

easing the pressure: tackling hypertension

A toolkit for developing a local strategy
to tackle high blood pressure



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Written by Dr Alan Maryon-Davis and Dr Vivienne Press on behalf of
the Cardiovascular Health Working Group of the Faculty of Public Health

Produced by the **Faculty of Public Health** and the **National Heart Forum**

Easing the Pressure: Tackling Hypertension

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Foreword

Hypertension – the ‘silent killer’ – is a major public health problem which has a significant impact on health and social care. Yet, despite the best efforts of individuals and the existence of isolated examples of good practice, many primary care organisations still lack a truly cohesive approach to the challenge of tackling hypertension – preventive initiatives are too thinly spread, early detection is patchy, and clinical protocols for control are poorly followed. All too often the relevant workstreams fail to link up effectively to provide an integrated and seamless care pathway.

The prevention and control of hypertension are essential to national strategies concerned with coronary heart disease, stroke, diabetes, chronic kidney disease and the health of older people. This is why the Faculty of Public Health and the National Heart Forum (NHF) have produced *Easing the Pressure: Tackling Hypertension*. This toolkit will give local health improvement partnerships the tools they need to develop effective strategies on hypertension prevention, detection and control.

The production of this toolkit is timely, given the focus by government and key organisations such as the Food Standards Agency on the need to reduce levels of salt intake, and the pressure on food manufacturers to reduce the amount of salt in processed food. The toolkit also forms part of a wider programme of work and campaign by the Faculty and the NHF to combat hypertension. It is hoped that, through concerted local and national action, the burden that hypertension places on individuals and on society can be lifted.

Professor Rod Griffiths, CBE

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Faculty of Public Health

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Executive summary

Hypertension (persistently high blood pressure) is one of the most common disorders in the UK. Although it rarely causes symptoms on its own, the damage it does to the arteries and the organs they supply can lead to considerable suffering, avoidable death and burdensome healthcare costs. Hypertension is arguably the most important modifiable risk factor for coronary heart disease (the leading cause of premature death in the UK) and stroke (the third leading cause). It is also an important cause of congestive heart failure (heart strain), chronic kidney disease, and peripheral vascular disease (diseased arteries in the limbs). This has earned hypertension a reputation as the 'silent killer' and makes it a key priority for prevention, detection and control.

Easing the Pressure: Tackling Hypertension is a toolkit for developing a local strategy to tackle hypertension. It is intended to help local multi-agency teams – including public health, health promotion and primary care professionals, and strategic planners in both NHS and local government – to develop and implement strategies and action plans, not only to identify and treat patients with hypertension but also to promote healthy lifestyles and environments to prevent hypertension in the first place. There are particular challenges to developing such a strategy, including:

- choosing the appropriate combination of 'whole population' and 'at-risk' approaches
- influencing and working with local and national policies and programmes that address health improvement and the wider determinants of health
- targeting the most 'at-risk' individuals and communities in the local population
- ensuring that people have easy access to appropriate information on hypertension and on healthy lifestyles to prevent it, and
- increasing the proportion of patients who have regular blood pressure check-ups, and follow the advice and treatment given.

Easing the Pressure is designed to equip local action teams with the necessary information and tools to meet and address these challenges. The toolkit is in four sections:

- **A: Hypertension: the public health burden** defines hypertension. It outlines the risk factors for hypertension, who is most at risk and why. It also describes the burden hypertension places on individuals, on society and the NHS – its prevalence, its health effects and financial costs.
- **B: Reducing the burden: tackling hypertension** looks at the strategic framework for tackling hypertension through prevention, detection and control. It looks at particular approaches to this, including a 'whole population' approach and an 'at-risk' individual or group approach, as well as considering the supporting evidence and broad principles involved.
- **C: Developing a local hypertension strategy** gives guidance on the practicalities of developing and implementing a local action plan. It provides information on the necessary elements, including: deciding what action is needed and where it should be targeted; building local partnerships; choosing interventions on prevention, detection and control; and dealing with barriers to change.
- **D: Resources** gives further information on relevant publications and guidance, as well as patient information and useful organisations. It also contains the toolset – 15 practical, in-depth

resources including proformas and online resources to help review current activities or services and develop the action plan.

***Easing the Pressure: Tackling Hypertension* is not designed to replace current clinical guidelines such as those provided by the National Institute of Clinical Excellence (now the National Institute for Health and Clinical Excellence), the Scottish Intercollegiate Guidelines Network or the British Hypertension Society. Instead it is focused more on the preventive and service development aspects of tackling hypertension and should be used in conjunction with whichever clinical guidelines are most appropriate.**

Dr Alan Maryon-Davis

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Hypertension: the public health burden

A

This section of the toolkit looks at:

- what hypertension is
- how prevalent it is
- who is most susceptible to it and why
- what effects it can have on health
- how much it costs the nation, and
- what are the main risk factors for hypertension.

What is blood pressure?

Blood pressure is the force of blood pushing through the arteries and is necessary for maintaining our circulation. With every heartbeat, the heart pumps blood through the arteries to all parts of the body.

The blood pressure rises and falls throughout each heartbeat cycle. The highest pressure in each cycle, known as the *systolic* blood pressure (SBP), occurs when the heart contracts to pump the blood. This is felt as the pulse. The lowest pressure, known as the *diastolic* blood pressure (DBP), occurs when the heart relaxes between beats and refills. Blood pressure is therefore expressed as two numbers – for example '140/90mmHg' – where 140 is the systolic pressure and 90 is the diastolic pressure. The units are millimetres of mercury (mmHg) because blood pressure has traditionally been measured using a column of mercury.

Blood pressure also varies throughout the day. It rises when a person is tense, anxious or angry, or if they physically exert themselves, and it falls when they relax, sit, lie down or go to sleep. For this reason, blood pressure is usually measured with the person sitting calmly and comfortably in a relaxed environment. This is sometimes referred to as the *resting blood pressure*. (For details on how blood pressure should be accurately measured, please refer to relevant clinical guidelines.)

Why is high blood pressure a problem?

If the resting blood pressure is persistently high, it not only puts strain on the heart but also damages the walls of the arteries, large and small, making them stiffer and more prone to clogging and haemorrhage. This causes problems in the organs they supply and leads to a number of major disorders and diseases. In general, the higher the blood pressure, the greater the risks to health.

What are the effects on health?

High blood pressure is usually symptomless and often not regarded as a disease in its own right. However, it is a major risk factor in a number of potentially fatal conditions and is also a precursor to several non-fatal but debilitating disorders.

The main potential consequences include:

- coronary heart disease (angina, heart attack)
- stroke (thrombotic and haemorrhagic)
- heart failure (heart strain – especially left ventricular)
- chronic kidney disease (including established renal failure)
- aortic aneurysm (dilated aorta with risk of massive internal haemorrhage)
- retinal disease (visual impairment), and
- peripheral vascular disease (clogged blood supply to the limbs).

In terms of the numbers of people affected, the most important group of consequences is the cardiovascular diseases (coronary heart disease, stroke, heart failure, aortic aneurysm and peripheral vascular disease).

How high is too high?

Surprisingly, there is no clear-cut answer to this. The risks associated with high blood pressure increase in parallel with a rising level of blood pressure. This increase in risk is gradual and continuous – there is no sudden step-up in risk with rising blood pressure. So drawing a line between what is 'normal' (in the sense of 'no risk' or 'low risk') and what is 'too high' is a matter for debate. Nevertheless, it is useful to have an agreed threshold (or a number of thresholds) in order to help decide between different courses of action (see *So, what is 'hypertension'?* on page 13).

Furthermore, average blood pressure levels in developed countries such as the UK are not 'normal', in the sense of 'no risk' or 'low risk' outlined above. A large-scale international study has shown that significantly increased risks of cardiovascular disease begin to appear at a level as low as 115/75mmHg.¹ This is far lower than the average adult blood pressure in the UK. For example, in England the average is 131/74mmHg for men and 126/73mmHg for women,² and there are similar average levels in Scotland, Wales and Northern Ireland – which may in part explain why the UK has relatively high rates of cardiovascular disease.

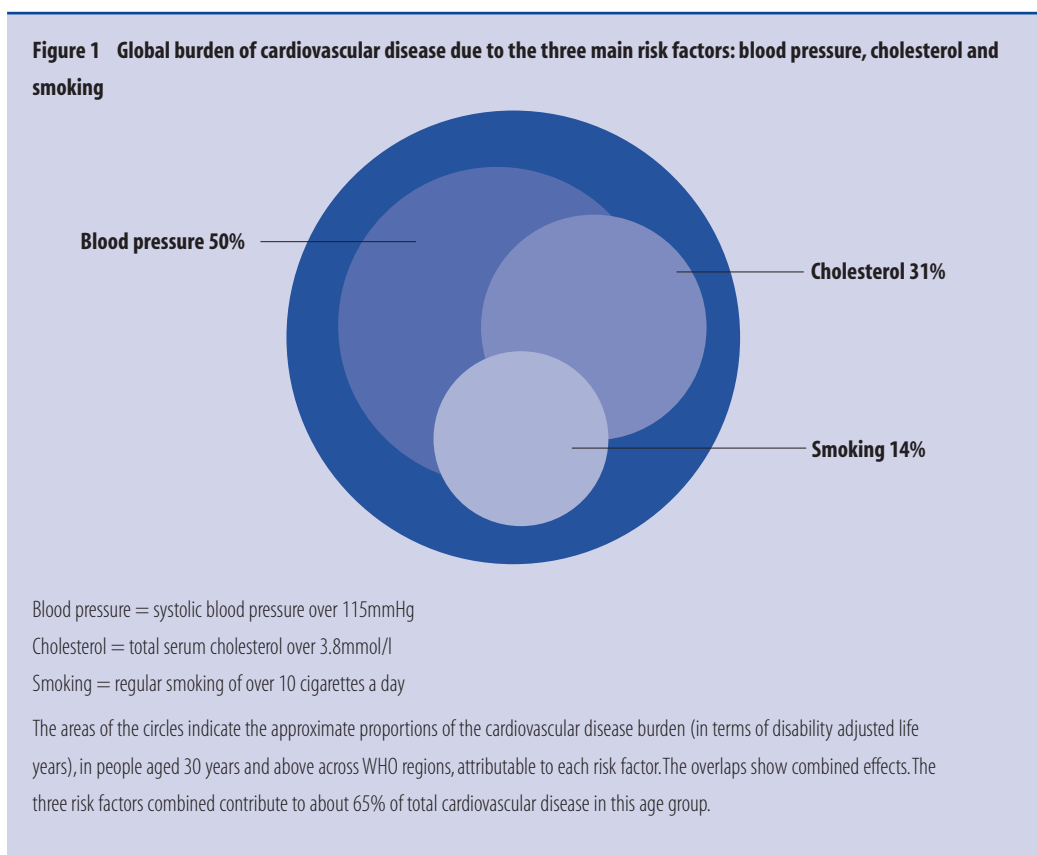
Because of the very large numbers of people involved, those with blood pressures above 115/75mmHg contribute considerably to the overall burden of blood pressure-related disease. According to the World Health Organization (WHO), the global disease burden attributable to a systolic blood pressure of 115mmHg or above is:³

- 20% of all deaths in men and 24% of all deaths in women
- 62% of strokes and 49% of coronary heart disease, and
- 11% of disability adjusted life years (DALYs).

High blood pressure is one of several risk factors for cardiovascular disease. Others include high blood cholesterol, diabetes and smoking. Combinations of these risk factors are additive. The combination of high blood pressure and diabetes is especially dangerous, doubling the risk of cardiovascular disease.⁴

Worldwide, approximately 50% of the burden of cardiovascular disease in people aged 30 years and over can be attributed to a systolic blood pressure of 115mmHg or above, 31% to high

cholesterol, and 14% to smoking (see Figure 1). These effects overlap to some extent, so that the three risk factors combined contribute to about 65% of total cardiovascular disease in this age group.³



Source: Adapted from *World Health Report: Reducing Risks, Promoting Healthy Life*. World Health Organization, 2002³

So, what is 'hypertension'?

'Hypertension' is a persistently raised blood pressure above a designated threshold. Given that the risks increase steadily with increasing blood pressure, the main purpose in having a designated level for diagnosing 'hypertension' is to indicate a threshold for a particular course of action such as whether or not to intervene medically.

Because any such threshold is arbitrary, the designated level has varied according to the recommendations of the many expert panels set up to consider the issue. In the UK, the most authoritative panels are the British Hypertension Society (BHS)⁵ and, in England and Wales, the National Institute for Clinical Excellence⁶ (NICE – now the National Institute for Health and Clinical Excellence). The Scottish Intercollegiate Guidelines Network (SIGN)⁷ has produced guidance which refers to the BHS guidelines.

This toolkit uses the definition of hypertension recommended in the current clinical guidelines of NICE⁶, BHS⁵ and SIGN⁷ – a persistent raised blood pressure of 140/90mmHg or above.

NB The thresholds for hypertension in people with Type 1 or Type 2 diabetes are slightly lower (see www.diabetes.org.uk).

Types of hypertension

Essential (or primary) hypertension

This accounts for 95% of cases of hypertension in adults in the UK. No specific underlying cause is found and it is thought to result from a genetic predisposition underlying the cumulative effects of various lifestyle factors (eg high salt intake, low levels of physical activity and increasing obesity) over many years. (See *Modifiable risk factors* on page 17.)

Around one-third of people with essential hypertension have raised systolic blood pressure only. This is known as **isolated systolic hypertension** (ISH) and is more common in older people.

The rise in systolic blood pressure with age is observed in all developed societies. Until fairly recently it was thought to be part of the normal ageing process. However, studies on economically underdeveloped societies have demonstrated that blood pressure naturally remains constant throughout life at around 110/70 mmHg.³ This suggests that the rise in systolic blood pressure with age in countries such as the UK is most likely related to lifestyle.

Secondary hypertension

This is hypertension caused by an underlying disease or as a side-effect of medication and may account for up to 5% of hypertension cases.⁶ The most common underlying disease is chronic kidney disease – but others include endocrine (hormonal) diseases, brain conditions and structural abnormalities in the cardiovascular system. Medications that can cause hypertension include some of those used to treat stomach ulcers, arthritis and depression.

Malignant (accelerated) hypertension

About 1% of people who have essential hypertension, and a higher proportion of those with secondary hypertension, develop a very high or rapidly rising blood pressure which threatens end-organ damage and requires urgent or emergency treatment.

Gestational hypertension

This occurs during pregnancy and usually returns to normal after childbirth. Women who have had gestational hypertension have a greater risk of developing hypertension later in life.⁸

‘White-coat hypertension’

‘White-coat hypertension’ is the term used for blood pressure which is high when the person sees the doctor or nurse, but is ‘normal’ at other times. It is a recognised entity separate from established essential hypertension. It appears to carry increased cardiovascular risk but at a lower level than that of essential hypertension.⁹

How many people have hypertension?

In England, 32% of men and 30% of women aged 16 years or over have hypertension (persistent raised blood pressure of 140/90mmHg or above) or are being treated for high blood pressure.² This means that, in terms of the average GP’s list of 2,000 patients, about 500 have hypertension.¹⁰ The equivalent figures for Scotland are 33% of men and 28% of women respectively.¹¹ There are no exactly comparable data available for Wales and Northern Ireland. However, in Wales 15% of adults (over 18 years) reported being treated for high blood pressure,¹² and in Northern Ireland 19% of men and 27% of women reported having been diagnosed with high blood pressure.¹³

What are the costs of hypertension?

In addition to the suffering caused to patients, carers and their families by the consequences of hypertension, there is also a considerable cost burden to the NHS, social care and the wider economy. The apportionment of costs to direct healthcare, social and informal care, and lost productivity varies from disease to disease and is methodologically complex. Calculating the proportion attributable to hypertension is even more difficult.

With regard to the two main cardiovascular consequences of hypertension – coronary heart disease and stroke – the British Heart Foundation Health Promotion Research Group has calculated the economic burden for the UK at 1999 prices.¹⁴ The total costs (direct healthcare, informal care and lost productivity) are equivalent to about £7.06 billion for coronary heart disease and £5.77 billion for stroke.

Taking into account the WHO estimates of the contribution raised blood pressure (115/75mmHg or above) makes to coronary heart disease (49%) and stroke (62%) as quoted on page 12, the total cost burden of raised blood pressure for these two diseases alone amounts to over £7 billion at 1999 prices, to say nothing of the additional costs incurred by other health consequences such as heart failure and renal disease.

Who is most at risk of hypertension?

With regard to essential (primary) hypertension, there are a number of predisposing ‘risk factors’ (see Table 1). Some of these are *unmodifiable* risk factors which are inbuilt and cannot be altered. The remaining risk factors can be modified through changes in various lifestyle habits from pre-conception onwards. The causes of other types of hypertension are mentioned above.

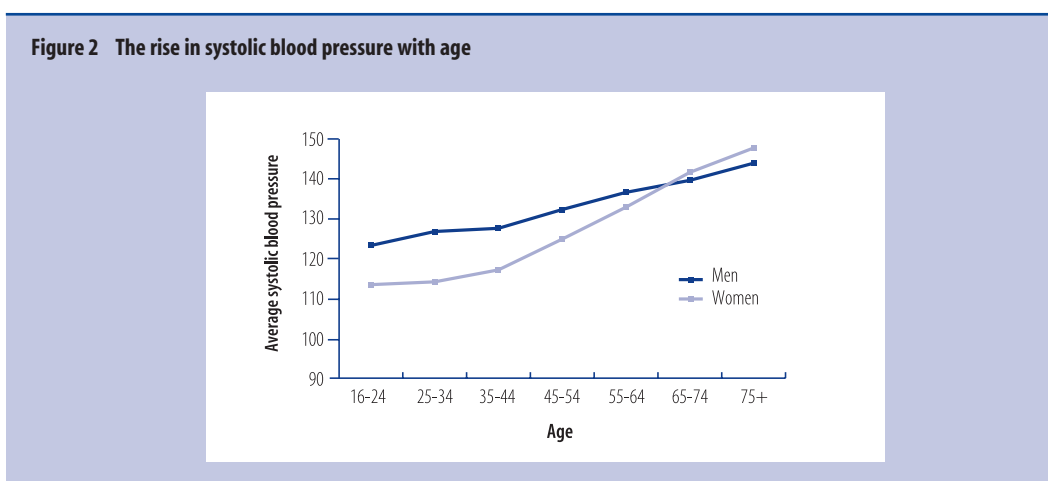
Table 1 Risk factors for developing hypertension	
Unmodifiable risk factors	Modifiable risk factors
Age and gender	Excess dietary salt
Ethnicity	Low dietary potassium
Family history	Overweight and obesity
	Physical inactivity
	Excess alcohol
	Smoking
	Cold homes
	Socioeconomic status
	Psychosocial stressors
	Diabetes
	Low birthweight
	Being formula-fed as a baby

These risk factors are explained in more detail on pages 16-21.

Unmodifiable risk factors

Age and gender

In the UK, as in other developed nations, blood pressure (particularly systolic) tends to rise with age. For example, in England, the increase in average systolic pressure between ages 16-24 years and 75 years and above is about 20mmHg (see Figure 2).



Source: Health Survey for England 2003²

The strong association in the UK between increasing age and increasing systolic blood pressure is thought to reflect the length of time that people are exposed to modifiable lifestyle risk factors such as those outlined in Table 1 on page 15.

Gender influences blood pressure differently according to age. For any given age up to about 65 years, women tend to have a lower systolic blood pressure than men. After 65 years of age, women tend to have a higher systolic blood pressure.² The cause of this difference is unknown. Diastolic pressures are about the same in both sexes for any given age.

In terms of prevalence, in England the proportion of the population with hypertension increases from 6% of men and 2% of women aged 16-24 years, to 64% in men and 64% of women aged 65-74 years.² Prevalence in Scotland also increases with age, from 10% in men and 4% in women aged 16-24 years, to 74% in men and 76% in women aged 65-74 years.¹⁵ The pattern in Wales and Northern Ireland shows a similar trend.

Ethnicity

There are differences in the prevalence of hypertension in different ethnic groups (see Table 2).

Table 2 Hypertension in ethnic groups in England	
Hypertension is MORE COMMON among:	Hypertension is LESS COMMON among:
Black Caribbean men and women	Bangladeshi men and women
Black African men and women	Chinese men
Chinese women	Irish women
Irish men	Pakistani men
Indian men and women	
Pakistani women	

Source: Health Survey for England. The Health of Ethnic Minority Groups '99¹⁶

At least some of the differences in prevalence of hypertension between ethnic groups are thought to be related to inherited differences in the way the body reacts to salt (salt-sensitivity),¹⁷ and differences in various hormones that control blood pressure (vasoactive neuropeptides) in the blood. Hypertension is also linked to diabetes which is more prevalent in certain ethnic groups such as South Asian, black African and black Caribbean communities.

Family history

Research on twins suggests that up to 40% of variability in blood pressure may be explained by genetic factors.¹⁸ However, studies in developing countries^{19,20} and in various ethnic groups²¹ suggest that genetic predisposition is relatively weak compared with the powerful influences of lifestyle and environment.

Modifiable risk factors

Excess dietary salt

Excess dietary salt (the active component of which is sodium) is the most important modifiable risk factor for hypertension. The Scientific Advisory Committee on Nutrition (SACN) concluded that: “the evidence strongly suggests an association between salt intakes and elevated blood pressure.”²²

In the UK the average adult eats around 9g of salt per day – up to three times the amount our bodies need.²³ About 65%-75% of the salt we eat comes from processed food, such as bread, breakfast cereals, soups, sauces, ready meals and biscuits.²² Other common sources of sodium in the diet include baking powder, effervescent tablets and monosodium glutamate (a flavour enhancer).²⁴

Epidemiological studies suggest the optimal level for health might be as low as 3g of salt a day – one third of the current UK intake.²⁵ However, achieving such a level is difficult and, as a population target, the daily salt intake for adults recommended by SACN is 6g (equivalent to 2.4g sodium) per day. For children, SACN recommends a range of target levels for different age groups of children (see Tool H9 on page 87).

Low dietary potassium

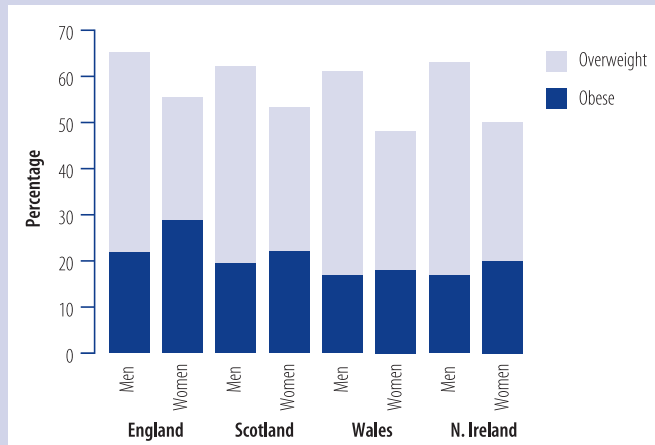
Low levels of potassium in the diet are associated with raised systolic and diastolic blood pressure. Fruit and vegetables are a good source of potassium. People in the UK on average eat only half the recommended level of at least five portions of fruit and vegetables a day.²³

Overweight and obesity

There is a strong and direct relationship between excess weight and hypertension.²⁶ Obesity multiplies the risk of developing hypertension about fourfold in men and threefold in women.²⁷

In the UK, about two-thirds of men and over half of women are either overweight (with a Body Mass Index [BMI] of 25-29.9kg/m²) or obese (with a BMI of 30kg/m² or above). (See Figure 3.) In England, the proportions categorised as obese are about one in five men and one in four women.² England also has a higher percentage of obese adults than other parts of the UK (see Figure 3). Obesity also tends to be more prevalent in manual/routine socioeconomic groups.

