

Director of Public Health Annual Report City of Bristol

2016

Living Well for Longer – The Case for Prevention



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Introduction

It gives me great pleasure to introduce my Director of Public Health Annual Report for 2016.

The Health and Social Care Act 2012, sets out a requirement for all Directors of Public Health to produce an annual independent report on the health of their local population and for their local authority to publish it. The purpose of the report is to raise awareness and understanding of local health issues, highlight areas of specific concern and make recommendations for change.

This year, I set out a clear 'case for prevention' or 'early intervention' to reduce early death and disability and set out a challenge to strengthen collective action across the city to create healthier, more resilient and sustainable communities.

Section one explores the overall health of people in Bristol by looking at life expectancy (how long people can expect to live) and healthy life expectancy (how long people can expect to live in good health). It describes the variation in health experience between different groups in the community and the main diseases and lifestyle behaviours, which contribute to the inequalities in health that we see today.

Section two describes the main factors which influence our health and wellbeing throughout our lives. It describes the relative impacts of modifiable health determinants including social and economic factors (such as education, employment, income, family and social support), health behaviours (lifestyles), clinical care and the physical (built) environment.

Section three introduces the 4:4:48 prevention model. This model describes the four modifiable lifestyle behaviours that contribute towards the four main diseases, which contribute to nearly half of all premature deaths in the city. It sets out what we know about these in Bristol and how the clustering of these behaviours impact on inequalities in health.

Section four explores the costs of unhealthy lifestyles behaviours to individuals and the wider community and brings together evidence what we can do to improve health and wellbeing. It looks at where we should focus our effort to get the best outcomes and 'return on investment'.

Finally, I set out five recommendations for how Bristol City Council and its key stakeholders can help turn the tide of increasing inequalities in health by scaling up public health action to tackle smoking and tobacco, poor diet, alcohol misuse and lack of physical activity.

Now is a great time to do this.

The Mayor's vision – *Our Bristol Plan Ensuring Everyone Benefits from Bristol's Success*, gives a clear commitment to working together with the NHS and voluntary community sector to keep people fit and active in their communities.

The *NHS Five Year Forward Plan* and the Bristol, North Somerset and South Gloucestershire Sustainability Transformation Plan both set out the need to focus efforts 'upstream' to prevent conditions such as diabetes and obesity.

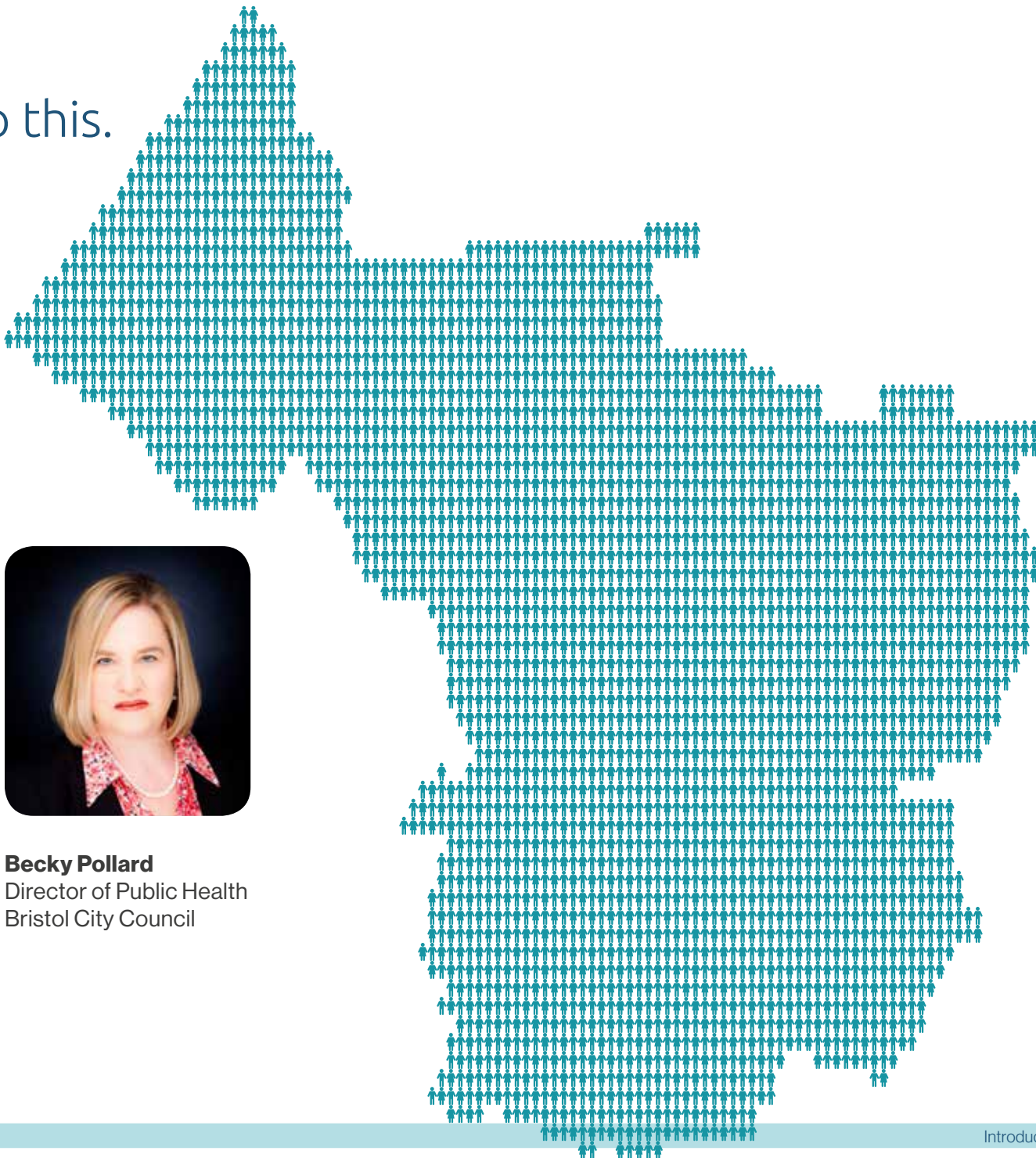
The Better Care Bristol vision sets out a clear mandate for joint working to integrate prevention and early intervention work aimed at keeping adults and older people healthier for longer.

In these days of austerity, we must target our public health resources where there is evidence for what works. We must work together across our local system by adopting flexible leadership styles so we not only 'do things better' but 'do better things'.

As a key system leader, it is my role to drive forward the 'case for prevention' and strengthen public health action. I look forward to working with partners across the city to help deliver the recommendations set out in this report.



Becky Pollard
Director of Public Health
Bristol City Council



Executive summary

Although people in Bristol are living longer, life expectancy varies considerably across Bristol with over 10 year's difference between wards. This difference is closely related to levels of deprivation, with cancer deaths being the principal cause of the gap in life expectancy between the most and least deprived areas of Bristol.

For many people, their additional years of life are not spent in good health. Healthy life expectancy (the average number of years a person might expect to live in 'good' health during their lifetime) is only around 63 years for men and 64 years for women in Bristol. Whilst this is similar to the England average, the gap between the most and least deprived areas within Bristol is over 16 years. This means that people living in areas of deprivation live for many more years with disability, limiting their ability to work, enjoy life, or take part in community life. The cost of this burden falls to families, social care, health care and society. The five top risk factors that lead to this disability and early death are dietary risks, tobacco smoke, obesity, high blood pressure and the use of substances (alcohol and drugs).

Each year in Bristol an average of 1,111 people die prematurely before they reach the age of 75 years. 815 (73%) of these deaths are due to just four main diseases; cancer (434 deaths), cardiovascular (230 deaths), respiratory (106 deaths) and liver disease (45 deaths). Around 60% of these cancer and cardiovascular disease deaths, half of respiratory disease deaths and over 90% of liver disease deaths are considered preventable by public health measures. Although premature mortality in Bristol has been falling, mostly due to fewer deaths from cardiovascular disease, the rate is still higher

than the England average. These four diseases, alongside diabetes and mental and substance misuse disorders, are responsible for most of the disability as well as early death that people in Bristol experience.

Health is determined by a wide range of factors including genetics, social and economic factors (such as income and education), environmental factors (such as housing and transport), healthcare and lifestyle. The foundations for a healthy life start before birth. The lifestyle choices we make greatly affect our health and wellbeing. Smoking, alcohol consumption, physical inactivity and a poor diet are all unhealthy lifestyle behaviours that lead to ill-health and premature death in Bristol.

All four lifestyle behaviours are associated with cancers and cardiovascular disease. Smoking is the key risk factor for respiratory disease and alcohol the key risk factor for liver disease. Indeed, these four lifestyle behaviours lead to around 48% of premature deaths from these four diseases alone in Bristol, hence the 4:4:48 model.

These four lifestyle behaviours are not distributed evenly across Bristol and they are a major contributor to the health inequalities seen within Bristol. People in lower socioeconomic groups are five times as likely as higher socioeconomic groups

to have a combination of three or four lifestyle risk factors and this clustering increases risk of poor health further. Differences in income, access to information, access to services, exposure to risk, lack of control over one's own life circumstances are directly linked with unhealthy lifestyle behaviours. These inequalities affect people's ability to withstand the biological, social, psychological and economic stress factors that can trigger ill health. They also affect a person's capacity to change their behaviour and to improve their health and wellbeing.

Smoking is increasingly concentrated in areas of deprivation and remains the biggest contributor to health inequalities. Almost 1 in 5 adults in Bristol smoke, but smoking rates in Hartcliffe and Withywood are five times those of Clifton Down. Smoking is estimated to cost the city around £111 million each year from costs to the local economy for smoking breaks, and costs to the NHS and social care. In addition, Bristol people spend £125 million on tobacco each year.

Around 27% of adults in Bristol consume alcohol at a level which could harm their health. Whilst the links between deprivation and alcohol consumption are not so clear cut, it is known that the actual impact of harmful drinking and alcohol dependence is much greater for those experiencing the highest levels of deprivation. Lawrence Hill has the highest rate of alcohol related admissions, and Henleaze the lowest.

Lack of physical activity is associated with a number of cancers and cardiovascular disease. There is a national recommendation of at least 150 minutes of moderate activity or 75 minutes vigorous activity per week for adults, and an hour per day for children, but nationally around half of women and a third of men do not meet these recommendations. In Bristol around 40% of people do not do enough physical activity and this, again, varies across the city with 80% of people in Hotwells and Harbourside ward but only 48% of those in Hartcliffe and Withywood reporting that they are physically active. 83% of 15 year olds in Bristol do not meet the recommendations. It is estimated that the NHS in Bristol spends over £3 million each year treating people for ill health caused by physical inactivity.

A large proportion of the population is still consuming too much saturated fat, added sugars and salt and not enough fruit, vegetables, oily fish and fibre. These dietary factors combined are now causing levels of disability and death similar to smoking through increasing the risk of developing some cancers, cardiovascular disease and diabetes. People on low incomes spend proportionally more of the household budget on food than better off people and often have a poorer diet; choosing cheaper, less nutritious foods. In Bristol only half of adults and young people consume adequate fruit and vegetables and again this varies across wards with people in Westbury on Trym almost twice as likely to consume the recommended 5 portions of fruit and vegetables as those in Filwood. Poor diet and inadequate physical activity is reflected in obesity levels which again are unequally distributed across Bristol for both adults and children.

Whilst addressing lifestyle behaviours is essential for both improving healthy life expectancy and reducing the vast inequalities within Bristol, we also have a clear need to understand the drivers behind chosen lifestyles. Lifestyle behaviours often start young and are deeply embedded in people's social and material circumstances and cultural context.

These conditions can prevent people from changing their behaviour and can reinforce behaviours that damage health. Effective interventions to modify lifestyles recognise the values people use to guide their lives and behaviour and take into account a person's attitudes toward the behaviour without stigmatising individuals or groups. Promoting mental wellbeing, a positive attitude to health, teaching coping skills and building trust and personal value through friendships, family, community and faith networks, can all positively affect a person's lifestyle behaviour and ability to make better health choices throughout life.

There are a number of cost effective interventions to address the four main lifestyle behaviours that contribute to the four main diseases and lead to most of the premature mortality seen in Bristol. Such interventions also impact on the levels of disability and years lived in poor health and pain experienced by so many, and the health inequalities experienced across the city. Investing in such prevention interventions would not only pay health dividends for current and future generations but fewer people living with serious conditions would reduce costs to public services, families and carers. We increasingly understand the financial value of investing in these preventative interventions;

investing £1 in smoking interventions could return £1.93 in 5 years; investing £1 in alcohol interventions could return £644 and investing £1 in physical activity could return £54 in 5 years.

Effective smoking cessation services, smoke free environments and supportive social networks are all necessary to increase people's chances of quitting smoking. Cost effective smoking cessation interventions include mass media campaigns, brief advice from health professionals and specialist smoking cessation services in the community, workplaces and secondary care. In recent years, e cigarettes have become popular amongst smokers to support quitting and research around cost effectiveness is awaited.

Reducing access to cheap alcohol through pricing mechanisms and advertising bans are seen as essential to protect the most vulnerable from the harms from alcohol and need to be driven at a national level. Cost effective interventions to reduce consumption include brief advice from healthcare professionals within primary care, hospital wards and accident and emergency. Alcohol treatment from specialist teams and on-line cognitive behavioural therapy are cost effective in treating dependency. Alcohol care teams in acute hospitals delivering brief interventions, detoxification support, and co-ordinating community based specialist treatment have also been shown to be cost effective.

Cost effective interventions to improve physical activity include improvements to the built environment to promote physical activity such as cycling and walking. Multicomponent programmes within schools and workplace settings to promote physical activity and active travel to schools and work have shown success. Primary care practitioners (such as GPs and pharmacists) can identify inactive people and offer brief advice and information about local opportunities to be physically active.

Whilst there are a number of interventions to improve population diet that need to be actioned by central government, such as restrictions on advertising of unhealthy foods, better food labelling and a tax on high sugar products, there are a number of effective interventions that local areas can take. We can increase the procurement of healthier food and drinks within public settings. Local implementation of national campaigns such as Change 4 Life can increase awareness and understanding of sometimes confusing messages around what constitutes a healthy diet. Delivering healthy diet training to those who have opportunities to influence food choices in the catering, fitness and leisure sectors and delivering multicomponent programmes around healthy eating in schools and workplaces have all been shown to be effective.

Since lifestyles are often clustered, a more integrated approach to behaviour change has been recommended. The Making Every Contact Count (MECC) programme is about front line workers across the public and voluntary sector having brief, opportunistic chats with the people they support, and signposting them to appropriate services.

The MECC approach is also an important part of the approach towards making health everyone's business. Strong partnership working results in limited resources being used efficiently and effectively for the benefit of the population. By working together and sharing expertise, experience and commitment to achieving better outcomes we can achieve more than if we work alone. Health therefore needs to be an integral part of policy and practice across all sectors of the city.

Smoking, alcohol, physical inactivity and poor diet are important contributors to both early death and to disability. They are a major driver of the health inequalities observed within Bristol and have a significant financial impact on individuals, families and society. A number of cost effective interventions have been outlined, which if implemented at scale, could have a demonstrable impact on the health and inequalities within the city. However, it is important also to appreciate that the lifestyles people adopt are affected by multiple factors: the physical environment, socio economic conditions, social norms and networks and mental wellbeing. Therefore the solutions to addressing these lifestyles need also to take into account these drivers of poor lifestyles. This requires a holistic, whole city approach and for health to become everyone's business.

Recommendations

- 1 The Director of Public Health should work through Bristol Health and Wellbeing Board and other stakeholders to implement the 4:4:48 prevention model to address modifiable unhealthy lifestyle behaviours (including smoking and tobacco, alcohol misuse, poor diet and lack of physical activity) and put 'Health in All Policies'.
- 2 The Health and Wellbeing Board should oversee an audit of current prevention and early intervention programmes against the evidence based interventions set out in this report and identifies any gaps.
- 3 The Bristol Children and Families Partnership Board should seek to strengthen cost effective public health programmes aimed at children and their families to give them a better and healthier start in life (specifically targeting those who experience the greatest disadvantage).
- 4 Bristol City Council's Public Health Team should coordinate the roll out of a 'Making Every Contact Count' training programme for multidisciplinary front line staff to improve health and wellbeing.
- 5 The Director of Public Health will work with the emerging Mayor's City Office, other city partnerships, the Bristol, North Somerset and South Gloucestershire Sustainability Transformation Plan and the West of England devolution deal to find ways to strengthen and consolidate public health effort to reduce health inequalities, preventable death and disease.



Section

The Overall Health of the Population in Bristol

1.1 Life expectancy and healthy life expectancy

The first section of this report gives an account of the overall health of the population in Bristol. It illustrates life expectancy rates and healthy life expectancy rates for men and women and highlights the gap in life expectancy for men and women living in the most and least deprived ward areas in Bristol. The difference between life expectancy and healthy life expectancy is explained and the main diseases that cause early death, before the age of 75 years, are identified, many of which are considered preventable.

Life expectancy at birth provides an estimate of the average number of years that a new born baby would expect to live, based on current mortality rates. It gives an indication of general population health and health inequalities within an area.

In the Bristol local authority area, life expectancy is 78 years for males and 83 years for females. Male life expectancy in Bristol is significantly lower than the English average of 79.5 years, whilst female life expectancy is the same as the English average of 83 years.

Life expectancy varies across the wards in Bristol. For men, the gap between the ward with the highest life expectancy and the ward with the lowest is 10 years, for women it is over 11 years (based on the ward boundaries prior to 2016).

Highest life expectancy for men is in Clifton, and women in Cabot. Lawrence Hill has the lowest life expectancy for men, and Southville has the lowest life expectancy for women.

Figure 1 sets out a map of male life expectancy by ward across the city and Figure 2 sets out a similar map of female life expectancy by ward across the city.

Figure 1: Life expectancy at birth for males in Bristol wards (pre 2016 boundary changes), 2012 – 2014 Source: Calculated by Bristol Public Health Knowledge Service using Primary Care Mortality Database and ONS population estimates.

