NHS

Health Development Agency

Cancer prevention

A resource to support local action in delivering The NHS Cancer Plan

Foreword

In September 2000 the government published the national 'cancer plan' which set out a comprehensive strategy to tackle the disease. Action on preventing cancer is key if we are to achieve the national target 'to reduce death rates from cancer in people under 75 years by at least a fifth by 2010'.

In relation to primary prevention the 'cancer plan' focused on tackling smoking, diet and nutrition, obesity, physical activity, alcohol, sunlight and radon. This document provides a resource for people working at local level to tackle these factors. It represents the first stage of support to delivering this work. Over the next year we will develop a dissemination strategy, which targets the work at different audiences using a range of approaches including briefings, seminars and articles in the professional press. In addition we will explore what further support we need to provide to help deliver this strategy.

We hope this work will support you in your local strategic planning and delivery of programmes that will prevent cancer and improve health.

Mike Richards, National Cancer Director

Yve Buckland, Chair, HDA

About the HDA

The Health Development Agency (HDA) is an NHS special health authority, established to support and enhance national efforts to improve health in England, with a particular focus on reducing health inequalities. In partnership with others, it gathers evidence of what works, advises on putting evidence into practice, and develops the skills of all those working to improve people's health.

Contents

Introduction

The Health Development Agency (HDA) has produced this document to support the implementation of the prevention aspects of *The NHS Cancer Plan* (DH, 2000a). It is aimed at people working in primary care trusts (PCTs), cancer networks, strategic health authorities, local authorities and partner agencies to assist them in their local strategic planning and delivery of initiatives to prevent cancer.

Preventing cancer is a national priority. The white paper *Saving Lives: Our Healthier Nation* set a target of 'reducing the death rate from cancer in people under 75 years by at least a fifth by 2010, saving up to 100,000 lives in total' (DH, 1999). *The NHS Plan* highlights cancer as a clinical priority and focuses on preventive aspects of the disease (DH, 2000a). *The NHS Cancer Plan* (DH, 2000b) is a comprehensive strategy to tackle the disease and the *Priorities and Planning Framework 2002-2003* reinforced cancer as an important focus for the NHS (DH, 2001a). Action to prevent cancer is highlighted as key to delivering *The NHS Cancer Plan*. It is estimated that a substantial reduction in mortality could be achieved through primary prevention, with the remainder coming from secondary prevention (screening) and improved treatment (DH, 2001b).

This document covers the key areas for action on prevention highlighted in *The NHS Cancer Plan*:

- Smoking
- Diet and nutrition
- Obesity
- Physical activity
- Alcohol
- Sunlight
- Radon.

Many of the risk factors covered in this resource have a significant impact on other priority areas in public health – for example, the *National Service Frameworks (NSF) for Coronary Heart Disease* (DH, 2000c), *Older People* (DH, 2001c) and *Diabetes* (DH, 2001d). These will be important factors to be addressed in the promotion of health and wellbeing, through partnership working and joining up activity with other stakeholders such as local authorities. It will also be important to link up, integrate and build on local programmes and policies which are already being developed.

Each section includes information on the case for action; an overview of the evidence for and features of effective approaches; and ideas for local action and signposting to useful resources. In the case of smoking, diet and nutrition, obesity and physical activity we have built upon the material covered in the HDA's *Coronary Heart Disease: Guidance for implementing the preventive aspects of the National Service Framework* (HDA, 2001) by highlighting the links between these factors and cancer, and updating the subsections on effective interventions and suggestions for action.

Methods used to develop the resource

We have consulted a range of academic, policy and practitioner opinion to inform the scope and content of this resource. We have drawn on systematic reviews and literature reviews and carried out literature searches. Some 100 reviewers were sent drafts of the document and amendments were made in the light of their comments (see Appendix for list of critical reviewers). We have taken a broad approach to evidence, valuing a range of research methods (quantitative and qualitative), which are appropriate to answer the questions we need to address in multidisciplinary public health. For example, we have drawn on systematic reviews of trials to answer questions about the effectiveness of interventions in

settings such as primary care, but have drawn on qualitative research to look at the features of effective alliances. Implications from the research evidence have been drawn out and recommendations for local action are made. Gaps in the evidence base have been highlighted.

The evidence indicates that action on a range of fronts within and outside the NHS at national, regional and local level is needed to tackle risk factors for cancer and health inequalities. There are more reported studies of interventions aimed at individuals (lifestyle and health-related behaviour) than there are of policies that seek to influence the broader determinants of cancer. Even at this level of activity few evaluation studies have looked at the impact of interventions on different groups (for example, socio-economic). We have reported findings where available. The lack of research aimed at assessing the effectiveness of interventions which tackle broader determinants of health should not be seen as evidence that these policies are not effective. It simply reflects that they are less amenable to research efforts that seek to assess their effectiveness.