Figure 3 Percentages of overweight and obese adults aged 16 years and over in the UK

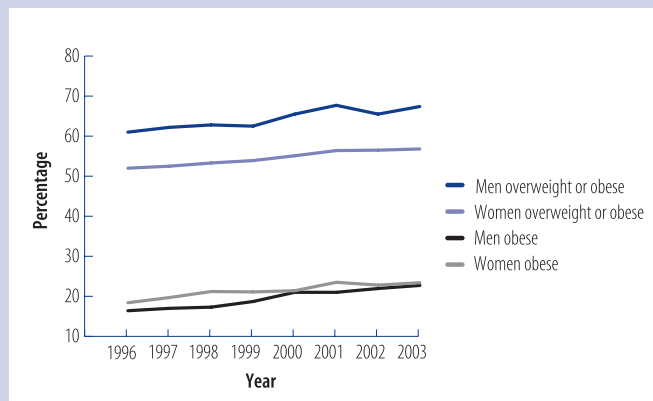


Sources: England: Health Survey for England 2003²; Scotland: Scottish Health Survey 1998¹⁵; Wales: Welsh Health Survey 2003/04²⁸; Northern Ireland: Health and Lifestyle Report 1997²⁹

Trends in overweight and obesity

Across the UK, the prevalence of overweight and obesity has increased markedly over the past decade. Figure 4 shows the trend in adults in England. Obesity in children has increased even more markedly.²

Figure 4 The rising prevalence of overweight and obesity in adults, England, 1996-2003



Source: Health Survey for England 2003²

In Wales, overweight and obesity increased from 53% of men in 1996 to 60% in 2003-04, and slightly decreased in women from 51% in 1996 to 48% in 2003-04.^{28, 30}

Figures for Scotland and Northern Ireland are not directly comparable to those for England and Wales as available data refer to different time periods. However, both countries show similar trends. In Scotland, in both men and women, the prevalence of obesity in adults aged 16-64 years increased from 16% to 20% in men and from 17% to 25% among women between 1995 and 1998.^{31, 15} In Northern Ireland, prevalence of obesity increased from 8% to 17% among men and from 16% to 20% among women between 1990 and 1997.^{32, 29}

Patterns of obesity differ between ethnic groups. Levels of obesity are much lower in Pakistani, Indian, Chinese and Bangladeshi men, and higher in black Caribbean and Pakistani women. However, in ethnic groups with low general obesity, there are often relatively high levels of central obesity (excess fat around the trunk, particularly the abdomen). Central obesity is linked to an increased risk of Type 2 diabetes and heart disease.¹⁶

Physical inactivity

People who do not take enough aerobic exercise (such as brisk walking, running, cycling, swimming or dancing) are more likely to have or to develop hypertension. Large cross-sectional and longitudinal studies have shown a direct positive correlation between habitual aerobic physical inactivity and hypertension.³³ For example, in a study following up male college alumni over many years, those who were habitually active were up to 30% less likely to have hypertension than their inactive colleagues.³⁴

Only 37% of men and 24% of women in England meet the recommended level of physical activity of a total of at least 30 minutes of at least moderate intensity activity a day on five or more days a week.² There is evidence that general activity levels are currently declining as lifestyles change. For example, between 1975-76 and 1999-2001 total miles travelled per year on foot or by bicycle fell by 26% and 24% respectively³⁵ (although these figures exclude walking and cycling for leisure). However, there has been an increase in the proportion of people who choose to be active in their leisure time.³⁶

In Scotland, 59% of men and 72% of women are not meeting the physical activity guidelines.³⁷ In Wales, 14% of adults take no exercise.²⁸ In Northern Ireland, 70% of men and 74% of women are not meeting the physical activity guidelines, and those in lower socioeconomic groups are the least likely to exercise.¹³

Excess alcohol

While a low-to-moderate habitual consumption of alcohol is associated with a lower risk of cardiovascular disease, heavy alcohol use is a well-established risk factor for hypertension and stroke. For example, a large study of almost 6,000 Scottish men aged 35-64 followed up for 21 years found that there was a strong correlation between alcohol consumption and mortality from stroke: drinkers of more than 35 units of alcohol a week doubled their risk of mortality compared with non-drinkers.³⁸

In Great Britain (England, Scotland and Wales combined) the proportion of men (aged 16 years plus) drinking more than the benchmark limit for weekly consumption (21 units for men) fell from 28% in 1998 to 27% in 2002, while in women the proportion drinking more than the benchmark for women (14 units) rose from 15% to 17%.³⁹ In Northern Ireland, 23% of men and 10% of women drink over the recommended weekly limits.²⁹

Blood pressure rises when large amounts of alcohol are consumed, in some cases to dangerous levels – particularly when ‘binge-drinking’.⁴⁰ In Great Britain there has been a marked increase in binge-drinking among young women. Between 1998 and 2002 the proportion of women aged 16-24 years who had drunk more than the ‘female binge benchmark’ of six units of alcohol on at least one day in the previous week rose from 24% to 28%. In contrast, the proportion of men aged 16-24 years drinking more than the ‘male binge benchmark’ of eight units on at least one day in the previous week fell from 39% to 35% over the same period.³⁹

Smoking

Although blood pressure rises briefly while people are smoking, any independent long-term effect on blood pressure is small.⁴¹ However, the risk of cardiovascular disease for any particular level of blood pressure is higher in smokers and strategies for hypertension should include helping people to stop smoking.

Cold homes

There are over 60,000 cold-related deaths throughout the year in the UK, and over half of these are from cardiovascular disease.⁴² In older people, blood pressure rises after two hours' exposure to temperatures of 12°C and below, and this effect may contribute to these excess deaths. In the UK around two and a quarter million people, many of them older people, are living in cold homes that they cannot afford to heat.⁴³

Socioeconomic status

Differences in the prevalence of hypertension in England have been analysed in the Health Survey for England 2003 using the new socioeconomic classification (NS-SEC). The prevalence of hypertension is highest in the lower supervisory and technical group in both men and women, and the differences between this group and the managerial and professional group are statistically significant in both sexes.²

In Scotland there is a similar pattern, with the prevalence of hypertension in women rising from 16.7% in social class I to 33.6% in social class V.¹⁵ No comparable data are available for Wales or Northern Ireland.

The social class (or manual vs non-manual) pattern differs according to ethnicity. For example, among Bangladeshi men in England there is a marked gradient with 11.7% of non-manual men compared with 26.2% of manual men having hypertension, while this difference is reversed among Bangladeshi women.¹⁶

Psychosocial stressors

In the short term, blood pressure is increased at times of 'stress'. It rises with anxiety, anger or mental effort as part of the physiological adrenalin-driven 'fight or flight' response, but decreases again once the anxiety has gone. One example of this is the 'white-coat hypertension' described on page 14.

Blood pressure may also persistently increase over a longer period in response to a wide range of stressful situations, including stress at work.⁴⁴ For example, the Whitehall II civil servants longitudinal study found that systolic and diastolic blood pressure were greater in participants reporting low job control compared with those reporting high job control, independent of sex, employment grade, body mass index, age, smoking status and physical activity.⁴⁵

Diabetes

Hypertension is more prevalent in people with Type 1 and Type 2 diabetes than in the non-diabetic population, whether or not they are overweight. With the much less common Type 1 diabetes, hypertension is mostly a consequence of kidney damage.⁴⁶ With Type 2 diabetes, the causative factor is thought to be insulin resistance or 'metabolic syndrome', but the mechanism is not fully understood.⁴⁷

In England, surveys have found the prevalence of hypertension to be as high as 70% of adults with Type 2 diabetes – with about 50% having blood pressure of 160/95mmHg or higher.⁴⁸ People who have both hypertension and Type 2 diabetes have double the risk of a cardiovascular event.⁴ The UKPDS 36 study found that the risk of diabetic complications for patients with Type 2 diabetes

was strongly associated with blood pressure.⁴⁹ Controlling blood pressure in people with diabetes who have co-existing hypertension reduces their risk of developing both end-organ damage (such as chronic kidney disease and visual impairment) and cardiovascular disease.⁵⁰

There are estimated to be around 1.8 million people with diabetes in the UK, about 85% of whom have Type 2 diabetes. As many as one million of these are undiagnosed.⁵¹

Type 2 diabetes is up to six times more common in people of South Asian origin and up to three times more common among people of black African or black Caribbean origin compared with the general population.¹⁶

The development of Type 2 diabetes, as with hypertension, is related to low physical activity levels and to overweight and obesity. Those with a BMI greater than 30 increase their risk of developing Type 2 diabetes by up to 10 times.⁵²

Low birthweight

There appears to be a direct relationship between adult hypertension and low birthweight and poor growth and development in the first year of life.⁵³ Fast catch-up growth (where small babies grow quickly in the first months of life) may also contribute to later hypertension.^{54,55} However, the contribution of low birthweight and catch-up growth to hypertension is relatively low in comparison with lifestyle influences in later life.

Being formula-fed as a baby

Babies who are exclusively formula-fed tend to have higher systolic blood pressures than breast-fed babies and this difference extends into adult life.^{56,57} The reasons for this are not known but some formula feeds can have a higher salt content than breast milk.

Summary of risk factor trends

A summary of the recent trends in adult lifestyle risk factors for hypertension is shown in Table 3.

	Timescale	Men	Women
Salt Average adult daily intake ²³	1986/87-2001/02	UP by 9%, from 10.1g to 11g	UP by 5%, from 7.7g to 8.1g
Fruit and vegetables Purchases of fresh fruit per person per week ⁵⁸ Purchases of fresh vegetables per person per week ⁵⁸	1995-2002/03	UP by 15% in both sexes from 6.9kg to 7.9kg by 2.3% in both sexes from 7.2kg to 7.4kg	
Overweight and obesity Prevalence of BMI of 25kg/m ² or above ²	1994-2003	UP from 58% to 65%	UP from 49% to 56%
Physical activity Percentage achieving recommended levels ²	1997-2003	UP from 32% to 37%	UP from 21% to 24%
Alcohol Percentage drinking more than weekly benchmark levels ³⁹	1998-2002	DOWN from 28% to 27%	UP from 15% to 17%
Diabetes Prevalence of Type 2 diabetes ²	1994-2003	UP from 2.9% to 4.8%	UP from 1.9% to 3.6%

In the next section – *Reducing the burden: tackling hypertension* – we consider some of the general principles involved in reducing the burden of hypertension.

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Reducing the burden: tackling hypertension

B

This section of the toolkit looks at ways of reducing the burden of hypertension through prevention and control. It considers the broad principles involved and some of the evidence supporting particular approaches.

There are two basic elements to any strategy to tackle hypertension and reduce its burden:

- preventing it developing in the first place by reducing the modifiable risk factors, and
- detecting, treating and controlling hypertension in those who already have the condition.

Preventing hypertension

There are two broad approaches to preventing hypertension:

- the whole population approach, and
- the 'at-risk' individual or group approach.

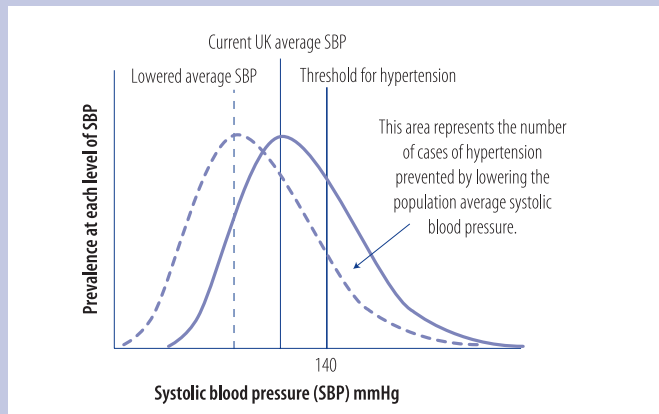
These two approaches are not mutually exclusive, and it has been argued that both are necessary in any comprehensive strategy.¹

The whole population approach

The aim of this approach is to prevent hypertension by lowering average blood pressure by a relatively small amount across a whole population. It has been estimated that a reduction as small as 2mmHg in the average adult's systolic blood pressure could save more than 14,000 UK lives per year.²

By encouraging enough people to change their lifestyles sufficiently to lower their blood pressure, large numbers are shifted to below the threshold for hypertension (140/90mmHg) (see Figure 5). In other words, many cases of hypertension are prevented.

Figure 5 How reducing the population average blood pressure can prevent hypertension



Source: Adapted from Rose, 1992¹

The main lifestyle changes required to achieve this are:

- reduce the population average intake of salt to 6g per day as recommended by the Scientific Advisory Committee on Nutrition³ (see Tool H9: *Salt and hypertension*, on page 87)
- increase potassium intake (by increasing fruit and vegetable intake to at least five portions a day – excluding potatoes)
- control weight (to achieve a 10% weight loss in overweight/obese people)
- increase habitual physical activity (to a total of at least 30 minutes a day of at least moderate intensity activity, on five or more days of the week for adults, and at least 60 minutes each day for children)
- keep alcohol intake within recommended benchmark limits for either sex.

Advantages of this approach are:

- Large numbers of people can benefit.
- The lifestyle changes required are modest and achievable.
- Many different sectors and agencies can play a part.
- It may be relatively low cost.

Barriers include:

- People are often resistant to changes in lifestyle.
- The main determinants are often beyond an individual's scope for control. (For example, as 65%-70% of salt intake is from processed foods,³ individuals will find it difficult to make significant reductions in salt unless there are across-the-board reductions in salt content.)
- The process may be very long-term.

The 'at-risk' individual or group approach

This approach focuses on people known to be at higher risk of developing hypertension than the general population. The risk factors described on page 15 can be used to identify individuals and groups in this category. For example, efforts could be focused on older people, people who are obese, or those from particular ethnic communities such as black Caribbean or black African people.

Advantages of this approach are:

- Resources can be focused on those most likely to benefit.

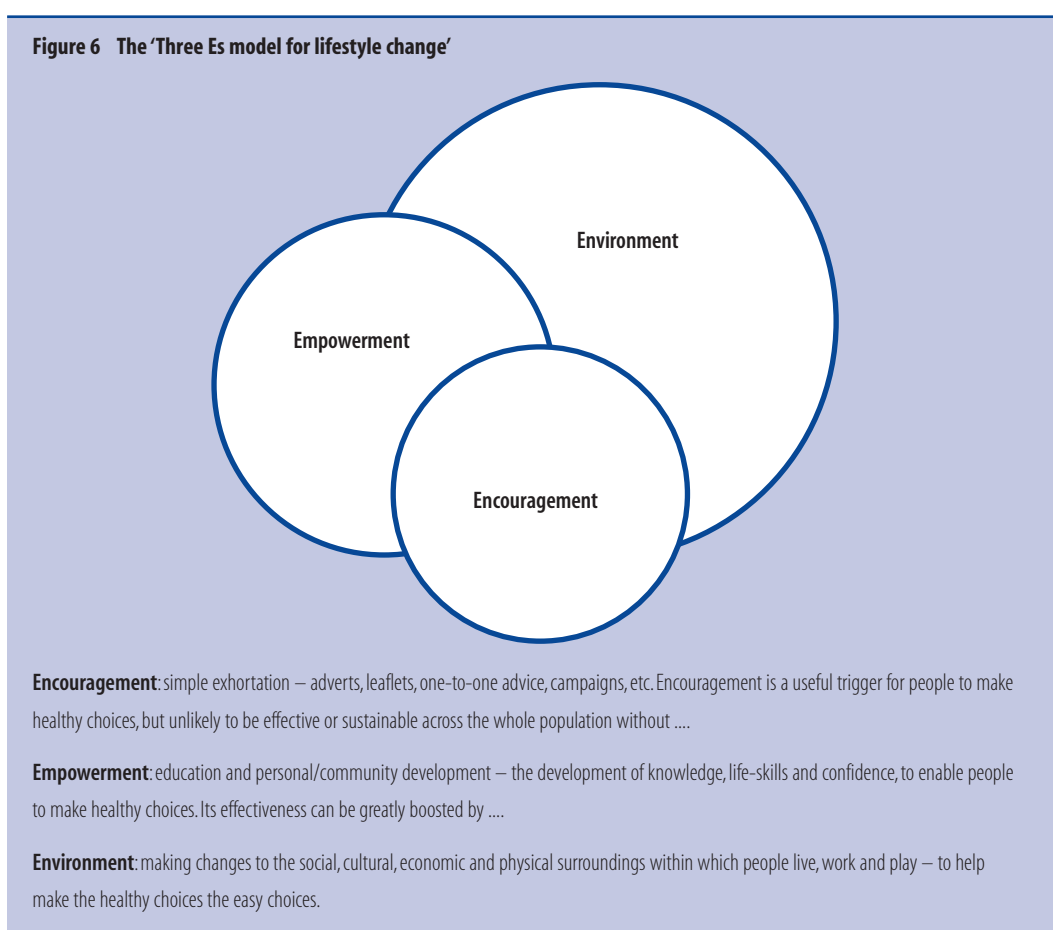
- People who are at risk are usually more motivated to make lifestyle changes.
- It is easier to attribute effects to efforts.
- The evidence of effectiveness is stronger than for the whole population approach.
- Performance management and remuneration systems can be set to encourage its adoption.

Barriers include:

- One-to-one or group work is usually more resource-intensive.
- There may be an element of ‘victim-blaming’ – placing all the responsibility on the ‘at-risk’ individual.

Achieving lifestyle change

To help people change their lifestyles and health behaviours it is important to recognise the part played by sociocultural influences and environments. This can be demonstrated by the ‘Three Es model for lifestyle change’ (see Figure 6).



Source: Adapted from Maryon-Davis, 2003⁴

For hypertension prevention and control, this model can help to identify the many determinants which influence people’s lifestyle choices. For example, with regard to reducing salt consumption: *encouragement* might comprise an awareness-raising campaign; *empowerment* might be through easy-to-understand food labelling; and *environment* might be, for example, through gradually reducing the salt content of all foods and the provision of low-salt choices in supermarkets and catering outlets.

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Evidence for prevention

There is an increasing body of evidence to support various lifestyle changes to prevent hypertension, either in 'at-risk' groups or the wider population. Useful summaries can be found in the *Nutrition and Food Poverty* toolkit⁵ and the *Let's Get Moving*⁶ physical activity toolkit.

A number of large-scale trials of lifestyle interventions in whole populations have led to significant reductions in average blood pressure.⁷⁻¹⁰ However, in general, the quality of the evidence concerning prevention appears less robust than the evidence for treatment and control. This is mainly because designing and carrying out randomised controlled trials (RCTs) of lifestyle interventions in healthy populations over extended periods of time is difficult – it is far easier to do an RCT of a new antihypertensive drug in a sample of patients. Instead, much of the evidence for prevention comes from observational studies rather than trials. However, it is important to remember that a lack of strong trial evidence of effectiveness does not necessarily mean evidence of ineffectiveness – it simply means that more research is needed and better methods for evaluating interventions need to be developed. In its recent public health white paper, *Choosing Health – Making Healthy Choices Easier*, the Department of Health (England) has acknowledged the lack of investment in public health research and has pledged to increase support for investigations into the effectiveness (and cost-effectiveness) of different preventive strategies.¹¹

Detecting and controlling hypertension

Benefits

There is substantial evidence that lowering blood pressure in people with hypertension is associated with a reduction in cardiovascular risk. For example, according to a recent large-scale meta-analysis of observational prospective studies,¹² among patients aged 40 to 69 years with hypertension, a 20mmHg lower systolic blood pressure is associated with:

- less than half the risk of dying from a stroke, and
- half the risk of dying from coronary heart disease.

Smaller differences in blood pressure are associated with smaller differences in death rates from stroke and coronary heart disease (see Table 4). The difference in risk varies with age, diminishing in older people, particularly with regard to stroke.

Difference in systolic blood pressure from coronary heart disease	% difference in mortality from stroke	% difference in mortality
-20mmHg	-50%	->50%
-10mmHg	-30%	-40%
-2mmHg	-7%	-10%

Source: Prospective Studies Collaboration, 2002¹²

These data are observational only – they do not represent the results of intervention trials. However, a large meta-analysis of evidence from trials involving antihypertensive drugs has demonstrated significant reductions in overall cardiovascular risk with reduced blood pressure.¹³

Risk assessment

Clinical decisions about whether and how to treat hypertension in individuals should be based on both their blood pressure level and their overall cardiovascular risk – not on blood pressure alone. Some of the practical aspects of risk assessment are covered in section C:

Developing a local hypertension strategy.

Methods of blood pressure control

There are two main types of therapeutic intervention to control blood pressure in people with hypertension:

- lifestyle interventions including advice and support on, for example, diet, weight control and promoting physical activity, and
- drug treatment for hypertension.

Lifestyle interventions for people with hypertension

A review by NICE of randomised controlled trials of lifestyle interventions for people with hypertension has shown significant reductions in systolic and diastolic blood pressure as a result of a healthy, weight-reducing diet, regular aerobic physical activity, reduced sodium and alcohol intake, and relaxation therapies¹⁴ (see Table 5).

Lifestyle intervention	Average reduction in systolic and diastolic blood pressure	Percentage who achieve a reduction in systolic blood pressure of 10mmHg or more
Healthy, weight-reducing diet	5-6mmHg	40%
Regular aerobic exercise	2-3mmHg	30%
Combined diet and exercise	4-5mmHg	25%
Relaxation techniques	3-4mmHg	33%
Alcohol within recommended limits	3-4mmHg	30%
Salt reduction to a maximum of 6g per day	2-3mmHg	25%

Source: Management of Hypertension in Adults in Primary Care (NICE guideline), 2004¹⁴

There is some evidence that using reduced-sodium salt as a substitute in cooking and at the table can be effective in lowering raised blood pressure.¹⁴ However, reduced-sodium salt is not suitable for everyone and a reduction in salt added to food is the preferred general approach.

A meta-analysis of weight reduction programmes has shown that 1kg weight loss leads to a 1mmHg reduction in systolic blood pressure. This effect is for people of all ages, at all levels of blood pressure, and whatever their initial body mass index.¹⁵

According to the NICE guideline,¹⁴ lifestyle advice (ie advice on smoking cessation, healthy eating, restricting sodium intake, regular exercise and avoiding excessive alcohol) should be an initial aspect of care for patients with hypertension. In some cases changes in lifestyle may remove or delay the need to use drugs, or help to reduce or stop drug therapy.

Drug treatment for hypertension

National and international guidelines provide clinical protocols for instituting drug therapy to control hypertension. In the UK, two sets of national clinical guidelines were published in 2004:

- British Hypertension Society guidelines,¹⁶ and
- NICE guidelines.¹⁴

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Both guidelines offer similar advice regarding thresholds for drug treatment but differ to some extent with regard to the order in which particular types of drug should be used. Both guidelines advise that antihypertensive medication should be offered to patients with:

- persistent high blood pressure of 160/100mmHg or above, or persistent isolated systolic hypertension (systolic blood pressure 160mmHg or above)
- raised cardiovascular risk (10-year risk of a cardiovascular event of 20% or above, or existing cardiovascular disease, or target-organ damage) with persistent blood pressure of more than 140/90mmHg.

NICE recommends that drug therapy, adding different drugs if necessary, should aim to achieve a target of 140/90mmHg and should be given until further treatment is inappropriate or declined. Appropriate guidance and materials about the benefits of drugs, and about the unwanted side-effects sometimes experienced, should be provided in order to help patients make informed choices.

According to NICE, in trials aiming to reduce blood pressure to below 140/90 mmHg using stepped medication regimens, between one-half and three-quarters of patients achieved target blood pressure.

The North of England Hypertension Guideline Development Group, which developed the NICE guideline for hypertension, estimated that, in England alone, the cost of drugs used for lowering blood pressure is £840 million per year – almost 15% of the total annual cost of drugs in primary care.¹⁷ This is compounded by poor adherence of patients to prescribed drug treatments, as discussed below. There is therefore a strong case for bringing about lifestyle changes across the population to prevent the occurrence of hypertension in the first place.

Access and adherence to treatment

Although there are effective interventions to treat and control hypertension, many people with the disorder go untreated or receive inadequate treatment. In both England¹⁸ and Scotland¹⁹ it is estimated that almost two-thirds of men and over half of women with hypertension are untreated. The proportion of those whose hypertension is untreated tends to be higher in older people and those in intermediate or manual socioeconomic groups. (Comparable figures for Wales and Northern Ireland are not available.)