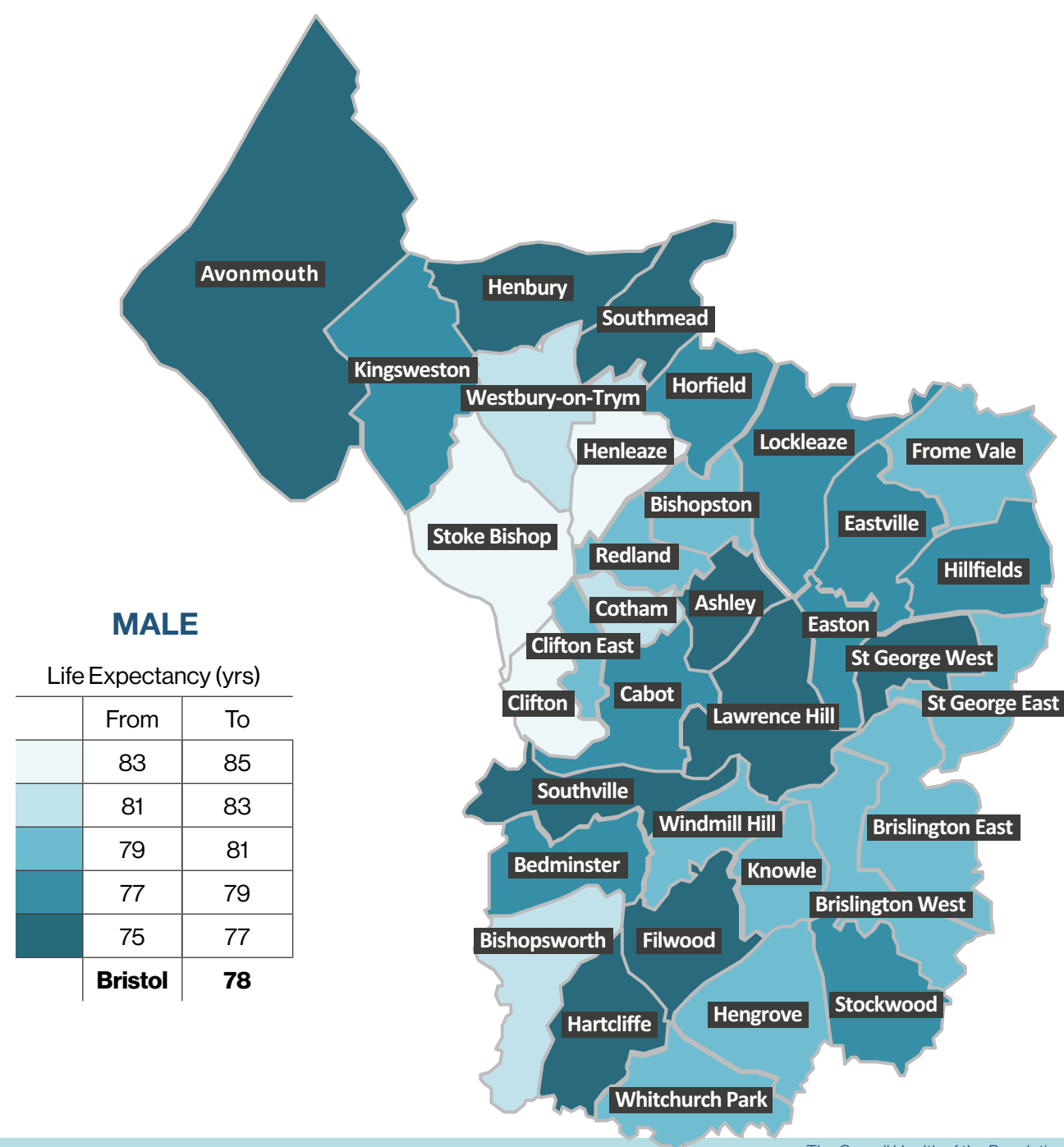
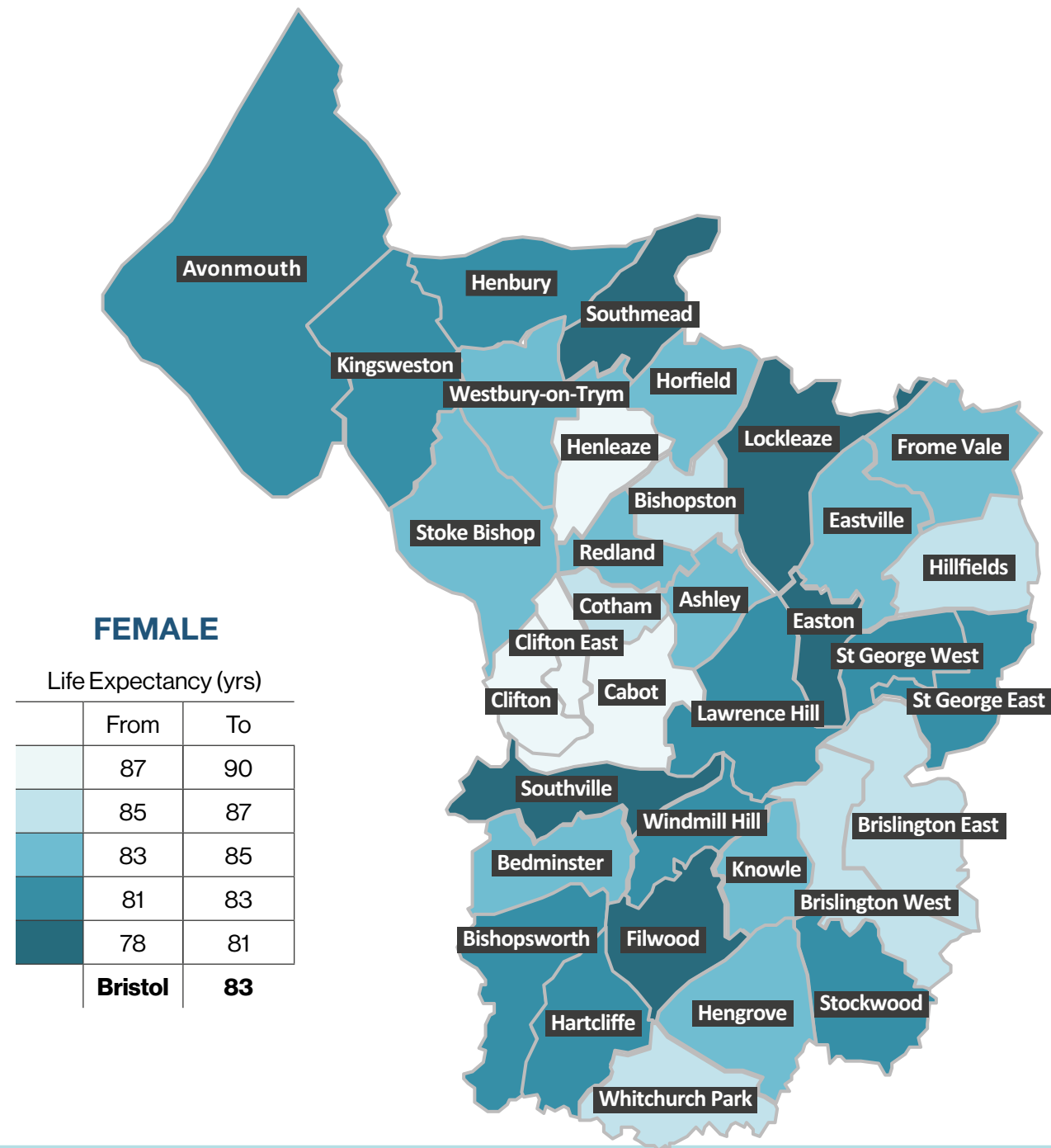


Figure 2: Life expectancy at birth for females in Bristol wards (pre 2016 boundary changes), 2012 – 2014 *Source: Calculated by Bristol Public Health Knowledge Service using Primary Care Mortality Database and ONS population estimates.*



Healthy life expectancy is a measure of the average number of years a person would expect to live in good health based on contemporary mortality rates and the prevalence of self-reported good health. Healthy life expectancy is the average number of years a person might expect to live in 'good' health during their lifetime. In Bristol the healthy life expectancy for men is 63 years and for women is 64 years, similar to England.

Figures 3 and 4 set out the differences in healthy life expectancy by geographic areas (called Middle Super Output Areas) within Bristol for males and females, retrospectively. Middle Super Output Areas are smaller areas than wards.

Men living in the least deprived areas of Bristol can expect to live 16 years longer in good health than those living in the most deprived areas of Bristol. Women living in the least deprived areas of Bristol can expect to live 17 years longer in good health than those living in the most deprived areas of Bristol.

MALE

Healthy Life Expectancy (yrs)		
	From	To
	70	75
	65	70
	60	65
	55	60
	50	55

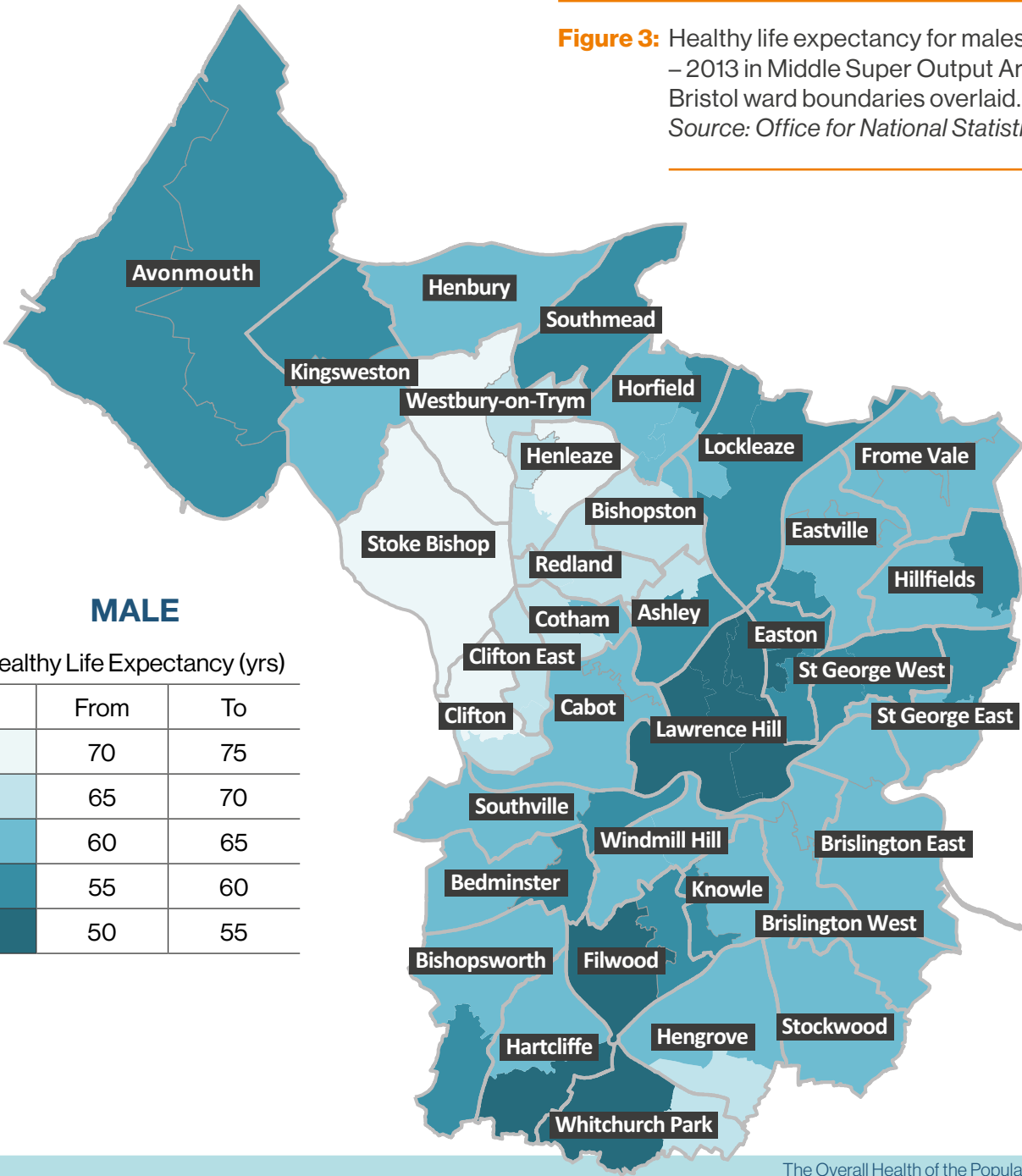
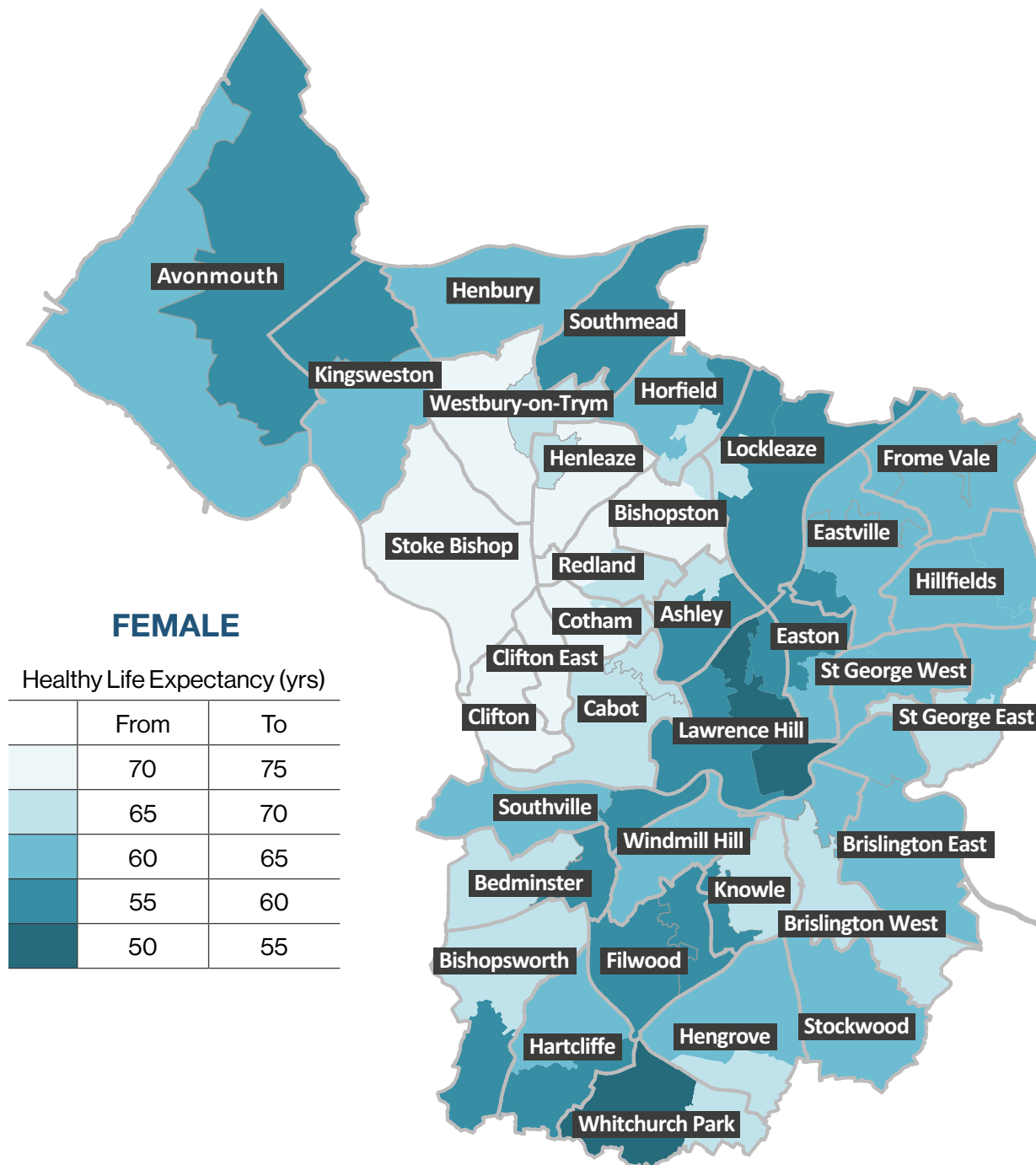


Figure 3: Healthy life expectancy for males, 2009 – 2013 in Middle Super Output Areas with Bristol ward boundaries overlaid.
Source: Office for National Statistics.

Figure 4: Healthy life expectancy for females, 2009 – 2013 in Middle Super Output Area with Bristol ward boundaries overlaid.
Source: Office for National Statistics (ONS).



1.2 The gap in life expectancy

Figure 5 shows the percentage contribution that different diseases make to the differences in life expectancy between the most and least deprived areas in Bristol. Cancer is the biggest cause of the gap for both men and women.