The information presented in this document needs to be interpreted in the context of local needs, local circumstances and resources. Section 8 highlights common features of effective health improvement work: partnership working, involving local communities, health needs assessment, community and equity profiling, monitoring progress and evaluation, and provides useful sources of information and support.

Effective implementation of the various strategies highlighted within this document will depend on the availability of adequate human and financial resources.

The HDA welcomes comment and suggestions on how to improve this document. Please contact Hilary Whent (hilary.whent@hda-online.org.uk).

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Chapter 1 – Reducing smoking prevalence

Introduction

Smoking causes about one in three cancer deaths in the UK (Callum, 1998). Lung cancer is most closely associated with smoking; nine in ten deaths from lung cancer among men and nearly three in four among women are estimated to have been caused by smoking – that is some 84% of all lung cancer deaths (Callum, 1998). The incidence of adenocarcinoma, a type of lung cancer that was the most commonly seen type in non-smokers, has been increasing in the US and in other countries (Gilliland and Samet, 1994). This increasing incidence has been linked to use of low nicotine/tar cigarettes (Bidoli, 1999) and may be related to different inhalation patterns of smokers of low yield brands.

Cigarette smoking is also a major cause of cancer of the mouth, oesophagus, bladder, kidney and pancreas (US Department of Health and Human Services, 2001). It is also related to cancers of the stomach, liver, nose and to leukaemia (Doll, 1996). Smoking is a cause of many other serious conditions including heart disease, stroke, chronic obstructive lung disease (CODP), asthma and other respiratory illnesses, peripheral vascular disease, periodontal disease, complications of pregnancy and osteoporosis. Smokers are also at increased risk of diverse conditions such as cataracts, age-related macular degeneration, type-2 diabetes and delayed conception (US Department of Health and Human Services, 2001). Long-term exposure to other people's tobacco smoke can also cause cancer. A review of 37 studies found that for lifelong non-smokers living with smokers, the excess risk of lung cancer was 24% (Hackshaw et al., 1997).

Reducing smoking is a declared government priority. In 1998, the first ever white paper on tobacco, *Smoking Kills*, set three targets on children's smoking, adults' smoking and smoking during pregnancy (DH, 1998a):

- To reduce adult smoking in all social classes so that the overall rate falls from 28% to 24% or less by 2010; with a fall to 26% by the year 2005. In terms of today's population, this would mean 1.5 million fewer smokers in England
- To reduce the percentage of women who smoke during pregnancy from 23% to 15% by the year 2010; with a fall to 18% by the year 2005. This will mean approximately 55,000 fewer women in England who smoke during pregnancy
- To reduce smoking among children from 13% to 9% or less by the year 2010; with a fall to 11% by the year 2005. This will mean approximately 110,000 fewer children smoking in England by the year 2010.

The NHS Cancer Plan (DH, 2000d) introduced a new target to address inequalities in smoking rates between socio-economic groups.

- To reduce smoking rates among manual groups from 32% in 1998 to 26% by 2010 (DH, 2000d).

The NHS Cancer Plan

The NHS Cancer Plan emphasises the importance of reducing tobacco consumption in order to improve cancer prevention. It sets out the government's tobacco control strategy which includes:

- A commitment to ban tobacco advertising
- Specialist NHS smoking cessation services
- Pharmacotherapies (nicotine replacement therapy [NRT] and Zyban) available on prescription
- The Committee on Safety of Medicines has approved NRT to be made available for general sale. The General Sales List (GSL) Order sets maximum doses for GSL products over which the product must be classified as

'Pharmacy Only'. The maximum strength for chewing gums is 4mg, for lozenges 1mg, for 16 hour transdermal patches 15mg, and 24 hour patches may have a maximum strength of 21mg
- Guidance on smoking cessation for healthcare professionals and commissioners from the Health Development Agency (HDA), which was published in the journal *Thorax* (West et al., 2000)
- A best-practice code to enforce the law against cigarette sales to children under 16
- A media campaign and NHS smokers' helpline.

In addition to the national targets, *The NHS Cancer Plan* announced the intention to set local targets for the 20 health authorities with the highest smoking rates.

A number of steps to meet the new targets are set out:

- Health Improvement and Modernisation Plans (HIMPs) should set out how primary care trusts (PCTs) and their partners will develop smoking cessation services. Guidance from the National Institute for Clinical Excellence (NICE) has been issued (NICE, 2002)
- Up to £1 million is allocated to funding new local alliances for action on tobacco. These alliances will be a national network forming a link between the cessation services and the community
- The government is supporting a national initiative for major employers to help them develop smoking policies for the workplace
- £750,000 has been made available for smoking cessation work with black and minority ethnic groups, including an advertising campaign in the South Asian press and broadcast media and a specialist NHS Asian Tobacco Helpline (DH, 2001d)
- New pilot projects are being developed for hard to reach communities, such as prisons and long-stay hospitals
- A £2.5 million research programme, with a particular focus on disadvantaged groups, children and pregnant women, will support policy on smoking cessation.

