

Health: determinants and inequalities

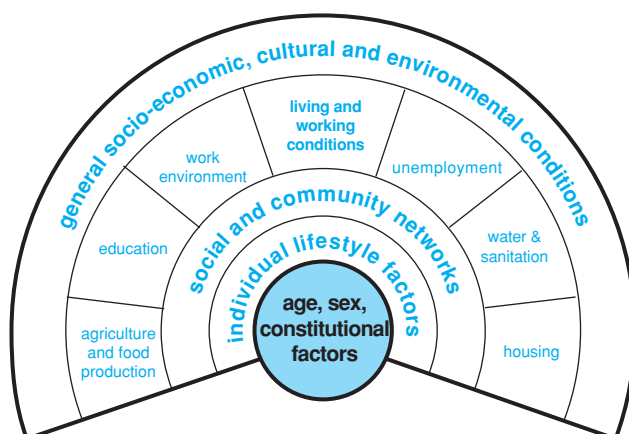


1.1 A model for health

In 1946 the World Health Organisation (WHO) defined health as a 'state of complete physical, mental and social well-being and not merely the absence of disease or infirmity'^[1].

There are several factors that determine how healthy we are. Dahlgren & Whitehead described these factors as different spheres of influence, which range from the individual to societal levels^[3] (see Figure 1.1). This model highlights the existence of wider determinants of health that are beyond the direct influence of the individual. In addition to addressing individual factors, tackling these wider determinants of health is one of the key roles of Public Health, requiring strong partnerships with other organisations (see section 2: *Tackling health inequalities*). Dahlgren & Whitehead's model provides a practical framework for considering both lifestyle and wider determinants of the public's health. Here we explore some of the national evidence for what determines health.

Figure 1.1 The Dahlgren & Whitehead model



Source *Policies and strategies to promote social equity in health*

public health

... the science and art of preventing disease, prolonging life and promoting health through the organised efforts of society^[2]

1.2 Individual lifestyle factors

1.21 Smoking

Smoking is the biggest cause of preventable death in the western world^[4]. It kills more than 120,000 in the UK every year, mainly due to cancer, bronchitis, emphysema and coronary heart disease and costs the NHS up to £1.9 billion annually^[5]^[6]. Currently there are about 13 million smokers in the UK, about a quarter of the population^[4]^[7]. However, the proportion of people in less affluent groups who smoke is far higher, contributing to their lower life expectancy when compared to life expectancy for more affluent groups^[4]^[8]. Smoking also accounts for a greater proportion of disposable income amongst the poorest groups, further impacting on living standards and health^[9]. Smoking even affects non-smokers, with environmental tobacco smoke probably leading to several hundred extra deaths due to heart disease and cancer^[10]. Children whose parents smoke are much more likely to develop lung illness and asthma than children of non-smoking parents^[11]. Smoking in pregnancy is also likely to damage the health of the baby and lead to low birth weight, which can have a negative impact on a child's future health^[4]^[12]. The Government's tobacco strategy has three broad aims – to reduce the number of children under 16 years old who smoke; to help adults stop smoking; and to provide special support to pregnant women.

Further information, *Smoking Kills* can be found on the internet at:

<http://www.official-documents.co.uk/document/cm41/4177/4177.htm>

Harrow PCT Corporate Objective: **a tobacco strategy will be developed by September 2004**

1.22 Diet

The food we eat has a significant impact on health. For coronary heart disease alone it has been estimated that up to a third of all deaths are attributable to dietary factors^[13]. A two point reduction in average blood pressure across the population due to a small reduction in salt intake could reduce rates of stroke by 16 per cent and coronary heart disease by six per cent^[14]; 75 per cent of the salt we consume comes from processed foods^[15]. Diet is also thought to play a role in about a quarter of the 30,000 premature cancer deaths each year^[15]. After reducing smoking, increased consumption of fruit and vegetables may be the most effective way to prevent cancer^[15].

In England, over one fifth of the population is obese, causing an estimated 30,000 deaths in 1998 alone^[16]. A further 47 per cent of men and a third of women are classified as overweight^[15]. Being overweight or obese predisposes people to type II diabetes, heart disease, high blood pressure and some types of cancer^[16].