These low treatment rates are due to the condition not being detected and diagnosed, partly because of lack of access to a primary care professional, and partly due to insufficient attention being given to measurement of blood pressure when a patient does see a GP or nurse. The National Service Frameworks for coronary heart disease and for older people (in England and Wales), and the GMS contract, contain targets and incentives for addressing these issues. (See Tools H2 and H11 for further information.)

Of those patients who are detected, diagnosed and treated, two out of three still have hypertension. In the UK only 10% of individuals with hypertension are controlled to the target of 140/90 mmHg.²⁰ This is due to poor understanding by practitioners of effective treatment regimens for lowering blood pressure, and to poor patient adherence (not taking the medication as prescribed). The currently available clinical guidelines (from NICE,¹⁴ the British Hypertension Society¹⁶ and SIGN²³) address treatment regimens in different ways.

It is estimated that between 50% and 80% of patients with hypertension do not take all of their prescribed medication.^{21,22} According to the Health Survey for England, the proportion of those who are treated but whose blood pressure remains inadequately controlled tends to be higher in older people, women, and people in intermediate or routine/manual socioeconomic groups.¹⁸

Understanding patients' reasons for not taking medications, and implementing effective strategies to overcome barriers to taking prescribed medication, are therefore crucial aspects in

the management of hypertension. According to the North of England Hypertension Guideline Development Group,¹⁷ adherence to prescribed drug treatments can be improved by improving patient education, providing counselling, and involving families and other members of the healthcare team. Greater adherence may also be achieved if healthcare professionals seek to explore and discuss a patient's reasons for not taking medication and any reservations they may have. (For a fuller discussion on this, see page 50 in section C: *Developing a local hypertension strategy*.)



The challenge is, therefore, to implement effective prevention and treatment strategies for hypertension at local level. Section C of this toolkit, *Developing a local hypertension strategy*, gives practical guidance on how to do this.

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hypertension

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Developing a local hypertension strategy

This section of the toolkit provides a practical guide to developing a local strategy to prevent, detect and control hypertension. It covers the following aspects:

- making the case for a local hypertension strategy
- building the necessary partnerships
- establishing a local hypertension action team
- reviewing current activity and identifying gaps
- identifying priorities and target groups
- deciding aims, objectives, standards, targets and milestones
- choosing interventions to prevent hypertension
- choosing interventions to detect and control hypertension
- understanding barriers and facilitating change
- ensuring appropriate infrastructure support
- monitoring progress, assessing performance and evaluating the strategy, and
- mainstreaming and sustainability.



Tool H1 shows a suggested structure for a local hypertension strategy containing all the elements listed above.

Making the case for a local hypertension strategy

The case for a local hypertension strategy should be built on:

- the key policy drivers – both national and local
- an estimate of the local burden of hypertension, and
- an estimate of the potential benefits of local action.

Key policy drivers

National policy drivers

Action to tackle hypertension is driven mainly by policies and strategies concerning the prevention and management of coronary heart disease, stroke, diabetes and chronic kidney disease. For example, in England and Wales these comprise the National Service Frameworks (NSFs) for coronary heart disease, older people, diabetes and renal services respectively. There are also parallel strategies concerned with broader issues – such as healthy lifestyles, healthy children, healthy older people, reducing disability, tackling health inequalities, modernisation, management

of long-term conditions and primary care development – which contribute to the case for a comprehensive approach to hypertension.

These policies and strategies differ to some extent between England, Wales, Scotland and Northern Ireland, but all follow essentially similar lines.



Tool H2 lists the main national policy drivers relevant to blood pressure.

Local policy drivers

These are likely to include local agreements, targets, standards, policies and strategies which relate to the promotion of healthy lifestyles and the provision of high-quality management of long-term conditions (such as for coronary heart disease or diabetes).

For example, the following are likely to be most relevant to hypertension:

- healthy eating strategies
- physical activity and/or sports development strategies
- health inequalities strategies
- workplace or occupational health policies
- primary care development strategies
- locally derived standards and targets for the NHS
- national and local public service agreements concerning life expectancy
- community strategies
- National Healthy Schools Standards, and
- regeneration and neighbourhood renewal strategies.

Estimating the local burden of hypertension

Prevalence

Although some areas have local prevalence data derived from various ad hoc local surveys, in most areas estimates must be either extrapolated from national surveys or obtained from general practice registers.

For example, the Health Survey for England provides data on the proportion of adults with hypertension, and those treated and controlled. These data can be applied to the local demographic profile of a primary care organisation (PCO) to calculate an estimate of prevalence. Similarly, data from the Scottish Health Survey, Welsh Health Survey and the Northern Ireland Health and Social Wellbeing Survey can be extrapolated to estimate local prevalence in those parts of the UK.



Tool H3 is a ready-reckoner to help you estimate the prevalence of hypertension in your area.

The quality of general practice data has hitherto been patchy but the introduction of standardised clinical systems software, and the current Quality and Outcomes Framework of the General Medical Services (GMS) contract, mean that more reliable and more comprehensive data are now becoming available. These are collated centrally (in England by the Quality Prevalence and Indicator Database (QPID)) and provided to primary care organisations as an annual estimate of prevalence.

The validity of estimates based on GP data depends on:

- accurately and regularly calibrated sphygmomanometers (blood pressure measuring devices)
- regular and comprehensive blood pressure monitoring of the practice population, especially those over 45 years of age (eg by a call-recall scheme)

- blood pressure readings (preferably paired*) taken on three separate occasions under standardised conditions (see the British Hypertension Society,⁵ NICE¹ or SIGN² guidance)
- proper recording of blood pressures with Read coding (flagging) of patient records where a diagnosis of hypertension is made (based on national guidance).

Population attributable risk

Another approach to estimating the local burden of disease is by calculating the population attributable risk of hypertension as a cause of complications such as coronary heart disease, stroke/transient ischaemic attack (TIA), or chronic kidney disease. For example, McPherson *et al* estimated that 14% of deaths from coronary heart disease in men and 12% of deaths in women were attributable to high blood pressure (blood pressure over 140/90mmHg).³

Costs

Estimating the costs and benefits of tackling hypertension at local level is difficult, and depends on:

- the degree of complexity used in modelling
- the validity of the various assumptions used in calculations
- the clinical guidelines and prescribing regimes followed, and
- the current costs of various antihypertensive drugs.

Approximate values can be derived by applying national figures to the local estimates of prevalence, either as calculated using the process described in *Tool H3: Hypertension prevalence ready-reckoner*, or from the prevalence data derived from general practices through the current Quality and Outcomes Framework of the GMS contract, for example via QMAS (Quality Management and Analysis System) in England.

Estimating the potential benefits of local action

Health outcomes

In essence, this is an estimation of the amount of reduction in burden as a result of effective prevention and treatment of hypertension. Ideally it should include cost-benefit analyses, although these are extremely difficult to quantify. Theoretically, there are two components to analyse:

- the number of cases of hypertension prevented by lifestyle changes in the population (and hence the cost-benefits of prevention), and
- the number of cases of coronary heart disease, stroke, heart failure and chronic kidney disease prevented by effective identification and treatment of hypertension (and hence the cost-benefits of screening for hypertension).

However, in practice such analyses have proved difficult to model with any degree of accuracy.

Building partnerships

Tackling hypertension at local level requires a 'whole-systems' approach, involving a range of partners in planning the strategy, steering its implementation and ensuring that it meshes appropriately with a wide range of related parallel strategies and policies.

Many of these partnerships are likely to exist already, either formally or informally – for example, as part of a healthy lifestyles programme, a National Service Framework implementation programme or a management programme for long-term conditions.

* Paired blood pressure readings involve taking at least two blood pressure measurements (about 1-2 minutes apart) on each occasion.⁵

Establishing a local hypertension action team

A key partnership that may need to be created specifically is a 'hypertension action team' to coordinate and steer the elements most relevant to tackling hypertension. This team does not need to be large and unwieldy. Core inputs are health promotion, primary care and commissioning; others can be included as and when appropriate. For example, if the focus is on detection and control of existing cases, the team might include:

- patient or carer
- GP and/or practice nurse
- practice manager
- primary care quality facilitator
- primary care commissioner
- primary care IT officer
- hospital specialist
- public health specialist
- pharmacist
- public health nutritionist or community dietitian
- physical activity facilitator.



Tool H4 gives details of various local partners and their potential roles.

Reviewing current activity and identifying gaps

This involves a service review, a 'gap analysis' or audit of local services, initiatives and infrastructure including protocols, procedures, pathways and practice, to find out:

- What is currently happening?
- Where are the gaps?
- What are the priorities?
- What are the opportunities for development?



Tool H5 provides a framework for a 'settings' approach to shaping the hypertension strategy, based on the main settings in which services and initiatives can be delivered.

Tool H6 provides a checklist to use when reviewing current activity and assessing how well services and initiatives are being delivered in the various settings.

For each service, initiative or infrastructure component, the following questions should be addressed:

- How well does it meet needs?
- Which groups are missing out?
- What development or further action is needed?

Each partner agency is usually best placed to undertake the mapping for its own sphere of influence and to feed its findings into the audit.

Identifying priorities and target groups

With limited resources and capacity, and with such a wide range of possible initiatives and interventions, both in terms of prevention and control, decisions will have to be made about where to focus efforts.

First, the balance between prevention and control needs to be considered. How much of the available resources and capacity should go into lifestyle changes to prevent hypertension, and how much into case-finding and treatment?

Second, within each of these broad approaches, decisions have to be made about priority interventions and target groups. Each partner agency should contribute to this process, beginning with those interventions for which it has the lead role. So, for example, the leisure department of the local authority might propose that certain physical activity/sports programmes be focused on men over 35 years of age. Or the primary care organisation might propose a hypertension case-finding and treatment scheme aimed specifically at ethnic groups who have a high risk of hypertension, such as black Caribbean or black African communities.

Priorities and target groups for prevention

Theoretically, the greatest number of cases of hypertension can be prevented by lowering the average blood pressure of the whole population (see page 25 in section B: *Reducing the burden: tackling hypertension*). This is most likely to be achieved by preventing the rise in blood pressure with age, particularly by reducing the average salt intake and Body Mass Index in the population, and by increasing physical activity levels in children and young people. For example, given that schoolchildren are a 'captive audience', it might be a good idea to make school-based interventions the main priority for hypertension prevention. The focus would be on healthy eating (particularly with regard to salt and calories) and increasing physical activity.

However, in section A: *Hypertension: the public health burden* we described a number of higher-risk groups in the population (see page 15) and it could be argued that preventive efforts could be more effectively focused on them. For example, in areas where there is a sizeable black African or black Caribbean community genetically predisposed to hypertension, it might be particularly cost-effective to aim preventive programmes at that group. In addition to offering healthy lifestyles interventions, an important message would be to have regular blood pressure checks.

In the primary care setting, preventive efforts should be focused on two broad groups of patients:

- Those whose blood pressure is already in what the British Hypertension Society refers to as the 'high-normal' range (systolic blood pressure 130-139mmHg, diastolic 80-89 mmHg). Without lifestyles intervention, this group is most likely to go on to develop hypertension.
- Those for whom the development of hypertension might be particularly risky – for example: those with existing cardiovascular disease (coronary heart disease, stroke/TIA) or diabetes, or evidence of target-organ damage such as chronic kidney disease or retinal disease; or those who are at higher risk of developing these conditions.

Both of these groups urgently require effective lifestyles advice and support, such as help to restrict salt intake, be more physically active, control their weight, drink alcohol in moderation and attend for regular check-ups.

Priorities and target groups for detection and control

The task of identifying those adults with existing hypertension (see page 45) is a daunting one, and in a general practice setting it makes sense to prioritise those patients at high overall risk of cardiovascular disease, or who show signs or symptoms of target-organ damage that may be due to hypertension (eg kidney damage or retinal damage).

Hierarchy of risk from existing hypertension

Those most likely to be at high risk of a cardiovascular event as a consequence of uncontrolled hypertension are, in order of greatest risk:

- 1 those with existing coronary heart disease, stroke, peripheral vascular disease, diabetes, chronic kidney disease or retinal damage
- 2 older people at high risk of coronary heart disease or stroke, but without existing disease
- 3 younger people at high risk of coronary heart disease or stroke, but without existing disease
- 4 older people not at high risk of coronary heart disease or stroke
- 5 younger people not at high risk of coronary heart disease or stroke.

Within each group, males, people from lower socioeconomic groups and certain ethnic groups are at greater risk (see pages 16 and 20 in section A: *Hypertension: the public health burden*). The absolute risk of a cardiovascular event occurring in hypertensive patients varies dramatically depending on age, sex, level of blood pressure and coexistence of other risk factors.⁴

Assessing overall cardiovascular risk

Current national and international guidelines emphasise the importance of assessing cardiovascular risk as a basis for prioritising patients for antihypertensive treatment.^{1,5,6}

The British Hypertension Society guidelines not only recommend cardiovascular risk assessment as a key part of blood pressure management, but also regard blood pressure measurement as a key element in the multifactorial approach to cardiovascular disease risk management. Persistently raised blood pressure is one of several risk factors for cardiovascular disease. Others include:

- older age
- male gender
- genetic tendency
- high blood cholesterol (specifically a high LDL:HDL ratio)
- diabetes
- history of smoking
- obesity
- lack of physical activity, and
- diet high in salt and saturated fats, and low in fruit and vegetables.

These risk factors influence cardiovascular risk in different ways and to different extents. Their effects are largely cumulative, so that the presence of two or more of them increases an individual's risk level accordingly. Ideally, they should all be taken into account when identifying people at high risk of cardiovascular disease – but in practice only a few are routinely used for risk assessment. The most widely used tools for this are the Joint British Societies' Cardiovascular Disease Risk Prediction Charts.⁷



Tool H7 contains the Joint British Societies' cardiovascular disease risk prediction charts which are used to assess the absolute risk of cardiovascular disease.

Patients with Type 2 diabetes often have concomitant hypertension which contributes significantly to their risk of cardiovascular disease. Blood pressure detection and control in these patients is particularly important.

Deciding aims, objectives, standards, targets and milestones

Aims and objectives set the 'direction of travel' of the strategy. Standards, targets and milestones are more specific operational goals against which the whole strategy and its component strands can be evaluated.

Aims

An **aim** is a general statement of strategic intent. For example, the overall aim of your local hypertension strategy could be along the following lines:

- to reduce the burden of death, disability and distress due to high blood pressure in the population served by (the named primary care organisation).
(The term 'high blood pressure' is used here to take account of levels of raised blood pressure which, although below the diagnostic threshold for hypertension, do nevertheless increase cardiovascular risk – see page 12.)

The strategy should have two basic subsidiary aims reflecting its two main approaches, such as:

- to prevent hypertension developing in the community, and
- to detect and control existing cases of hypertension.

Aim: To prevent hypertension developing in the community

This strand, also known as the 'population approach', involves promoting healthier lifestyles in the community, with an emphasis on reducing salt and alcohol intake, reducing obesity and increasing physical activity. It can be aimed at the whole population or targeted at groups who are particularly susceptible to hypertension or its consequences. In practice, healthy eating and active lifestyle programmes tend to be aimed at the whole population – but more specific components such as salt reduction or weight control are emphasised for particular target groups such as children, people from ethnic minorities, or women in manual socioeconomic groups (see page 15 in section A: *Hypertension: the public health burden*).

Aim: To detect and control existing cases of hypertension

This strand, also known as the 'high-risk approach', involves identifying people with hypertension ('case-finding') and ensuring that their blood pressure is effectively controlled and their clinical condition properly managed. This should also help people to self-manage their blood pressure. The high-risk approach should include an assessment of their overall risk of cardiovascular disease.



The challenge for local hypertension action teams is to choose the appropriate combination of prevention (population-wide) and high-risk individual-based detection and control approaches.

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Objectives, standards, targets and milestones

Objectives

Objectives are more specific than aims. They refer to particular outcomes or outputs of either the preventive or control elements of the strategy. For example, a 'prevention' objective might be:

- to reduce the consumption of salty foods by schoolchildren, or
- to increase the habitual level of physical activity in young women.

A 'detection and control' objective might be:

- to establish a call-recall programme for case-finding in patients aged 45 years or over.

Standards

A **standard** is an operational goal which usually prescribes a specific level of quality of a service. Standards are particularly useful as 'process' indicators – a way of assessing how well a service is delivering or developing its intended outputs. In practice, standards to be achieved within given timeframes are often used as targets and milestones. An example of a standard might be:

- 95% of patients on the diabetes register to have had their blood pressure measured at least once during the past 12 months.

Targets and milestones

A **target** is an objective or standard with a specified measurable outcome, output or level of quality within a timeframe. For example, a 'prevention' target might be:

- to reduce the average consumption of salt in the adult population to 6g a day by the year 2010.

A 'detection and control' target might be:

- by 2008, to achieve a blood pressure of 150/90mmHg or less in 70% of patients with coronary heart disease who have had their blood pressure measured in the past 15 months.
(150/90mmHg is the level used for GP audit purposes only.)

A **milestone** is an interim position on the way towards a target. It provides a useful means of demonstrating shorter-term progress and is used in monitoring and evaluation.

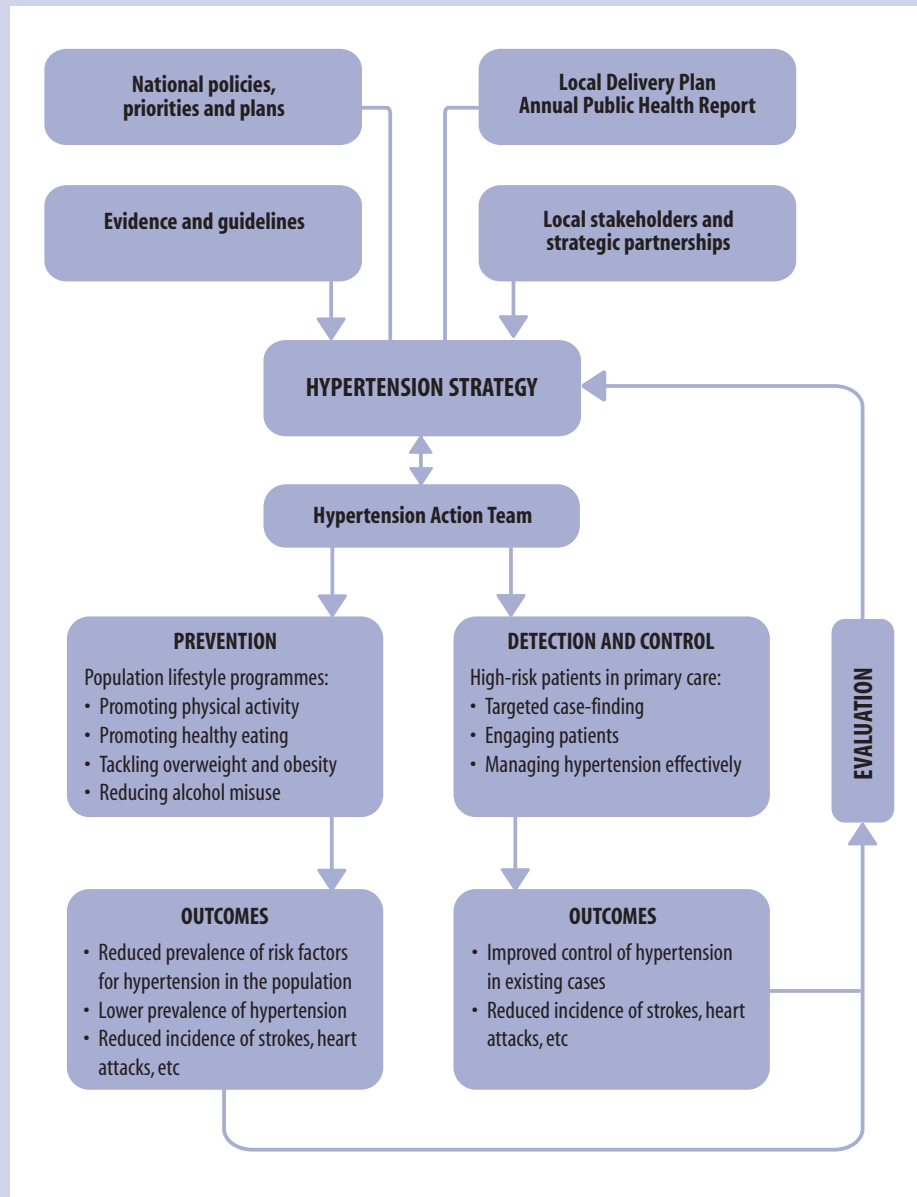
Local target-setting is being encouraged as a core principle of NHS and local partnership planning. For example, the Department of Health in England has issued the following checklist of principles for local target-setting in its latest planning guidance:⁸

Principles for local target-setting

In developing local plans primary care trusts should ensure that their local targets:

- are in line with population needs
- address local service gaps
- deliver equity
- are evidence-based
- are developed in partnership with other NHS bodies and local authorities, and
- offer value for money.

Figure 7 Inputs and outputs of a local hypertension strategy



Choosing interventions to prevent hypertension

The prevention strand of the hypertension strategy should be based on a 'healthy lifestyles' approach and include interventions to:

- reduce salt consumption
- increase fruit and vegetable consumption
- increase aerobic physical activity
- reduce levels of obesity, and
- reduce alcohol consumption.

This might involve:

- assessing the evidence for particular interventions
- where possible, considering the cost-effectiveness of particular interventions
- achieving a balance between the preventive and control strands of the overall strategy
- assessing what can be done within budget and infrastructure constraints
- developing action plans for the key settings and identifying specific 'deliverables', the lead agency/individual for each deliverable, and the date by which these must be achieved, and
- choosing appropriate settings for interventions (see Table 6).

Setting	Main target group(s)
'Home'	Infants, pre-school children and their parents or carers
School	School-age children, parents, teachers, school nurses and governors
Community groups and faith groups	Minority groups, eg people with cultural or ethnic identities, refugees and asylum-seekers, travellers, homeless people
Workplace	Employees and employers, and their families, catering providers
Leisure outlets (for active leisure pursuits)	General public and specific subgroups (eg older people), leisure staff
'High street' – retail and commerce (for healthy eating and active leisure)	General public and specific subgroups (eg younger people), food retailers, catering providers
Primary and community care including community pharmacies, optometrists and community health services	Patients, carers, primary care staff
Hospital	Patients, carers, hospital staff, including catering providers
Local media	General public and specific subgroups (eg younger people, older people)



Tool H5 describes the various settings and how they can be used, and potential partners for each setting.



Tool H8 provides a proforma for developing a hypertension action plan.

EXAMPLE OF A LOCAL INITIATIVE

Tooting Healthy Living Initiative

The Tooting Healthy Living Initiative, a network of projects funded by the New Opportunities Fund, staged a one-day community conference to raise awareness and understanding of hypertension, particularly among the local African and Caribbean communities. As well as highlighting the importance of blood pressure monitoring, the conference sought to motivate participants to make healthy lifestyle changes. A referral protocol was developed specifically for the conference. Those attending the conference also had the opportunity to advise service deliverers on areas where services could be further improved.

**For more information contact: Anna D'Arcy, Food Health Advisor, Public Health, Wandsworth Primary Care Trust
T 020 8682 5940**

Types of interventions to prevent hypertension in the community

Interventions to reduce salt in the diet

For most local teams, the issue of salt reduction is likely to be tackled mainly through existing healthy eating programmes (for example, as part of the implementation of the National Service Framework for coronary heart disease in England and Wales), and related programmes such as Sure Start. The evidence base is provided in the Scientific Advisory Committee on Nutrition's report, *Salt and Health*.⁹ Comprehensive practical advice on choosing interventions to reduce salt is provided in the *Nutrition and Food Poverty* toolkit produced by the National Heart Forum, the Faculty of Public Health, the Government Office for the North West, the Government Office for the West Midlands and the West Midlands Public Health Observatory.¹⁰

Local health teams should consider setting local standards for school and NHS catering services regarding the salt content of publicly-procured foods and the appropriate use of salt in food preparation. It should also be possible to set local advisory standards for the preparation and marketing of foods in private catering outlets that have local autonomy. Local health teams could seek partnerships with their local dietetic department and catering managers to develop these standards. The annual Salt Awareness Day run by Consensus Action on Salt and Health, and the Blood Pressure Association's blood pressure awareness week provide a useful focus for this work.