Trends in smoking

Adults

Smoking prevalence in the UK has fallen steadily over the last two decades. In 2000, 27% of adults aged 16 and over in Great Britain smoked cigarettes compared with 40% in 1978. However, most of this decline occurred in the 1970s and 1980s. In the 1990s the decline in smoking prevalence among adults levelled off (Office for National Statistics, 2001).

The prevalence of smoking is higher among people in manual than non-manual social classes (31% compared with 23% in England in 2000). The widening of this gap over the past 20 years reflects a steeper decline in smoking prevalence among non-manual classes compared with manual classes. However, between 1998 and 2000, overall prevalence of cigarette smoking among those in manual groups in England fell by two percentage points. Although this is a statistically significant fall, the Office for National Statistics advises caution about a year on year comparison because the data may have been affected by recent changes in assessing socio-economic groups (Office for National Statistics, 2001).

The social class differentials in smoking are reflected in the social gradients of deaths caused by smoking. Among men, smoking accounts for over half of the difference in risk of premature death between social classes (Jarvis and Wardle, 1999). Premature deaths from lung cancer are five times higher among men in unskilled manual work compared to those in professional occupations (DH, 1998a).

Pregnant women

Two data sources are available to estimate smoking among pregnant women in England. The Infant Feeding Survey, which is the main source of information used by the Department of Health to monitor progress towards the tobacco white paper target on smoking in pregnancy, is conducted every five years among women who have recently given birth. The data on smoking are both retrospective and unvalidated by biochemical measures. The 2000 survey gives prevalence figures for England of 23% for 1995 (the figure used for the baseline of the tobacco white paper target) and 18% for 2000 (DH, 2001c).

From 1992 to 2000, the former Health Education Authority (HEA) conducted annual surveys among pregnant women in England. The proportion of pregnant smokers fluctuated over that time (Owen et al.,1998; Owen and Penn, 1999). In 1999 nearly a third of women (31.5%) smoked during pregnancy compared to 27% in 1992. Smoking was especially prevalent among women who were single, separated or divorced (55.5%), in social groups DE (52.2%), living in rented local authority

accommodation (57.3%), or who had left full-time education at 15 and 16 years old (52.9% and 42.7% respectively) (Owen and McNeill, 2001).

When a sample of responses was validated by biochemical measure (saliva cotinine) it revealed an under-reporting of the current smoking status among pregnant women of about 3%. This suggests that government estimates of smoking in pregnancy may be underestimates (Owen and McNeill, 2001).

Young people

In 2000, an estimated 10% of children aged 11-15 were regular smokers, an increase from 9% in 1999 (DH, 2001a). Smoking behaviour in this group has fluctuated considerably over time, showing a low of 8% in 1988 and a high of 13% in 1996 (DH, 2000c). As the majority of smokers take up the habit in their teens, any increases in the rates of young smokers will eventually feed through into adult smoking rates.

Black and minority ethnic groups

Cigarette smoking among minority ethnic groups is generally less than among the UK population as a whole (27%), but a more detailed examination reveals important differences between and within groups. The smoking rate among Bangladeshi men is particularly high (44%). Smoking rates are even higher among middle-aged and older Bangladeshi men (50% and 54% for men aged between 35-54 and 55+ years respectively). This same group of men also has high rates of chewing tobacco products.

Tobacco chewing is particularly high among older Bangladeshi women: 43% of women aged 35-54 years and 56% of women aged over 55 years chew tobacco (DH, 1999a).

Poverty and smoking

Traditional measures of social class tend to underplay the extent to which high smoking rates have not decreased in the poorest sections of society. Recent studies have shown that smoking levels have remained virtually unchanged among those in the poorest groups, and among lone mothers smoking levels have risen (Marsh and McKay, 1994; Dorsett and Marsh 1998; Jarvis, 1998). In a detailed study, lone parents living in rented accommodation and relying on social security benefits were found to have smoking levels in excess of 75% (Dorsett and Marsh, 1998).

Objectives of interventions to reduce smoking

The importance of a comprehensive approach to tobacco control has long been recognised (World Health Organization, 1979). As well as approaches aimed at the individual, there has been a recognition of the need for policy and legislative measures and social and environmental initiatives as essential components of any strategy to reduce tobacco use (WHO, 1998). Ideally, each component of such a comprehensive strategy would create a social environment that would 'de-normalise' smoking. This would include protecting non-smokers from environmental tobacco smoke (ETS) and promoting quitting (not cutting down) among adults and young people.