Despite a high awareness of the need to eat a healthy diet, the majority of people consume less than the recommended amount of fruit, vegetables and fibre but more than the recommended amounts of fat, saturated fat, salt and sugar^[15]. However there are marked differences in consumption patterns across income levels in the population^[8]. For example, children from less advantaged households eat on average half as much fruit and vegetables as children from high income households^[17]. For the poorest fifth of the population, food costs account for about one third of the household budget (30 per cent), compared to the national average of just 16 per cent^[15].

Further information:

<http://www.doh.gov.uk/fiveaday/index.htm>

Harrow PCT Corporate Objective: **a healthy eating partnership board will be established in 2004 and a healthy eating strategy will be developed by November 2004**

1.23 Physical activity

To maintain health, the Department of Health recommends at least 30 minutes of moderate activity on five or more occasions each week. However, six out of ten men and seven out of ten women do not meet this standard ^[13]. Among children, four out of ten boys and five out of ten girls are not meeting the recommended one hour of daily exercise ^[13]. The health consequences of physical inactivity are considerable. The risk of coronary heart disease (CHD) and stroke due to inactivity is estimated to be similar to that due to smoking, having raised cholesterol levels or high blood pressure ^[18]. It is estimated that over a third of CHD deaths in the UK are the result of physical inactivity (36 % men; 38 % women). Also, that nine per cent of all deaths due to CHD could be avoided if people who are currently sedentary increased their level of physical activity to recommended levels ^[13]. Physical activity has also been shown to benefit a range of other conditions associated with cardiovascular conditions including hypertension ^[19], weight control ^[20], the prevention of type II diabetes ^[21] and management of types I and II diabetes ^[22]. There is also evidence to suggest that sedentary people have between 1.2 and 3.6 times greater risk of developing colon cancer compared to the most active people ^{[23][24]}. Physical health is also related to a person's quality of life and psychological well-being. Physical activity can help relieve anxiety and depression ^[24]. Additionally, physical exercise during childhood can help prevent osteoporosis ^[25], and in older people it can help reduce the risk of injury due to falls and accidents ^[26].

A £2.6 million programme of Local Exercise Action Pilots (LEAP) starts September 2003. Jointly funded by the Department of Health, the Countryside Agency and Sport England, the LEAP initiative aims to encourage people to become more active. Later in 2003 the Chief Medical Officer will publish *Physical Activity: Making the Case* which will set out in detail the links between health outcomes and physical inactivity.

Further information about LEAP:

<http://www.doh.gov.uk/leap/index.htm>

Harrow PCT Corporate Objective: **a physical activity strategy will be developed by March 2004**

1.3 The wider determinants of health

1.31 Employment and unemployment experience

In addition to providing income, employment also has an important social role by defining status. Unemployment may be detrimental to health due to increased poverty and hardship, social exclusion and effects on psychological well-being ^[8]. Families whose head of household is unemployed are at a higher risk of poverty and single parents face many barriers to employment ^[8] ^[27] ^[28]. London has twice the national proportion of children living in households with non-earning adults ^[29]. A study of mortality found that all major causes of mortality including suicide were higher than average amongst unemployed men (unemployment representing a 20 per cent excess risk of mortality)^[30]. Additionally, individuals with poor health are themselves more likely to be unemployed ^[8]. Those most likely to be unemployed include young adults, people from minority ethnic groups and unskilled workers ^[8]. Unemployment is also associated with low educational attainment (see 1.32), poor housing (see 1.33) and individual lifestyle factors that can be detrimental to health (see 1.2).

Further information:

<http://www.archive.officialdocuments.co.uk/document/doh/ih/ih.htm>

1.32 Education

Many studies have found that education is closely correlated with health and health-related behaviour ^[31]. This may be because educational level is a marker for other health-related influences such as socio-economic status, occupation or lifestyle (see sections on smoking, physical activity and diet) ^[8]. However, those with low levels of educational achievement tend to experience poorer adult health ^[32]. This may be because education ^[8]:

- influences income, housing and other material resources,
- provides children with the practical, social and emotional knowledge to achieve a full and healthy life,
- encourages children to participate fully in society, making children socially aware,
- provides an environment and culture that is safe, healthy and conducive to learning.