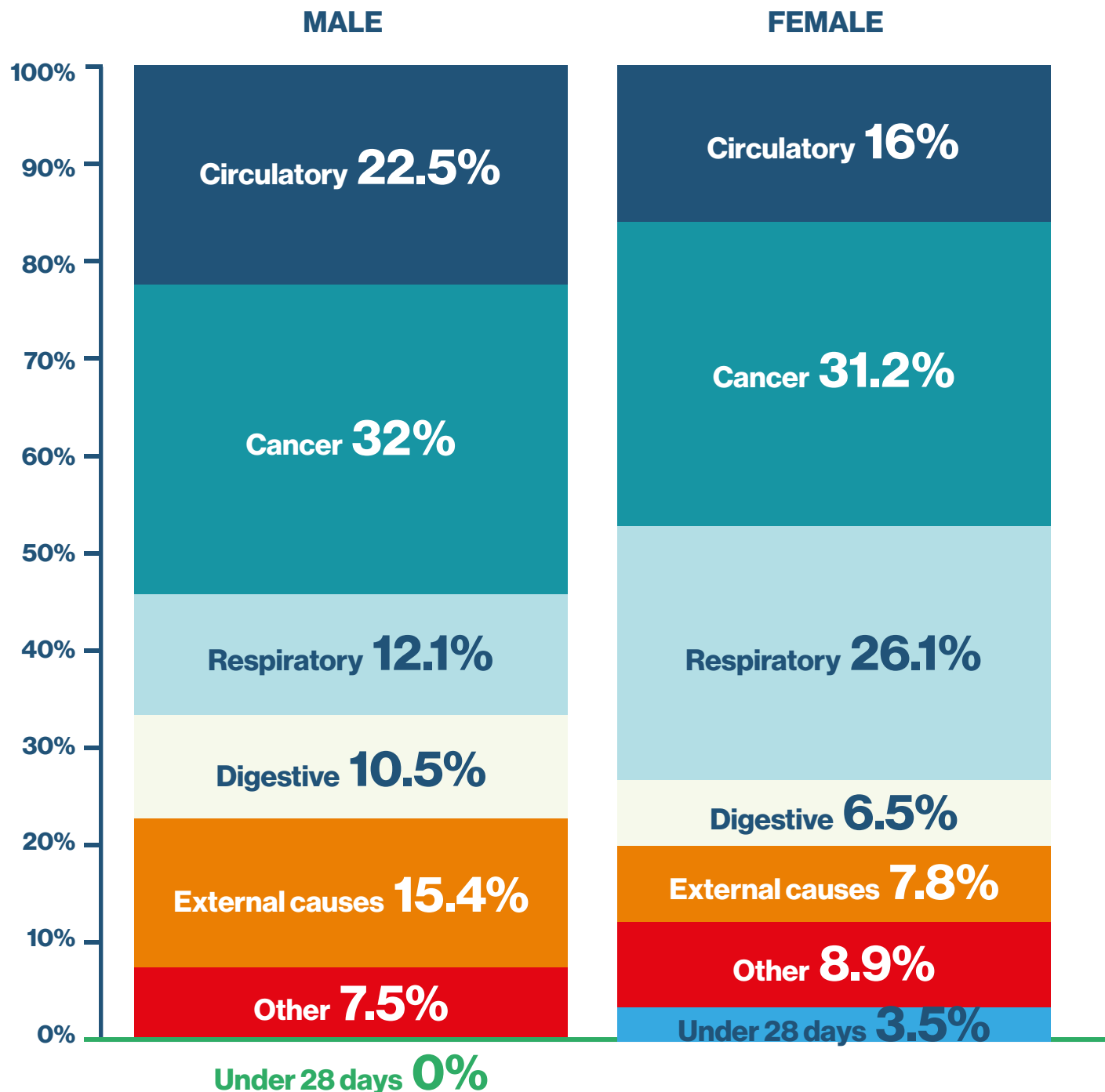


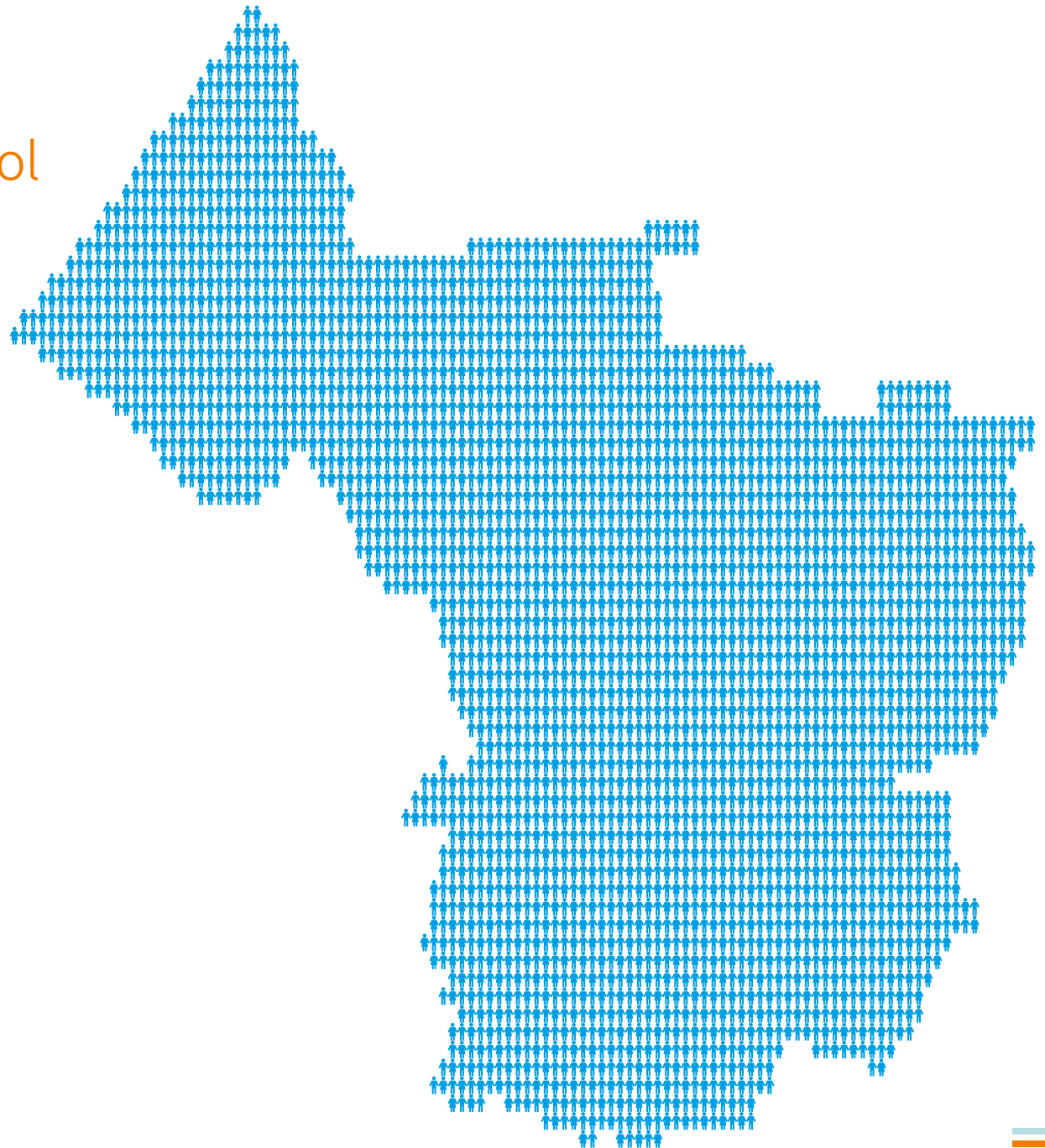
Figure 5: Breakdown of the life expectancy gap between Bristol most deprived quintile and Bristol least deprived quintile, by broad cause of death, 2012-2014.
Source: Analysis by Public Health England Epidemiology and Surveillance team based on ONS death registration data, and mid-year population estimates, and DCLG Index of Multiple Deprivation, 2015.

1.3 The main diseases that cause early death in Bristol

On average, 1,111 people die prematurely every year in Bristol (before the age of 75). This is around a third of all deaths that occur in Bristol (an average of 3,323 people die in Bristol every year).

Figure 6 shows that the four main disease groups that cause early death in Bristol are: cancer, cardiovascular diseases (heart disease and stroke), respiratory diseases and liver disease. These four diseases contribute to 73% of premature mortality in Bristol.

Many of these deaths are considered preventable through known public health interventions. Interventions to prevent early death can include for instance, supporting people to follow healthy lifestyles and encouraging people to take up flu vaccinations and cancer screening.



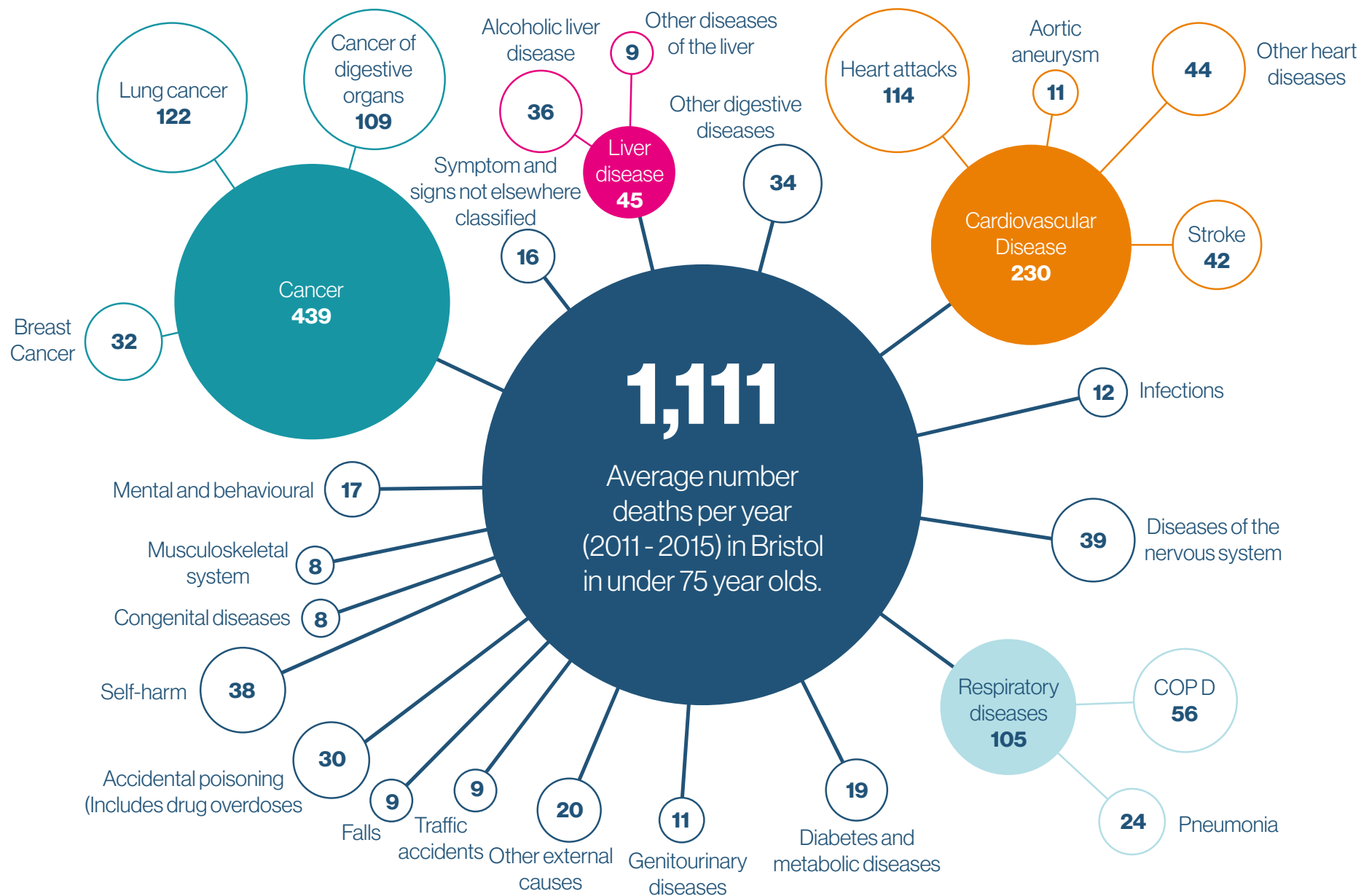
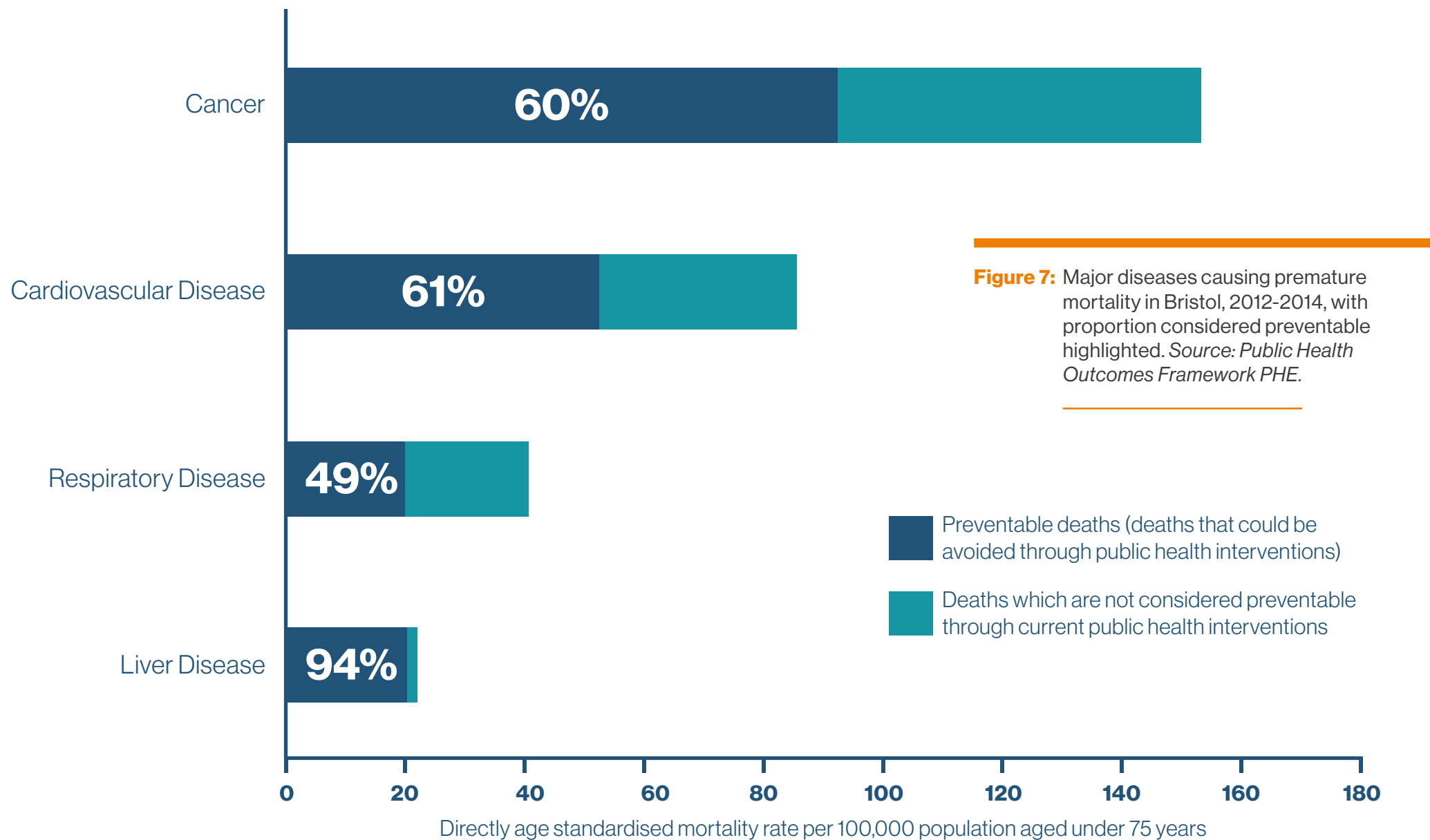


Figure 6: Main causes of premature death in Bristol (average per year 2011 - 15). Source: calculated by Bristol Public Health Knowledge Service using ONS mortality data.



Please note: Preventable deaths are those from causes considered to have been potentially avoidable through appropriate public health intervention.

Figure 7 shows the percentage of deaths that are preventable in each disease group. Of these early deaths in Bristol:

- 60% are considered preventable from cancer
- 61% are considered preventable from cardiovascular disease
- 49% are considered preventable from respiratory disease
- 94% are considered preventable from liver disease

Cancer is the leading cause of premature death in Bristol. Between 2012 and 2014, the rate of death from cancer of people under the age of 75 years old was 153 per 100,000 people per year, of which 60% are considered preventable.

Cancer is a condition where cells in a part of the body grow and reproduce uncontrollably. These cancer cells can then invade and destroy healthy tissue and organs. There are over 200 types of cancer with lung, breast, bowel and prostate cancers accounting for more than half of cancers ¹.

Cardiovascular disease (CVD) is the second leading cause of premature deaths in Bristol. Between 2012 and 2014, the rate of death from cardiovascular disease of people under the age of 75 years was 85 per 100,000 people per year of which 61% are considered preventable.

Cardiovascular disease (CVD) covers a range of conditions including coronary heart disease, stroke and peripheral vascular disease. These are diseases which occur when the arteries or vessels supplying the heart or brain become blocked or rupture preventing the normal flow of blood and oxygen ².

Respiratory disease is the third leading cause of premature death in Bristol. Between 2012 and 2014, the rate of death from respiratory disease of people under the age of 75 years was 40 per 100,000 people per year of which 49% are considered preventable.

Respiratory diseases include chronic obstructive pulmonary disease, and infections such as pneumonia and influenza.

Liver disease is the fourth leading cause of premature death in Bristol. Between 2012 and 2014, the rate of death from digestive diseases, including liver disease, of people under the age of 75 years was 22 per 100,000 people per year of these 94% are considered preventable.

The main liver disease is alcoholic liver disease. Other liver diseases include non-alcoholic fatty liver disease and hepatitis infections.

1.4 Trends in Premature Mortality

Figure 8 shows that over the last 15 years, premature mortality rates have been gradually falling, however premature mortality rates in Bristol are still significantly higher than the English average and there has been no significant reduction since 2010.

Figures 9 and 10 illustrate that most of the reduction is due to fewer early deaths from cardiovascular diseases, and a small contribution from fewer cancer deaths.

Respiratory disease accounts for a relatively small proportion of premature deaths (under 10%). Figure 11 shows that the mortality rate for respiratory disease has fallen roughly in line with England, however, over the last two years the rate has increased and Bristol is now significantly higher than England.

Liver disease accounts for about 4% of premature deaths. Figure 12 shows that the premature mortality rate for liver disease has increased recently and for 2012-2014, Bristol is now significantly higher than England.

Figure 8: Under 75 years old mortality rate for Bristol compared to the English average (2001-2014). Source: Health and Social Care Information Centre (HSCIC).

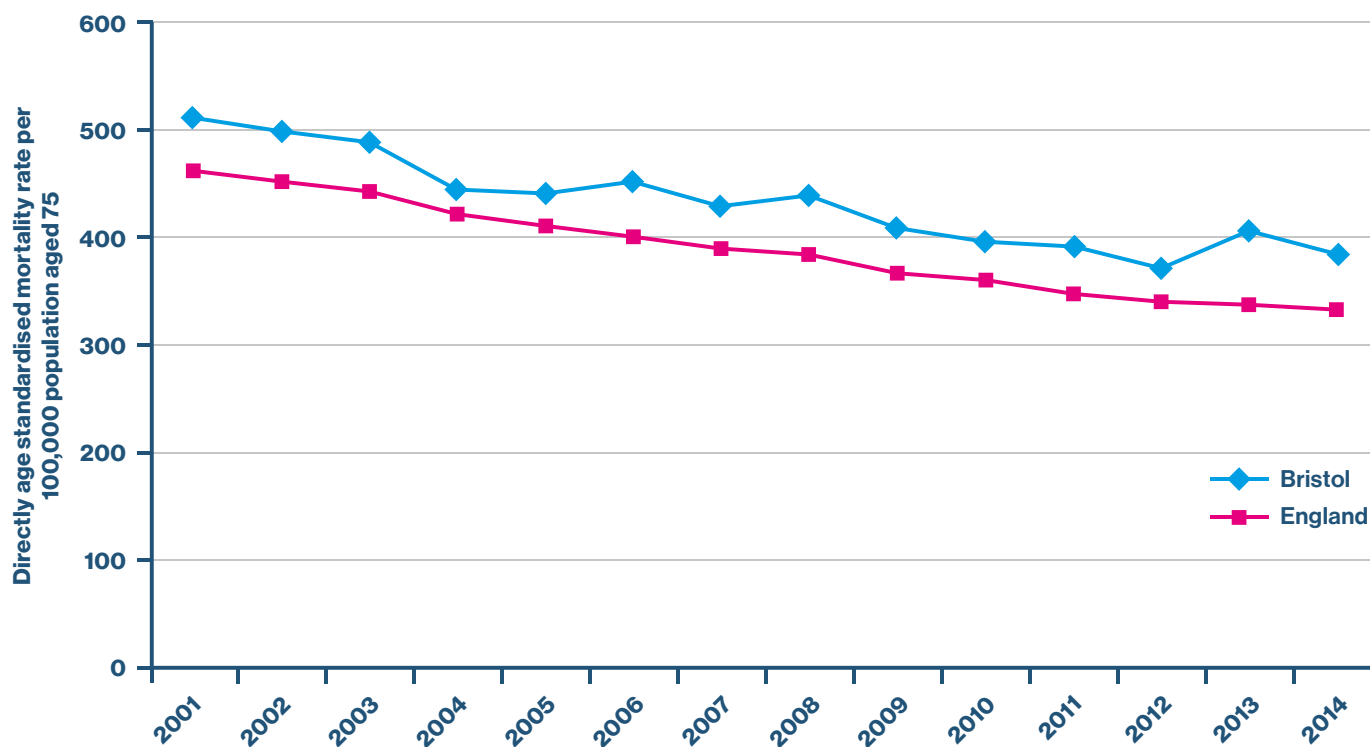


Figure 9: Under 75 years old mortality rate for cardiovascular disease in Bristol, (2001-03 to 2012-14).
Source: Public Health England (based on ONS source data).