The key elements of a tobacco control strategy have not changed radically since the first Royal College of Physicians report on smoking was published 40 years ago (RCP, 1962) although the emphasis on different policy elements has shifted. The key elements of a comprehensive policy, reflected in the tobacco white paper, include:

- Strong mass media led information campaigns
- A ban on tobacco advertising and promotion
- Price policy and control of smuggling
- Smoke-free public places, especially workplaces
- NHS cessation services
- Community based initiatives
- Harm reduction strategies.

Local strategies to reduce smoking prevalence should reflect the policies and population groups set out in the white paper *Smoking Kills* (DH, 1998a), *The NHS Plan* (DH, 2000a: Chapter 13), *National Service Framework for Coronary Heart Disease* (DH, 2000b), *The NHS Cancer Plan* (DH, 2000d) and *National Service Framework for Older People* (DH, 2001b).

Features of effective interventions

A comprehensive approach – combining community wide programmes with economic and regulatory measures – has been identified by the US Surgeon General as the strategy most likely to have the greatest long-term, population impact (US Department of Health and Human Services, 2000).

Community wide approaches typically involve a range of agencies including health services, voluntary agencies, the

media (paid and unpaid), as well as government and local authorities. Together, these agencies undertake a range of activities such as smoking cessation therapy, helplines, training and resources for health professionals, development of policies to reduce smoking in public places, media campaigns and advocacy, reducing sales to minors, and work in schools. Overall, community interventions seek to influence both individual behaviour as well as the environmental, social and cultural conditions that affect tobacco use (Lantz et al., 2000).

The impact of a comprehensive approach is difficult to evaluate, especially given the potential for individual components to work synergistically to produce combined effects (Chapman, 1993; US Department of Health and Human Services, 2000). For example, the effectiveness of school-based programmes appears to be enhanced when they are included in broad-based community interventions (Lantz et al., 2000). Studies that have sought to measure the effects of a comprehensive approach have yielded encouraging results (US Department of Health and Human Services, 2000; Sowden and Arblaster, 2000, 2002; Lantz et al., 2000; Wakefield and Chaloupka, 2000).

Local alliances in England

In 1995, the HEA established the National Alliance Scheme in England to encourage the establishment of local tobacco alliances that would help bring together national and local action on tobacco. Twenty-five alliances, covering 62% of England, evolved as a result. Tackling smoking through partnerships (Evans, 2000), a study of the National Alliance Scheme and the lessons learned about partnership working can be found at www.hda-online.org.uk/html/resources/publications.html

After the dissolution of the HEA the Department of Health took over management of the scheme and gave it additional resources. In 2001/2 the alliance network expanded to 42 alliances which now cover all of England. A framework document that describes the future support and development of the alliance network is available at www.nosmokingday.org.uk/material/Alliance framework2001-2002.doc. Alliances report regularly to the Department of Health on their activity, and this information is available from the Alliance Network Development Manager at the Tobacco Policy Unit of the Department of Health.

Who to target: young people or adults?

Many people feel instinctively that since smoking is so difficult to give up, it would make more sense to concentrate efforts on preventing its uptake by young people. However, it is important to note that there is little evidence that teenage interventions, especially in the absence of adult strategies, have any impact on the uptake of smoking among children (Reid, 1996; Hill, 1999). The view that smoking among adults should therefore be tackled ahead of teenagers has been elaborated by David Hill (Hill, 1999). His argument is fivefold:

1 Reducing smoking among adults will lead to a quicker and bigger reduction of tobacco-related harm. This is because there is a higher level of smoking-related mortality and morbidity among adults than teenagers
2 Reducing smoking among adults will provide protection to the unborn and recently born from exposure to direct and indirect tobacco smoke
3 Quitting by adults (especially by parents) reduces the likelihood of children taking up smoking
4 While there are clear ethical reasons for educating children about what is the largest preventable cause of death, beyond this, the methods of delivering interventions are fraught with practical problems and the evidence of effectiveness of interventions aimed at young people is poor
5 The fact that the tobacco industry itself supports anti-smoking campaigns targeted at teenagers should be taken as a warning signal.
'*Even Phillip Morris was confident that* [anti-smoking] *youth campaigns could do them little damage.*'
(Hill, 1999)

Reducing inequality in health

Who are 'poor smokers'?

While discussion about 'poor smokers' often centres on the most deprived, *The NHS Cancer Plan* sets its national target to reduce smoking prevalence in 'manual' groups. It is true that the proportion of smokers is highest in the lower social classes, although the numbers of smokers in these groups is comparatively small. For example, smoking prevalence in social class E (or V) is 41% among men and 32% among women, but this represents only some 700,000 smokers (HDA/ASH, 2001).

The proportion of smokers is highest in social classes D and E (See graphs, p20).

The number of smokers is highest in the middle social classes (See graphs, p20).