Local health teams, together with the healthy schools programme coordinator, the local dietetic department and the local education authority should work with school caterers to encourage the implementation of the Caroline Walker Trust's standards for school meals¹¹ (revised to include the salt recommendations of the Scientific Advisory Committee on Nutrition⁹).

The Food Standards Agency has spearheaded a number of approaches at national level to tackle this issue, including the 'Sid the Slug' TV and billboard campaign. It also provides useful resources to support local action (see page 106 in section D: *Resources*).



Tool H9 provides target daily limits for salt intake and information on the main sources of salt in the average diet.

Interventions to reduce obesity

The issue of obesity is likely to be tackled through the local implementation strategies for National Service Frameworks for coronary heart disease and diabetes (or their equivalents). The evidence base for interventions has been recently reviewed,¹²⁻¹⁴ including interventions in primary care.¹⁵ Comprehensive practical advice for tackling obesity at local level is provided in the *Tackling Obesity* toolkit produced by the Faculty of Public Health Medicine and the National Heart Forum.¹⁶

Interventions to reduce alcohol consumption

Attempts to moderate alcohol consumption among those groups in the population for whom alcohol is an important social 'lubricant' have met with limited success. The approaches have combined fiscal measures, such as increasing the excise duty on alcoholic drinks, with public education programmes emphasising the benefits of sensible drinking and recommending sensible limits in terms of units of alcohol.

In England, for example, the Prime Minister's Strategy Unit has recently published its *Alcohol Harm Reduction Strategy for England*¹⁷ which includes an evidence base and a section on education and communication.

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Interventions to increase fruit and vegetable consumption

Interventions to increase fruit and vegetable consumption are likely to be an integral part of any local healthy eating strategy. One element is the national School Fruit and Vegetable Scheme which offers a free piece of fruit or salad vegetable each day to 4-6 year-old children in England (as part of the 5 A Day Programme – see Tool H10).

The evidence base and comprehensive practical advice on choosing interventions to increase consumption of fruit and vegetables are provided in the *Nutrition and Food Poverty* toolkit produced by the National Heart Forum, the Faculty of Public Health, the Government Office for the North West, the Government Office for the West Midlands and the West Midlands Public Health Observatory.¹⁰

Interventions to increase aerobic physical activity

The form of physical activity that is most effective in preventing hypertension and reducing resting high blood pressure is moderate intensity, aerobic exercise. Activities in which this form of activity predominates include walking, running, cycling, swimming, dancing, skipping, stepping and stair-climbing. The evidence base is considered in the Chief Medical Officer's (England) recent report on physical activity and health.¹⁸ Evidence-based advice on choosing effective interventions for a local physical activity strategy has been provided in the *Let's Get Moving* toolkit, published by the Faculty of Public Health Medicine and the National Heart Forum.¹⁹

An evidence briefing on the effectiveness of public health interventions for increasing physical activity among adults, published by the Health Development Agency, gave as its main conclusions:²⁰

- Interventions promoting changes to more active living (eg walking) which are not facility-dependent are associated with longer-term adherence.
- Referral to an exercise specialist based in the community can lead to longer-term changes in physical activity.
- Brief advice from a doctor based in primary care, supported by written materials, is likely to be effective in producing a modest, short-term effect on physical activity.
- Interventions using motivational approaches are associated with longer-term adherence.

Creating an enabling environment: making healthy choices easier

People's lifestyle habits are more likely to change for the better if healthier choices are also easier choices (see page 27). Most people behave in a way that seems to them to best fit their circumstances at the time. Their diet and exercise habits are influenced by peer pressure, custom and tradition, their living and working environment, and how much they can afford to spend.

An 'enabling environment' can mean lots of things – from the environment in the home, at school, in the workplace and in the community, to transport policies, urban design policies, and the availability of healthy food choices. The ideal is an environment and culture that supports and promotes healthy living, making it possible, for example, to walk or cycle to work or school in safety, and to buy fresh fruit and vegetables, and low-salt foods cheaply and conveniently.

Above all, local programmes need to be underpinned by appropriate national legislative, regulatory and fiscal policies. Unless there is an enabling national context, the potential for change at local level will be limited. This is generally recognised by all UK governments. For example, the *Choosing Health* strategy for England has set out a comprehensive programme for lifestyle change.²¹ To give a key example of national action relevant to tackling hypertension: the Minister for Public Health in England has asked food companies to reduce the salt in their prepared foods in a stepwise fashion. The Government has set a target to reduce population average salt intake to 6g per day by 2010.

At local level, creating an enabling environment to tackle hypertension could mean anything from working with local schools and catering outlets to ensure that healthy food choices are provided (particularly in terms of low-salt alternatives, and fruit and vegetables), to working with town planners to ensure that the environment is conducive to safe active leisure and active transport.



The challenge for local hypertension action teams is to make best use of the opportunities created by action at national level.



Tool H10 lists policies and programmes that address the wider determinants of health that are relevant to blood pressure, including healthy eating and physical activity.

Choosing interventions to detect and control hypertension

The second broad strand of any local hypertension strategy is detecting and controlling cases of established hypertension, mainly in the primary care setting.

This toolkit does not provide detailed clinical guidance but simply gathers some of the basic elements and points to where you can find useful guidance. The following key documents are all available to download from the internet:

- NICE guidance on the management of essential hypertension in primary care¹
- BHS guidance on the management of all types of hypertension⁵
- NICE guidance on the management of hypertension in Type 2 diabetes²²
- SIGN guidance on hypertension in older people.²

Note that guidelines are subject to ongoing review and should be checked regularly.

Identifying patients with hypertension

This is also known as 'case-finding'. There are three main ways of doing this:

- opportunistic case-finding in various settings
- systematic screening programmes, and
- targeted case-finding in general practice.

Opportunistic case-finding

This is a non-systematic approach to detecting hypertension, often undertaken during a consultation on another health matter or as part of a simple 'MOT-type' health check. Detection can take place not just in general practices but also in a wide variety of other settings including community pharmacies, workplaces, health fairs, individuals' homes, nursing homes, clinics or hospital wards.

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EXAMPLE OF A LOCAL INITIATIVE

Rolls Royce: Blood pressure monitoring

During a Stroke Awareness week, Rolls Royce employees at sites around the UK were invited through their occupational health services to have their blood pressure checked. Leaflets on stroke prevention were also distributed. Of the 835 people who had the check-up, 20% had a diastolic blood pressure of more than 90mmHg and were asked to attend the occupational health department to have it re-checked. A few people had diastolic pressures of more than 110mmHg and were urgently referred to their GP. The response from employees was very positive: they appreciated that the company was offering the check-up and that, if a previously undiagnosed high reading was found, it was followed up. The project lasted for one week and cost less than £1,000. A Stroke Awareness week has been held each year at Rolls Royce and has been rolled out to all global sites, and all employees, both on and off site, are encouraged to get their blood pressure checked.

For more information visit: www.rolls-royce.com/community/health_safety/default.jsp

National Blood Pressure Testing Week

The Blood Pressure Association runs a National Blood Pressure Testing Week in September each year. The objectives are to raise awareness of blood pressure by giving people the chance to get a free blood pressure check at 'pressure stations' throughout the UK, and to drive home the important message that we should all 'know our number' – our up-to-date blood pressure.

For further information see: www.bpassoc.org.uk

Screening

Unlike opportunistic case-finding, screening is routine and systematic, and is usually based on a proactive call-recall programme.

The latest British Hypertension Society guidelines⁵ recommend that all adults should have their blood pressure measured routinely at least every five years. However, universal screening of adults is not current UK policy. The NICE guideline in England does not cover screening.¹

The feasibility and cost-effectiveness of population screening is currently being investigated by the National Screening Committee.

Targeted case-finding in general practice

This approach focuses on those patients most likely to have hypertension or most likely to suffer complications from it. To implement it successfully, practices need:

- well-maintained disease registers for coronary heart disease, diabetes and stroke, and a register of patients at 'high risk' of coronary heart disease (for England and Wales this is in line with the National Service Framework for coronary heart disease²³)
- a protocol for updating risk factor assessments
- identified individuals with responsibility for maintaining the disease registers
- practice policies for capturing information obtained opportunistically (eg in clinic or discharge letters), as well as systematically (eg at coronary heart disease review clinics)
- an IT system that allows identification of patients with risk factors such as target-organ damage, diabetes, or a history of smoking, and which avoids double-counting

- an effective call-recall system based on agreed risk thresholds for intervention, and
- well-maintained and regularly calibrated sphygmomanometers.

The General Medical Services (GP) contract

Targeted case-finding has been given a considerable boost by the General Medical Services (GMS) contract for general practices which includes a major focus on service quality and treatment outcomes.²⁴ The importance of hypertension has been highlighted by the current Quality and Outcomes Framework of the contract, in which identification and effective management of hypertension can account for up to 173 of the total 550 quality points available in the clinical domain – 31%. The more points a practice scores, the greater its financial reward.

The GMS contract only specifically rewards case-finding for hypertension in patients aged 45 years or over, plus patients of any age on the practice's coronary heart disease, stroke/TIA and diabetes registers.

In England, participating practices submit monthly reports to the national Quality Management and Analysis System (QMAS) central database. This is used to calculate payments based on case-finding as a proportion of estimated prevalence, but can also be used for epidemiological analysis.²⁵



Tool H11 shows the quality indicators in the GMS contract and their points for hypertension.

Organising effective management of hypertension

Effective management of hypertension is based on partnerships between primary care professionals and patients, and between primary and secondary care (see Figure 8). The roles of doctors, nurses and pharmacists have to be considered. For example, nurse practitioners have been shown to be at least as successful as doctors in managing hypertension.²⁶ With the advance in nurse prescribing, this option seems even more attractive. The contract for pharmacists in England, Wales and Scotland will have a profound impact on the detection and management of hypertension. The role of patients in self-management is discussed on page 50.

Using clinical guidelines

Clinical guidelines for hypertension management have been produced by WHO⁶ and SIGN.² The latest guidance from the British Hypertension Society details a classification of blood pressure levels and algorithms for thresholds of intervention and treatment for different types of hypertension.⁵ (See also page 13 in section A: *Hypertension: the public health burden*.)

The most recent guidance from NICE¹ covers the management of essential hypertension in primary care, including:

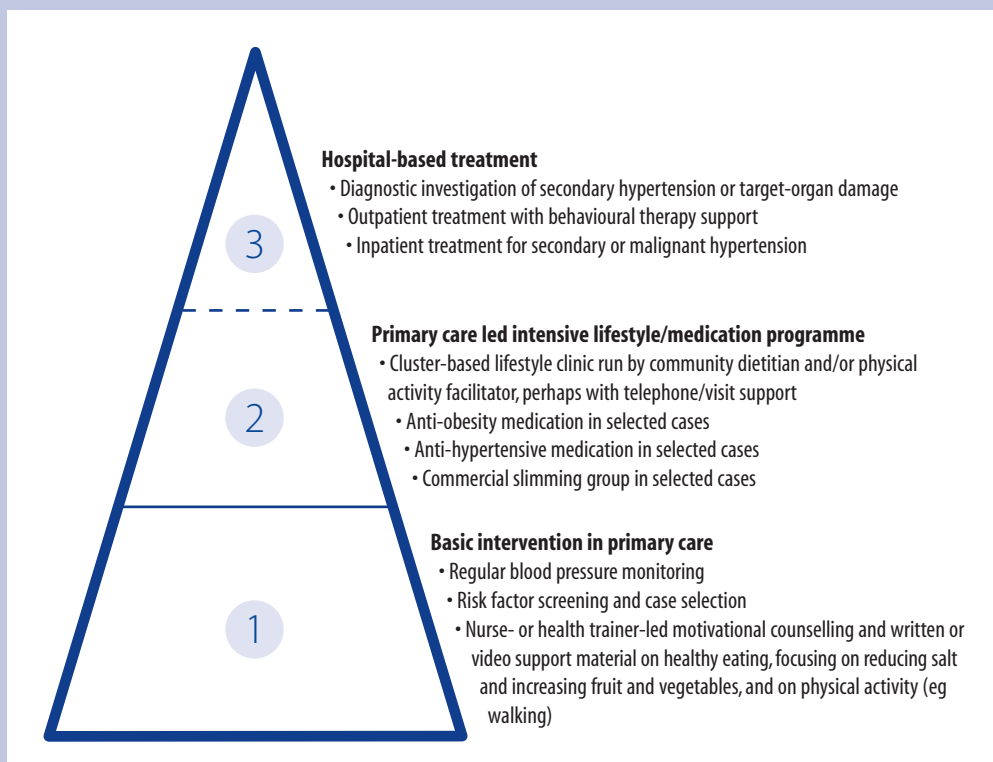
- measuring blood pressure (and identifying persistent raised blood pressure)
- estimating cardiovascular risk
- providing lifestyle interventions
- providing pharmacological interventions, and
- providing continuing treatment and support.

Local hypertension action teams will need to decide which guidelines to recommend and to ensure that these are clearly communicated to local practices and adhered to.

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Figure 8 Triple-tier pathway for hypertension control



Implementing guidelines locally

The following actions are needed to ensure guidelines can be used effectively:

- Establish clinical leadership through the CHD or stroke lead (CHD/Stroke Managed Clinical Network clinical lead in Scotland) responsible for delivering consensus on the various aspects of hypertension management.
- Review existing local guidelines, pathways, protocols and practice concerning the treatment and management of hypertension in the light of national guidelines, and revise accordingly. The review should also consider the resources required, the people and processes involved, and the timeline for full implementation.
- Customise guidelines to reflect local circumstances: for example, local formulary decisions, local referring protocols and where to refer, and information on local services for physical activity, smoking cessation and weight management.
- Develop local agreement on guidelines between primary and secondary care clinicians.
- Hold local meetings to highlight the importance of effective management of hypertension.
- Provide education and training for members of primary care teams on the agreed guidelines.
- Provide a multidisciplinary team of facilitators to visit practices and help them organise their clinical systems to support case-finding and dedicated hypertension clinics.
- Develop an appropriate audit system, based on criteria such as those in the current Quality and Outcomes Framework of the GMS contract.
- Promote professional adherence to the guidelines by incentives and feeding back audit results, including comparisons between practices.
- Produce patient information which explains the risks of hypertension, gives lifestyle advice, describes the various treatments, and outlines the standards for treatment that have been set.
- Assess the implications for primary care budgets of the likely increase in costs of implementing the guidelines, and develop a plan for dealing with this. (See *Capacity* on page 55.)

EXAMPLE OF A LOCAL INITIATIVE

North Derbyshire: Producing local hypertension guidelines

The North Derbyshire CHD NSF Local Implementation Team decided to develop a local hypertension guideline as there was general consensus that a single, up-to-date district hypertension guideline was needed. It was envisaged that the guideline would include comments on managing resistant hypertension and would be specific to the local district general hospital which provided secondary care to the majority of North Derbyshire residents. The guideline would be implemented across all three North Derbyshire PCTs.

To develop the guideline, a literature review was undertaken and local health professionals, both in primary care and at the local hospital, were interviewed on what they felt should be included. The developed guideline was then ratified by the North Derbyshire Priorities and Clinical Effectiveness Forum and presented to North Derbyshire PCT Clinical Governance Leads. It was left to individual North Derbyshire PCTs to decide how best to disseminate the guideline in their own areas. The guidelines were made available on PCT websites and the North Derbyshire Public Health Network also placed them on its intranet.

For more information contact: Public Health Department, Chesterfield PCT. T 01246 231255

EXAMPLE OF A LOCAL INITIATIVE

Lambeth and Southwark: A primary care hypertension facilitating team

The Lambeth and Southwark Hypertension Project aims to support local practices to optimise the treatment of known hypertensive patients. A small team consisting of GPs, IT staff and pharmacists initially visited a few practices to assess their needs. Based on the outcome of these pilot visits the team developed a variety of tools to support clinicians. These ranged from helping them set up disease registers, to advice on complex therapeutic problems and motivational interview skills for clinicians. Key to the success of the project was helping clinicians set up partnerships with patients to optimise concordance.

For more information see the Medicines Partnership website: www.medicines-partnership.org/projects/current-projects/hypertension. Or contact: Dr John Balazs at john.balazs@lambethpct.nhs.uk

Managing the primary-secondary care interface

Locally agreed guidelines will indicate which patients need investigation in secondary care in addition to those investigations routinely offered in primary care, and should ensure that the facilities are available. There are several models of good practice for managing the interface between primary and secondary care. Two examples are described below.

The outreach nurse practitioner²⁷

Nurse practitioners can provide an outreach service to appropriately referred patients and work closely with the secondary care expert clinic. They can offer access to CT or other imaging. They can also review test results before an appointment at an expert clinic and so help to target the resources of that clinic, and reduce the need for appointments. Such a system can also offer good, comprehensive audit of all referrals and the potential for outcome audit by linking with primary care datasets. There are clear guidelines for when a patient requires further review by either the nurse practitioner or secondary care, and when it is more suitable for the patient to return to primary care for ongoing management.

*Annual secondary care based assessment of management*²⁸

In this model, the GP sends the consultant the patient's blood pressure readings, medication history, biochemistry, history of cardiovascular disease and any other relevant information. This allows a paper review without the patient being present. This is, in effect, audit by an expert and allows more patient reviews per expert hour than if the patients were all seen in person.

Understanding barriers and facilitating change

Barriers to prevention

The main barriers to eating a healthier diet and being more physically active have been discussed elsewhere in this toolkit. They are also extensively considered in the public health white paper for England, *Choosing Health: Making Healthy Choices Easier*²¹ and other key policy documents (see Tools H2 and H10). They include psychological, social, cultural, environmental and economic barriers. Overcoming such barriers is clearly key to success.

One mechanism by which this can be achieved is through the involvement of the public and patients in the planning of healthy lifestyle programmes. For example, in England local residents are represented on local strategic partnerships in three important ways: through direct representation of community councils; through elected members (councillors); and through the voluntary sector. There are also statutory requirements for effective patient and public involvement (PPI) throughout the NHS in all parts of the UK. Public and patient involvement is further discussed on page 54.

Helping people to self-manage their blood pressure

A key principle in coping with chronic disease is the concept of 'self-management'. In England and Wales, this theme has been developed by the Wanless reviews into the concept of people becoming 'fully engaged' in their health and healthcare.^{29,30} A range of mechanisms for patients, the general population and health professionals needs to be in place before people can fully self-manage their blood pressure. These are outlined in Table 7 and are described more fully below.

Adherence*

Over half of patients treated for hypertension drop out of care entirely within a year of diagnosis. Of those who remain in treatment, around half do not take their medicines as prescribed.³¹ Some patients may have the medicines dispensed but do not take them, while others may take them erratically or stop taking them abruptly, which can cause a rebound increase in their blood pressure. There are a number of reasons for poor adherence. Some patients may have difficulty in remembering to take their medication or in physically opening medicine bottles. People may also experience difficulty with reading written instructions, either because they have difficulty with reading or perhaps because instructions are not available in their first language. Further reasons are outlined in *Concordance* on page 52.

Poor adherence to prescribed medicines is the most important cause of uncontrolled blood pressure and accounts for three-quarters of patients not achieving optimum blood pressure levels.³¹



The challenge is to increase the proportion of patients who take their medicines as prescribed.

* The terms 'adherence' and 'compliance' are both used to describe the action of taking medicines as prescribed. However, 'compliance' can suggest that the patient passively accepts the prescriber's instructions, and describing the patient as 'non-compliant' can infer blame. For these reasons, many health professionals now prefer to use the less judgmental term 'adherence' rather than 'compliance'.

Table 7 Promoting self-management in the prevention and treatment of hypertension	
Role of the individual	Role of the health professional or partner agency
<i>Awareness and understanding</i>	<i>Awareness and understanding</i>
Gaining awareness and understanding of: <ul style="list-style-type: none"> • the potential dangers of hypertension • its causes, and • how to reduce the risk factors through healthy lifestyles and the avoidance of overweight. 	Raising awareness and understanding of hypertension through media campaigns and other methods. Developing information materials with the involvement of the public and service users. Working with specific at-risk groups to improve communication.
<i>Shared responsibility</i>	<i>Shared responsibility</i>
Developing the ability to take increased responsibility for one's own health.	Promoting shared responsibility through such initiatives as: <ul style="list-style-type: none"> • delivering personal, social and health education and citizenship programmes in schools • delivering self-management courses such as the Expert Patients Programme (see page 54).
<i>Adherence* and concordance</i>	<i>Adherence and concordance</i>
Achieving adherence to medical treatment through concordance with healthcare professionals.	Promoting concordance by: <ul style="list-style-type: none"> • exploring the beliefs, preferences and priorities of individual patients in relation to proposed treatment³² • offering a treatment regime which is simple to adhere to and which minimises side-effects³¹ • agreeing a care plan jointly with each patient³³ • providing continuing support and follow-up as part of the care plan, including regular review of difficulties and progress.

EXAMPLE OF A LOCAL INITIATIVE

Bristol South and West PCT and Bristol North PCT: Raising awareness in the local African and Caribbean communities

The overall aim of this project (managed by the Health Improvement Performance Scheme on behalf of Bristol South and West PCT, and Bristol North PCT) was to develop appropriate hypertension management and prevention guidelines with the African and Caribbean communities in Bristol. To ensure that health promotion initiatives were relevant, accessible and culturally appropriate, a qualitative research framework was used. Focus groups explored people's views and beliefs on high blood pressure, including causes, symptoms, treatment and management, information sources and prevention. Semi-structured interviews were carried out with health professionals to explore issues about risk factor reduction and management of patients with hypertension.

A community-based health awareness day on diabetes and hypertension was also held, providing the opportunity for people to have their blood sugar and blood pressure checked and to obtain information through talks and displays.

For more information contact: Nicola Ravenscroft, South Gloucestershire PCT, Monarch Court, Emerald Business Park, Emerson Green, South Gloucestershire; or Natalie Field, Assistant Director of Public Health, Joint Bristol Public Health Directorate, Bristol North and Bristol South and West PCT. T 0117 900 2445

* See footnote on page 50.

Concordance

Research shows that patients are more likely to be motivated to take their medicines as prescribed when:³⁴

- they fully understand and accept the diagnosis
- they agree with the proposed treatment, and
- their concerns about medicines have been specifically and seriously addressed.

The process necessary to achieve this is described as ‘concordance’ – an approach to the prescribing and taking of medicines, based on partnership.³⁵ Concordance means shared decision-making and arriving at an agreement that best represents the intentions of both the patient and the clinician.

The requirements for effective concordance include:

- appropriate information for patients
- effective ways for health professionals to communicate risks and benefits
- training for doctors on simplifying dosage regimes and minimising side-effects
- training on shared decision-making for health professionals and patients
- follow-up support to review difficulties and progress, and
- aids to help patients remember to take their medicines.

Concordance facilitators

The Medicines Partnership Professional Development Programme has funded over 70 ‘concordance facilitators’ across England, with professional development and training remits from medicine, pharmacy, nursing and patient backgrounds. They are testing out and exploring ways of promoting medicines concordance within their own learning and training contexts.

For more information see: www.medicines-partnership.org

Communicating effectively with patients

Up to 80% of information given to patients during a typical consultation is forgotten within a few minutes, and about half of what patients are able to recall is incorrect.³⁶ Follow-up information, in a form that the patient can readily understand, is essential for good patient care. This may be through leaflets, tapes, interactive computer programmes or videos, and is best developed with patient involvement from the outset.³⁷ Reliable evidence-based information on hypertension is available from organisations such as the Blood Pressure Association, the British Heart Foundation and the Stroke Association, and through the Expert Patients Programme. (For details see page 54.)

Information given to patients by a variety of health professionals must be consistent. For example, advice from the GP should be corroborated by the pharmacist dispensing the medication, and by the practice nurse undertaking the long-term management of the patient.

Delivering good information is also a matter of repeating it as often as the person needs to have it reaffirmed, timing it to be useful at the right moment, and allowing the person the opportunity to scrutinise and ask questions relating to any information given.



The challenge is to ensure that people have easy access to appropriate information and support on hypertension.

