assessment training for two people engaged in tobacco control in each local authority to maximise the effectiveness of programmes at local level
- PHE has developed a standard operating procedure with prisons to rectify variable access to national AAA and diabetic eye screening programmes
- in partnership with NHS Improvement, PHE developed the Lester tool to support people with serious mental illness to manage cardiovascular conditions

PHE's **Behavioural Insights team** (BIT) uses behavioural insights to design interventions with the potential to scale up using low resource, and robustly test interventions to enable sharing and generalisability of evidence. The team has provided advice on interventions, trials and policies to reduce calorie consumption, sedentary behaviour and smoking and has informed the smoking and childhood obesity strategies, all of which contribute to cardiovascular disease. Partners can commission or co-bid with PHE BIT, which can advise and develop further interventions, trials and evidence around reducing risk or provide policy advice using behavioural insights.

PHE will continue to run a range of public marketing campaigns that address a broad range of risk factors and early diagnosis of cardiovascular disease.

CVD work across our local centres

PHE centres are crucial in developing and implementing local CVD prevention programmes. This page provides a flavour of just some of the diverse actions taking place.



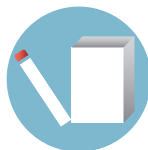
PHE's population interventions

Population-level interventions are the most effective in tackling the structural causes of ill health, including CVD. PHE is leading and partnering with other organisations to deliver a range of place-based population interventions supported by national action to influence the CVD prevention agenda, as illustrated in the following examples:

Alcohol

We support local authorities to develop their understanding of how public health can contribute to and make use of the local alcohol licensing system to shape the drinking environment.

Tobacco



PHE has launched new data modelling tools to estimate youth smoking, commissioned by PHE and the National Institute for Health and Care Excellence (NICE) and modelled by the universities of Portsmouth and Southampton. The figures estimate youth smoking rates for every local authority, ward and local NHS footprint. PHE published our third independent evidence review on e-cigarettes in 2015 to consolidate the evidence base around this emerging technology. Our National Centre for Smoking Cessation and Training provides free training to thousands of health professionals who have supported 3.8 million smokers to reach the four-week quit standard and an estimated one million smokers to quit for more than a year.

Diet and obesity

We published 'Sugar Reduction: The evidence for action', a mixed methods review undertaken to better understand what drives sugar consumption, which identified eight actions that, if implemented together, could help reduce sugar intakes. Some of the work completed for the report involved partnership working with other organisations including West Sussex County Council and the Association for Nutrition. The Eatwell Guide and promotion of healthier catering helps reduce salt, saturated fat and sugars, promoting improved diet and health outcomes.

Physical activity

In 2014, PHE worked with more than 1,000 stakeholders to produce a physical activity framework for England, 'Everybody Active Every Day'. This is an evidence-based, whole system approach to increasing physical activity and reducing inactivity across the population.

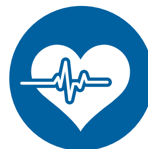
Air pollution

PHE is working to support national and local government to reduce the health impact of poor air quality by developing and disseminating evidence and engaging with local networks to increase awareness of the impacts of air pollution and how to reduce emissions and exposure.

Immunisation

PHE operates many population-wide immunisation programmes that give herd immunity and help protect people with CVD in later life. For instance, adults with existing CVD who receive the seasonal flu vaccination and immunisation against pneumococcal disease benefit from added protection, as their CVD makes them less resilient to infection.