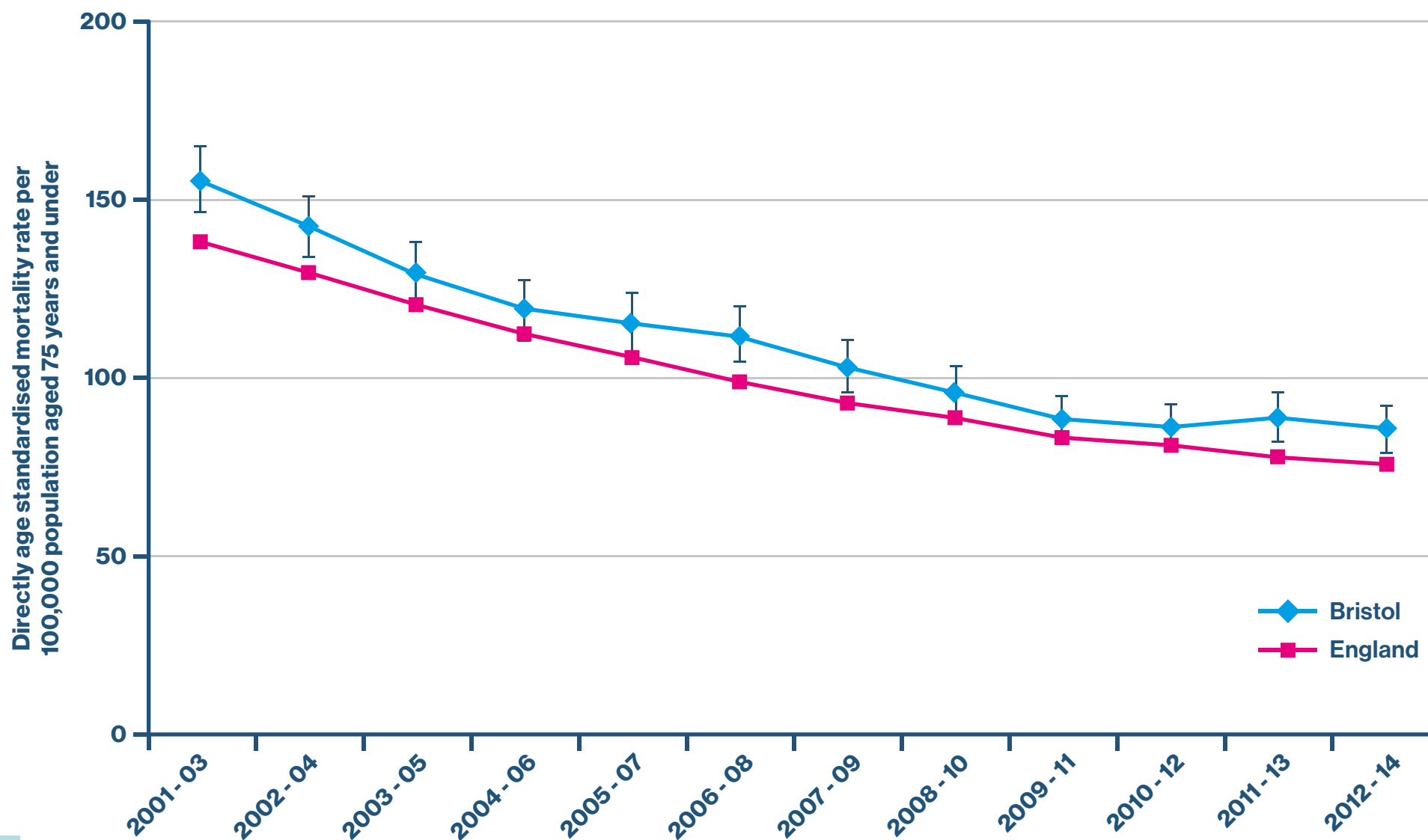


Figure 10: Under 75 years old mortality rate for cancer in Bristol, (2001-03 to 2012-14).
Source: Public Health England (based on ONS source data).

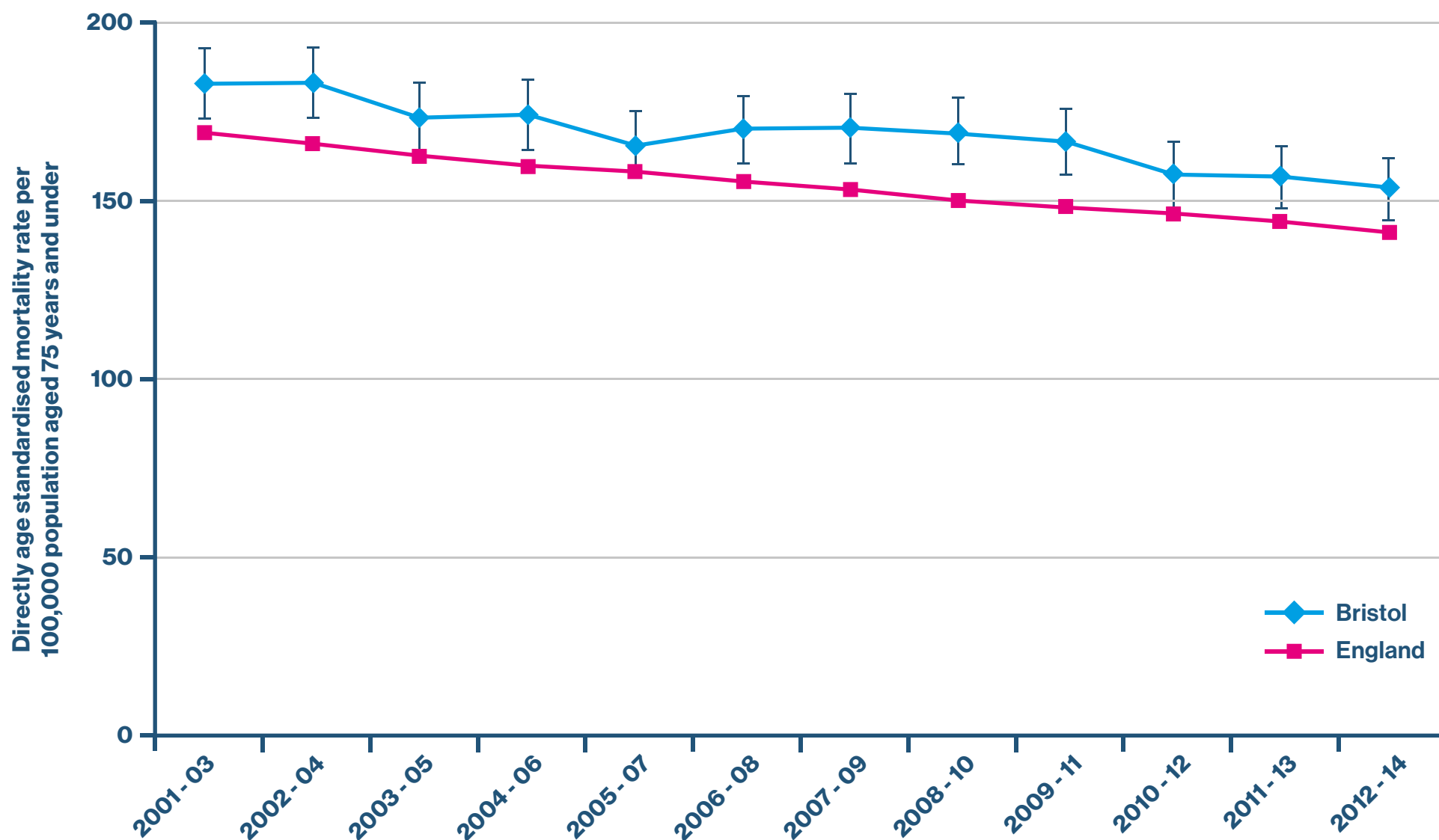


Figure 11: Under 75 years old mortality rate for respiratory disease in Bristol, (2001-03 to 2012-14).

Source: Public Health England (based on ONS source data).

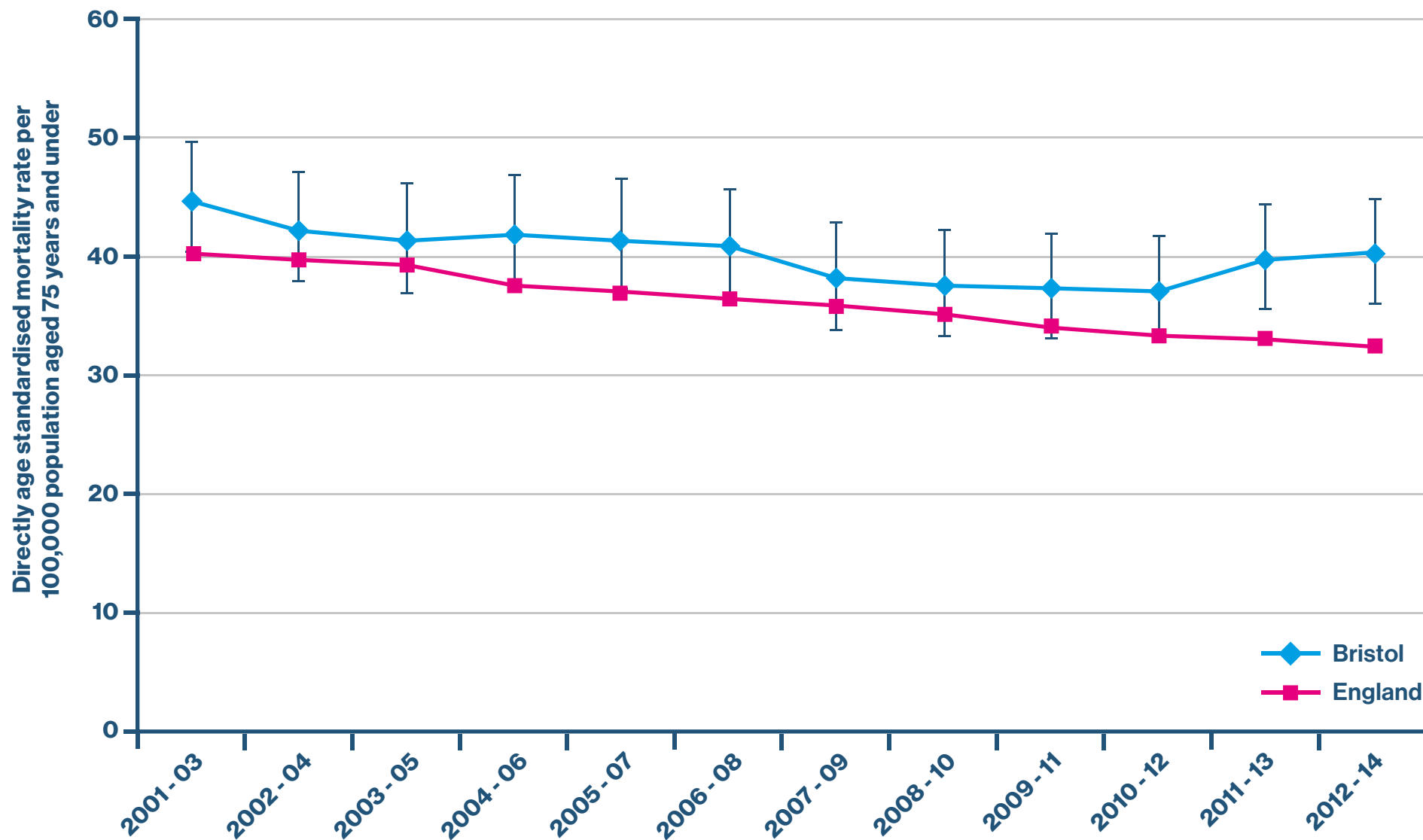
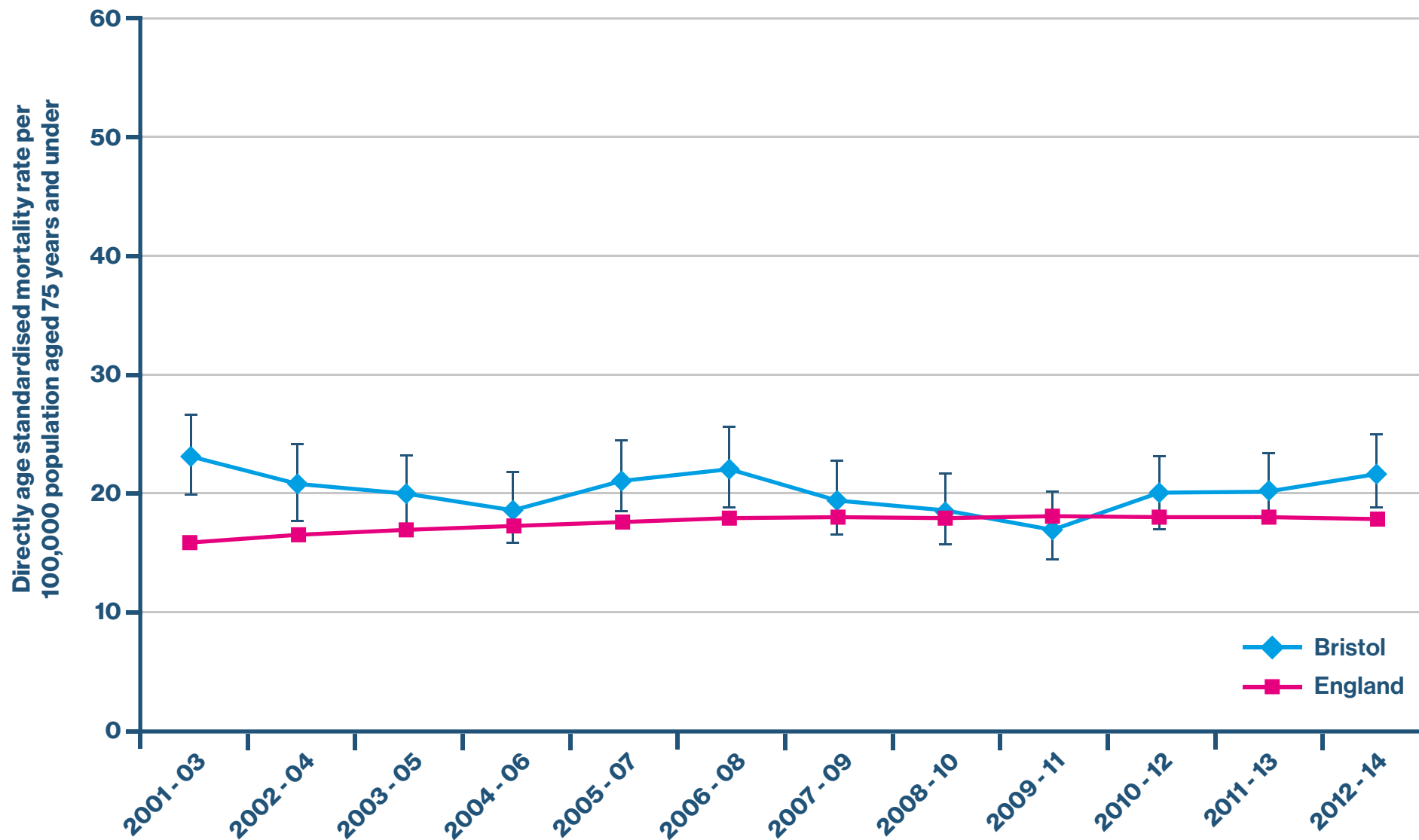


Figure 12: Under 75 years old mortality rate for liver disease in Bristol (2001-03 to 2012-14).
Source: Public Health England (based on ONS source data).



1.5 The burden of disease and disability in Bristol

The major diseases causing premature deaths in Bristol also cause years of disability for the person leading up to their death, limiting their ability to work, enjoy life, or take part in community life. The cost of this burden falls to families, social care, health care and society.

Disability adjusted life years (DALYs) are a measure of disease burden. They are a sum of the years lost due to ill-health, disability and early death (see Figure 13).

The Global Burden of Disease⁴ uses DALYs to demonstrate the burden of disease and the relative contribution of diseases and risk factors. The Global Burden of Disease enables us to explore the relative contributions of risk factors to early death and disability. When exploring the diseases that contribute to the burden of early death and disability for Bristol, it is apparent that the main diseases are similar to those causing premature mortality. One of the major diseases causing disability is diabetes and obesity (as a result of poor diet and lack of physical activity) is one of the main risk factors for type 2 diabetes (see Figure 14).

Health Champions

As part of the Health Champions Programme, the Bristol City Council Public Health Team invited the Fit and Fab group based at Knowle West Health Park to participate in a training course. The training was well received and all participants passed the Level Two assessment. Led by a volunteer, it motivated the participants to set up a health group called CHAMPS. Based at The Park they meet monthly to discuss health issues and run campaigns in their local area. The group has continued to develop, taking on further training including *Talking About Cancer*. The group now organise a stall in the Health Park to promote Cervical and Bowel Cancer screening.

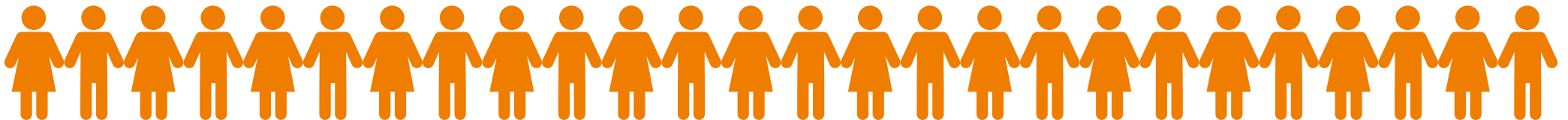
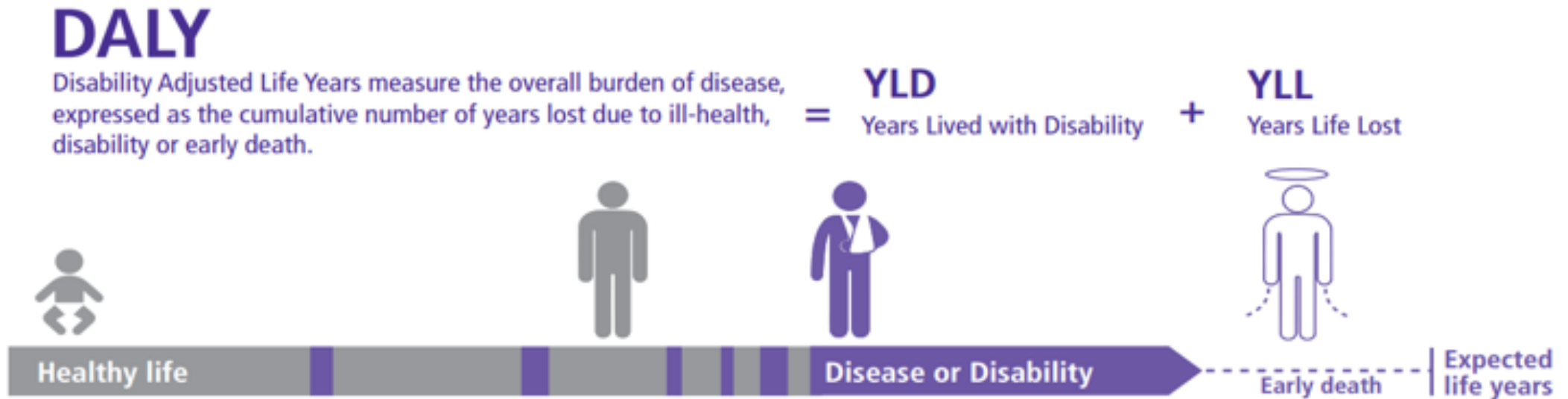


Figure 13: The meaning of disability adjusted life years (DALYs) ³.