Communicating risk and benefits

There is evidence that health professionals are not good at calculating and communicating risk.³⁸ The way in which risks are communicated can make the risks confusing or seem bigger or smaller than they really are:

- Relative risks can inflate effects and should not be used. For example, an increase in relative risk of 50% may be an absolute increase from 1 to 1.5 per 1,000.
- Percentages often confuse and numbers should be used instead. For example, instead of saying that 96% of people will benefit, it is better to say that out of 100 people, 96 will benefit but four will not.

Communicating risks is important and needs to be done in a positive and reassuring way. The understanding of risk varies from person to person and so the way it is explained will need to be tailored to the individual. The following are some examples of methods of explaining risks.

- Explain how someone's risks reduce with the positive action they take and when they manage to reach certain goals.
- Use the Joint British Societies' cardiovascular disease risk prediction charts (see Tool H7) to show level of risk. This enables people to see that lowering their blood pressure to a certain level will take them out of one zone and into another. It is also a way of showing how blood pressure is one of several risk factors that all play a part in their overall cardiovascular risk.

Sources of information for patients can also be found on page 105.

Understanding patients' beliefs

Patients have their own belief systems that determine what advice and treatment they are willing to adhere to. These beliefs may be very different to those of their health professional. The health professional needs to understand and appreciate not only the patient's beliefs but also the way that the patient weighs up the perceived risks and benefits of adhering or not adhering to advice or treatment. It is often difficult for the health professional to let go of the decision-making role and to let the patient decide on treatment following discussion. The discussion may be at different levels depending on the patient's ability and willingness to take on board different levels of information.



Tool H12 shows an analysis of patients' thoughts and feelings about taking medicines for hypertension.

Care plans and patient-held records

A care plan is a document that provides a comprehensive, up-to-date record of antihypertensive care, including all issues considered important by both the person with hypertension and his or her healthcare providers.

Patient-held records enable people with hypertension and their professional team to keep track of how their risk profile is being managed. The information recorded should reflect the individual's needs. The format should also be suited to individual preferences. For example, it could be in a handy ring-binder format or in the form of a patient-accessible electronic record. The benefits of patient-held records are:

- The patient with hypertension has ownership of his or her care.
- Both the patient with hypertension and the health professionals know at all times what care is planned.
- Contact details of health professionals are readily to hand.

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England's public health white paper, *Choosing Health*, has proposed the use of personalised patient-held 'health guides' completed with the assistance of 'NHS health trainers' giving lifestyles advice.²¹



Tool H13 shows the suggested minimum content of a care plan and a patient-held record for hypertension.

The Expert Patients Programme

The Expert Patients Programme (EPP) is a national NHS-based self-management training programme which provides opportunities for people who live with long-term conditions to develop new skills to manage their condition better on a day-to-day basis. Set up in 2002, it is based on research from the US and UK over the last two decades which shows that people living with long-term illnesses are often in the best position to know what they need to manage their own condition. Provided with the necessary 'self-management' skills, they can make a tangible impact on their disease and quality of life more generally. EPP courses are being run by primary care trusts throughout England. Similar programmes are also being developed in other parts of the UK.

The core module of the EPP programme is the same for a range of long-term conditions, and additional modules for specific diseases including coronary heart disease and hypertension are being developed and trialled. (For further details, see www.expertpatients.nhs.uk)

Self-monitoring of blood pressure at home

There is conflicting evidence regarding the value of self-monitoring of blood pressure. NICE, in its clinical guideline on hypertension, does not advocate home blood-pressure monitoring and recommends the need for further research.¹

Ensuring appropriate infrastructure support

The main issues concerning infrastructure support are around the need to:

- involve the public, patients and carers
- build capacity in terms of staff, equipment and facilities
- set up appropriate education and training programmes
- ensure effective IT systems in primary care
- ensure good communications, and
- provide sufficient funding for all elements of the strategy.

Involving the public, patients and carers

Services cannot be truly responsive without effective input by the people they are designed to serve. There is a wide variety of ways of involving people in the planning and evaluation of services – both preventive and care services. There are also various statutory requirements for involving the public and patients which differ slightly in the four countries of the UK.



Tool H14 outlines the various ways in which patients and the public can be involved in tackling hypertension.

Capacity

Workforce development needs to deliver a service that identifies people with hypertension and then ensures adequate investigation and management, including expert intervention when necessary. It also needs to develop the preventive strand of the strategy by developing a 'wider public health' workforce. This should involve a joint approach with local partners, including joint appointments and shared budgets.

The clinic time needed in each practice for case-finding in order to reach current Quality and Outcomes Framework targets can be calculated from average consultation time. Prescriber time to deal with pharmacological management will increase, since more patients will be identified, requiring initiation and titration of dosage. In some general practices, healthcare assistants and reception staff are being trained to take blood pressures.

Other important aspects include: adequate administrative support, well-maintained and calibrated blood pressure measuring equipment, and sufficient space for a nurse-led cardiovascular risk assessment service.

Demand and capacity planning might include novel approaches to provision such as:

- health trainers and lifestyle coaches
- nurse-led blood pressure assessment services
- community pharmacy-based services
- cluster-based approaches, and
- primary care staff (eg GPs) with a special interest.

Education and training

Where appropriate, multidisciplinary or multiagency training programmes should be set up to provide education and training for a range of professionals and lay workers on:

- raising awareness of the issue of hypertension as an important chronic disease
- promoting health in 'at-risk' groups
- accurate blood pressure measurement
- motivational counselling for lifestyle behaviour change
- appropriate investigations and prescribing, and
- ongoing care.

The training issues around the clinical aspects of the management of hypertension and use of the agreed guidelines, as well as around related use of IT systems, will need to be considered and appropriate training packages put in place. Training all staff within a practice during protected learning time could address all these issues at once. Primary care organisations could provide a menu of training opportunities to suit a variety of needs, and baseline awareness and expertise, both clinically and in relation to IT.

Effective IT systems in primary care

Current general practice IT systems vary greatly in how well they can support hypertension case-finding, cardiovascular risk assessment, clinical decision-making, appointment booking, records, prescription sharing and audit. A major programme of standardisation to preferred IT-based clinical systems is currently being coordinated throughout the UK (eg by the National Programme for IT in England).³⁹

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Audit is focused on the current Quality and Outcomes Framework (QOF) of the GMS contract (with a parallel process for Personal Medical Services contracts), which contains a specific component for hypertension, as well as related issues such as CHD, stroke and diabetes. Practices make monthly returns to the QMAS centre and are financially rewarded for achieving QOF standards (see Tool H11).

EXAMPLE OF A LOCAL INITIATIVE

Scottish Borders: LHCC Hypertension Project

This project began in 2001 as the main clinical priority for the two Local Healthcare Cooperatives (LHCCs) in the NHS Borders area and involved all primary care teams. It consisted of several coordinated elements:

- the creation of computerised disease registers for hypertension
- screening of the initial target population group (men and women aged 35-64 years)
- staff training and calibration of instruments
- agreement on the local hypertension guideline and its dissemination
- educational events and support for primary care teams via a project nurse facilitator
- use of standard software for inputting data to the General Practice Administration System for Scotland, and development of a system for central collation and analysis of practice data, and
- audit of the target population by individual practices and across all practices.

The project was coordinated by both the local primary prevention project for CHD, stroke and cancer, and the local secondary prevention of CHD project. A local guideline which was developed using national guidance has wide ownership.

The initial focus was on developing systems and increasing screening to identify people with hypertension. Once all practices had the standard software and had undergone IT training, the intention was to move on to audit the control of blood pressure.

Progress included the following:

- All practices developed a register of all identified patients with hypertension.
- Screening of blood pressure in the target group (35-64 year olds) improved from a mean of 58% for both LHCCs in 2002, to 70% in 2003.
- Standard software for data collection in primary care was agreed by all local practices and roll-out proceeded, with training provided by a central IT learning resource centre.
- A central database was developed to collate data from all practices and facilitate collaborative clinical audit.

The project has placed NHS Borders primary care teams in a good position to respond to the GMS contract quality indicators for hypertension. It has also facilitated the development of data collection systems which are now used for quality indicator data within the contract for all chronic diseases.

For more information contact: Borders LHCC Office, NHS Borders, Newstead, Melrose TD6 9DB. T 01896 825508

Ensuring good communications

With the public and 'at-risk' groups

Communications is a key element of the local strategy – not only to raise awareness of the dangers of hypertension and its risk factors, but also to get across the importance of having blood pressure checks and adhering to treatment.

Methods of effective communication might include:

- encouraging healthy early nutrition and active play through parents, health visitors, childminders, playgroup leaders and Sure Start programmes
- supporting school-based learning and whole-school initiatives
- posters and leaflets in general practices, pharmacies and clinics
- working with 'at-risk' groups
- blood pressure measuring stands at health fairs and events
- news and features in local media
- local advertising campaigns.

For more on communicating with patients, see page 50.

With secondary care

An important part of the work-up of identified cases of hypertension is the need for tests to eliminate secondary hypertension and related disorders. This requires effective and efficient communication with secondary care services, particularly diagnostics and medical outpatients. Local planners need to agree clinical protocols and pathways which ensure appropriate referral to secondary care. New IT systems for electronic booking and record-sharing will greatly assist efficient referral and improve patient experience.

Funding

Prescribing

The primary care organisation will need to identify the additional prescribing costs associated with fully implementing the hypertension case-finding and management programme. The costs will mostly lie in ACE (angiotensin-converting enzyme) inhibitors and calcium channel blockers.

Additional investigations

Additional laboratory tests will be needed to assess and monitor, for example, kidney function, in those patients identified through a more systematic approach to case-finding.

Behaviour-change programmes

There should be sufficient resources for behaviour-change programmes which can support the management of hypertension. This involves support for increasing physical activity, and for promoting healthy eating and weight management through additional health trainers, physical activity facilitators, community dietitians or public health nutritionists.

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Monitoring progress, assessing performance and evaluating the strategy

Evaluation of strategies and programmes for hypertension is central for:

- clinical governance
- audit and quality improvement
- providing information to the public
- strategy and programme development
- assessing value for money
- assessing sustainability, and
- increasing the evidence base.

There are two basic rules for successful evaluation:

- The evaluation process must be developed at the start, at the same time as aims, objectives and targets of the intervention are worked out.
- Adequate funding must be set aside for the evaluation. A good guide is 10% of a programme's budget.



Tool H15 gives examples of indicators that could be used to assess performance of a local hypertension prevention and control programme.

Mainstreaming and sustainability

A perennial problem facing local healthcare planners and providers is ensuring that effective practice is sustainable and 'mainstreamed' in terms of continued funding. Many innovative approaches are piloted using short-term funding streams but, despite favourable evaluation, are difficult to build into budget baselines due to intense competition for mainstream funding. This is particularly true of preventive lifestyle initiatives which often have less measurable, less attributable, and shorter-term outcomes than interventions to control hypertension.

However, in England, the public health white paper, *Choosing Health*,²¹ strengthens the focus on prevention and sustainable implementation. In particular it calls for:

- strong leadership and management
- effective partnership working
- a 'can-do' culture
- an effective workforce strategy
- appropriate education and training programmes
- sound governance arrangements
- aligned inspection, regulation, standards, targets, incentives and performance assurance.

The National Institute for Health and Clinical Excellence in England integrates preventive and treatment knowledge and guidance on issues such as hypertension, and works closely with the Healthcare Commission in developing appropriate tools for performance assessment. This will inform guidance for primary care organisations on implementation, coordination and monitoring.

As part of sustainability there is a need to strengthen the role of public health observatories in supporting local bodies by helping them to identify and measure local health problems and track progress towards targets.

At local level, the local strategic partnership, and its equivalent in all parts of the UK, can act as overall coordinator of a 'whole system' approach to hypertension prevention and control. Local targets can be set around promoting healthy eating, physical activity and reducing overweight and obesity. The local Health and Social Care Scrutiny Committee (or its equivalent) can choose to assess the performance of this integrated approach to local services.

National NHS improvement strategies such as the NHS Improvement Plan in England, and its parallels in Wales, Scotland and Northern Ireland, have endorsed the importance of prevention and management of long-term conditions such as coronary heart disease (CHD), diabetes, stroke and chronic kidney disease. In particular, implementation of programmes to prevent and manage CHD and stroke are core priorities for primary care organisations across the UK. Public Service Agreements on increasing life expectancy, preventing avoidable illness, reducing health inequalities and improving access to healthcare services add further impetus to delivery in each part of the UK.

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Resources

D

This section contains:

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• Further reading – information on publications to help develop a local hypertension strategy	101
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The toolset includes the following tools:

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Tool H2	National policy drivers (1): government health priorities, standards and targets related to blood pressure	65
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Suggested structure for a local hypertension strategy

Tool H1

Strategy section	Sections of this toolkit that can help
<p>Introduction: the need for action</p> <p>The introduction to the strategy should outline the main elements and give the reasons why local action is necessary to tackle hypertension. For example:</p> <ul style="list-style-type: none">• national and local policy drivers• an estimate of the local prevalence and costs of hypertension• an outline of the benefits of preventing, detecting and controlling hypertension.	<p><i>Pages 33-35</i></p> <p>Tool H1 Suggested structure for a local hypertension strategy</p> <p>Tool H2 National policy drivers (1)</p> <p>Tool H3 Hypertension prevalence ready-reckoner</p>
<p>Strategic partnerships</p> <p>This section details the key partners who will help to plan, implement and evaluate the strategy, the establishment of a hypertension action team and who it will include.</p>	<p><i>Pages 35-36</i></p> <p>Tool H4 Local partners and their potential roles</p> <p>Tool H5 A settings approach to tackling hypertension</p>
<p>Current activity and gaps</p> <p>This section of the strategy looks at what is currently happening at local level on prevention, detection and control. It could include the results of an audit to map local action and identify gaps, and the action each partner agency needs to take.</p>	<p><i>Page 36</i></p> <p>Tool H6 Checklist for reviewing current activity</p>
<p>Priorities and target groups</p> <p>This section considers how resources will be targeted and where to focus efforts.</p>	<p><i>Pages 15-21, 25-31 and 37-38</i></p> <p>Tool H7 Cardiovascular disease risk prediction charts</p> <p>Tool H8 Proforma for developing a hypertension action plan</p>
<p>Aims, objectives, standards, targets and milestones</p> <p>The broad aims of the strategy, specific objectives and standards, and time-scheduled targets and milestones.</p>	<p><i>Pages 39-40</i></p> <p>Tool H2 National policy drivers (1)</p>

Strategy section

Sections of this toolkit that can help

Key interventions

Using a settings approach, this section suggests interventions to:

- prevent hypertension, and
- detect and control hypertension.

It also outlines how to develop a local hypertension action plan.

Pages 25-31 and 41-50

Tool H5 A settings approach to tackling hypertension

Tool H8 Proforma for developing a hypertension action plan

Tool H9 Salt and hypertension

Tool H10 National policy drivers (2)

Tool H11 The GMS contract: quality indicators for hypertension

Potential barriers

This section outlines the obstacles which prevent people from adopting healthier lifestyles or adhering to treatment, ways in which these can be overcome, and the roles of the individual and of health professionals and partner agencies.

Pages 26-27 and 50-54

Tool H12 Patients' thoughts and feelings about taking medicines for hypertension

Tool H13 Suggested minimum content of care plans and patient-held records for hypertension

Tool H14 Ways of involving patients and the public in tackling hypertension

Infrastructure support

This section details the structures that need to be in place at local level to implement a hypertension strategy, such as capacity, IT systems, sufficient funding, and public and patient involvement.

Pages 54-57

Tool H14 Ways of involving patients and the public in tackling hypertension

Monitoring and evaluation

How to monitor progress, assess performance and evaluate the strategy should be detailed in this section.

Page 58

Tool H11 The GMS contract: quality indicators for hypertension

Tool H15 Performance assessment: examples of indicators

Mainstreaming and sustainability

Plans on how to ensure that local action to prevent, detect and control hypertension is mainstreamed and sustained should be included in the strategy.

Pages 58-60

Government health priorities, standards and targets related to blood pressure

For details of policies and programmes on healthy eating, physical activity and the wider determinants of health, see Tool H10 National policy drivers (2).

ENGLAND

Choosing Health: Making Healthy Choices Easier

(2004)

www.dh.gov.uk

This public health white paper is a national strategy for improving health in England, focusing mainly on individual lifestyle changes, supported by fiscal, legislative, environmental, commercial and other changes to encourage, enable and empower the individual. It builds on the relevant national service frameworks described below and introduces a number of new initiatives including:

- tough targets for salt reduction in processed and prepared foods
- an expanded Healthy Schools Programme
- nutrient-based standards for school meals and public sector catering
- a specialist anti-obesity service in each PCT
- NHS-accredited health trainers offering lifestyle advice
- personally-held health guides containing personal health goals
- boosted smoking cessation services
- a big expansion and enforcement of smoke-free workplaces, restaurants, pubs and bars
- boosted active workforce schemes
- an online/telephone advisory service for healthy lifestyles (Health Direct)
- new campaigns to reduce binge-drinking, obesity and smoking, and increase physical activity.

National Standards, Local Action: Health and Social Care Standards and Planning Framework 2005/06-2007/08

(2004)

www.dh.gov.uk

Describes national targets and standards for NHS and social services authorities. Core standards must be complied with, while developmental standards set the 'direction of travel'.

Core Standard C5: Healthcare organisations ensure they conform to NICE technology appraisals and, where it is available, take into account nationally agreed guidance when planning and delivering treatment and care.

Developmental Standard D2: Patients receive effective treatment and care that conform to nationally agreed best practice, particularly as defined in national service frameworks (NSFs), NICE guidance, national plans and agreed national guidance on service delivery.

Core Standard C15: Where food is provided, healthcare organisations have systems in place to ensure that patients are provided with a choice, and that it is prepared safely and provides a balanced diet.

Core Standard C23: Healthcare organisations have systematic and managed disease prevention and health promotion programmes which meet the requirements of the NSFs, and national plans with particular regard to reducing obesity through action on nutrition and exercise, smoking and substance misuse.

Developmental Standard D13: Healthcare organisations:

- identify and act upon significant public health problems and health inequality issues, with PCTs taking the leading role
- implement effective programmes to improve health and reduce health inequalities, and
- take fully into account current and emerging policies, and knowledge on public health issues in the development of their public health programmes, health promotion and prevention services for the public, and the commissioning and provision of services.

Securing Good Health for the Whole Population: Final Report
(2004)

The Wanless reports are likely to become major drivers of change (in England and Wales) in the allocation of resources over the next 20 years. Wanless' underlying theme is that progress in life expectancy and health status is heavily dependent on people becoming more fully involved in all aspects of their health, and that the health service should be responsive to this.

Securing Our Future Health: Taking a Long-term View
(2002)
www.hm-treasury.gov.uk

Improvement, Expansion and Reform: The Next 3 Years' Priorities and Planning Framework, 2003-2006
(2002)
www.dh.gov.uk

The priorities in the Priorities and Planning Framework (PPF) for 2003-06 are based on the Department of Health's Public Service Agreement (PSA).

The aim of the underlying PSA is to transform the health and social care system so that it produces faster, fairer services that deliver better health and tackle health inequalities. The objectives of the PSA relevant to policies on blood pressure are:

Objective 2: Improve health and social care outcomes for everyone.

- Reduce substantially the mortality rates from the major killer diseases by 2010: from heart disease by at least 40% in people under 75 years, with a 40% reduction in the inequalities gap between the fifth of areas with the worst health and deprivation indicators, and the population as a whole.
- By 2010 reduce inequalities in health outcomes by 10% (from a 1997-99 baseline), as measured by infant mortality and life expectancy at birth.
- To improve the health outcomes for people with long-term conditions by offering a personalised care plan for vulnerable people most at risk; and to reduce emergency bed days by 5% by 2008, through improved care in primary care and community settings.

Tackle the underlying determinants of ill health and health inequalities by:

- Halting the year-on-year rise in obesity among children under 11 years by 2010 – in the context of a broader strategy to tackle obesity in the population as a whole (joint target with the Department for Education and Skills, and the Department for Culture, Media and Sport).

Within these priority areas, the key targets of the PPF related to hypertension are:

Coronary heart disease

- In primary care, update practice-based registers so that patients with coronary heart disease and diabetes continue to receive appropriate advice and treatment in line with NSF standards.
- Ensure that practice-based registers and systematic treatment regimes, including appropriate advice on diet, physical activity and smoking, also cover the majority of patients at high risk of coronary heart disease, particularly those with hypertension, diabetes or a BMI greater than 30kg/m².

Reducing health inequalities

- Deliver an increase of two percentage points per year in the breastfeeding initiation rate, focusing especially on women from disadvantaged groups.
- Contribute to a national reduction in death rates from coronary heart disease (CHD) in people under 75 years, targeting the 20% of areas with the highest rates of CHD.

National Service Framework for Renal Services – Part Two: Chronic Kidney Disease, Acute Renal Failure and End of Life Care
(2005)
www.dh.gov.uk

There are two quality requirements relevant to hypertension:

Quality requirement 1: Prevention and early detection of chronic kidney disease

People at increased risk of developing or having undiagnosed chronic kidney disease, especially people with diabetes or hypertension, are identified, assessed and their condition managed to preserve their kidney function.

Quality requirement 2: Minimising the progression and consequences of chronic kidney disease

People with a diagnosis of chronic kidney disease receive timely, appropriate and effective investigation, treatment and follow-up to reduce the risk of progression and complications.

Both of these require close monitoring of blood pressure to detect and control hypertension.

National Service Framework for Children, Young People and Maternity Services

(2004)

www.dh.gov.uk

Action taken to promote and deliver health and well-being (as called for in Standard 1) will help prevent the rise of blood pressure with age.

National Service Framework for Diabetes

(2001)

www.dh.gov.uk

Three standards are relevant to hypertension:

Standard 1: Strategies to prevent Type 2 diabetes in the general population and reduce inequalities in the risk of developing Type 2 diabetes. Key interventions include local strategies for the prevention and reduction of the prevalence of overweight and obesity, and reducing risk by eating a balanced diet, losing weight and increasing physical activity. Implications for service planning include continuing education for health professionals about the interventions that are effective in these areas.

Standard 3: Empowering people with diabetes. Includes help to adopt and maintain a healthy lifestyle, such as tools to support behaviour – for example, affordable healthier food options both at home and in the workplace.

Standard 4: Clinical care of adults with diabetes. Emphasises that weight loss and increased physical activity are the first interventions for people with newly diagnosed Type 2 diabetes. All adults with diabetes will receive high-quality care throughout their lifetime, including support to optimise the control of their blood glucose, blood pressure and other risk factors.

National Service Framework for Older People

(2001)

www.dh.gov.uk

This is a 10-year programme of action with eight standards, two of which are directly relevant to blood pressure.

Standard 5: Stroke. Working in partnership with other agencies where appropriate, to reduce the incidence of stroke in the population and to ensure those who have had a stroke have prompt access to integrated services.

Standard 8: The promotion of health and active life in older age. "The health and wellbeing of older people is promoted through a coordinated programme of action led by the NHS with support from councils." Key interventions include programmes for improved diet and nutrition. Local health systems should be able to demonstrate year-on-year improvements in measures of health and well-being among older people including flu immunisation, smoking cessation and blood pressure management.

National Service Framework for Coronary Heart Disease

(2000)

www.dh.gov.uk

Sets national standards for the treatment and prevention of coronary heart disease (CHD). Reducing health inequalities is a guiding principle. Standards 1, 3, 4, 8, 11 and 12 are relevant to action on blood pressure.

Standard 1: Reducing the prevalence of CHD risk factors in the population and reducing inequalities in risk of developing heart disease. Directors of public health are expected to produce an 'equity profile' for their population. A community development approach is sought, with health visitors as a vital resource. All NHS bodies, working closely with local authorities, are required to have an effective local policy and programmes on promoting healthy eating, reducing overweight and obesity and increasing physical activity. NHS and local authorities are asked to be exemplary employers in the promotion of physical activity and healthy eating.