All Our Health

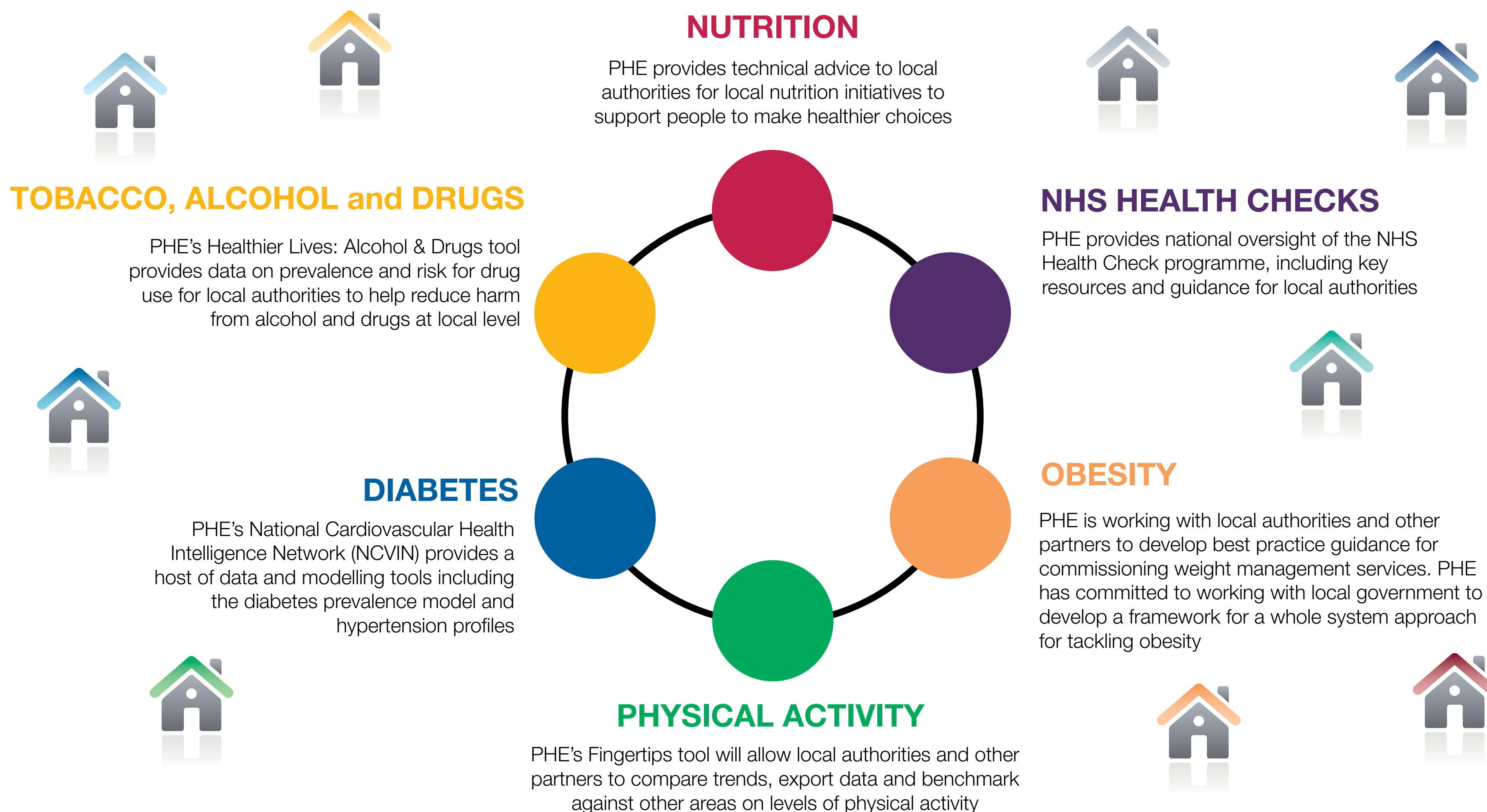


Led by PHE's Chief Nurse Directorate, this is a 'Call to Action' for all health and care professionals to embed and extend prevention, health protection and promotion of wellbeing and resilience into practice. This framework incorporates priority population, community and individual level interventions, including topics related to CVD prevention.

Local authorities and CVD prevention

Local authorities have a critical role to improve health and wellbeing of all communities through CVD prevention.

PHE is working alongside local authorities on a number of programmes that cut across key areas of public health, including:



Priorities for action in 2016-2017

This section outlines further actions that PHE will take in the coming year to tackle cardiovascular disease and work towards our vision for improved health and reduced inequalities

What?

PHE recognises the importance of tackling cardiovascular disease and will demonstrate its commitment through providing system leadership and supporting the wider health system to take action

How?

- develop an action plan setting out organisation-wide commitments to cardiovascular disease prevention
- determine mechanisms to measure PHE's impact on cardiovascular disease prevention
- system leadership, including the development of a national network of primary care leaders in cardiovascular disease
- strategic partnership building
- in partnership with other organisations, PHE is enhancing the successful Heart Age tool, which provides a self-assessment of cardiovascular risk
- provision of intelligence and data through NCVIN
- an annual review of PHE's work on cardiovascular disease for the next four years
- in collaboration with NHS Choices, PHE is developing and launching an online blood pressure tool to help people understand what their blood pressure numbers mean and direct them to relevant information

What?

PHE will strengthen joint working between internal teams to better address cardiovascular disease outcomes

How?

- aligning work to address cardiovascular risk factors with improving cardiovascular disease outcomes across PHE
- develop governance structures that effectively and efficiently deliver desired outcomes
- use the recent PHE internal stocktake exercise as an opportunity to signpost internal resources and contributions on cardiovascular disease

What?

PHE will strengthen its work with external partners to deliver better cardiovascular disease outcomes

How?

- identify and develop mechanisms to ensure effective working with partners including clinical networks, the CVD Collaborative which provides cross-organisational leadership to enhance CVD outcomes, the third sector and local authorities to maximise opportunities for cardiovascular disease prevention
- optimise support for NHS England in areas where positive gains can be made, such as sustainability and transformation plans (STP), the General Practice Forward View and NHS Right Care
- use our position to influence the cardiovascular disease agenda and guide implementation of prevention interventions within STP footprint areas
- further develop the dementia profile, particularly around health inequalities and support the development of a global dementia observatory

What?

PHE will collaborate with external partners to develop work programmes, recommendations and guidance for risk factors where gaps currently exist

How?

- increasing early detection of people with undiagnosed or undetected cardiovascular disease risk factors or risk conditions such as diabetes, pre-diabetes, raised cholesterol, raised blood pressure etc
- driving improvements in the provision and uptake of effective interventions for people to reduce their risk of cardiovascular disease, such as increasing the number of people with atrial fibrillation who are prescribed anticoagulants
- improving the care and management of people with established cardiovascular disease, such as increasing the number of people with elevated cholesterol receiving lipid management treatments

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About Public Health England

Public Health England exists to protect and improve the nation's health and wellbeing, and reduce health inequalities. It does this through world-class science, knowledge and intelligence, advocacy, partnerships and the delivery of specialist public health services. PHE is an operationally autonomous executive agency of the Department of Health.

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