Source : Wiki Commons

$$\text{DALYs} = \text{Years of life lost due to premature mortality (YLL)} + \text{Years lived with disability (YLD)}$$

Figure 14: Estimated proportion of disability adjusted life years (DALYs) by disease group for Bristol in 2013.

Source: Calculated by Bristol Public Health Knowledge Service by applying global burden of

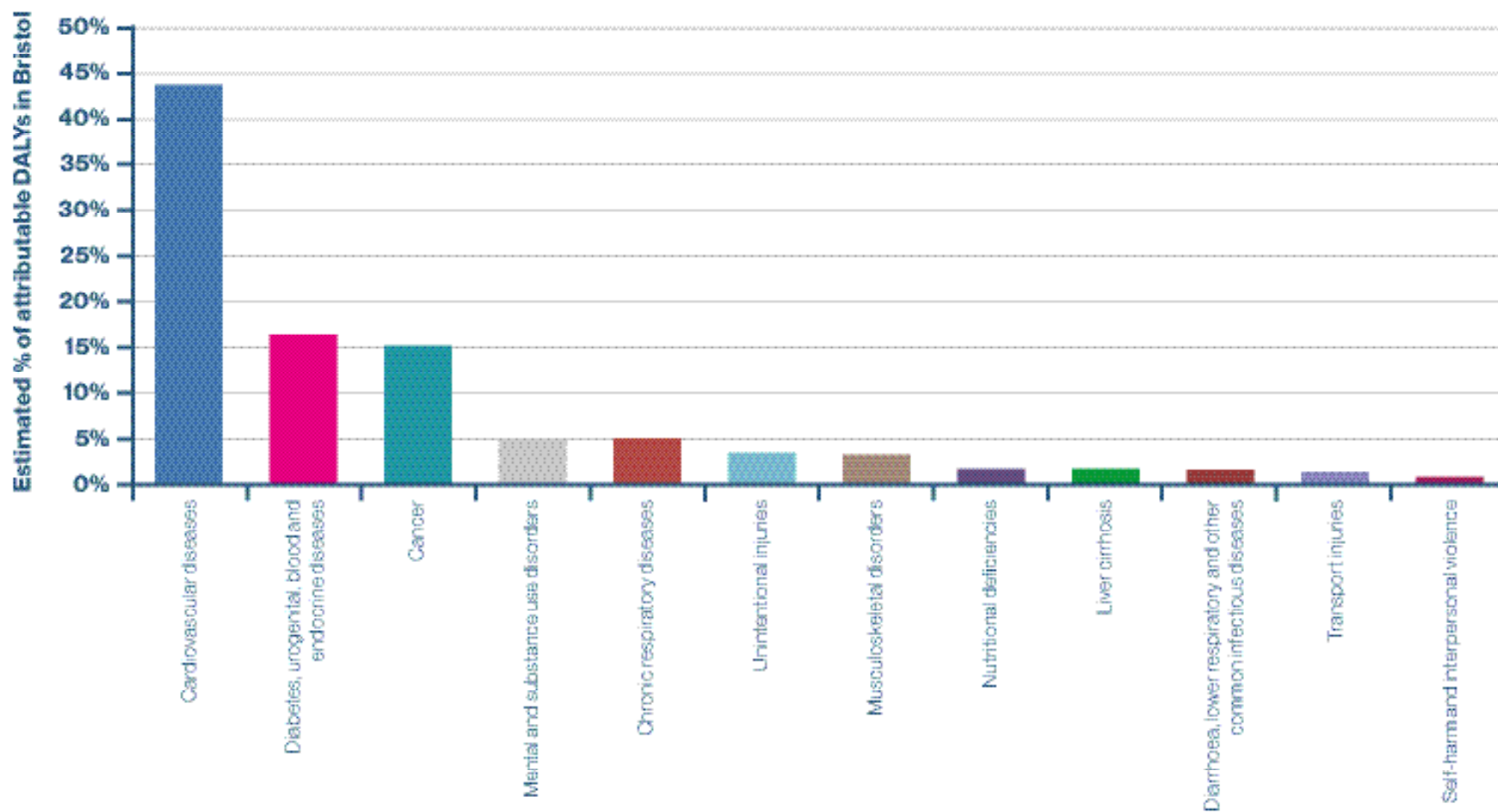


Figure 15 shows the estimated breakdown of disability adjusted life years by risk factor and cause. Dietary risks, tobacco smoke, obesity, high blood pressure and alcohol/drugs are the five top risk factors and causes that lead to most early death and disability.

Please note: Dietary risks are related to poor diet. This means diets low in fruit, vegetables and fibre and diets high in sodium, processed meat and artificial trans- fatty acids (processed saturated fats).

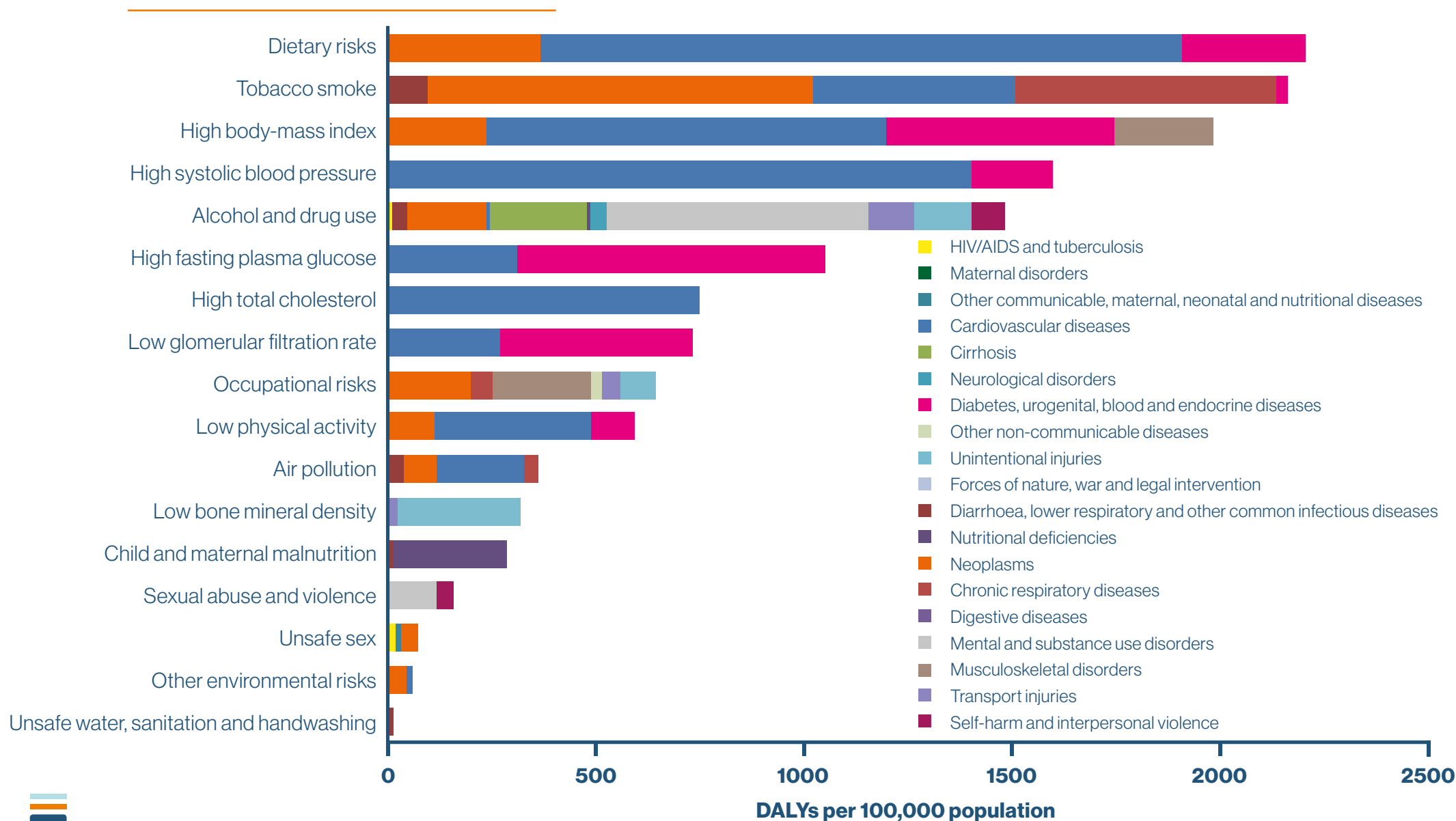


Every Step Counts

Every Step Counts is a Health Walks project that provided a 12-week tailored walking programme with graduated walks. The people who joined had mostly been inactive, and some had long-term health conditions. The walks were led by trained volunteers, and the aim was for the project to be a stepping stone to independent walking or more demanding walking groups.

The project recruited more than 250 walkers who increased their physical activity by 88% and their mental wellbeing by 92% after joining. The volunteers delivered seventeen 12-week walking programmes. Over 120 short walking routes were mapped and made available to download on the Ramblers website. Many of the walkers have continued to be active and walk for health.

Figure 15: Estimated breakdown of disability adjusted life years (DALYs) by risk and cause in Bristol, 2013.
Source: calculated by Bristol Public Health Knowledge Service using results from Global Burden of Disease, Institute for health metrics and evaluation.



Section

2

What influences the health of the population of Bristol?

2.1 Determinants of health

There are many factors which shape and influence the health of individuals and local populations. Some of these relate to our own individual characteristics (i.e. age, gender or genetic make-up) whilst others are related to the wider context in which we live (i.e. social, physical, economic environments).

These factors can be grouped into five areas:

1. Fixed factors (age, sex, genetic makeup)
2. Lifestyle health behaviours
3. Social and economic factors (education, employment, income, family and social support, community safety)
4. Physical environment (sanitation, water and air quality, housing)
5. Access to quality services

Differences in health outcomes between individuals and populations are affected by the interplay of these factors and can lead to significant inequalities in health between different groups.

It is important to understand the impacts on health and wellbeing if we are to promote positive health and wellbeing and prevent ill-health and avoidable death.

The opportunity a person has to improve their healthy life expectancy very much depends on:

- Their ability to prevent illness and disease, by modifying unhealthy lifestyle behaviours and,
- The socioeconomic and environmental conditions that enable a person to take control of their own life.



2.2 A life course approach

There is strong evidence that the foundations of good health start even before birth and are influenced at each stage of the life course from childhood, adulthood and into older age.

There is also strong evidence that poor health is linked to social and economic disadvantage and deprivation which starts before birth and accumulates throughout life. For instance school readiness, which can be described as a measure of the personal, social, emotional, physical, communication and language development of children age 4/5 years, greatly affects the opportunities for social mobility that a child may encounter and the lifestyle choices they may make throughout adult life⁶.

Therefore if we are to effectively promote health and wellbeing and reduce health inequalities we need to take action before birth and across the life course.

‘Giving every child the best start in life is crucial to reducing health inequalities across the life course.’

Marmot review report - Fair Society, Healthy Lives 2010

‘The importance of investing in the early years is key to preventing ill health later in life, as is investing in healthy schools and healthy employment as well as more traditional forms of ill-health prevention such as drug treatment and smoking cessation programmes.’

Marmot review report – Fair Society, Healthy Lives 2010

Public Health Alcohol Intervention

In the Bristol Royal Infirmary Accident and Emergency department, a public health alcohol nurse is employed to support people who have been referred by staff who have concerns about a patient's alcohol use. This ranges from patients who need basic advice about safer alcohol use to those who have physical dependencies to alcohol and need support to manage this.

Alcohol interventions given by the nurse include sign posting or referrals to community alcohol services. Advice is also given to other members of staff to aid them in caring for these patients. Follow up appointments as outpatients can be offered and if they are admitted to a ward then they can be referred on to a ward alcohol nurse.

High impact user patients with substance misuse problems are discussed in a weekly meeting held by the drug and alcohol nurses along with the high impact user worker from the ROADS drug and alcohol service. A team approach is used in order to put together plans of care and support for this client group. Where needed, there is liaison with both hospital and community-based teams, including the use of multi-professional meetings where needed.

‘Health inequalities are largely preventable. Action on health inequalities requires action across all the social determinants of health, including education, occupation, income, home and community’

Marmot review report – Fair Society, Healthy Lives 2010



2.3 Lifestyle Behaviours and Health Inequalities

The lifestyle choices we make greatly affect our health and wellbeing. Smoking, alcohol consumption, physical inactivity and a poor diet are all unhealthy lifestyle behaviours that lead to ill-health and premature death in Bristol.

Lifestyle choices are deeply embedded in people's social and material circumstances and their cultural and environmental context. Differences in income, access to information, access to services, exposure to risk and the level of control over one's own life circumstances all impact on lifestyle behaviours. Such inequalities affect people's ability to withstand the biological, social, psychological and economic stress factors that can trigger ill health as well as affecting a person's capacity to change their behaviour and improve their health and wellbeing. Action taken earlier, rather than later, in a person's life can be more effective at preventing health-damaging behaviours⁶.

NICE guidance reminds⁷ us that attempts to change unhealthy lifestyle behaviour do not always lead to overall improvements in the health of the population. Different groups of people react differently to the environment in which they live, work and play. Changing behaviour may not be a priority for some individuals in certain social and cultural contexts, as unhealthy lifestyle behaviours may provide positive psychological or social benefits. For example, smoking cigarettes may provide 'time-out' for people in difficult circumstances. Effective interventions to modify unhealthy lifestyle behaviour do not stereotype or stigmatise groups or individuals, but recognise the values people use to guide their lives and behaviour and take into account a person's attitudes toward the behaviour at any one time.

We know that mental and physical health are inextricably linked and that unhealthy lifestyles are sometimes adopted to manage stress⁸. Supporting people and communities to take more control of their lives can help them withstand the effects of health inequalities and boost the resilience of people living in difficult circumstances. Promoting good mental wellbeing, a positive attitude to health, teaching coping skills and building trust and personal value through friendships, family and faith networks, can all positively affect people's ability to change their behaviour.

'Communities are important for physical and mental health and well-being. The physical and social characteristics of communities, and the degree to which they enable and promote healthy behaviours, all make a contribution to social inequalities in health.'

Marmot review report – Fair Society, Healthy Lives 2010

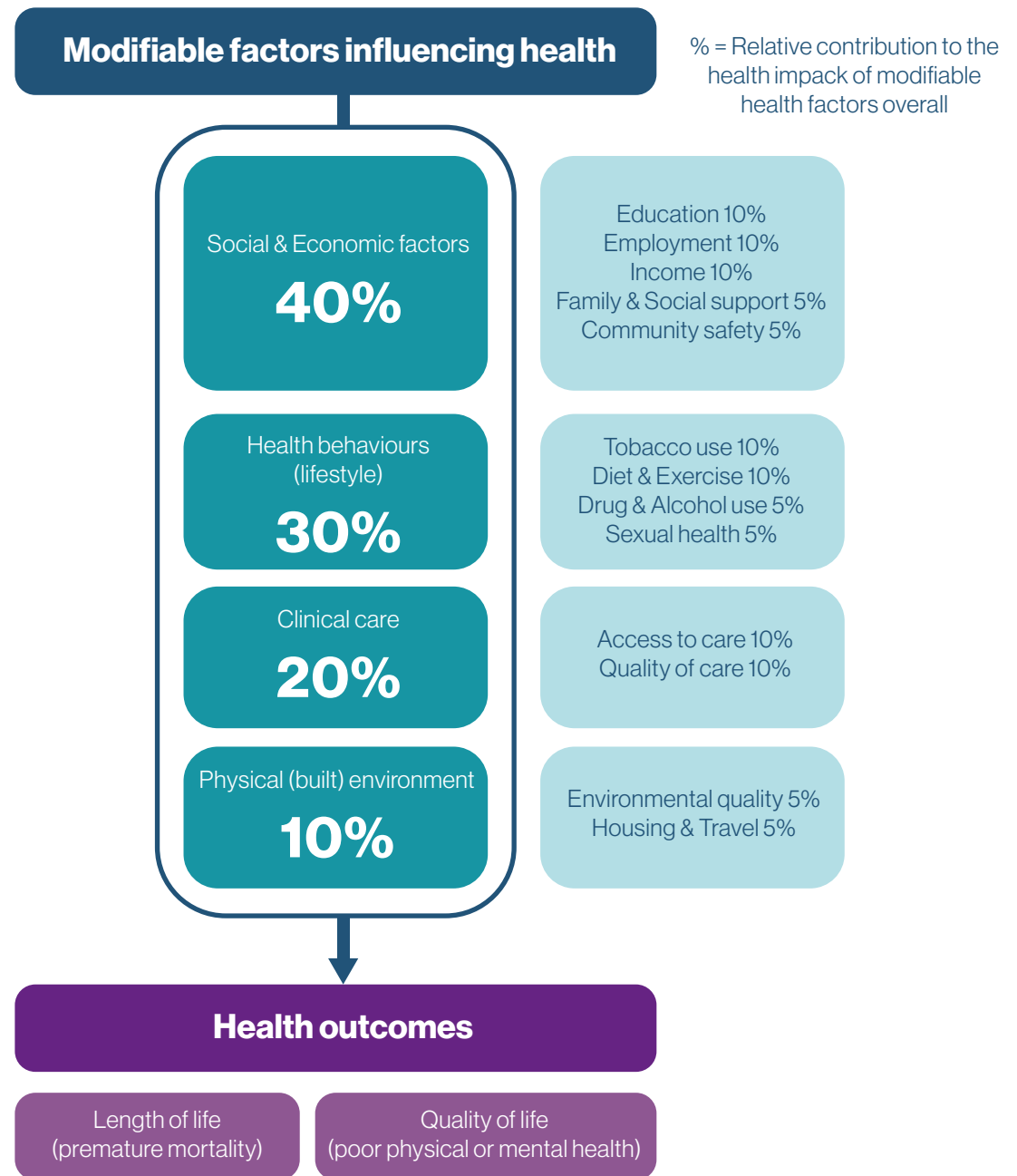
2.4 The relative impact of health determinants

By studying the patterns of diseases in different populations, academics have developed a number of models which try to quantify the relative effects of different determinants on population health and wellbeing^{9,10,11}.

Figure 16 illustrates one such model from the United States of America that sets out the estimated relative contribution of health behaviours compared to a set of other factors. It suggests that lifestyle behaviours such as smoking, alcohol consumption, diet and physical inactivity account for around a third of population health outcomes (length and quality of life). However, as with all the other models referenced above, social and economic factors are considered to be the most significant determinants.

Please note: Although it is understood that genetics are an important predictor of health and as such may drive health outcomes, they are excluded from this model.

Figure 16: Estimated contribution of modifiable factors that influence population health¹².