Standards 3 and 4: Identifying and treating all people with established cardiovascular disease (CVD) and those at high risk of developing CVD, particularly those with hypertension, diabetes and a BMI greater than 30kg/m². By 2006 to ensure practice-based registers and systematic treatment regimes, including appropriate advice on physical activity, diet and weight, diabetes and alcohol consumption, as well as advice and treatment to control blood pressure.

Standard 8: People with symptoms of angina should receive appropriate investigation and treatment to relieve their pain and reduce their risk of coronary events. This includes advice on physical activity, diet and weight, diabetes and alcohol consumption, and advice and treatment to control blood pressure.

Standard 11: Heart failure and palliative care for people with CHD. This includes advice on physical activity, diet and weight, diabetes and alcohol consumption, and advice and treatment to control blood pressure.

Standard 12: Cardiac rehabilitation. This includes assessment of individuals' risks and needs, and developing individualised plans to meet those needs. Plans might include advice on physical activity, diet and weight, diabetes and alcohol consumption, and advice and treatment to control blood pressure.

SCOTLAND

Improving Health in Scotland: the Challenge – Framework for Action

(2003)

www.scotland.gov.uk

This document builds on *Towards a Healthier Scotland* and is the first in a series. It includes the following two objectives for health improvement:

- By 2010 improve the life expectancy and healthy life expectancy for all men and women living in all areas of Scotland. Also reduce inequalities between the most affluent and most deprived groups.
- By 2020-22, further improve life expectancy and healthy life expectancy of men and women living in all areas of Scotland. Also further reduce inequalities between the most affluent and most deprived groups.

The document acknowledges that improved health requires linkages with local authorities, education, social justice, environment and sport. It seeks to support people at critical times in their lives and works through four areas: early years, teenage transition, the workplace and communities.

Coronary Heart Disease and Stroke Strategy for Scotland

(2002)

www.scotland.gov.uk

This document includes recommendations on prevention, managed clinical networks, workforce issues and IT. The prevention recommendation is:

“All NHS boards should, through their local Managed Clinical Networks, develop explicit CHD and stroke prevention strategies... These should link to, and may be an integral part of, more general strategies for primary/secondary prevention/health improvement plans. The strategies should adopt a ‘population approach’ to improving the health of communities that they serve, complemented by a ‘high risk’ approach targeted at certain key groups, such as those with hypertension, hypercholesterolaemia, or diabetes, as well as the more socially disadvantaged groups within the population.”

Towards a Healthier Scotland

(1999)

www.scotland.gov.uk

This white paper sets out action at three levels: improving life circumstances that impact on health, unhealthy lifestyles and the health priorities. These include heart disease and effective support for children in their early years, and for their parents. Tackling health inequalities is the overarching aim of all three levels. There are targets for coronary heart disease and stroke, physical activity, alcohol, diet and smoking:

CHD and stroke: By 2010 to reduce the age-standardised mortality rate from CHD and stroke in people under 75 years by 50% (from 1995 baseline). The ratio of CHD deaths among the 20% of the population living in deprived postcode sectors to the 20% living in the most affluent postcode sectors has been chosen as an indicator of health inequalities.

Physical activity: The targets for physical activity have now been superseded by those set in *Let's Make Scotland More Active* (see Tool H10).

Alcohol: To reduce the incidence of men and women aged 16-64 exceeding weekly limits of 21 and 14 units of alcohol, respectively, from 33% in 1995 to 29% by 2010 for men, and from 13% in 1995 to 11% by 2010 for women.

To reduce the frequency and level of drinking among 12-15 year olds from 20% in 1995 to 16% by 2010.

Diet: The targets for healthy eating have now been superseded by those in the *Scottish Diet Action Plan* (see *Eating for Health* in Tool H10).

Smoking: To reduce the rate of smoking among adults aged 16-64 in all social classes to an average of 31% by 2010.

There are also smoking targets for pregnant women and young people.

WALES

Securing Good Health for the Whole Population: Final Report (2004)

See page 66.

Securing Our Future Health: Taking a Long-term View (2002)

www.hm-treasury.gov.uk

Health, Social Care and Well-being Strategies, and Policy Guidance (2003)

www.wales.gov.uk

Local health boards and local authorities have to produce these strategies in conjunction with other organisations and through public consultation. This is based on *Well Being in Wales* which sets an integrated approach to tackling the economic, social and environmental factors that affect people's health.

Improving Health in Wales. A Plan for the NHS with its Partners

(2001)

www.wales.gov.uk

This white paper set the direction for health services in Wales over 10 years. It states that the NHS will work with local government and its other partners to create healthier communities. It increased the power of local health groups in commissioning and delivering services, and widened their membership to include local authority members. Local health groups were also given the responsibility of achieving effective local joint working across the statutory and non-statutory sectors to deliver strong community-based health and social care services.

Tackling Coronary Heart Disease in Wales: Implementing through Evidence

(2001)

www.wales.nhs.uk

There are five evidence-based standards for tackling CHD in Wales. Those relevant to hypertension are:

- *Standard 1.* Health authorities through their local health groups and with local authorities in partnership through local health alliances should develop, implement and monitor evidence-based programmes to address tobacco use, diet and physical activity targeted at the most disadvantaged communities in Wales.
- *Standard 2.* Everyone at high risk of developing coronary heart disease and all those who have been diagnosed as having the disease should have access to a multifactorial risk assessment and be offered an appropriate treatment plan. This should address those at high risk.
- *Standard 4.* Everyone with heart failure should be recognised and offered appropriate evidence-based care.

The health outcome target for coronary heart disease is:

- To reduce deaths from coronary heart disease (measured by the European age-standardised ratio) in 65-74 year olds from 600 per 100,000 in 2002, to 400 per 100,000 by 2012.
- Health inequality target – to improve CHD mortality in all groups and at the same time aim for a more rapid improvement in the most deprived groups.
- Other indicators to be monitored include CHD premature mortality in males and females under 75 years at local and national level, and progress towards the National Service Framework standards.

Promoting Health and Well-being: Implementing the National Health Promotion Strategy

(2001)

www.wales.gov.uk

Sets out the action programme for implementation of the health promotion strategy highlighted in *Better Health, Better Wales*. It outlines its commitment to preventing ill health and reducing inequalities.

NORTHERN IRELAND

Priorities for Action 2004/05: Planning Priorities and Actions for the Health and Personal Social Services

(2004)

www.dhsspsni.gov.uk

Health and Social Services Boards will be required to submit Health and Wellbeing Investment Plans (HWIPs) setting out how they will secure effective health and social services for their local populations, improve health and well-being, and reduce inequalities with a view to achieving the *Investing for Health* targets by 2010. Boards are expected to work with other organisations as part of the Investing for Health Partnership to take forward the implementation of cross-departmental strategies and action plans in the interrelated areas of drugs and alcohol misuse, mental health promotion, physical activity, food and nutrition, breastfeeding, and teenage parenthood.

Boards should also provide for improved outcomes for people with diabetes by taking forward prioritised recommendations of the CREST taskforce on the prevention and treatment of diabetes (see *The Joint Task Force Report on Diabetes*, below).

The Joint Task Force Report on Diabetes

(2003)

www.diabetes.org.uk

The Clinical Resource Efficiency Support Team (CREST) and Diabetes UK produced a joint report which highlighted relevant issues in diabetes, and collated them into an integrated health service framework. This framework is made up of 18 key building blocks which cover five main areas: prevention and early detection; care, monitoring and treatment; targeting vulnerable groups; planning and managing services; and implementation issues. It is anticipated that the development and implementation of the framework will be a 5- to 10-year programme.

Investing for Health

(2002)

www.dhsspsni.gov.uk

This is a framework for a new strategy to improve the health and well-being of people in Northern Ireland through a multidisciplinary approach including social, economic, physical and cultural environments and health policy. The targets include:

- reducing the gap in life expectancy between the average life expectancy of those living in the fifth most deprived electoral wards and the average life expectancy for both men and women between 2000 and 2010
- reducing the mortality rate from circulatory diseases (in particular deaths from heart disease and stroke) by at least 20% in people under 75 years by 2010
- stopping the increase in levels of obesity in men and women so that by 2010 the proportion of men who are obese is less than 17%, and the proportion of women who are obese is less than 20%.

Following on from this, cross-departmental strategies and action plans will cover a range of areas including: drugs and alcohol misuse, food and nutrition, mental health promotion, physical activity, tobacco and teenage parenthood.

Northern Ireland Evidence-based Stroke Strategy

(2001)

www.nichsa.com

This strategy provides a challenging agenda for the development of stroke services for the next 5-10 years. Implementation of this strategy will bring benefits to patients, carers and stroke survivors.

Hypertension prevalence ready-reckoner

This tool can be used to estimate the number of people within a primary care organisation's local area who have hypertension (persistent raised blood pressure of 140/90mmHg or above), treated and untreated, controlled and uncontrolled.



An electronic version of the Hypertension ready-reckoner – which can be completed online – can be found at: www.fph.org.uk. (See Policy and Communications, Publications, 'Easing the Pressure: Tackling Hypertension'.)

How to use the ready-reckoner

- 1 In cells A1-A7 and B1-B7 enter the actual numbers of residents in each age group, based on latest population estimates for your area.
- 2 Calculate the other cell values according to the formulae shown below.

		PCO* population		Estimate of number of hypertensives	
		Male	Female	Male	Female
	Age	A	B	C	D
1	15-24	Enter actual number	Enter actual number	$A1 \times 0.06$	$B1 \times 0.02$
2	25-34	Enter actual number	Enter actual number	$A2 \times 0.11$	$B2 \times 0.05$
3	35-44	Enter actual number	Enter actual number	$A3 \times 0.20$	$B3 \times 0.11$
4	45-54	Enter actual number	Enter actual number	$A4 \times 0.35$	$B4 \times 0.23$
5	55-64	Enter actual number	Enter actual number	$A5 \times 0.51$	$B5 \times 0.47$
6	65-74	Enter actual number	Enter actual number	$A6 \times 0.64$	$B6 \times 0.64$
7	75 plus	Enter actual number	Enter actual number	$A7 \times 0.64$	$B7 \times 0.75$
8	TOTALS	Sum of A1-A7	Sum of B1-B7	Sum of C1-C7	Sum of D1-D7
Of those who are hypertensive:					
9		Estimated number receiving treatment:		$C8 \times 0.37$	$D8 \times 0.46$
10		Estimated number not receiving treatment:		$C8 \times 0.63$	$D8 \times 0.54$
Of those receiving treatment:					
11		Estimated number controlled:		$C9 \times 0.46$	$D9 \times 0.44$
12		Estimated number uncontrolled:		$C9 \times 0.54$	$D9 \times 0.56$

* PCO = primary care organisation

Source: Formulae based on the *Health Survey for England 2003*¹

Note: This ready-reckoner takes no account of ethnicity, deprivation or other factors that might affect hypertension prevalence; nor of recent changes in the proportion controlled. It can give only a rough approximation based on all-England data collected in 2003.

EXAMPLE

The following is a worked example of how to use the ready-reckoner, based on 2003 mid-year population estimates (rounded) for Southwark Primary Care Trust, London. (Numbers are in 000s.)

Population of Southwark PCT (000s)				Estimate of number of hypertensives (000s)	
	Male	Female	Male	Female	
Age	A	B	C	D	
1	15-24	17.0	17.2	$A1 \times 0.06 = 1.02$	$B1 \times 0.02 = 0.34$
2	25-34	29.5	25.9	$A2 \times 0.11 = 3.25$	$B2 \times 0.05 = 1.30$
3	35-44	24.4	22.7	$A3 \times 0.20 = 4.88$	$B3 \times 0.11 = 2.50$
4	45-54	13.0	13.1	$A4 \times 0.35 = 4.55$	$B4 \times 0.23 = 3.01$
5	55-64	8.5	9.3	$A5 \times 0.51 = 4.34$	$B5 \times 0.47 = 4.37$
6	65-74	6.4	7.4	$A6 \times 0.64 = 4.10$	$B6 \times 0.64 = 4.74$
7	75 plus	4.6	7.5	$A7 \times 0.64 = 2.94$	$B7 \times 0.75 = 5.63$
8	TOTALS	Sum of A1-A7 = 103.4	Sum of B1-B7 = 103.1	Sum of C1-C7 = 25.08	Sum of D1-D7 = 21.89

Of those who are hypertensive:				
9	Estimated number receiving treatment:		$C8 \times 0.37 = 9.28$	$D8 \times 0.46 = 10.07$
10	Estimated number not receiving treatment:		$C8 \times 0.63 = 15.80$	$D8 \times 0.54 = 11.82$

Of those receiving treatment:				
11	Estimated number controlled:		$C9 \times 0.46 = 4.27$	$D9 \times 0.44 = 4.43$
12	Estimated number uncontrolled:		$C9 \times 0.54 = 5.01$	$D9 \times 0.56 = 5.64$

Thus:

The total estimated number of people in Southwark PCT with hypertension is:

$$C8 + D8 = 25.08 + 21.89 = 46.97 \text{ (000s)} = 46,970$$

The total estimated number of hypertensives not receiving treatment is:

$$C10 + D10 = 15.80 + 11.82 = 27.62 \text{ (000s)} = 27,620$$

The total estimated number of those receiving treatment who are uncontrolled is:

$$C12 + D12 = 5.01 + 5.64 = 10.65 \text{ (000s)} = 10,650$$

Reference

- 1 Joint Health Surveys Unit. 2004. *Health Survey for England 2003. Volume 2 Risk Factors for Cardiovascular Disease*. London: The Stationery Office.

Local partners and their potential roles

Tool H4

AGENCY	POTENTIAL ROLE
LOCAL NHS	Strategic and operational lead for tackling hypertension at local level. Role model as major employer.
General practices	<ul style="list-style-type: none">• Protocol for systematic detection and control of hypertension, preferably through a call-recall approach.• Lifestyles advice and referral to appropriate specialist lifestyles support (eg smoking cessation groups, dietetic support, exercise referral, etc).
Pharmacists	<ul style="list-style-type: none">• Help patients adhere to treatment.• Offer blood pressure checks.
Opticians	<ul style="list-style-type: none">• Detect signs of hypertension in the eyes.
Primary care organisation	<ul style="list-style-type: none">• Lead agency for implementing a hypertension programme as part of local delivery plans or local health plans.• Supporting and facilitating a proactive detection and control programme in primary care.• Ensuring an appropriate and targeted health education programme.• Lead agency for physical activity promotion through exercise referral schemes.• Lead agency for improving diet and nutrition through a local nutrition and food poverty strategy.• Personal health trainers.
Acute trusts	<ul style="list-style-type: none">• Specialist hypertension clinics.• Specialist rehabilitation and secondary prevention programmes for patients with coronary heart disease, stroke or established renal failure.
Mental health trusts	<ul style="list-style-type: none">• Specialist help for people with severe anxiety syndromes.
Strategic health authority	<ul style="list-style-type: none">• Strategy and performance management.

LOCAL AUTHORITY	Key partner through a variety of strategies and mechanisms, including the community strategy. Role model as local employer.
Leisure and recreation services	<ul style="list-style-type: none"> • Lead agency on physical activity, recreation and sports development through the local cultural strategy, and recreation and sports development plans. • Access to allotments, parks and spaces.
Education and schools	<ul style="list-style-type: none"> • Work with young people on healthy eating and physical activity through the national curriculum, extra-curricular activities, Safe Routes to Schools and the National Healthy Schools Standard.
Environment, transport and planning	<ul style="list-style-type: none"> • Improved safety and security. • Changes to the built environment, eg traffic-calming, access to public spaces, play areas, parks and pathways, lighting improvements, green gym, and countryside spaces.
Social, care and housing services and cooperatives	<ul style="list-style-type: none"> • Access to 'at-risk' groups and those with specific needs, people who are socially excluded and experiencing health inequalities, people who may be housebound, and older people.
VOLUNTARY GROUPS	<ul style="list-style-type: none"> • Key role in helping to target 'at-risk' groups such as black African and black Caribbean communities, and older people. • Local campaigns and programmes, eg Sustrans's Safe Routes to Schools, traffic-free routes and food cooperatives. • Local branches of voluntary and charitable organisations, eg the Stroke Association, or the Blood Pressure Association's community programmes on self-management.
COMMERCE	<ul style="list-style-type: none"> • Workplace health initiatives. • Sponsoring community programmes.
SUPERMARKETS	<ul style="list-style-type: none"> • Helping people to make healthier choices. • Information on healthy eating. • Offering low-price healthier alternatives.
LOCAL MEDIA	<ul style="list-style-type: none"> • Providing information and encouragement to promote healthy eating, everyday physical activity and weight management, and local initiatives. • Providing information and encouragement to keep check-up appointments, and adhere to treatment. • Highlighting 'at-risk' groups.

Examples of partnership working

A partnership to promote healthy eating

Different partner agencies or professional inputs will be more or less appropriate depending on the target group. For example, to promote healthy eating in young children, with a particular emphasis on salt restriction, the following might be involved:

- parents and children
- midwives and health visitors (infant feeding)
- school nurses
- GPs and practice nurses
- community dietitians/public health nutritionists
- playgroup leaders
- community and voluntary group workers
- school nurses, teachers, headteachers and school governors
- health trainers, health promotion and public health specialists
- local food retailers, eating establishments and caterers
- local media.

Some of the above are likely to be already working together on existing partnership programmes, eg Sure Start. More detailed guidance can be found in the *Nutrition and Food Poverty* toolkit.¹

A partnership to promote physical activity

Again, a different variety of partners will be needed. For example, to promote physical activity in middle-aged adults, the following might provide input:

- representatives of the community
- GPs and practice nurses
- lifestyle advisers, health trainers, physical activity facilitators, healthy walks coordinators
- leisure services staff
- sports development staff
- cardiac rehabilitation nurses
- regeneration planners
- local employers
- local media.

Some of the above are already likely to be engaged in local CHD or physical activity strategies. More detailed guidance can be found in the *Let's Get Moving* toolkit.²

A partnership to manage obesity

The partners for this element of hypertension prevention are likely to be a combination of those involved in promoting healthy eating and physical activity, but with more emphasis on the primary care input. For example, they might include:

- patients/carers
- GPs and/or practice nurses
- practice managers
- primary care quality facilitators
- primary care commissioners
- primary care IT officers
- public health specialists
- pharmacists

- hospital specialists
- community dietitians/public health nutritionists
- physical activity facilitators.

For more detailed guidance see the *Tackling Obesity* toolkit.³

References

- 1 Press V, on behalf of the National Heart Forum, Faculty of Public Health, Government Office for the North West, Government Office for the West Midlands, and the West Midlands Public Health Observatory. 2004. *Nutrition and Food Poverty: A Toolkit for Those Involved in Developing or Implementing a Local Nutrition and Food Poverty Strategy*. London: National Heart Forum.
- 2 Maryon-Davis A, Sarch L, Morris M, Laventure R. 2001. *Let's Get Moving: A Physical Activity Handbook for Developing Local Programmes*. London: Faculty of Public Health Medicine.
- 3 Maryon-Davis A, Giles A, Rona R. 2000. *Tackling Obesity: A Toolbox for Local Partnership Action*. London: Faculty of Public Health Medicine.

A settings approach to tackling hypertension

Tool H5

A local hypertension strategy can most practically be constructed around the main settings for the various interventions. These are likely to include:

Home

- Early life influences such as breastfeeding, child nutrition and active play.
- Family eating habits and physical activity patterns.
- Sure Start programmes and children's centres.

Potential partners for this setting include:

Parents, midwives, health visitors, GPs, community dietitians or public health nutritionists, social workers, playgroup leaders, voluntary groups, food retailers, leisure services, health promotion and public health specialists.

School

- A whole-school approach – curricular and non-curricular.
- Reducing the salt content of school meals and snacks, and providing healthy choices.
- Developing food choice skills and cooking skills.
- Creating opportunities for sports and physical activities.
- Encouraging active travel to and from school.
- Developing family and community involvement.
- Advising on children's personal health guides.

Potential partners for this setting include:

Pupils and students, parents, school nurses, teachers, headteachers, school governors, local education authority, local communities, road safety officers, community dietitians or public health nutritionists, school caterers and lunchtime assistants, leisure services, health promotion, and public health specialists.

Workplace

- Reducing the salt content of all catering and providing healthy choices.
- Encouraging active transport and active team pursuits.
- Enforcing smoke-free workspaces.
- Developing family and community involvement.
- Promoting employee health checks.

The priority should be larger employers, beginning with the NHS and local authority(ies).

Potential partners for this setting include:

Employees and their families, managers, human resources staff, occupational health, facilities managers, leisure services, catering providers, trade unions, health promotion and public health specialists.

Communities

- Developing awareness of hypertension and its prevention, detection and control among vulnerable, 'at-risk' communities.

D

Resources

- Engaging local people in healthy lifestyles initiatives.
- Encouraging local advocacy for culturally appropriate, health-promoting environments and facilities.
- Fostering a culture of prevention and adherence to health checks.

Potential partners for this setting include:

Community members and leaders, local charities, faith groups, voluntary groups, outreach workers, project workers, primary care staff, regeneration and neighbourhood renewal workers, community safety workers, road safety officers, local businesses, leisure providers, primary care staff, local media, health promotion and public health specialists.

Primary care

- Contributing to the primary prevention of hypertension by providing appropriate lifestyles advice and motivation.
- Referring suitable patients for specialist dietetic advice or an exercise programme.
- Setting up a weight control programme for the most 'at-risk' patients.
- Setting up a hypertension case-finding and management programme.

Potential partners for this setting include:

Patients and carers, practice staff, pharmacists, optometrists, community dietitians or public health nutritionists, exercise facilitators, fitness coaches, leisure providers, secondary care providers, health promotion and public health specialists.

Other settings

These might include the 'high street' (retail opportunities), health fairs, major sporting events and media campaigns.

Potential partners for these settings

Potential partners might include most of those previously mentioned, as well as local media resources, such as newspapers, radio and television.

Checklist for reviewing current activity

Tool H6

Carrying out an audit of local services and initiatives to identify priorities and target groups (and gaps in provision) is particularly helpful when resources and budgets are limited.

The audit checklist below can be used to help map current services and initiatives, grouped under various settings, and any identified gaps will help shape the development of a local hypertension strategy. For ease of use, use the proforma provided online (see details below).

For each service or initiative in the checklist below, assess:

- How well does it meet needs? (Score +, or ++, or +++)
- Which groups are missing out? (Specify)
- What development or further action is needed? (Specify)

Add your own local services or initiatives as appropriate.