Although the proportion of smokers is lower in social class C2 (or IIIM) – 32% of men and 30% of women in 1998 – the number of smokers exceeds three million, almost five times the number of those in social class E. So the target set in *The NHS Cancer Plan* has the advantage of producing the greatest health gain in the population. However, the seemingly intractable problem of smoking among the most disadvantaged must also be addressed.

Smoking and deprivation

The problem of smoking among the most disadvantaged in our society is daunting. For example, among lone parents living on benefits and in council housing, more than three-quarters smoke (Dorsett and Marsh, 1998). Moreover, recent research suggests that nicotine dependence is higher in people experiencing disadvantage (Jarvis and Wardle, 1999).

In keeping with these findings, the *Independent Inquiry into Inequalities in Health* recommended a short-term strategy to reduce nicotine dependence coupled with a complementary, longer-term strategy aimed at removing the cultural and environmental barriers that disadvantaged people face (Acheson, 1998). Community based interventions, brief advice from a general practitioner and specialised smoking clinics are also recommended as effective settings in which to provide NRT (Acheson, 1998). Bupropion (Zyban) is also now available on NHS prescription.

The available evidence indicates that a comprehensive tobacco control programme as set out in *Smoking Kills*, if efficiently and fully implemented, would bring down smoking in both manual and non-manual social classes. This is one of the conclusions of a joint HDA and Action on Smoking and Health (ASH) project on inequalities and smoking. The project has several elements including:

- A thematic discussion paper based on a review of the literature (Richardson, 2001)
- A rapid mapping exercise to identify existing and recent projects targeted at people living on low income and/or minority ethnic groups (Crosier, 2001)
- Secondary analysis of survey data to identify factors associated with quitting/not quitting among the most disadvantaged
- Qualitative research to identify low income consumers' views of products and treatments (Jackson and Prebble, 2001)
- An expert seminar to seek consensus on what the evidence tells us
- Further discussion and a seminar with practitioners and policy makers.

The thematic discussion paper, the mapping exercise and a summary of the qualitative research are available at the HDA's website (www.hda-online.org.uk). A very useful summary on inequalities and smoking, a product of this project, is available to download from the site or from ASH at www.ash.org.uk/html/policy/mapping.html (HDA/ASH, 2001).

Clearly, some elements of a comprehensive policy, such as price policy, will be the responsibility of national authorities, but even these will have considerable impact on a local level. For example, the recent sharp increase in smuggled tobacco is mainly targeted on low income communities. This undermines the government's price policy and compromises attempts to concentrate cessation help on low income smokers. Contraband tobacco is viewed positively in some deprived areas and is seen as a rational strategy to maintain levels of consumption (Wiltshire et al., 2001). Low income smokers may be slow in responding to national initiatives until more is done to address the material and personal factors that make it difficult for them to quit.

Community based projects

Attempts to set up community based projects to promote smoking cessation have met with mixed success. In a report of initiatives set up in low income communities in Scotland, the authors concluded that:

> *'… small grant funding for time limited projects can promote work on smoking amongst women living or working in low income communities. Although reducing smoking was a long term goal for the majority of the initiatives most did not perceive themselves as a cessation group. As a result they did not measure success by the numbers quitting. Changes in individual smoking behaviours were noted and these ranged from extending the period of smoke free time, to restricting smoking to a specific room or location and trying nicotine replacement therapy.'* (ASH, Scotland, 1999)

Examples of other community based projects funded through small grants schemes can be found in *Empowering smokers to quit: success principles for community stop-smoking projects* (HEA, 1996b). The mapping exercise cited previously, which drew on this study, made several interesting observations about the nature of community based or mainstream projects. It reports finding a striking number of community smoking cessation projects given what was found in the literature, but the vast majority of these had been established by mainstream funding available after the publication of *Smoking Kills*. Only a very few – notably the innovative services established by the charity QUIT – had been established outside the NHS. This underlines the importance of sustained and dedicated funding.

One problem encountered with community projects is the difficulty of sustainability. With such an approach, a continuous, long-term effort is crucial to build understanding and commitment between the participants. Moreover, challenging and changing the cultural norms is a long-term process that requires careful planning and commitment of all agencies involved.