Schools also present excellent opportunities for health promotion. For example, the National School Fruit Scheme, which is part of the 5-a-day Programme to increase fruit and vegetable consumption, offers all four to six year-old children in state schools a free piece of fruit or vegetable each school day ^[33].

Further information:

<http://www.doh.gov.uk/fiveaday/index.htm>

1.33 Housing

The link between housing and health was central to the sanitary movement of the 1800s and the creation of the public health system ^[34]. Despite the significant advances in public health since then, housing quality is still an important factor. The physical condition of a person's housing can directly affect their health; damp and cold have been associated with respiratory problems, infections and some allergic conditions ^[35]. London has a high proportion of old housing stock which may also be associated with fire risk, carbon monoxide poisoning, asbestos exposure and lead water pipes ^[36].

It has been estimated that the health service costs for treating ill-health resulting from sub-standard housing is £2.4 billion per year^[37]. The environment outside the home is also important and includes air quality and road traffic (see 1.34), crime, social isolation and lack of safe areas for children to play^[36]. Between an estimated 100,000 and 237,000 people in London live in temporary accommodation. Many experience overcrowded conditions leading to physical and mental health problems^[38]. High house prices and rents in London take a greater proportion of people's incomes than elsewhere in the UK and are a further contributor to housing stress^[39].

Further information:

<http://www.lho.org.uk/hil/housing.htm>

1.34 Transport

A recent report from the Social Exclusion Unit found that transport can impact on health in a variety of ways^[40]. Poor access to transport, either through limited services or high cost, can limit people's opportunity to find employment or access educational or leisure activities^[40]. Sixteen per cent of people without cars find it difficult to get to supermarkets compared with six per cent of the population as a whole^[41]. These people may have to use more limited and expensive local shops^[42]. Lack of adequate transport may also directly affect access to healthcare, with three per cent of people (over 1.4 million) having missed, turned down or not sought medical help because of transport problems during the past year^[43]. These difficulties may be especially important for older persons or people with young children. For example, more than half of older people travelling to hospitals and dentists in London experience some difficulties in getting there, as do a third of those attending GPs or health centres^[44].

Road traffic accidents are a direct health consequence of transport. Every year there are over 6500 serious road casualties in London and between 200 and 300 deaths^[45]. Estimates suggest that these cost the NHS over £4,200m per year^[45]. Road traffic accidents tend to be more frequent amongst young adults and children as well as those from more deprived areas^[45]. Children from social class V are five times more likely to die in a road accident than those from social class I^[46].

Traffic generates air pollution which directly impacts on health although quantifying the impact has proved difficult. The Committee on the Medical Effects of Air Pollution has not found evidence to support the effect of outdoor air pollution on asthma. However, other studies suggest that air pollution may bring deaths forward in vulnerable and chronically ill people^[47]. Despite some of the negative health consequences of transport, there are also potential health gains, mostly through opportunities for increasing levels of physical activity through walking and cycling.

Further information:

<http://www.socialexclusionunit.gov.uk/publications/reports/html/transportfinal/index.html>