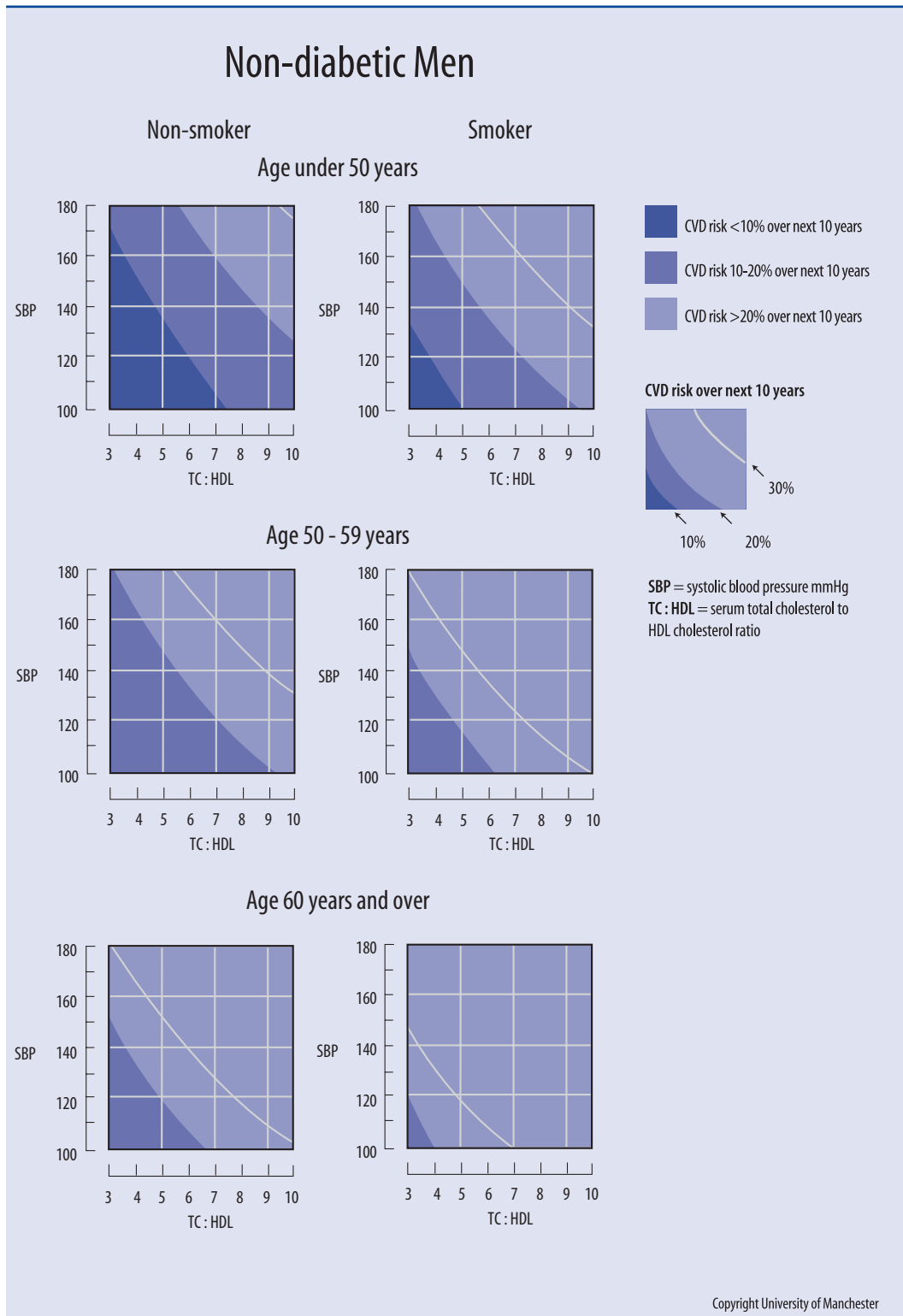
A copy of the proforma below – which can be completed online – can be found at: www.fph.org.uk. (See Policy and Communications, Publications, 'Easing the Pressure: Tackling Hypertension')

Service/initiative	How well does it meet needs? Score + or ++, or +++	Which groups are missing out?	What development or further action is needed?
PREVENTION			
Home setting			
Infant nutrition eg breastfeeding			
Pre-school child nutrition eg Sure Start			
Pre-school child active play eg playgroups			
School setting			
School child nutrition eg school fruit and vegetable scheme, school meals, vending machines, water			
School child physical activity eg PE and sports, travel to and from school			
Leisure setting			
eg healthy walks, exercise referral scheme, etc			
Workplace setting			
(Specify)			
Community group setting			
(Specify)			

Service/initiative	How well does it meet needs? Score + or ++, or +++	Which groups are missing out?	What development or further action is needed?
Primary care setting			
(Specify)			
'High street' setting			
(Specify)			
Local media			
(Specify)			
etc.			
DETECTION AND CONTROL			
General practices			
(Specify)			
Pharmacies			
(Specify)			
Walk-in centres, etc			
(Specify)			
Hospitals			
(Specify)			
etc.			
INFRASTRUCTURE			
Training			
(Specify)			
IT systems			
(Specify)			
Premises			
(Specify)			
Workforce planning			
(Specify)			
Sustainable funding			
(Specify)			
etc.			

Cardiovascular disease risk prediction charts

The following cardiovascular disease risk prediction charts were produced by the Joint British Societies.¹

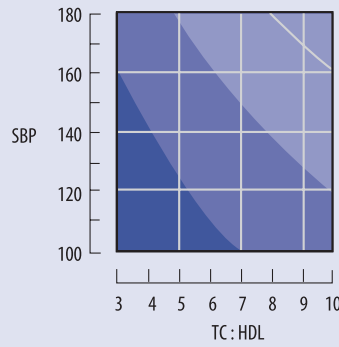
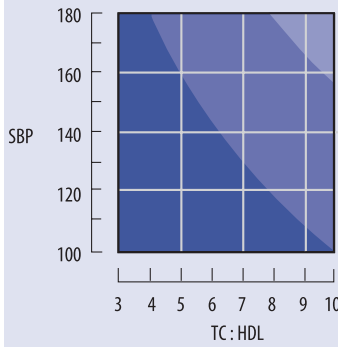


Non-diabetic Women

Non-smoker

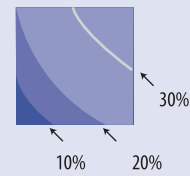
Smoker

Age under 50 years

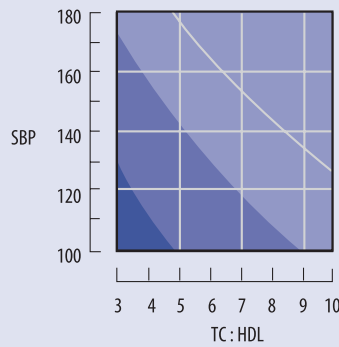
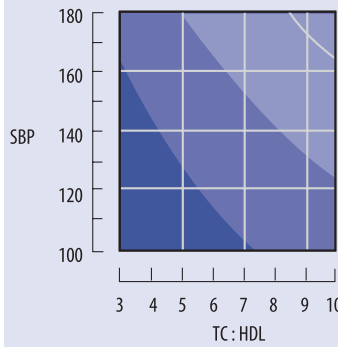


- CVD risk <10% over next 10 years
- CVD risk 10-20% over next 10 years
- CVD risk >20% over next 10 years

CVD risk over next 10 years

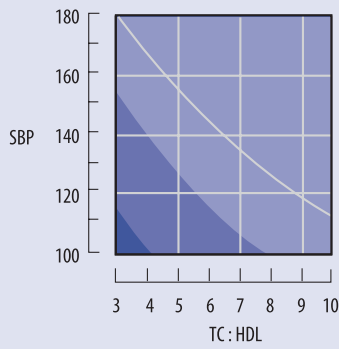
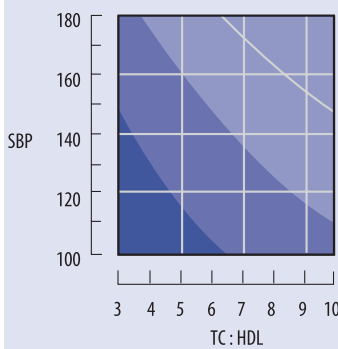


Age 50 - 59 years



SBP = systolic blood pressure mmHg
 TC : HDL = serum total cholesterol to HDL cholesterol ratio

Age 60 years and over



How to use the coronary risk prediction charts for primary prevention

These charts are for estimating CVD risk (nonfatal MI and stroke, coronary and stroke death and new angina pectoris) for individuals who have not already developed CHD or other major atherosclerotic disease. They are an aid to making clinical decisions about how intensively to intervene on lifestyle and whether to use antihypertensives, lipid-lowering medication and aspirin.

The use of these charts is not appropriate for the following patient groups. Those with:

- CHD or other major atherosclerotic disease;
- familial hypercholesterolaemia or other inherited dyslipidaemias;
- chronic renal dysfunction;
- type 1 and 2 diabetes mellitus.

The charts should not be used to decide whether to introduce antihypertensive medication when BP is persistently at or above 160/100 or when TOD [target organ damage] due to hypertension is present. In both cases, antihypertensive medication is recommended regardless of CVD risk. Similarly, the charts should not be used to decide whether to introduce lipid-lowering medication when the ratio of serum total to HDL cholesterol exceeds 7. Such medication is generally then indicated, regardless of the estimated CVD risk.

To estimate an individual's absolute 10-year risk of developing CVD, choose the table for his or her gender, smoking status (smoker/non-smoker) and age. Within this square, define the level of risk according to the point where the coordinates for SBP and the ratio of the total cholesterol to HDL-cholesterol meet. If no HDL cholesterol result is available, then assume this is 1.00 mmol/l and the lipid scale can be used for total serum cholesterol alone.

Higher risk individuals (light blue areas) are defined as those whose 10-year CVD risk exceeds 20%, which is approximately equivalent to the CHD risk of >15% over the same period, indicated by the previous version of these charts. As a minimum, those at highest CVD risk (greater than 30% shown by the line within the light blue area) should be targeted and treated now. When resources allow, others with a CVD risk of >20% should be progressively targeted.

The chart also assists in the identification of individuals whose 10-year CVD risk is moderately increased in the range 10–20% (mid-blue area) and those in whom the risk is lower than 10% over 10 years (dark blue area).

Smoking status should reflect the lifetime exposure to tobacco and not simply tobacco use at the time of assessment. For example, those who have given up smoking within 5 years should be regarded as current smokers for the purposes of the charts.

The initial BP and the first random (nonfasting) total cholesterol and HDL cholesterol can be used to estimate an individual's risk. However, the decision on using drug therapy should generally be based on repeat risk factor measurements over a period of time.

Men and women do not reach the level of risk predicted by the charts for the three age bands until they reach the ages 49, 59 and 69 years, respectively. Everyone aged 70 years and over should be considered at higher risk. The charts will overestimate the current risk most in the under 40s. Clinical judgement must be exercised in deciding on treatment in younger patients. However, it should be recognised that BP and cholesterol tend to rise most and HDL cholesterol to decline most in younger people already possessing adverse levels. Thus untreated, their risk at the age 49 years is likely to be higher than the projected risk shown on the age-less-than 50 years chart.

These charts (and all other currently available methods of CVD risk prediction) are based on groups of people with untreated levels of BP, total cholesterol and HDL cholesterol. In patients already receiving antihypertensive therapy in whom the decision is to be made about whether to introduce lipid-lowering medication or vice versa, the charts can act as a guide, but unless recent

pre-treatment risk factor values are available it is generally safest to assume that CVD risk factor than that predicted by current levels of BP or lipids on treatment.

CVD risk is also higher than indicated in the charts for:

- those with a family history of premature CVD or stroke (male first-degree relatives aged <55 years and female first-degree relatives aged <65 years), which increases the risk by a factor of approximately 1.5;
- those with raised triglyceride levels;
- women with premature menopause;
- those who are not yet diabetic, but have impaired fasting glucose (6.1–6.9mmol/l).

In some ethnic minorities, the risk charts underestimate CVD risk, because they have not been validated in these populations. For example, in people originating from the Indian subcontinent, it is safest to assume that the CVD risk is higher than that predicted from the charts (1.5 times).

These charts may be used to illustrate the direction of impact of risk factor intervention on the estimated level of CVD risk. However, such estimates are crude and are not based on randomised trial evidence. Nevertheless, this approach may be helpful in motivating appropriate intervention. The charts are primarily to assist in directing intervention to those who typically stand to benefit the most.

Reproduced with kind permission from the British Hypertension Society.

Reference

- 1 Williams B, Poulter NR, Brown MJ *et al.* 2004. Guidelines for management of hypertension: report of the fourth working party of the British Hypertension Society, 2004-BHS IV. *Journal of Human Hypertension*. 18: 139-185.

Proforma for developing a hypertension action plan

Tool H8

This tool can be used to help build up the key elements of a local hypertension action plan (including prevention, detection and control), and to keep track of what is to be delivered by whom and by when. For ease of use, use the proforma provided online (see details below).



A copy of this proforma – which can be completed online – can be found at: www.fph.org.uk. (See Policy and Communications, Publications, 'Easing the Pressure: Tackling Hypertension')

HOME				
Intervention	Deliverable(s)	Lead partner	By when	Notes
1 (eg breastfeeding)				
2				
etc				
SCHOOL				
Intervention	Deliverable(s)	Lead partner	By when	Notes
1 (eg healthy school meals)				
2				
etc				
LEISURE				
Intervention	Deliverable(s)	Lead partner	By when	Notes
1				
2				
etc				
WORKPLACE				
Intervention	Deliverable(s)	Lead partner	By when	Notes
1				
2				
etc				
COMMUNITY				
Intervention	Deliverable(s)	Lead partner	By when	Notes
1				
2				
etc				
PRIMARY CARE				
Intervention	Deliverable(s)	Lead partner	By when	Notes
1				
2				
etc				
OTHER				
Intervention	Deliverable(s)	Lead partner	By when	Notes
1				
2				
etc				

Why is too much salt a problem?

There is a strong link between a high salt intake and elevated blood pressure.¹ Hypertension can contribute to cardiovascular disease – including coronary heart disease, heart failure and stroke – and kidney disease.

Recommended maximum intakes of salt

Babies and children

Babies and children require a much smaller amount of salt than adults (see chart on the right). For babies, appropriate amounts can easily be supplied through breast milk. The ‘target’ levels shown on the right represent an achievable *maximum* for health – not what is *optimal*.

Daily target average salt intakes for infants and children [†]	
Age	Target average salt intake (grams per day)
0-6 months	Less than 1g
7-12 months	1g
1-3 years	2g
4-6 years	3g
7-10 years	5g
11-14 years	6g

Source: Scientific Advisory Committee on Nutrition, 2003¹

[†] Crown copyright material is reproduced with the permission of the Controller of HMSO and the Queen's Printer for Scotland.

Older children and adults

It is recommended that older children and adults should not exceed the *maximum* daily intake level of 6g of salt per day. Again, this reflects what is *achievable* – not what is recommended (which is 4g per day for adults).²

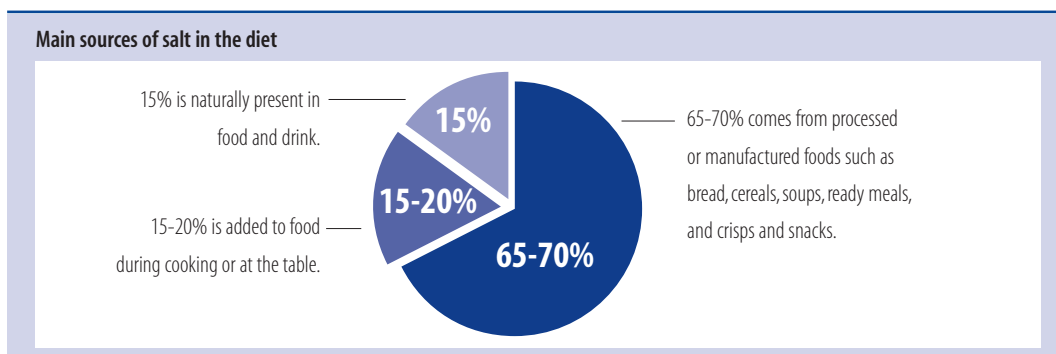
Salt and sodium in food

People often use the terms ‘salt’ and ‘sodium’ interchangeably. However, salt is a compound of sodium and chloride. Too much sodium can cause ill health. Salt is by far the biggest source of sodium in the diet.

Some food labels give the sodium level but not the salt levels. Levels of salt can be roughly calculated by multiplying the sodium (per 100g) by 2.5. The Food Standards Agency provides an online calculator (at www.salt.gov.uk) to work out levels of salt in food.³

Guide to salt levels in food	
A lot	A little
1.25g salt (or 0.5g sodium) or more per 100g	0.25g salt (or 0.1g sodium) or less per 100g

Source: Food Standards Agency, 2005³



Source: Scientific Advisory Committee on Nutrition, 2003;¹ and Food Standards Agency website³

Percentage contribution of food types to average daily intake of sodium, by age and sex *			
Food	Men	Women	All
	(%)	(%)	(%)
Cereals and cereal products	35	36	35
Milk and milk products	7	9	8
Eggs and egg dishes	2	2	2
Fat spreads	3	3	3
Meat and meat products	28	23	26
Fish and fish dishes	3	5	4
Vegetables (excluding potatoes)	6	7	7
Potatoes and savoury snacks	3	4	4
Fruit and nuts	0	1	0
Sugars, preserves and confectionery	1	1	1
Drinks**	2	2	2
Miscellaneous***	8	10	9
TOTAL	98	103	101

* Data are for intakes from food only and do not include further additions of salt in cooking or at the table.

** Includes soft drinks, alcohol drinks, tea, coffee and water.

*** Includes powdered beverages (except tea and coffee), soups, sauces, condiments and artificial sweeteners.

Source: Adapted from the National Diet and Nutrition Survey, 2003 ⁴

Tips for salt reduction

Comprehensive guidance on reducing salt intake is available from the Food Standards Agency and CASH (details below). Key tips include:

- Avoid adding salt to cooking or to food at the table.
- Eat more fruit and vegetables – they're lower in salt and saturated fats than processed foods.
- Choose products with less salt/sodium. Go for the 'low salt' option and look at the information on food labels.
- Take particular care with children's diets. (See page 87 for recommended levels for children.)

For more information on salt

Consensus Action on Salt and Health (CASH)

Runs an annual campaign to reduce the amount of salt in our diet, including a Salt Awareness Day.
www.actiononsalt.org.uk

Food Standards Agency

Includes the *Sid the Slug* salt campaign.
www.salt.gov.uk

Scientific Advisory Committee on Nutrition

www.sacn.gov.uk

References

- 1 Scientific Advisory Committee on Nutrition. 2003. *Salt and Health*. London: The Stationery Office.
- 2 Department of Health. 1991. *Dietary Reference Values for Food Energy and Nutrients for the United Kingdom*. London: HMSO.
- 3 Food Standards Agency website. Accessed on 18 January 2005 from: www.salt.gov.uk
- 4 Henderson L, Irving K, Gregory J et al. 2003. *National Diet and Nutrition Survey: Adults Aged 19 to 64 Years. Volume 3 Vitamin and Mineral Intake and Urinary Analytes*. London: The Stationery Office.

National policy drivers (2)

Tool H10

Policies and programmes related to healthy eating, physical activity and the wider determinants of health

www

For fuller details of these documents, and how they relate to hypertension, see www.fph.uk, under Policy and Communications, Publications, 'Easing the Pressure: Tackling Hypertension'.

ENGLAND

HEALTHY EATING

Alcohol Harm Reduction Strategy for England (2004)

www.strategy.gov.uk

Better Hospital Food Programme (Ongoing)

www.betterhospitalfood.com

Food and Health Action Plan (2005)

www.dh.gov.uk

Food in Schools Programme (Ongoing)

www.dh.gov.uk

Healthy Start (2005)

www.dh.gov.uk

National Healthy Schools Programme (Ongoing)

www.wiredforhealth.gov.uk

The Strategy for Sustainable Farming and Food: Facing the Future (2003)

www.defra.gov.uk

5 A DAY Programme (Ongoing)

www.5aday.nhs.uk

PHYSICAL ACTIVITY

Activity Co-ordination Team (Ongoing)

www.dh.gov.uk

Game Plan: A Strategy for Delivering Government's Sport and Physical Activity Objectives (2002)

www.number10.gov.uk

Local Exercise Action Plan (Ongoing)

www.dh.gov.uk

New Opportunities in PE and Sport Initiative (Ongoing)

www.nof.org.uk

Safe Routes to School (Ongoing)

www.saferoutestoschools.org.uk

WIDER DETERMINANTS

Every Child Matters: Change for Children (2004)

www.everychildmatters.gov.uk

Health and Social Care Act 2001: Health Scrutiny Provisions

www.legislation.hmsa.gov.uk

Health Inequality Targets (2002)

www.dh.gov.uk

Healthy Living Centre Programme (Ongoing)

www.nof.org.uk

Local Government Act 2000

www.hmsa.gov.uk

New Deal for Communities (Ongoing)

www.neighbourhood.gov.uk

NHS Plan. A Plan for Investment. A Plan for Reform (2000)

www.nhs.uk/nhsplan

Opportunities for All: Tackling Poverty and Social Exclusion (Ongoing)

www.dwp.gov.uk

Skills and Knowledge Programme (Ongoing)

www.neighbourhood.gov.uk

Sure Start (Ongoing)

www.surestart.gov.uk

Tackling Health Inequalities. A Programme for Action (2003)

www.dh.gov.uk

SCOTLAND

HEALTHY EATING

Eating for Health – Meeting the Challenge (2004)

www.scotland.gov.uk

Heart Health National Learning Network (Ongoing)

www.phis.org.uk

Healthy Living Programme (Ongoing)

www.healthyliving.gov.uk

Healthy Start (2005)

www.dh.gov.uk

Hungry for Success: A Whole School Approach to School Meals in Scotland. Final Report of the Expert Panel on School Meals (2002)

www.scotland.gov.uk

Plan for Action on Alcohol Problems (2002)

www.alcoholinformation.isdscotland.org

Scottish Community Diet Project (Ongoing)

www.dietproject.org.uk

Scottish Healthy Choices Award Scheme (Ongoing)

www.shcas.co.uk

PHYSICAL ACTIVITY

Active Schools Strategy (Ongoing)

www.scotland.gov.uk

Let's Make Scotland More Active: A Strategy for Physical Activity (2003)

www.scotland.gov.uk

New Opportunities in PE and Sport Initiative (Ongoing)

www.nof.org.uk

Safe Routes to School (Ongoing)

www.scotland.gov.uk

www.saferoutestoschool.org.uk

D
Resources

WIDER DETERMINANTS

Being Well – Doing Well (Ongoing)

www.healthpromotingschools.co.uk

Coronary Heart Disease, Stroke and Cancer Programme (Ongoing)

www.nof.org.uk

Early Years National Learning Network (Ongoing)

www.ltsotland.org.uk

Fair for All (2002)

www.scotland.gov.uk

Health and Homelessness Guidance (2001)

www.scotland.gov.uk

Healthy Living Centre Programme

www.nof.org.uk

NHS Reform (Scotland) Act (2004)

www.legislation.hmsa.gov.uk

Our Community's Health: Guidance on the Preparation of Joint Health Improvement Plans (2001)

www.show.scot.nhs.uk

Partnership for Care (2003)

www.scotland.gov.uk

Scotland's Health At Work Scheme (Ongoing)

www.shaw.uk.com

Starting Well (Ongoing)

www.phis.org.uk

Sure Start (Ongoing)

www.surestart.gov.uk

WALES

HEALTHY EATING

Community Food Initiative (Ongoing)

www.cmo.wales.gov.uk

Food and Fitness Health Promoting Grants (Ongoing)

www.wales.gov.uk

Food and Well Being – Reducing Inequalities through a Nutrition Strategy for Wales (2003)

www.food.gov.uk

Healthy Start (2005)

www.dh.gov.uk

Investing in a Better Start: Promoting Breastfeeding in Wales (2001)

www.wales.gov.uk

National Healthy Schools Programme

www.wiredforhealth.gov.uk

Nutrition and Catering Framework (2002)

www.wales.nhs.uk

5 A DAY Programme (Ongoing)

www.5aday.nhs.uk

PHYSICAL ACTIVITY

Climbing Higher – Sport and Active Recreation in Wales (2003)

www.wales.gov.uk

Healthy and Active Lifestyles in Wales: A Framework for Action (2003)

www.cmo.wales.gov.uk

New Opportunities in PE and Sport Initiative

www.nof.org.uk

Physical Education and School Sport Task Force (Ongoing)

www.hp.wales.gov.uk

Road Safety Strategy for Wales (2003)

www.wales.gov.uk

Safe Routes to Schools Initiative (Ongoing)

www.saferoutestoschool.org.uk

Transport Framework for Wales (2001)

www.wales.gov.uk

Walking and Cycling Strategy for Wales (2002)

www.wales.gov.uk

WIDER DETERMINANTS

Coronary Heart Disease, Stroke and Cancer Programme

www.nof.org.uk

Inequalities in Health (Ongoing)

www.cmo.wales.gov.uk

The Review of Health and Social Care in Wales (2003)

www.wales.nhs.uk

Sure Start (Ongoing)

www.surestart.gov.uk

NORTHERN IRELAND

HEALTHY EATING

Catering for Healthier Lifestyles – Compulsory Nutritional Standards for School Meals (Ongoing)

www.deni.gov.uk

Fit Futures: Focus on Food, Activity and Young People (2004)

www.investingforhealthni.gov.uk

Fresh Fruit in Schools (Ongoing)

www.investingforhealthni.gov.uk

Health Promoting Schools Initiative (Ongoing)

www.investingforhealthni.gov.uk

PHYSICAL ACTIVITY

A Five Year Physical Activity Strategy and Action Plan (2004)

www.dhsspsni.gov.uk

Northern Ireland Cycling Strategy (2000)

www.healthpromotionagency.org.uk

Walking Northern Ireland: An Action Plan (2003)

www.roadsni.gov.uk

WIDER DETERMINANTS

Coronary Heart Disease, Stroke and Cancer Programme (Ongoing)

www.nof.org.uk

A Healthier Future: A Twenty Year Vision for Health and Wellbeing in Northern Ireland 2005-2025 (2004)

www.dhsspsni.gov.uk

People and Places: A Strategy for Neighbourhood Renewal (2003)

www.dsdni.gov.uk

Sure Start (Ongoing)

www.surestart.gov.uk

Workplace for Health (Ongoing)

www.workingforhealthni.gov.uk

The GMS contract: quality indicators for hypertension

In the GMS contract¹ there are 173 quality points available for blood pressure measurement, and hypertension detection and control (which can be found under the sub-domains of hypertension, coronary heart disease, stroke and diabetes) out of a total of 550 points in the entire clinical domain. All *minimum* thresholds are 25%.