Black and minority ethnic groups

Little has been published on the impact of smoking cessation interventions in reducing tobacco use among black and minority ethnic groups in England. However, studies from the US suggest that they can be effective (Botvin et al., 1992; Elder et al., 1993; Lillington et al., 1995; Elder et al., 1996). In the absence of UK studies, patterns of tobacco use (HEA, 1999a) and research into tobacco's role within and between black and minority ethnic groups (Maltby et al., 2000) can provide some pointers for the way forward. Examples of these are:

- The high rates of tobacco chewing, especially among Bangladeshis, suggest that this practice should be included in interventions aimed at reducing tobacco use
- Sensitivity to gender issues is vital
- Literature should be multi-lingual and in a style that is culturally familiar, eg use of vignettes to highlight health risks associated with tobacco use
- Information campaigns should be developed to redress misperceptions about tobacco use:
  – eg belief that tobacco use can relieve indigestion
  – eg belief that healthy practice in other areas such as diet and exercise will offset the detrimental effects of smoking
- Ethnic differences in attitudes and beliefs about cigarette smoking should be incorporated into smoking cessation interventions.
  (Maltby et al., 2000; HEA, 1999a)

So to be successful, a tobacco cessation campaign must take account of the culture, tradition and religion of the particular target group. In so doing it will need to involve community groups, religious groups, smoking cessation coordinators, local tobacco alliances, primary healthcare teams, and culturally relevant local and national media, as well as key individuals within different ethnic groups.

Further information on black and minority ethnic groups

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Components of a local strategy

1 – Support smoking cessation services

While smoking has been declining slowly in the last two decades, over a quarter of adults are still regular smokers. Although about two-thirds of smokers consistently say they would like to quit, most are addicted to nicotine and need help in giving up. The unaided cessation rate in middle-aged smokers is only about 2% per year, making nicotine one of the most addictive of drugs (RCP, 2000).

PCTs will now take the lead in commissioning and, where appropriate, providing smoking cessation services. Plans should now set out how PCTs and their partners will develop and target these services. What is clear is that smokers need help in stopping, treatment should be effective and, importantly, helping smokers stop is a highly cost-effective use of NHS resources.

The evidence supporting commissioning of smoking cessation services has been concisely set out in a document published by the NHS (*Smokefree London*) and the WHO Europe Partnership Project (Raw at al., 2001). The report is available at www.ash.org.uk/html/cessation/servicescase.hmtl

It points out that helping smokers stop is effective:

- Brief advice, pharmacotherapies and more intensive behavioural support have all been shown to increase a smoker's chance of stopping (Raw et al., 1998; West et al., 2000)
- The NHS smoking cessation services have been popular and successful. In England during the period April to December 2001, around 153,000 people set a quit date through the smoking cessation services and of these, 79,100 said they were not smoking at four week follow-up (DH, 2002)
- Using eligibility for free NHS prescriptions as a proxy measure for 'manual groups', the smoking cessation services appear to be reaching the intended target group. Some six in ten of those who set a date for quitting are eligible for free prescriptions (DH, 2001e).

Helping smokers stop is extremely cost effective:

- Studies have suggested a range of cost per life year saved of a comprehensive treatment service is between £212-£873 (West et al., 2000; Parrott et al., 1998). Recent reports suggest that NICE is using a threshold of £30,000 per 'quality-adjusted life year gained' (QALY) for acceptable expenditure for the NHS (Rafferty, 2001). This indicates that smoking cessation treatment is many times more cost effective than the standard set by NICE
- Helping smokers stop will reduce the costs of treating other illnesses before they arise. Stopping smoking significantly reduces the risk of some conditions and will produce immediate gains. For example, the risk of myocardial infarction and stroke fall by about half within the first two years of quitting (Lightwood and Glantz, 1997). Helping pregnant smokers stop before the end of the first trimester will produce significant cost savings by, among other things, reducing low birthweight (Lightwood et al., 1999)
- There is a potential saving to the drugs bill if smokers stop. Over 80% of patients would fall below the threshold for treatment with statins if they stopped smoking (Muir et al.,1999). In 2000, the NHS spent about 12 times as much on statins as on smoking cessation, even though smoking cessation is about 17 times as cost effective (Bates and McNeill, 2000)
- The availability of smoking cessation services means that the GP need do no more than give brief advice about smoking, prescribe a pharmacotherapy and refer to the local service, rather than spend time in the surgery.

The National Institute for Clinical Excellence (NICE) has made a technical appraisal and recommended the use of bupropion and NRT for smokers who wish to quit. Guidance from NICE says that these therapies should normally be prescribed as part of an 'abstinent-contingent treatment', that is, to smokers who have made a commitment to stop smoking by a certain date and who continue to remain smoke-free. NICE recommends that smokers should also receive advice and encouragement to aid their quit attempt (NICE, 2002).

Model of the service to the smoker

Each smoker contacting the NHS should be asked about smoking and have the NHS smoking cessation services brought to their attention. Those who want to stop should be offered a package of both pharmaceutical aids and behavioural support that meets their particular needs and circumstances. Given restrictions on who can prescribe drugs, and limitations on the extent to which those that may prescribe are able to offer support, it will not always be possible to provide a 'one-stop shop'. The aim must be to make access to drugs and support as straightforward as possible. The elements of the support package include:

- Influences on smokers' motivations to quit – including advice from primary care professionals, national and local media information campaigns, No Smoking Day, pharmaceutical manufacturers' advertising
- Brief opportunistic interventions by the GP and other primary care professionals
- Prescribing pharmacotherapies – NRT and Bupropion (Zyban).
- Behavioural support. This will need to be tailored to match the circumstances of the smoker, but the range of options includes:
  – Referral to a smoking cessation service
  – Discussion of other support options [telephone, self-help etc] that the smoker could consider, if the cessation service is not a desirable option.