Health Behaviours (Lifestyle)

As shown in Figure 16, modifiable lifestyle behaviours such as smoking, diet and physical activity, are some of the most important factors that affect the health and wellbeing of the population.

Adult lifestyle behaviour affects the rate at which a person's health declines as they age and is one of the most important factors that affect population health.

'The rate of decline may be reversible at any age and can be influenced at any age by individual lifestyle changes and policy measures, such as improving physical fitness, smoking cessation and creating opportunities for employment' ¹³

Clinical care

Access to quality health and care services (including social care, primary and community services and hospital services) plays an important part in determining health outcomes for a population. However, their contribution is estimated to be less than that of health behaviours and social and economic factors.

Social and economic factors

The social and economic environment into which individuals are born, live, work and age is considered the most important factor in influencing the health of the population.

'Improving population health requires effort to change behaviours and living conditions across communities' ¹⁴

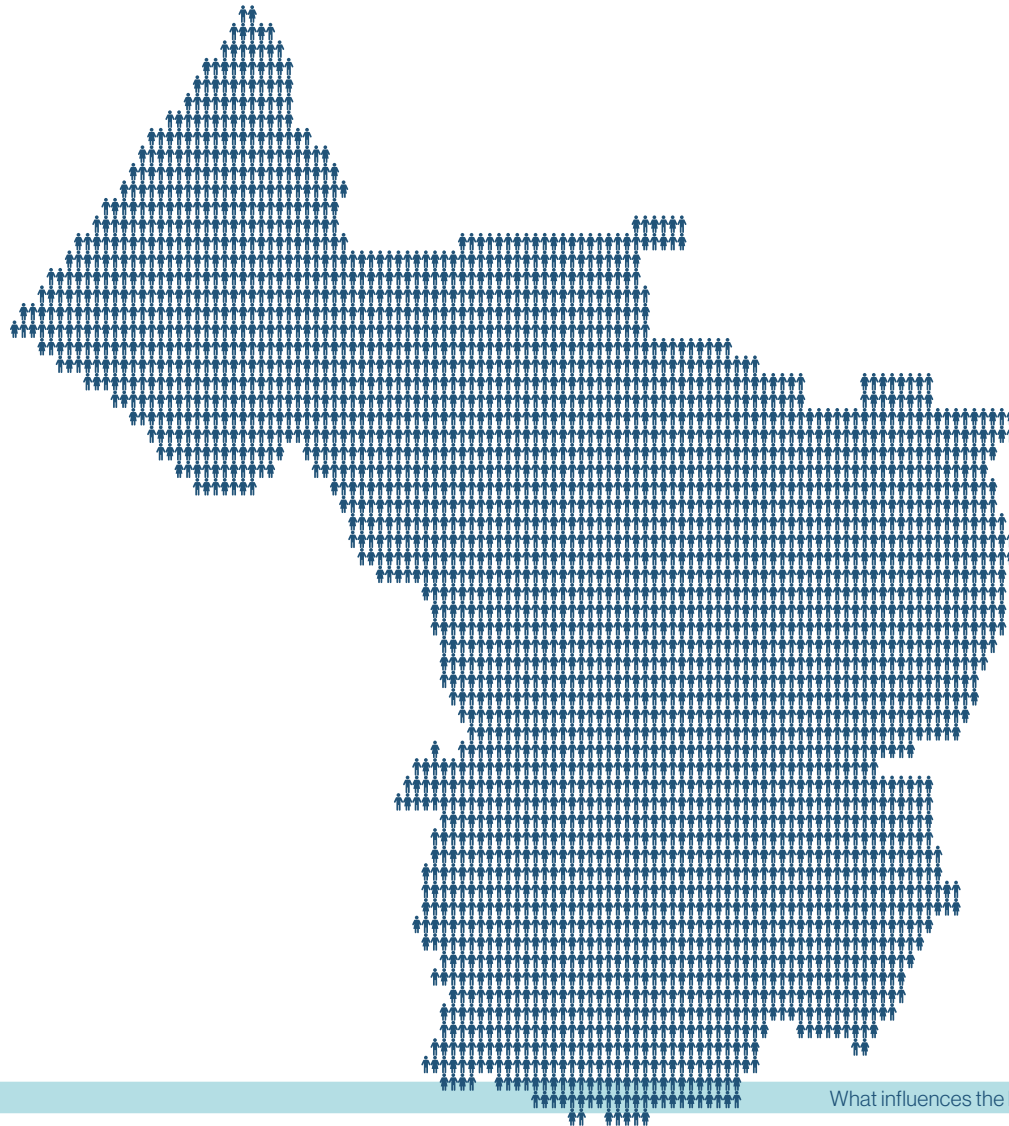


Physical environment

The physical conditions in which we live and work affect the health of the population. Our built environment, such as our housing, neighbourhoods, recreational settings, workplaces and transport infrastructure shape our health outcomes throughout our lives in different ways. Other physical factors include air and water quality.

It is clear that we have a real opportunity to prevent ill-health and early death by modifying lifestyle behaviours. However, this needs to be done at the same time as addressing the wider socio-economic and environmental conditions and clinical care, which all have a significant impact on the health outcomes of the population in Bristol.

‘Poor health outcomes are often made worse by the interaction between an individual and their social and physical environment’ ¹⁵.



Section

3

The Case for Prevention and Early Intervention

This section considers the case for prevention based on what we know about the health of people living in Bristol and what influences their health outcomes. It draws on work carried out in San Diego¹⁶, which provides a framework to help target local effort and resources to get the best outcomes to prevent early death and improve the health and wellbeing of the local population, see Figure 17.



3.1 The 4:4:48 Prevention Model

As set out in section two, lifestyle behaviours have a significant influence on health outcomes. The Global Burden of Diseases Study (GBD) uses worldwide data from 35,000 sources to assess death and disability from the major diseases and risk factors ⁴.

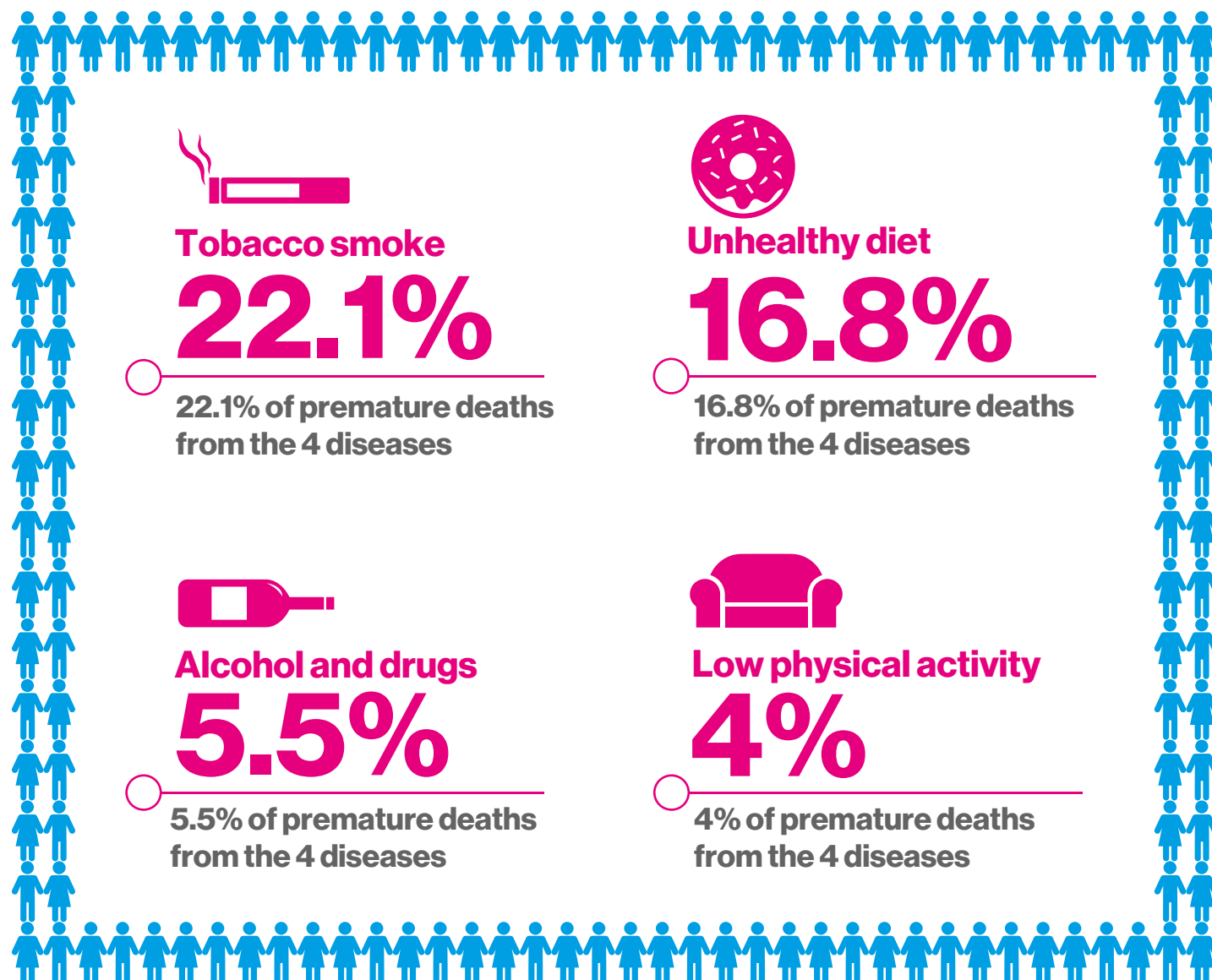
Figure 17 uses GBD data to show the relationship between the four modifiable lifestyle behaviours that contribute towards the four major diseases and also lead to around half of the premature deaths in Bristol from these four diseases alone. This 4:4:48 prevention model provides a useful way to approach our local prevention plans for the local area.

Approximately 48% of all premature deaths from the four main diseases in Bristol are related to just four modifiable lifestyle behaviours. Figure 18 shows the contribution each of the four lifestyles makes to premature death from the four diseases.



Figure 17: The 4:4:48 Prevention Model for Bristol. Source: Bristol Public Health Knowledge Service using primary care mortality database and Global Burden of Disease (2013) results for England.

Figure 18: Risk factors for premature mortality from the four main diseases in Bristol
Source: Bristol Public Health Knowledge Service using primary care mortality database and Global Burden of Disease (2013) results for England.



3.2 What do we know about the four modifiable lifestyle behaviours in Bristol?

Figure 19 sets out the prevalence of the four key modifiable lifestyle behaviours in adults in Bristol as a proportion of the whole city population. Fig 20 shows the prevalence of these behaviours in 15 year olds.

Recent estimates show that 19% of adults in Bristol smoke, and 8% of 15 year olds are regular smokers, which means they smoke at least one cigarette a week.

Over a quarter of the adult population (28%) are considered to drink alcohol above the recommended level. This includes people who drink at a level which can cause them immediate harm, for example through falls and fights when binge drinking, those who will harm their health in the future (through alcohol-related illnesses), to those who are already suffering harmful health effects from alcohol, for example dependent drinkers. 6% of 15 year olds drink alcohol at least once a week.

Around 47% of adults and 47% of 15 year olds in Bristol do not eat five or more fruit and vegetables a day and therefore are considered to have an unhealthy diet, and over 57% of adults are overweight or obese.

39% of adults do not do enough physical activity, taking less than 150 minutes moderate or 75 minutes vigorous exercise each week. 83% of 15 years olds do not do enough physical activity each day, taking less than 60 minutes exercise a day and less than 3 days a week muscle and bone strength-building exercise like running, jumping and push-ups.

Figure 19: The estimated prevalence of the four modifiable lifestyle Behaviours by percentage of the adult population in Bristol.
Source: Public Health Outcome Framework, Alcohol LAPE PHE 2016 and Bristol Quality of Life Survey 2015.



19% **Smoking**
of people are smokers



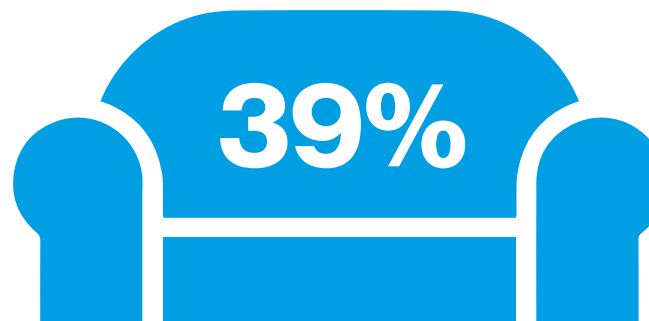
57%

Diet
of people are overweight / obese



28%

Alcohol
of people drink above the
recommended levels



39%

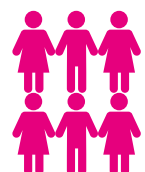
Physical Activity
of people do not do enough physical
activity each week



47%

Diet
of people are not meeting the 5 fruit
and veg a day recommendation

Figure 20: The estimated prevalence of the four modifiable lifestyle behaviours by percentage of the 15 year old population in Bristol. Source: *What About Youth (WAY) survey of 15-year-olds, Health and Social Care Information Centre, 2014.*



8%

Smoking
of 15-year-olds are regular smokers



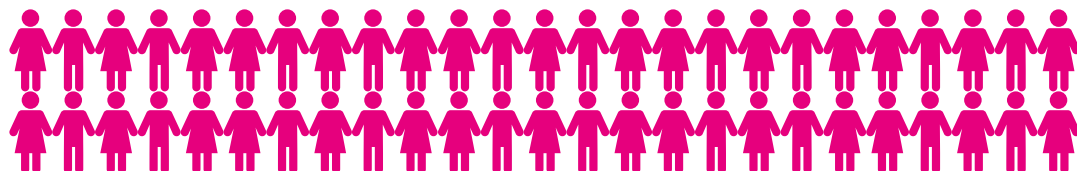
6%

Alcohol
of 15-year-olds drink alcohol at least once per week



47%

Unhealthy Diet
of 15-year-olds reported are not meeting the 5 fruit and veg a day recommendation



83%

Physical Inactivity
of 15-year-olds do not do enough physical activity each day



Smoking

There is no safe level of smoking. Nationally, we know that people living in more deprived areas are more likely to smoke and are less likely to quit. Smoking is increasingly concentrated in more disadvantaged groups and is the main contributor to health inequalities in England. Men and women from the most deprived groups have more than double the death rate from lung cancer compared with those from the least deprived. Smoking is twice as common in people with longstanding mental health problems ¹⁷.

Although smoking rates have reduced considerably over the last 20 years, rates have barely changed in people with mental health problems. There are relatively high smoking levels among certain demographic groups, including Bangladeshi, Irish and Pakistani men and among Irish and Black Caribbean women. Smoking in pregnancy increases the risks of miscarriage, stillbirth or having a sick baby, and is a major cause of child health inequalities ¹⁷.

83% of smokers start before the age of 20. The reasons they start are complex, ranging from peer pressure to behaviour problems. Children are more likely to take up smoking if they live with people who smoke.

Maternal smoking during pregnancy can be harmful for the baby, potentially leading to reduced blood supply to the developing baby and poor growth, and it can also increase the risk of miscarriage and premature birth, and can have longer term effects increasing the risk of obesity and poor cardiovascular and respiratory health later in life

Smoking and the harm it causes are not evenly distributed amongst the population of Bristol. In the city there is a five-fold difference in reported adult smoking rates between Hartcliffe and Withywood, and Clifton Down wards ¹⁸.

3907 adults in Bristol set a quit date during 2014/15. Of these 1,666 successfully quit smoking ¹⁹.

Case Study: Mary

'Mary' started smoking when she was 11 years old and continued for the next 56 years. In the end she was smoking 70 roll ups a day. She thought 'enough was enough' and decided to stop. Mary contacted Smoke Free Bristol, and joined one of their Stop Smoking Groups that night. To help her decrease her nicotine addiction she was prescribed patches, and stopped smoking completely on her quit date four weeks after joining the group. She continued to use e-cigarettes for 3 more months and then she stopped using them too.



Alcohol

The most recent national guidance on alcohol consumption recommends that men and women should not drink more than 14 units a week. If they do drink, they are advised to drink evenly over three days or more. This is not deemed a safe level of drinking but one with a lower risk of harm to health. If pregnant or planning a pregnancy, women are advised to avoid drinking alcohol. An alcohol-free childhood is best for children: young people aged 15-17 years are advised to drink on no more than one day a week and in addition, they should drink less than the adult low-risk limits of 14 units a week. Children affected by parental alcohol misuse are more likely to have physical, psychological and behavioural problems ²⁰.

Nationally, the impact of harmful drinking and alcohol dependence is much greater for those in the lowest income bracket and those experiencing the highest levels of deprivation. Populations that are especially vulnerable to alcohol misuse and harm include people who are homeless, people with mental health issues, and offenders. The more of these factors a person has, the more likely they are to die prematurely. The average age of death of a homeless person is 47 years old and even lower for homeless women at just 43 ²¹.

It is estimated that of the adult drinkers in Bristol, 7.5% drink at levels that harm themselves and others, 20% drink at levels that risk harm in the long term, and 72.5% stay within low risk limits.

In Bristol, 416 people were treated for alcohol misuse in 2014/15; 27% of clients successfully completed treatment.

The rate of alcohol-related hospital admissions varies over the city. There are more reported non-drinkers in areas of deprivation and the rates of abstinence vary from 42% in Filwood to 8% in Clifton ¹⁸. Between 2011 and 2014, the deprived wards had a much higher rate of admissions than the well-off areas. Lawrence Hill had the highest admission rate at 1,305 per 100,000 population and Henleaze the lowest at 416 (old ward boundaries) ²².



Unhealthy Diet

The Department of Health has issued eight top tips for a healthy diet (see Figure 21).

There is a wealth of evidence for the components of a healthy diet ²³⁻²⁹ and these have been incorporated within the Eat Well Guide. See Fig 22.

Food is now more readily available, more heavily marketed, more processed, served in bigger portion sizes and cheaper than ever before ³⁰. These factors can nudge people towards both over-consumption and consumption of unhealthy foods.

The population consumes more saturated fat, added sugars and salt and not enough fruit, vegetables, oily fish and fibre than is recommended ³¹.

In 2015, the Scientific Advisory Committee on Nutrition ³² concluded that our intake of sugar needed to be halved to less than 5% of total dietary energy. A specific recommendation was made around minimising the consumption of sugar sweetened drinks. See Figure 23 for the recommended maximum daily sugar intake for all ages.

Department of Health's Eight Top Tips for a Healthy Diet

- Base meals on potatoes, bread, rice, pasta or other starchy carbohydrates. Choose wholegrain where possible
- Eat lots of fruit and veg – at least five portions of a variety of fruit and vegetables a day
- Aim for at least two portions of fish every week – one of which should be oily, such as salmon or mackerel
- Cut down on saturated fat and sugar
- Eat less salt – no more than 6g a day for adults
- Get active and be a healthy weight
- Don't get thirsty – 6-8 cups/glasses of fluids a day are recommended (water, lower-fat milks and lower-sugar or sugar-free drinks including tea and coffee all count)
- Don't skip breakfast

Figure 21: Department of Health's eight top tips for a healthy diet.