Indicator	Points	Maximum Threshold
Records		
BP 1 The practice can produce a register of patients with established hypertension.	9	N/A
Records 11 The blood pressure of patients aged 45 and over is recorded in the preceding 5 years for at least 55% of patients.	10	N/A
Records 17 The blood pressure of patients aged 45 and over is recorded in the preceding 5 years for at least 75% of patients.	5	N/A
Diagnosis and initial management		
BP 2 The percentage of patients with hypertension whose notes record smoking status at least once.	10	90%
BP 3 The percentage of patients with hypertension who smoke, whose notes contain a record that smoking cessation advice has been offered at least once.	10	90%
Ongoing management		
BP 4 The percentage of patients with hypertension in which there is a record of the blood pressure in the last nine months.	20	90%
BP 5 The percentage of patients with hypertension in whom the last blood pressure (measured in the last nine months) is 150/90 or less.	56	70%
Stroke 5 The percentage of patients with TIA [transient ischaemic attacks] or stroke whose notes have a record of blood pressure in the previous 15 months.	2	90%
Stroke 6 The percentage of patients with a history of TIA or stroke in which the last blood pressure reading (measured in the last 15 months) is 150/90 or less.	5	70%
CHD 5 The percentage of patients with CHD whose notes have a record of blood pressure in the previous 15 months.	7	90%
CHD 6 The percentage of patients with CHD in whom the last blood pressure reading (measured in the last 15 months) is 150/90 or less.	19	70%
Diabetes 11 The percentage of patients with diabetes who have a record of the blood pressure in the last 15 months.	3	90%
Diabetes 12 The percentage of patients with diabetes in whom the last blood pressure is 145/85 or less.	17	55%

Reference

- 1 Department of Health. General Medical Services (GMS) contract. Accessed on 21 January 2005 from: <http://www.dh.gov.uk/PolicyAndGuidance/OrganisationPolicy/PrimaryCare/PrimaryCareContracting/fs/en>

Patients' thoughts and feelings about taking medicines for hypertension

Tool H12

This information is taken from a qualitative study on patients' views of antihypertensive drugs.¹

Reservations about drugs generally

- Drugs are best avoided.
- Drugs are unnatural or unsafe.
- Drugs are perceived adversely because of previous experience.
- Drugs are signifiers of ill health.
- Patient brought up to avoid drugs.
- Doctors prescribe drugs too readily.

Reservations about antihypertensive drugs

- Desire to discontinue using antihypertensives.
- Preference for an alternative to drugs.
- Patients questioned continued necessity.
- Possible long-term or hidden risk.

Patients' reasons for taking antihypertensive drugs

- Advice from doctors.
- Trust in doctors.
- Improvement in blood pressure readings.

Perceived benefits of medication

- Achieving a good outcome.
- Feeling better.
- Gaining peace of mind.

Pragmatic considerations

- Absence of a practical alternative to drugs.
- Absence of symptoms to guide medicine use.
- Drugs use overshadowed by some other consideration.

Reference

- 1 Benson J, Britten N. 2002. Patients' decisions about whether or not to take antihypertensive drugs: qualitative study. *British Medical Journal*; 323:873.

D

Resources

Suggested minimum content of care plans and patient-held records for hypertension

Care plans

Jointly agreed personal care plans should:

- be negotiated and agreed following a full explanation and discussion of the choices to be made between the person with hypertension (and/or their partner or carers, if appropriate) and the health professionals involved in that individual's care
- be set out in a way that is understandable and clear
- be kept in the patient's record and copied to the person with hypertension (and/or their partner or carers, if appropriate)
- be kept up-to-date
- set out the treatment plan, goals and management targets
- record blood pressure measurements, and give an explanation of how these relate to the goals and management targets
- specify what care the person should expect to support the treatment plan, who will provide it and where it will be provided
- advise on how to prevent and manage the complications of hypertension
- set the date of the next review.

Patient-held records

Records should contain as a minimum:

- background information on hypertension
- patient contact details, including those of the health professionals providing care
- medical and other relevant details
- treatment regime
- instructions for emergencies
- the care plan
- items to be covered at annual and other checks
- an education checklist
- a glossary of medical terms
- space for the patient's own notes.

Note: If a patient with hypertension has a co-morbidity, such as diabetes or coronary heart disease, the above information should be incorporated into their existing care plan and patient-held record.

Ways of involving patients and the public in tackling hypertension

Tool H14

Patient and public involvement is now a core part of health service development and decision-making. Without it, truly responsive services cannot be delivered. This tool outlines the benefits of public and patient participation in developing a local hypertension strategy, as well as the statutory requirements.

Benefits

Patient and public involvement has the following benefits.

- It informs the development of improved patient-centred services and service delivery.
- It increases patient satisfaction, through a sense of greater involvement and being listened to.
- Engagement in developing appropriate care plans and services can increase concordance.
- It improves relationships, through increased understanding and trust between, on the one hand, managers and professionals, and on the other, patients, carers and the public.
- It helps to provide services which are culturally sensitive and appropriate, and which are tailored to an individual's particular needs.
- It helps to inspire change and innovation in service delivery.
- It helps to build solid community partnerships.
- It demonstrates a willingness by organisations to be held more accountable to patients and the public.
- It meets statutory requirements.

Statutory requirements for patient and public involvement

Key policy drivers include:

In England:	Health and Social Care Act 2001 (www.legislation.hmsso.gov.uk) The NHS Plan (www.dh.gov.uk) Planning and Priorities Framework 2005-2008 (www.dh.gov.uk) Local authorities also have a duty to scrutinise local NHS.
In Scotland:	Our National Health: A Plan for Action, A Plan for Change (www.scotland.gov.uk) Patient Focus and Public Involvement (www.scotland.gov.uk)
In Wales:	Improving Health in Wales (www.wales.gov.uk) Signposts – A Practical Guide to Public and Patient Involvement in Wales (www.wales.nhs.uk)
In Northern Ireland:	A Healthier Future: A Twenty Year Vision for Health and Wellbeing in Northern Ireland 2005-2025 (www.dhsspsni.gov.uk) Good Practice Review on User Involvement – Proposed Guidelines (www.dhsspsni.gov.uk)

Performance assessment

Patient and public involvement processes are subject to performance assessment through bodies such as the Healthcare Commission (in England).

Ways of involving the public and patients

- Individual feedback or contributions to care plans
- Consultation and formal evaluation of services
- Focus groups for feeding back thoughts and feelings on services
- Project working groups
- Patient forums
- Planning groups
- Patient Environment Action Teams (PEAT)
- Expert Patients Programme
- Patient Advocacy and Liaison Services
- Independent Complaints Advocacy Services
- Commission for Patient and Public Involvement in Health (England)
- Patient and Public Involvement Forums (England)
- Voluntary and charity organisations
- Independent Local Authority Forums
- Local healthcare cooperatives

For more information on patient and public involvement

England

Commission for Patient and Public Involvement in Health

The Commission's role is to make sure the public is involved in decision-making about health and health services in England through Patient and Public Involvement (PPI) Forums – one for each NHS Trust. **www.cppih.org**

Health in Partnership

A research programme to support greater patient, carer and public participation in healthcare decision-making. Provides links to online publications and useful websites.

www.healthinpartnership.org

Medicines Partnership

This is an initiative supported by the Department of Health, aimed at enabling patients to get the most out of medicines, by involving them as partners in decisions about treatment and supporting them in medicine-taking. **www.medicines-partnership.org**

Scotland

Involving People

Part of the Scottish Executive's commitment to improving public and patient involvement. Provides details on training, initiatives and projects being undertaken in Scotland, and links to publications. **www.show.scot.nhs.uk/involvingpeople**

Wales

NHS Wales

Provides links to policy on patient and public involvement. **www.wales.nhs.uk**

Northern Ireland

Department of Health, Social Services and Personal Safety

Provides links to policy on patient and public involvement. **www.dhsspsni.gov.uk**

Performance assessment: examples of indicators

Tool H15

This tool gives examples of indicators that could be used to assess performance of a local hypertension prevention and control programme.

DOMAIN	INDICATOR
Fair access	<ul style="list-style-type: none">• Equity of access to dietetic advice.• Equity of access to exercise advice.• Equity of access to blood pressure monitoring and control.
Effective delivery of appropriate healthcare	<ul style="list-style-type: none">• As per current Quality and Outcomes Framework of the GMS contract.
Efficiency	<ul style="list-style-type: none">• Annual cost per patient on the hypertension register who achieves satisfactory control as per current Quality and Outcomes Framework.
Patient/carer experience	<ul style="list-style-type: none">• Waiting time for appointments.• Patient-reported control of side-effects.• Patient-reported quality of life.
Intermediate outcomes	<ul style="list-style-type: none">• Percentage of population aware of hypertension and its importance.• Percentage of population who 'know their number'.
Health improvement	<ul style="list-style-type: none">• Percentage of patients on the hypertension register who achieve satisfactory control as per current Quality and Outcomes Framework.• Percentage of target population who maintain or lose weight.
Final health outcomes	<ul style="list-style-type: none">• Prevalence of uncontrolled hypertension in defined high-risk populations.• Incidence of stroke in the under-75s in the general population.
Inputs	<ul style="list-style-type: none">• Partners involved.• Level of funding secured.• Number and types of professionals involved.

Further reading

This section gives a list of publications that may be useful for developing strategies on hypertension. For contact details of the organisations producing these documents see *Useful organisations* on page 107 (unless specified below).

UK

Fuel Poverty and Health. A Toolkit for Primary Care Organisations, and Public Health and Primary Care Professionals

National Heart Forum, the Eaga Partnership Charitable Trust, the Faculty of Public Health Medicine and the Met Office

Let's Get Moving: A Physical Activity Handbook for Developing Local Programmes

Faculty of Public Health Medicine and the National Heart Forum

A Lifecourse Approach to Coronary Heart Disease Prevention. Scientific and Policy Review

National Heart Forum

Nutrition and Food Poverty: A Toolkit for Those Involved in Developing or Implementing a Local Nutrition and Food Poverty Strategy

National Heart Forum, Faculty of Public Health, Government Office for the North West, Government Office for the West Midlands and the West Midlands Public Health Observatory.
Available from the National Heart Forum.

Salt and Health

Scientific Advisory Committee on Nutrition

Stroke – Good Practice in Primary Care

Stroke Association

Tackling Obesity: A Toolkit for Local Partnership Action

Faculty of Public Health Medicine (now Faculty of Public Health)

Young@heart. Towards a Generation Free from Coronary Heart Disease. Policy Action for Children's and Young People's Health and Well-being

National Heart Forum

CLINICAL GUIDELINES:

Guidelines for Management of Hypertension: Report of the Fourth Working Party of the British Hypertension Society, 2004-BHS IV

British Hypertension Society

England

DOCUMENTS AVAILABLE FROM THE DEPARTMENT OF HEALTH:

At Least Five a Week: Evidence on the Impact of Physical Activity and its Relationship to Health – A Report from the Chief Medical Officer

Choosing Health: Making Healthy Choices Easier

(Public Health White Paper)

Improvement, Expansion and Reform – the Next 3 Years: Priorities and Planning Framework 2003-2006

National Service Framework for Children, Young People and Maternity Services

National Service Framework for Coronary Heart Disease

National Service Framework for Diabetes

National Service Framework for Older People

National Service Framework for Renal Services (Parts 1 and 2)

National Standards, Local Action 2005/06-2007/08

NHS Plan. A Plan for Investment. A Plan for Reform

Saving Lives: Our Healthier Nation

Tackling Health Inequalities – A Programme for Action

OTHER PUBLICATIONS:

Game Plan: A Strategy for Delivering Government's Sport and Physical Activity Objectives

Department for Culture, Media and Sport and the Strategy Unit

www.number-10.gov.uk/su/sport/report/01.htm

Government Spending Review 2004

HM Treasury

www.hm-treasury.gov.uk

HDA Evidence Briefing: The Management of Obesity and Overweight: An Analysis of Reviews of Diet, Physical Activity and Behavioural Approaches

Health Development Agency

Health Surveys for England (particularly 1998, 1999 and 2003)

The Stationery Office

Also available from the Department of Health

Investing in General Practice. The New GMS Contract

NHS Confederation and the British Medical Association

Available from NHS Confederation: www.nhsconfed.org

Local Government Act

Local Public Service Agreements

Public Service Agreements

Available from the Office of the Deputy Prime Minister

www.odpm.gov.uk

Storing up Problems. The Medical Case for a Slimmer Nation

Royal College of Physicians, the Royal College of Paediatrics and Child Health, and the Faculty of Public Health

Available from the Faculty of Public Health

CLINICAL GUIDELINES:

Management of Hypertension in Adults in Primary Care

National Institute for Clinical Excellence (now the National Institute for Health and Clinical Excellence)

PRODIGY Guidance

Offers advice on the management of conditions and symptoms commonly seen in primary care.
www.prodigy.nhs.uk

Scotland

DOCUMENTS AVAILABLE FROM THE SCOTTISH EXECUTIVE:

Coronary Heart Disease and Stroke: Strategy for Scotland

Improving Health in Scotland: the Challenge – Framework for Action

Let's Make Scotland More Active – A Strategy for Physical Activity

Towards a Healthier Scotland: A White Paper on Health 1999

CLINICAL GUIDELINES:

Hypertension in Older People (No. 49)

Scottish Intercollegiate Guidelines Network

Wales

DOCUMENTS AVAILABLE FROM THE WELSH ASSEMBLY GOVERNMENT:

Healthy and Active Lifestyles in Wales. A Framework for Action

Promoting Health and Well-being: Implementing the National Health Promotion Strategy

Well-being in Wales 2002

OTHER PUBLICATIONS:

Tackling Coronary Heart Disease in Wales: Implementing through Evidence

National Assembly for Wales

Northern Ireland

DOCUMENTS AVAILABLE FROM THE DEPARTMENT OF HEALTH, SOCIAL SERVICES AND PUBLIC SAFETY:

Investing for Health

Northern Ireland Evidence-based Stroke Strategy

A Five Year Physical Activity Strategy and Action Plan

Well into 2000

International

DOCUMENTS AVAILABLE FROM THE WORLD HEALTH ORGANIZATION:

Global Strategy on Diet and Physical Activity

Diet, Nutrition and the Prevention of Chronic Disease: Report of a Joint World Health Organization/Food and Agriculture Organization Expert Consultation

World Health Report: Reducing Risks, Promoting Health

OTHER PUBLICATIONS:

European Society of Hypertension/European Society of Cardiology Guidelines for the Management of Arterial Hypertension

www.eshonline.org/esh/index.asp

Information for patients

Below is a list of resources – including publications and website information – which may be useful for patients with hypertension, and for their carers, family or friends. For further contact details of organisations see page 107.

Best Treatments

www.besttreatments.co.uk

Joint initiative from NHS Direct and BMJ Publishing to provide clinical evidence for patients.

Blood Pressure Association

www.bpassoc.org.uk

Booklets and leaflets

You and Your Blood Pressure

A general guide to high blood pressure, its management and treatments.

Healthy Eating and Blood Pressure

A guide to lowering blood pressure through changes to diet and lifestyle.

Medicines for High Blood Pressure

A guide to the groups of medicines available for high blood pressure, side-effects and commonly asked questions.

British Dietetic Association

Weight Wise website: www.bdaweightwise.com/bda

British Heart Foundation

www.bhf.org.uk

Provides information on high blood pressure for patients, their families and friends.

Booklets

Blood Pressure

Physical Activity and Your Heart

CASH

www.actiononsalt.org.uk

CASH (Consensus Action on Salt and Health) runs an annual campaign to reduce the amount of salt in our diets. This includes an annual National Salt Awareness Day. Their website gives information about salt, tips on how to reduce salt in the diet, and a collection of low-salt recipes.

Department of Health (England)

www.dh.gov.uk

The Expert Patients Programme

www.expertpatients.nhs.uk

T 0845 606 6040

Leaflet

5 A Day

Gives advice on how to achieve the recommendation of at least five portions of a variety of fruit and vegetables each day. (See www.5aday.nhs.uk)

Diabetes UK

www.diabetes.org.uk

Provides information on hypertension, its management and treatment, particularly for people with diabetes.

DIPEX

www.dipex.org

The Database of Individual Patient Experiences (DIPEX) is based on patients' personal accounts of their illness. To discover that you have a serious illness can be confusing and frightening. DIPEX gives patients access to the experiences of people who have gone through the same thing.

Patients can watch, listen to or read interviews, learn more about high blood pressure and its treatments, and find out where to get support and more detailed medical information.

DIPEX links to evidence-based information about the illness and its treatments, and covers other major diseases as well as hypertension. DIPEX is available both via the web and on CD-ROM.

Food Standards Agency

www.food.gov.uk

Provides an online resource on salt – as part of its 'Sid the Slug' information campaign. It also provides extensive information on food and diet – both online and published information.

Leaflets

Salt

Salt: Facts for a Healthy Heart (Produced jointly with the British Heart Foundation)

National Kidney Federation

www.kidney.org.uk

Provides information for people with kidney disease.

Prodigy

www.prodigy.nhs.uk

Offers advice on the management of conditions and symptoms commonly seen in primary care.

Patient Information Leaflets are an integral part of PRODIGY guidance and are designed to be easily understandable by people who are not healthcare professionals.

Stroke Association

www.stroke.org.uk

Provides information on blood pressure.

Booklets

Blood Pressure and Stroke

How to Reduce Your Risk of a Stroke

Medicines for High Blood Pressure

Useful organisations

UK

Blood Pressure Association

60 Cranmer Terrace
London SW17 0QS
T 020 8772 4994
W www.bpassoc.org.uk

British Dietetic Association

5th Floor
Charles House
148/9 Great Charles Street
Queensway
Birmingham B3 3HT
T 0121 200 8080
E info@bda.uk.com
W www.bda.uk.com

British Heart Foundation

14 Fitzhardinge Street
London W1H 6DH
Heart Information Line: 08450 70 80 70
T 020 7935 0185
W www.bhf.org.uk

British Hypertension Society

Information Service
Blood Pressure Unit
Department of Physiological Medicine
St George's Hospital Medical School
Cranmer Terrace
London SW17 0RE
W www.hyp.ac.uk

Consensus Action on Salt and Health

Blood Pressure Unit (Administration)
Department of Medicine
St George's Hospital Medical School
London SW17 0RE
T 020 8266 6498
W www.actiononsalt.org.uk

Diabetes UK

10 Parkway
London NW1 7AA
Helpline: 020 7424 1030
T 020 7424 1000
E info@diabetes.org.uk
W www.diabetes.org.uk

Faculty of Public Health

4 St Andrews Place
London NW1 4LB
T 020 7935 0243
E enquiries@fph.org.uk
W www.fph.org.uk

Food Standards Agency

UK Headquarters
Aviation House
125 Kingsway
London WC2B 6NH
T 020 7276 8000
W www.food.gov.uk (provides links to other UK sites)
www.salt.gov.uk (dedicated online resource on salt)

National Heart Forum

Tavistock House South
Tavistock Square
London WC1H 9LG
T 020 7383 7638
E nhf-post@heartforum.org.uk
W www.heartforum.org.uk

National Kidney Federation

6 Standley Street
Worksop
Nottinghamshire S81 7HX
Helpline: 0845 601 0209
T 01909 487795
W www.kidney.org.uk

PharmacyHealthLink

1 Lambeth High Street
London SE1 7JN
T 020 7572 2265
E info@pharmacyhealthlink.org.uk
W www.pharmacyhealthlink.org.uk

Royal College of General Practitioners

14 Princes Gate
Hyde Park
London SW7 1PU
T 020 7581 3232
E info@rcgp.org.uk
W www.rcgp.org.uk

Royal College of Nursing

20 Cavendish Square
London W1G 0RN
T 020 7409 3333
W www.rcn.org.uk

Royal Institute of Public Health

28 Portland Place
London W1B 1DE
T 020 7580 2731
W www.riph.org.uk

Royal Pharmaceutical Society of Great Britain

1 Lambeth High Street
London SE1 7JN
T 020 7735 9141
E enquiries@rpsgb.org
W www.rpsgb.org.uk

Royal Society for the Promotion of Health

38a St George's Drive
London SW1V 4BH
T 020 7630 0121
E rsph@rsph.org
W www.rsph.org

Stroke Association

Stroke House
240 City Road
London EC1V 2PR
Stroke Helpline: 0845 30 33 100
T 020 7556 0300
W www.stroke.org.uk

UK Public Health Association

7th Floor
Holborn Gate
330 High Holborn
London WC1V 7BA
T 0870 010 1932
E info@ukpha.org.uk
W www.ukpha.org.uk

England

Alcohol Concern

www.alcoholconcern.org.uk

Department of Health

www.dh.gov.uk

Institute of Health Promotion and Education

www.ihpe.org.uk

Medicines Partnership Taskforce

www.medicines-partnership.org

National Institute for Health and Clinical Excellence

(Formed following the merger of the National Institute for Clinical Excellence and the Health Development Agency.)
www.nice.org.uk

Royal College of Physicians

www.rcplondon.ac.uk

Scotland

Alcohol Focus Scotland

www.alcohol-focus-scotland.org.uk

Chest, Heart and Stroke Scotland

www.chss.org.uk

NHS Health Scotland

www.healthscotland.com

Royal College of Physicians and Surgeons of Glasgow

www.rcpsglasg.ac.uk

Royal College of Physicians of Edinburgh

www.rcpe.ac.uk

Scottish Community Diet Project

www.dietproject.org.uk

Scottish Executive

www.scotland.gov.uk

Scottish Intercollegiate Guidelines Network

www.sign.ac.uk

Wales

National Assembly for Wales

www.wales.gov.uk

NHS Wales

www.wales.nhs.uk

Welsh Assembly Government

www.wales.gov.uk

Northern Ireland

Department of Health, Social Services and Public Safety

www.dhsspsni.gov.uk

Northern Ireland Chest, Heart and Stroke Association

www.nichsa.com

International

European Society of Hypertension

www.eshonline.org

World Health Organization

www.who.int

Acronyms

BHS	British Hypertension Society
BMI	Body Mass Index
BP	blood pressure
CASH	Consensus Action on Salt and Health
CHD	coronary heart disease
CMO	Chief Medical Officer
CVD	cardiovascular disease
DBP	diastolic blood pressure
EPP	Expert Patients Programme
FPH	Faculty of Public Health
FSA	Food Standards Agency
GMS	General Medical Services
HDA	Health Development Agency
HDL	high-density lipoprotein
ISH	isolated systolic hypertension
LDL	low-density lipoprotein
LDP	Local Delivery Plan
NHF	National Heart Forum
NICE	National Institute for Health and Clinical Excellence
NSF	National Service Framework
PCO	primary care organisation
PCT	primary care trust
QMAS	Quality Management and Analysis System
QOF	Quality and Outcomes Framework
QPID	Quality Prevalence and Indicator Database
RCT	randomised controlled trial
SACN	Scientific Advisory Committee on Nutrition
SBP	systolic blood pressure
SIGN	Scottish Intercollegiate Guidelines Network
TIA	transient ischaemic attack
UKPDS	UK Prospective Diabetes Study
WHO	World Health Organization

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