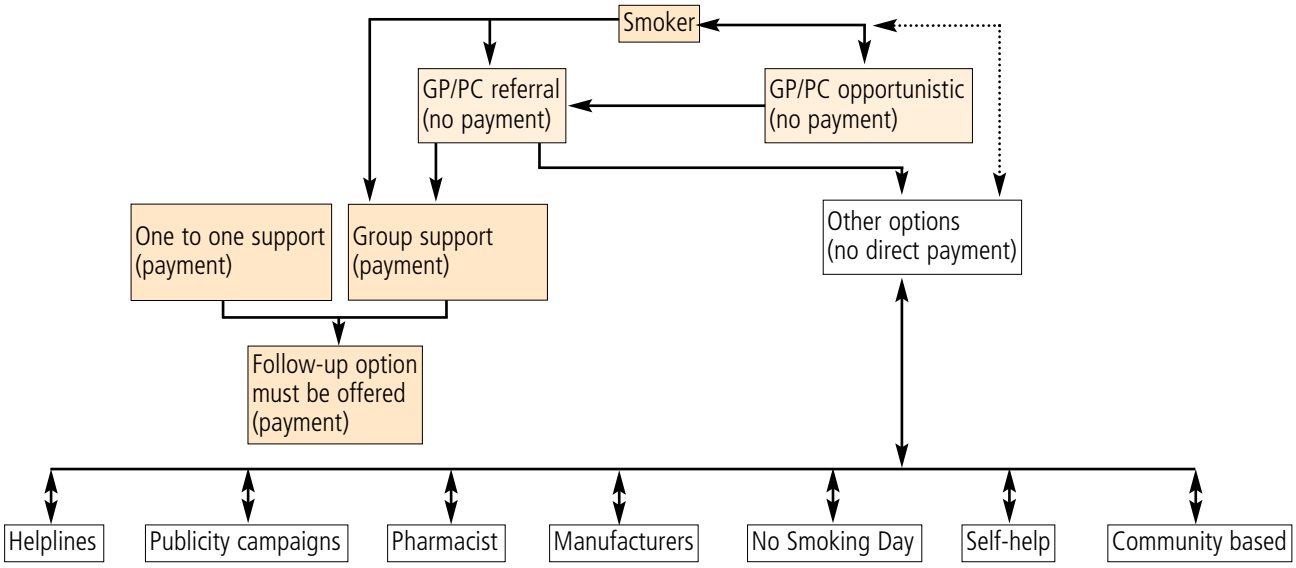
The model of the service is set out in the diagram below. For full details and further guidance see www.ash.org.uk/?cessation

Reducing smoking during pregnancy

A systematic review assessing the effects of smoking cessation programmes during pregnancy on the health of the fetus and infant found that such programmes appear to reduce smoking, low birthweight and preterm birth, but no effect was found for very low birthweight or perinatal mortality (Lumley et al., 2002).

For pregnant women, pregnancy specific materials are more cost effective than less specific, cheaper, standard information because of their greater effectiveness (Buck and Godfrey, 1994). The intensity of the intervention also affects outcome. While there is some evidence of the effectiveness of advice with literature coupled with follow-up, more intensive interventions, eg a structured cessation course based on self-help booklets, provide stronger evidence (Raw et al.,1998). Specialist support – that is, by someone trained and employed to give cessation help – enables about one in 15 pregnant smokers who would not have otherwise done so, to quit for the remainder of the pregnancy (West et al., 2000).
Public education campaigns may be effective in shifting

Configuration of smoking cessation support services



Explanation

The smoker encounters 'pressure' to quit from:

- The GP or other primary care professional who will make systematic opportunistic interventions
- Other options, which provide both direction to services, encouragement to quit and support

The smoker may be referred or self-refer to a qualifying service (this is the ideal), which will offer a minimum service standard and be paid from smoking cessation monies.

If the smoker does not want this – the GP or other professional should suggest the other options and know what is available locally.
(Source: Bates et al., 2000)

pregnant women's attitudes and behaviour (Campion et al., 1994).

The difficulties of advising outright cessation in pregnancy has led some health professionals to suggest cutting down as an alternative. However, there is little evidence to show that cutting down is of any health benefit (Raw et al., 1998). An expert seminar convened by the HDA and No Smoking Day concluded that cutting down could not be recommended, either for pregnant women or general smokers (NSD, 2001). Thus quitting as opposed to cutting down needs to be emphasised.