1.4 Health inequalities

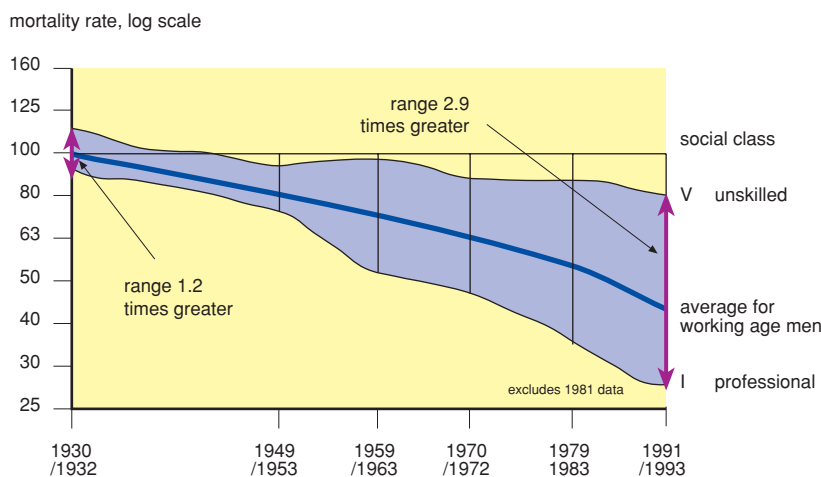
1.41 Health inequalities: the evidence

Studies into inequalities and the effect on health have a long history. In 1842, Edwin Chadwick's report *Sanitary Conditions of the Laboring Classes of Great Britain* paved the way for major public health reforms. In 1911, efforts of the social reformers Charles Booth and Seebohm Rowntree led the Registrar General of Great Britain to use occupation to classify social class, thereby identifying significant health disparities between different groups within society^[49]. The Black Report (1980) and its revision *The Health Divide* in 1985 highlighted the need to improve conditions for poorer groups, especially children^[38]. Recently, the *Independent Inquiry into Inequalities in Health* – the Acheson Report – comprehensively considered a range of factors leading to inequalities in health^[8]. Acheson has been a significant driver shaping change within the NHS, local and national government.

1.42 Social class and deprivation

Death rates amongst all social groups have been decreasing since the 1930s^[8]. However, the decrease has been much greater in professional groups than in unskilled groups (Figure 1.2). The less well off have significantly higher mortality rates for nearly all major causes of death including coronary heart disease, stroke and lung cancer^[49]. Morbidity, including mental health problems, also disproportionately affects unskilled groups^[49]. Several of the reasons for these differences are avoidable and include both lifestyle factors and wider determinants of health (see sections 1.2, 1.3).

Figure 1.2 The widening mortality gap between social classes



Notes 1979-83 excludes year 1981
England and Wales, men of working age (varies according to year) either 15 or 20 to age 60 or 65
Source ONS; Decennial Supplements, analysis by DH Statistics Division

the inverse care law

the availability of good medical care tends to vary inversely with the need for it in the population served.

1.43 Ethnicity

The 2001 Census identified approximately forty per cent of London's population as being from black or minority ethnic groups [6]. It is not possible to assess whether different ethnic groups experience variations in mortality as country of birth, rather than ethnicity, is recorded on death certificates. However, an analysis of death certificates suggests that migrants experience higher mortality for all causes than the average population [6]. South Asian and Black Caribbean populations have between 1.5 and 3 times more consultations with their GP than the general population [54].

Differences in lifestyle may also be important. Ethnic minority groups (except Black Caribbean) take less exercise. Bangladeshi and Pakistani groups consume less fresh fruit [54]. Smoking prevalence also varies between groups, with high rates in Bangladeshi men and Caribbean men and women, and low rates in South Asian women [55]. In addition to lifestyle factors, some health conditions are more prevalent in certain ethnic groups. Some of these health conditions are outlined in Table 1.1.

Table 1.1 Variations in health conditions for different ethnic groups

Diabetes	People from Bangladesh and Pakistan are about 5 times more likely to have diabetes than the general population. Indian and Caribbean people are 3 times more likely to have diabetes.
Tuberculosis	High mortality for people born in Ireland and for recent entrants to UK from South Asia.
Cardiovascular disease	Pakistani and Bangladeshi men are between 60 and 70 per cent more likely to have cardiovascular disease (CVD) than the general population. Chinese are less likely to experience CVD.
High blood pressure	Bangladeshi and Chinese men are about 25 per cent more likely to have high blood pressure than the general population. Black Caribbean and Pakistani women are also more likely to have high blood pressure.
Stroke	Rates of stroke are two thirds higher in the Black Caribbean population compared to the general population.
Cholesterol	Black Caribbean, Pakistani and Chinese men are less likely to have high total cholesterol levels.
Thalassaemia	More common amongst people from Southern Europe, the Middle East and South Asia.
Sickle cell	More prevalent in African and Caribbean populations.
Cancer	Mortality rates are high amongst people born in Ireland. People born in the Indian subcontinent and Caribbean and African Commonwealth countries have lower rates of major cancers (except cervical). Oral cancers high in South Asian and African groups.

Source Smaje [56]; ONS [54]