Figure 22: The Eat Well Guide.

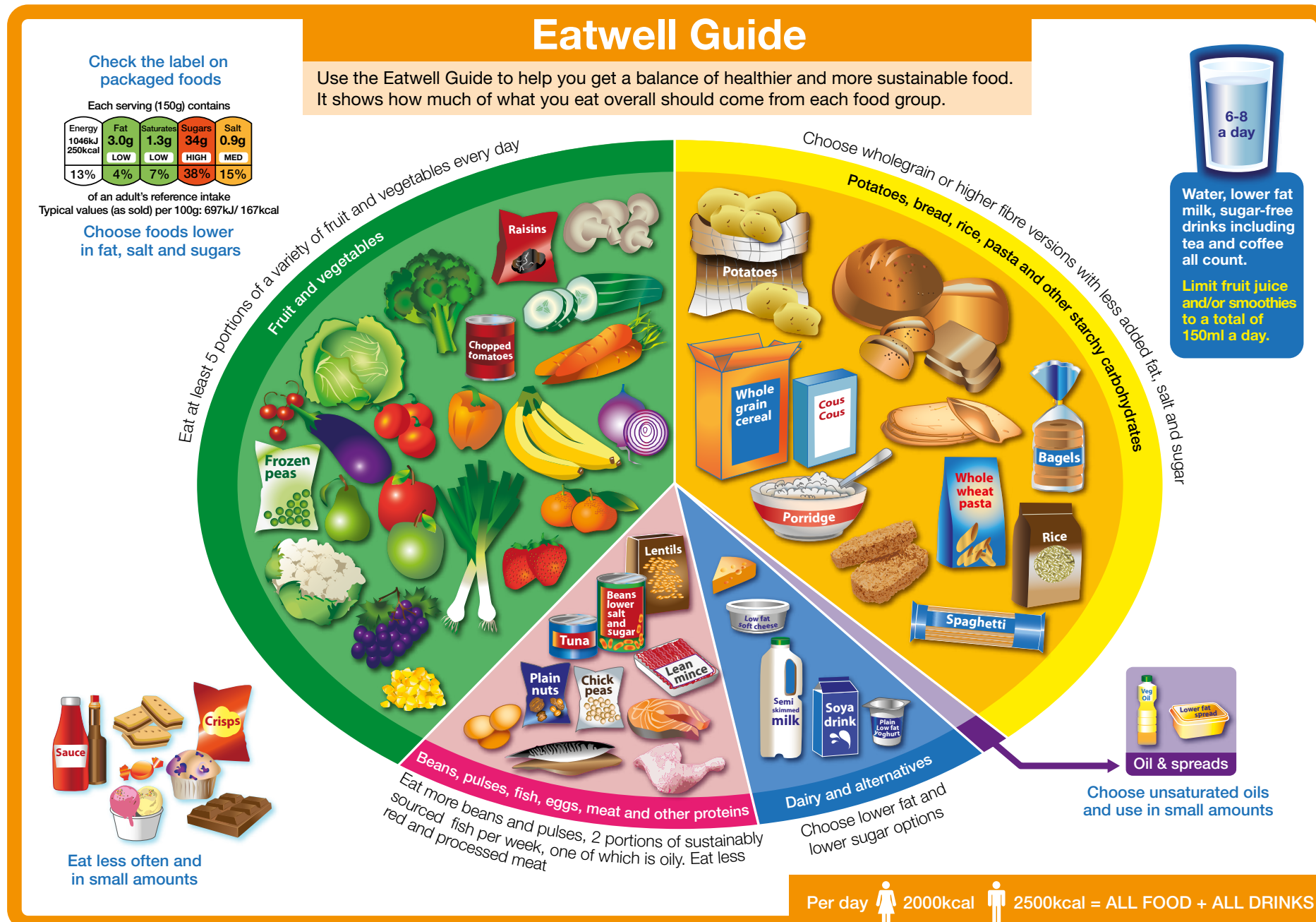
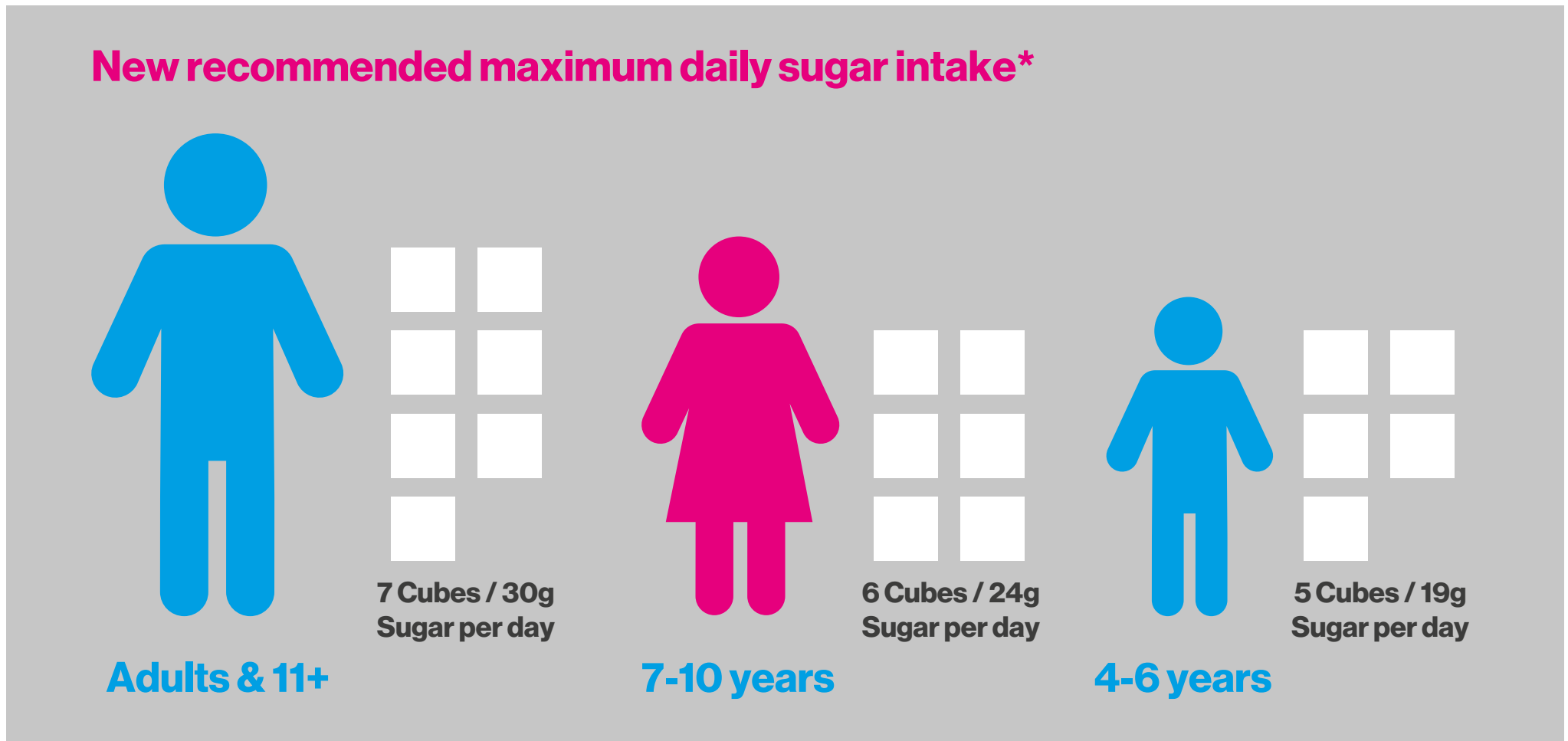


Figure 23: New recommended maximum daily sugar intake.
Source: Scientific Advisory Committee on Nutrition. 2015.



People on low incomes spend proportionally more of the household budget on food than better off people. However, they often have a poorer diet; choosing cheaper, less nutritious foods, and having less variety in their diet. Average intakes of saturated fat, sugar, and salt are above recommendations while intake of fruit and vegetables, fibre and some vitamins and minerals are below recommendations³³.

The Quality of Life Survey in Bristol found that 34% of people in Filwood consumed five or more portions of fruit and vegetables a day, compared to 62% in Westbury-on-Trym and Henleaze (post - 2016 ward boundaries). Poor diet is also reflected in the variation in obesity levels across Bristol. Responses to the Quality of Life Survey 2015 indicate a range in the prevalence of self-reported adult obesity from approximately 3% of residents in Clifton ward, to 34% of residents in Hartcliffe and Withywood.

Baby nutrition – healthy diet

Bristol became a UNICEF UK 'Baby Friendly' city in 2010. This NICE recommended award encompasses best practice standards in the feeding and nurture of all babies. Over the last 18 months, the Bristol Public Health Bristol Team, in partnership with local Children's Centres, has supported the training of over 450 staff in the new standards. In addition, the team co-ordinates the Bristol Breastfeeding Welcome scheme, supports awareness raising events (such as the annual Big Bristol Breastfeed), facilitates the Infant Nutrition and Nurture Network and commissions services to support mothers experiencing difficulties.

Healthy Schools Programme

The healthy schools programme supports all schools across Bristol wishing to improve the health and wellbeing of their pupils, staff and the local community. The programme encourages schools to embed high standards of healthy behaviour through all aspects of school life.

Bristol has big aspirations for its future as a healthy, happy, vibrant city and key to this is the education of our children and young people. 24 Bristol schools have achieved the prestigious Mayor's Award for Excellence as a Health Improving School, with many more schools currently working towards this accolade.



Physical Inactivity

Figure 24 shows the benefits of physical activity for the mind, body and quality of life of adults and older adult populations.

National guidance recommends that adults should undertake a minimum of 150 minutes moderate exercise a week or 75 minutes vigorous exercise.

However, there appears to be a continued epidemic of physical inactivity across the United Kingdom. Nationally, around half of women and a third of all men are damaging their health through a lack of physical activity.

Technology is increasingly dominant in our home and work environments, encouraging us to sit for long periods. Over-reliance on cars is another factor. The design of our cities, towns and buildings often work against physical activity, prioritising convenience and speed.

Physical inactivity defined as less than 30 minutes of activity a week is not just associated with the four main diseases causing premature mortality but also with obesity and depression. Being active increases your chances of staying independent in later life, is good for children's educational attainment, can boost workplace productivity, reduce sickness absence and reduces crime and anti-social behaviour ³⁴.

There is some evidence of a social gradient in participation in physical activity; however the pattern is different for men and women. When household income is compared to physical activity, men in the lowest income group are less likely to reach the recommended physical activity levels. More women with the highest household income reach the recommended levels of activity (34%) than women who have less household income. Total activity includes activity at work for instance, manual labour ³⁵.

The Quality of Life Survey 2015 showed that the percentage of people who had 150 minutes moderate exercise a week or 75 minutes vigorous exercise was; 80% in Hotwells and Harbourside, and 48% in Hartcliffe and Withywood.

Physical activity benefits for adults and older adults



BENEFITS HEALTH



IMPROVES SLEEP



MAINTAINS HEALTHY WEIGHT



MANAGES STRESS



IMPROVES QUALITY OF LIFE

REDUCES YOUR CHANCE OF

Type II Diabetes -40%

Cardiovascular Disease -35%

Falls, Depression and Dementia -30%

Joint and Back Pain -25%

Cancers (Colon and Breast) -20%

What should you do?

For a healthy heart and mind

To keep your muscles, bones and joints strong

To reduce your chance of falls

Be Active

Sit Less

Build Strength

Improve Balance

VIGOROUS

MODERATE



RUN



WALK



SPORT



CYCLE



STAIRS



SWIM



TV



SOFA



COMPUTER



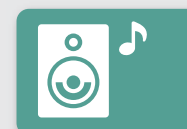
GYM



YOGA



CARRY BAGS



DANCE



TAI CHI



BOWLS

MINUTES PER WEEK

75 OR 150

VIGOROUS INTENSITY

(BREATHING FAST
DIFFICULTY TALKING)

MODERATE INTENSITY

(INCREASED BREATHING
ABLE TO TALK)

OR A COMBINATION OF BOTH

BREAK UP SITTING TIME



2 DAYS PER WEEK

Something is better than nothing.

Start small and build up gradually:
just 10 minutes at a time provides benefit.

MAKE A START TODAY: it's never too late!

Figure 24: Physical activity benefits for adults and older adults.
Source: UK Chief Medical Officers' Guidelines 2011
Start Active, Stay Active.

3.3 Clustering of Modifiable Lifestyle Behaviours and the Risk of Disease

People often have more than one modifiable lifestyle behaviour and this can have a cumulative effect on health, for example: a poor diet with excess alcohol consumption can significantly increase a person's risk of liver disease. Studies have shown that people with multiple lifestyle risks have a higher risk of earlier death³⁶.

People in lower socioeconomic groups are five times as likely as higher socioeconomic groups to have a combination of three or four risk factors, for example smoking and excessive alcohol consumption, and/or a poor diet and low physical activity levels. The reasons for this are complex and may be a way to cope with the stress for example living with unemployment, or poor housing; or it might be a cultural choice or it may reflect a lack of opportunity.

Case Study: David

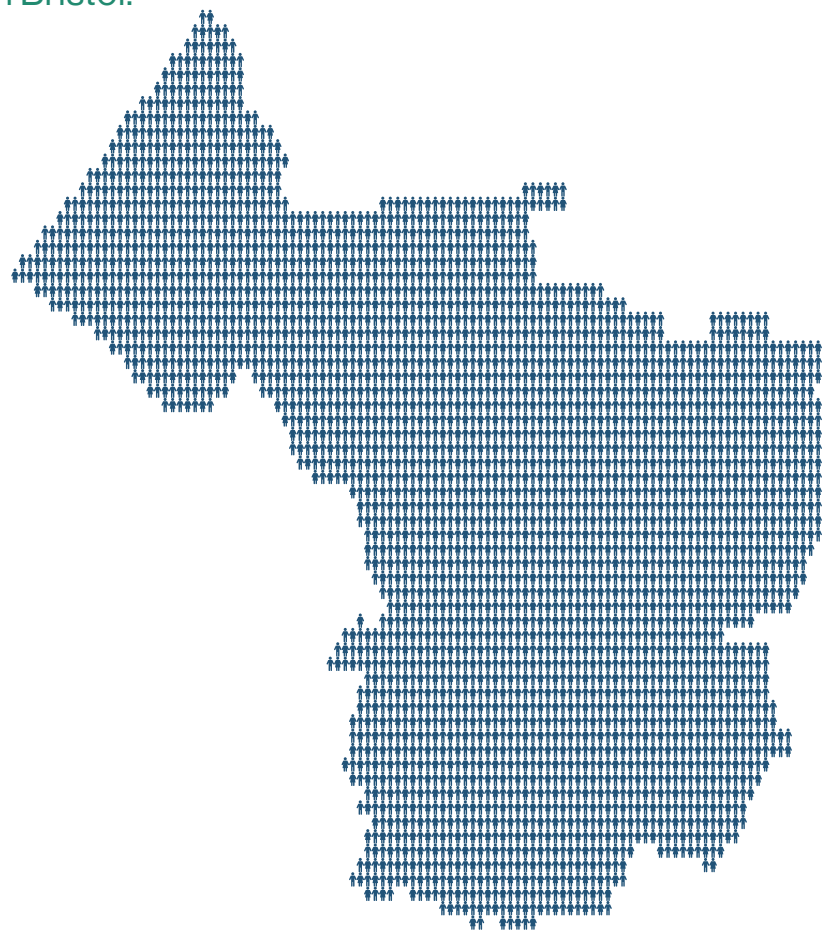
'David' is 61 and started on the Weight Management Referral scheme at the beginning of July 2014. He was nearly 19 stone when he started and wanted to get down to 13 stone. He was not as active as he wanted to be. He lost weight quickly to start with then this slowed down.

Thirteen months after starting to attend his weight loss group he had lost five stone. He now cycles to work and plays sports a couple of times a week. He enjoys the social aspect of the group where he has made good friends. David acknowledges that putting the weight on was due to his eating habits, and it will be an ongoing project to staying in control of his weight.

4 Section

What the evidence says we can do to modify Unhealthy Lifestyle Behaviour

This final section looks at the factors that affect lifestyle behaviour and explores what we can do to modify unhealthy lifestyle behaviour, taking into account the cost of unhealthy behaviours on individuals, communities, health care services and the local economy in Bristol.



4.1 Cost of Unhealthy Lifestyle Behaviours



Smoking

In 2013, Action on Smoking and Health estimated the annual cost of smoking to society in Bristol to be approximately £111 million pounds. Figure 25 shows the breakdown of costs in terms of different impacts on the local system and shows the greatest cost is to the local economy for employees taking time off for smoking breaks.

Who pays in Bristol	COST each year
The local economy for absences due to smoking-related illness	£9 million
The local economy for smoking-related early deaths (1,451)	£29 million
The local economy for smoking breaks	£47.7 million
The NHS in Bristol for treating smoking-related ill health	£16.7 million
Council care services in later life for people with smoking-related illnesses	£3.7 million
Families caring for people with smoking-related illnesses in later life	£2.7 million
Families and insurance companies for smoking-related fires (includes fire deaths and injuries)	£2 million
Total	£110.8 million

It is estimated that smokers in Bristol spent £124.8 million in 2013 on tobacco; money that literally went up in smoke and was lost to the family purse¹⁹.

In 2015 it is estimated that smokers in Bristol paid £60.2 million to the Exchequer in duty³⁷. This resulted in a shortfall of £51 million when the cost to the local economy is taken into account.

Figure 25: Breakdown of the cost of smoking to society in Bristol, December 2015.
Source: The Local Cost of Tobacco publication by Action on Smoking and Health.



Alcohol

The Government Alcohol Strategy 2012³⁸ claimed that alcohol misuse cost English society an estimated £21 billion a year; this includes NHS costs of £3.5 billion, alcohol-related crime costs of £11 billion and lost productivity due to alcohol of about £7.3 billion.

The majority of people who misuse alcohol do not seek treatment. The national commissioning guidance³⁹ recommends that 10-15% should access treatment each year.

There are 257.3 per 100,000 people in Bristol claiming state benefits for disability due to alcohol dependency⁴⁰.



Unhealthy Diet

NICE states that the most recent estimate (2006/7) of the direct cost to the NHS of people being overweight and obese was £5.1 billion⁴¹.

The societal costs of obesity, which include unemployment, early retirement and associated welfare benefits, were estimated as an additional £11.6 billion per year in 2007⁴².



Physical Inactivity

Physical inactivity is costing the economy in England £6.5 billion per year⁴³.

It is estimated that NHS in Bristol spends £3.2 million each year treating people for ill health caused by physical inactivity⁴⁴.

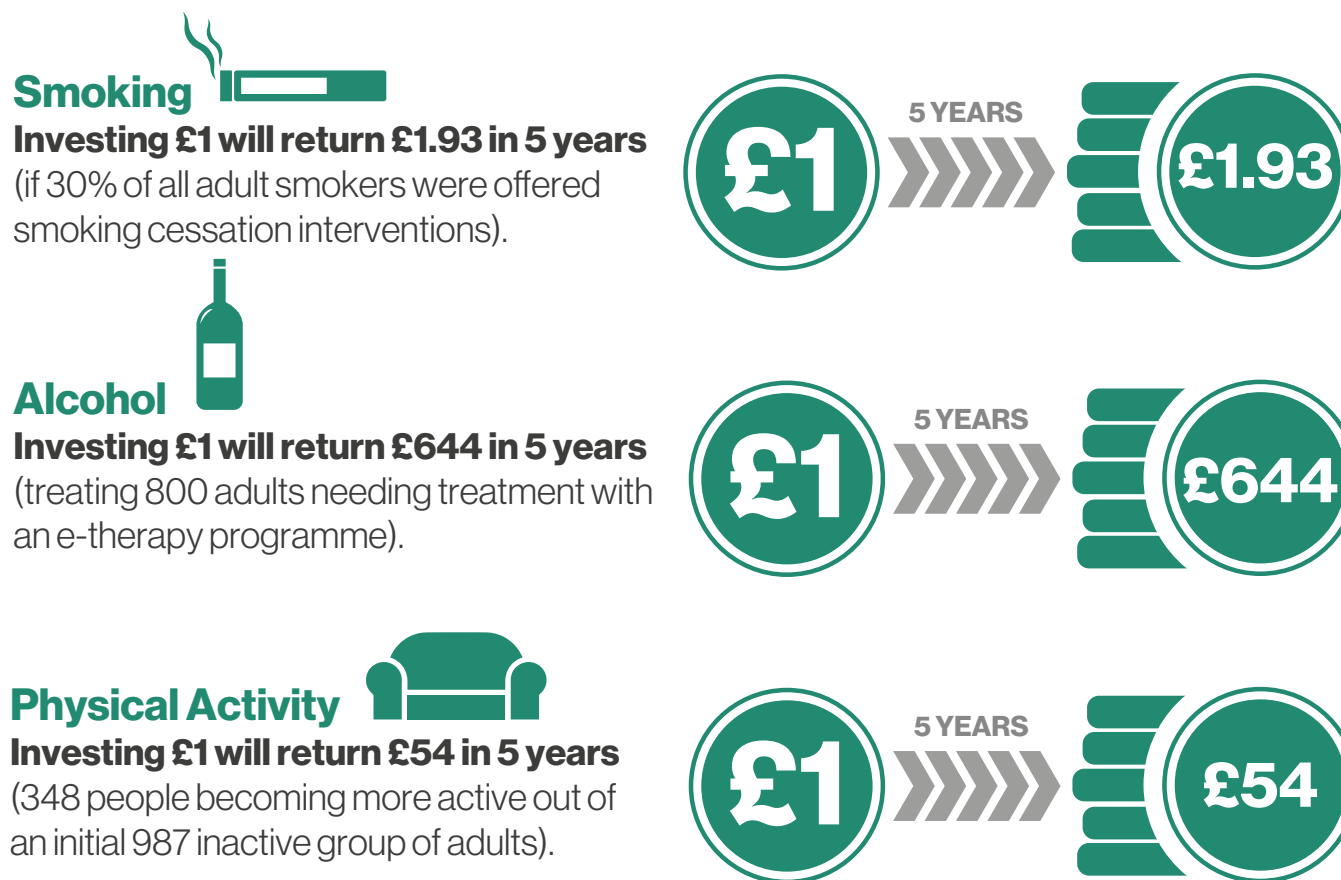
4.2 Cost Effective Public Health Interventions

There are a number of cost effective interventions to address the four main lifestyle behaviours that contribute to the four main diseases and lead to nearly half of the premature mortality seen in Bristol.

Such interventions also impact on the levels of disability and years lived in poor health and pain for so many and the health inequalities experienced across the city. Investing in such prevention interventions would not only pay health dividends for current and future generations, but fewer people living with serious conditions would also reduce costs to public services, families and carers as well as enabling people to be able to return to work or volunteering and to be actively engaged in community life ⁴⁵. As stated in the NHS Five Year Forward View, the future health of millions of children, the sustainability of public services, and the economic prosperity of Britain all now depend on a radical upgrade in prevention and public health action.

Figure 26 illustrates some of the predicted returns on investment that are achievable using specific investment in tried and tested interventions.

Figure 26: Return on Investment Tool.





Smoking

Whilst preventing young people from starting to smoke is of primary concern ⁴⁷, helping people to quit is also a key part of reducing the harm from tobacco. To improve chances of quitting, smokers need:

- effective services and therapies
- supportive social networks
- smoke free environments

Smoking Cessation Services

Local stop smoking services offer the best chance of success, yet fewer people are now using such services. They are up to 4 times more effective than no help or over the counter nicotine replacement therapy (NRT). Stop smoking services need to be targeted to provide the right support to the people who need it most. Proactive telephone support, texts, internet support and self-help books have also been found to be low cost but effective interventions⁴⁸. Offering brief advice to hospitalised smokers and referral to stop smoking services, is also effective ⁴⁹.

In the last few years, many people have been choosing electronic cigarettes to help them quit smoking and they are now the most popular quitting aid. Emerging evidence indicates they can be effective for this purpose ^{50,51}.

Brief advice from GPs is effective in reducing smoking, and it is recommended that other professionals also offer brief advice and refer to stop smoking services. Behavioural support, incentives and nicotine replacement therapy can be effective in reducing smoking in pregnant women.

Supportive Networks

A person's decision to quit smoking and the ability to stay smoke free is influenced by their social network. Research suggests that smoking cessation spreads through social networks just as smoking does; the chances of quitting increase by 67% if a spouse gives up.

Campaigns, such as the cost-effective Stoptober campaign, harness this power of social networks within the local community through employer networks and online forums, encouraging people to attempt to quit and supporting them through it. The NHS and local government in-particular, have a contribution to make as major employers in the city.

Smoke Free Environments

Reducing the promotion of tobacco, increasing the cost of cigarettes, introducing legislation such as the smoking ban in cars, improving public awareness of harm from smoking and second hand smoke all support the expansion of smoke free environments.

Smoking cessation should be a priority in settings where prevalence is high, such as prisons and mental health units and in NHS settings such as acute and maternity hospitals. This can be promoted via smoke free grounds and buildings, and with on-site stop smoking services ⁵².

Support to Stop Smoking

In 2015, local Health Champions and Health Trainers employed by Bristol City Council undertook 'Stop Smoking Advisor' training. Since then four Health Champions have been providing outreach support services in the inner city communities of St Pauls, Easton and Lawrence Hill. These include two male advisors who are Arabic speakers, and one advisor who has worked with the Bangladesh Association.

So far, these advisors have spoken to over 460 people and supported over 100 people on a one-to-one basis. As a result 58 people have quit smoking.

Examples of cost effective interventions for tobacco control

There are a number of highly cost effective interventions to support people to quit smoking. Examples of these are listed in Figure 27.

Cost and return on investment for smoking

It is estimated that in Bristol investing an additional £2,061,916 in the interventions we currently commission would save £1,062,584 in the short term (two years) and would give more returns over time. After five years for every £1 invested, the local economy would see a return of £1.93.

Figure 27: Cost effective smoking interventions.

Intervention	Description	Reference
Brief advice plus self help	Advice from primary care practitioners	Reference 53 Reference 54
Stop Smoking Services	Brief advice , individual/ group counselling, self-help materials and nicotine replacement or medication	Reference 53 Reference 55
Workplace and secondary care interventions	Brief advice, counselling, self-help materials and nicotine replacement or medication in a workplace setting or hospital	Reference 56 Reference 52 Reference 49
Mass media campaigns	Multiple media, such as TV, radio and newspaper advertising. They can be used or combined with other activities at a local level	Reference 56
E cigarettes	No cost effectiveness information available yet	Reference 50 Reference 51



Alcohol

Evidence shows that making alcohol less affordable is likely to be the most effective way of reducing alcohol related harm, such as through the introduction of a minimum price of 50p per unit. Banning alcohol advertising would also have a significant impact on alcohol consumption ⁵⁷.

Screening and treatment

Interventions at a local level, such as screening for alcohol misuse and offering brief advice by GPs during registration and during consultations have been shown to be very cost effective ⁵³. Offering brief advice in accident and emergency departments has also shown to be cost effective ⁵⁸. Treatment for alcohol dependence is effective and will contribute to reductions in hospital admissions, deaths from liver disease, cardiovascular disease, cancer and falls as well as reductions in childhood poverty, social isolation and unemployment. Amongst those who received treatment, 61% of service users reported being free of alcohol dependence when they left treatment ⁵⁹. The majority of people dependent on alcohol however do not access alcohol treatment ⁶⁰.

Supportive Networks

Multidisciplinary alcohol care teams within hospitals offer personalised brief advice and co-ordinate access into treatment and have been shown to deliver significant outcomes in terms of reduction in length of stay, and fewer readmissions ⁶¹.

Examples of cost effective interventions for alcohol

The alcohol interventions we can put in place locally are listed below in Figure 28.

Figure 28: Cost effective alcohol interventions.

Intervention	Description	Reference
Screening and brief advice during GP consultation	Identification and brief advice by primary care practitioners during GP registration or consultation.	Reference 53
Supported Online Cognitive Behavioural Therapy	Computer-based behavioural self-control training is effective among alcohol-misusers suitable for a moderation goal.	Reference 62 Reference 63
Psychosocial interventions for dependence	Specialist interventions including for instance; Motivational Interviewing, behavioural therapies, social networking, and family therapies for all levels of dependancy. Cognitive Behaviour Treatment, and coping and social skills for people with moderate dependancy.	Reference 63
Hospital alcohol care teams	Muti disciplinary teams, typically made up of alcohol specialist nurses, and sometimes inreach alcohol treatment service workers, led by a consultant. They deliver brief interventions, advice on detoxification, liasion and referrals to community services seven days a week.	Reference 61

Cost and Return on Investment for Alcohol

It is estimated that if just 1,000 patients in Bristol (0.3% of the population) were screened for alcohol misuse during their next GP registration or GP appointment at a cost of £25,265, within five years we could see a return of up to £5,281,382 through accident cost savings (£5,235,815), productivity gains (£29,853), healthcare cost savings (£7,694) and crime cost savings (£8,019). In other words for every £1 invested there would be a return of £209.

If we treated just 5% of the adult population requiring treatment using online cognitive behaviour therapy at a cost of £60,128 we would see an overall return of £38,697,548 in five years. The main saving is in accident costs (£38,363,672), other savings are productivity gains (£218,741), health care cost savings (£56,378) and crime cost savings (£58,757). So just counting health care cost savings and crime cost savings, we would see a return after five years of £1.91 for every £1 spent.



Physical Inactivity

Studies have shown that even a small increase in physical activity can provide protection against chronic diseases⁶⁴. There is an established link between physical inactivity and obesity, and being active can reduce the risk of developing diabetes by 30-40% and breast cancer by up to 20%.

Physical activity can also reduce the risk of vascular dementia, musculoskeletal conditions and depression⁶⁵. The benefits are not just limited to health gains. Increasing active travel (cycling or walking) reduces traffic, air pollution and accidents. Participating in sports helps children develop social skills such as team work which would reduce antisocial and criminal behaviour⁶⁶.

Physical (built) environment

NICE has made a number of recommendations around effective interventions for improving physical activity. The built and natural environment should be designed to encourage physical activity through the provision of green spaces and safe play areas and buildings should encourage stair usage. Walking and cycling programmes and networks should form a core part of local transport plans and address barriers such as perceived and actual road danger⁶⁷. Leisure and sports facilities services need to be safe, accessible and suit a range of ages, abilities and cultural norms⁶⁸.

Schools provide a useful setting for the promotion of physical activity and should encourage a culture of physical activity including safe and active travel to school and playgrounds that optimise physical activity⁶⁹. Multi-component physical activity programmes involving families and communities have also shown to be effective within schools. Likewise, workplaces should provide organisation-wide, multi-component programmes to encourage and support employees to be physically active. This could include policies to encourage employees to walk and cycle to work, the dissemination of information on how to be more physically active and the benefits of such activity, encouragement to use stairs and individual support⁷⁰.

Supportive Networks

NICE guidance states that primary care practitioners (such as GPs, and pharmacists), should identify people who are not active and offer brief advice, tailored to the individual's motivation and provide information about local opportunities to be physically active ⁷¹. Although exercise referral schemes may offer other benefits, such as helping people to socialise, NICE advise that they should only be funded for people who are sedentary or inactive and have existing health conditions or

other factors that put them at increased risk of ill health ⁷². Pedometers should only be offered as part of a package which includes support to set realistic goals (whereby the number of steps taken is gradually increased), monitoring and feedback ⁶⁷.

Examples of cost effective Interventions for Physical Activity

Intervention	Description	Reference
Brief advice	Identification and tailored advice from a primary care practitioner	Reference 71
Walking school buses	Children and volunteers walk in a group along a set route, picking up or dropping off 'passengers' at specific 'bus stops' on their journey to and from school.	Reference 69
Urban planning	Improvements to infrastructure to promote cycling and walking	Reference 68
Work based physical activity programmes	Multicomponent programmes such as active travel policies, information and encouragement of stair use	Reference 70

Cost and Return on Investment for Alcohol

It is estimated that if we target 1% of the physically inactive adult population in Bristol (987 adults) with NICE recommended interventions we could see a total saving of £1,804,945 over five years, at a cost of £33,452. The interventions comprise 1:1 brief activity advice, transport advice (Travel Smart individualised travel marketing) and distributing

pedometers (physical activity consultation plus 12 week pedometer walking programme). The savings include productivity gains of £1,496,669 and transport cost savings of £305,964. These interventions could lead to 348 adults becoming more physically active ⁷³.



Diet

Public Health England suggests that no single action will be enough to change dietary habits recognising that the environmental drivers of poor diets are too significant⁷⁴. Therefore, it has advised for the need to implement a broad, structured programme of parallel measures to:

- reduce the impact of influences that encourage consumption of unhealthy foods
- improve the nutritional content of food and drinks and access to healthy foods
- support people in making healthier choices through information and education.

Whilst central government can lead on a number of initiatives (including market restrictions on unhealthy food and drink, working with industry to reduce portion sizes and sugar in everyday food and drink products, better food labelling and introducing a tax on high sugar products)⁷⁵, there are also a number of evidence based actions that can be delivered locally such as:

- Implementing government buying standards for food and catering services across the public sector, including local government and the NHS to ensure provision and sale of healthier food and drinks in hospitals, leisure centres etc.
- Delivering training in diet and health to those who have opportunities to influence food choices in the catering, fitness and leisure sectors and others within local authorities.
- Raising awareness of concerns around poor diet, including sugar in the diet, to the public, health professionals, schools, employers, the food industry, etc. through campaigns such as Change 4 Life.
- Delivering multicomponent, culturally and environmentally appropriate comprehensive programmes around healthy eating within schools, workplaces and other community organisations.



Figure 30: Examples of interventions to improve healthy eating.

Examples of cost effective interventions for healthy eating

Intervention	Description	Reference
Procurement of healthy food	Uptake of the Government Buying Standards for food and Catering Services (GBSF) to influence diets of those who use public sector services	Reference 30 Reference 77
Healthy diet training	Accredited training in diet routinely delivered to those who have opportunities to influence food choices in the catering, fitness and leisure sectors and others within local authorities	Reference 30
Campaigns	Raising awareness around poor diet through local implementation of national campaigns such as Change for Life	Reference 30
Health eating programmes	Multicomponent programmes in schools and workplaces around healthy eating	Reference 76

Making Every Contact Count

In 2012, the King's Fund published a report on the clustering of unhealthy lifestyle behaviours and suggested that a more integrated approach to behaviour change was required that links more closely to inequalities policy³⁶. It suggested the ongoing roll out of the 'Every Contact Counts' policy or 'Making Every Contact Count' (MECC) programme to address multiple lifestyle risk factors.

The MECC programme is about people having brief chats about healthy lifestyles. People often have more than one unhealthy lifestyle and can be open to change if they are given the right support at the right time. Workers in the public and voluntary sectors can be trained to have conversations about health even if they are not health workers, making health everybody's business. This will enable workers to chat to people about their lifestyle choices and signpost them to relevant services if the person wants support to change their behaviour.

4.3 Working together - Making health everyone's business

Evidence shows that if we are to really make a difference in improving people's health and wellbeing, we need to work together.

Making health everyone's business will enable the council and its partners across the city to support people to change their health behaviours and improve their health and wellbeing. This means making health a priority for everyone. By ensuring that all workers are health literate, so that they understand the long term impact of smoking, drinking to excess, having an unhealthy diet and being physically inactive on their and their family's health, we can help them make informed choices about the way they look after their health and wellbeing.

Strong partnership working results in resources being used more efficiently and effectively for the benefit of all Bristol residents. It is essential that working together across the city with key allied partners and stakeholders, remains a priority for all. Health needs to be an integral part of policy and practice to ensure that services provide cost-effective interventions that achieve sustainable health outcomes. By working together and sharing our knowledge, experience and commitment to achieving better health outcomes we can achieve more than if we work alone.

'The evidence shows that partnership working between primary care, local authorities and the third sector to deliver effective universal and targeted preventive interventions can bring important benefits.'

Marmot review report – Fair Society, Healthy Lives 2010⁵

Sustainable Food City Network

Bristol has achieved the Silver Award from the Sustainable Food City Network, recognising the pioneering work in the city to promote healthy and sustainable food. The Sustainable Food Cities Award is designed to recognise and celebrate the success of those places taking a joined up, holistic approach to food and that are achieving significant positive change on a range of key food issues.

Working in partnership, Bristol City Council's Public Health Team has been part of this achievement through:

- Supporting community-led food projects including food co-ops, vegetable and fruit box schemes, community food shops, cooking skills classes, 'cooking from scratch' campaigns, fruit and vegetable promotions.
- The Healthy Schools Programme has embedded healthy and sustainable food as a curriculum-wide issue in many primary and junior schools, reaching all parts of the city, with the ambition to get every school in the city on board.
- Being a strategic member of the Food Policy Council for the city and convening an officer food group within Bristol City Council, as well as gathering all the evidence together so that the city could apply for the award.

The Big Commuting Challenge

The Big Commuting Challenge is a yearly sustainable travel challenge, with the council working in partnership with a number of different organisations. This year Sustrans delivered the Challenge, and organisations like Business West, Go Green and North Bristol Suscom helped to promote the Challenge across the sub-region.

Almost three and a half thousand people took part, with one participant commenting to say that the Challenge "has been a brilliant part of a structured rehab programme" with many others commenting on the health and wellbeing benefits of active travel."

Section

Conclusion

5 Conclusion

As shown before, unhealthy lifestyles are an important contributor to early death and disability. They are a major driver of the inequalities in health that are observed within Bristol and have a significant economic impact on individuals, families and society.

A number of cost effective prevention interventions have been outlined, which if implemented at scale could have a demonstrable impact on health and inequalities within the city.

It is important to also appreciate that the lifestyles that people adopt are affected by multiple factors; socio-economic, clinical care, the physical environment and mental wellbeing.

The solutions to addressing these lifestyles also need to take into account these drivers of poor lifestyles. This requires a holistic, whole city approach and for health to be everyone's business.

Acknowledgements

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