Many women who do stop smoking in pregnancy go back to smoking after the birth of the baby. In one American study over half (56%) of women who stopped during pregnancy were smoking within one month of the birth (Secker-Walker et al., 1995). Relapse prevention interventions with pregnant women and women who have recently given birth are needed. All those responsible for providing antenatal care should ensure that relapse prevention is included as a component in the smoking cessation service.

The lower rate of cessation associated with mothers from lower socio-economic groups led the Scientific Advisory Group on Inequalities to conclude that 'interventions that target the individual behaviour alone may not be sufficient … broader policies to combat inequality are also required' (Acheson, 1998).

Further information on smoking and pregnancy can be obtained in the following reports:

- *Infant feeding 1995: a survey of infant feeding practices in the United Kingdom* (Foster, 1997)
- *Infant feeding 2000: a survey of infant feeding practices in the United Kingdom* (Hamlyn et al., 2002)
- *Smoking and Pregnancy: a survey of knowledge, attitudes and behaviour 1992-1999* (Owen and Penn, 1999)
- *Smoking and Pregnancy: guidance for purchasers and providers* (HEA, 1994a)
- *Helping Pregnant Smokers Quit: training for health professionals* (HEA, 1994b)
- *Smoking and Pregnancy: developing a communications strategy for cessation* (Owen and Bolling, 1996)
- *Smoking and Pregnancy: a growing problem* (HEA, 1996a).

Smoking cessation and young people

Mechanisms for delivering cessation services for young people are outlined in the document *Smoking Cessation in Young People: should we do more to help young people quit?* (HDA, 2000a).

2 – Reduce smoking in public places including workplaces

Tobacco smoke is a major indoor air pollutant containing known human carcinogens and toxic gases (US Department of Health and Human Services, 2000). Restricting smoking is important not only for limiting the public's exposure to environmental tobacco smoke (ETS), but also for wider policy reasons. First, it puts smoking in a broader context than one of personal choice and personal risk and legitimises it as a social problem; second, it may be the source of litigation against employers or businesses; and third, the spread of smoking restrictions reduces the opportunities to smoke and so reduces consumption (Borland et al., 1991; Brenner and Mielck, 1992; Marcus et al., 1992; Wakefield et al., 1992; Jeffery et al., 1994; Glasgow et al., 1997; Brauer and Mannetje, 1998).

There are still some three million non-smokers in the UK exposed to environmental tobacco smoke at work. The *Smoking Kills* tobacco white paper set in motion the process of issuing an Approved Code of Practice (ACoP) on passive smoking at work. On 5 September 2000, after an extensive consultation in which over 80% of the 485 respondents were in favour, the Health and Safety Commission recommended the introduction of the ACoP.

There are potential legal liabilities for employers who do not address passive smoking in the workplace. Employees have recourse to civil law, contract and employment law and the general provisions of the Health and Safety at Work Act (1974). The ACoP would clarify the legal position for both employers and employees, and enable local authority environmental health officers to intervene. The government has asked the Health and Safety Commission to consider further the implications of an ACoP on the hospitality industry and small businesses generally.

A systematic review of interventions to reduce smoking in public places found that interventions are more likely to be effective if they are carefully planned, adequately resourced and contain several strategies. Less comprehensive strategies, for example only posting 'no smoking' notices, or distributing educational materials, have been shown to be less effective (Serra et al., 2002).

For a joint ASH, TUC, National Asthma Campaign, WHO Europe review of smoking in the workplace (2001), see www.ash.org.uk/html/workplace/html/workplace.html

Local plans should include objectives to:

- Ensure that all local hospitals have smoking policies (DH, 1998a; HEA, 1999b), and that these are fully implemented
- Implement policies to restrict smoking in public places (Scientific Committee on Tobacco and Health, 1998)
- Encourage restaurants, bars, and other leisure facilities to provide smoke-free areas.

Many employers now find an advantage to smoking restrictions through savings on sickness absence, increased productivity, lower insurance and cleaning costs. The checklist in the box will help managers of workplaces to develop an effective strategy on smoking.

Management checklist for a smoking policy

- Review current situation
- Assess need, capacity to change
- Make sure you consult with everyone
- Seek feedback, not permission
- Decide on the policy details
- Decide on a total or partial ban
- Decide what restrictions to impose if a total ban is not possible
- Communicate final decisions clearly to all staff
- Label smoking and smoke-free areas
- Monitor and review the policy

Source: *Smoking Policy for the Workplace: an update*. (HEA, 1999c)

Further information

For examples of case studies of effective practice within the NHS see *Tobacco Control Policies within the NHS: case studies of effective practice* (HDA, 2000b). For further information on developing, reviewing and amending tobacco control policies see *Been There, Done That: revisiting tobacco control policies in the NHS* (HEA, 1999b). Sample policies and consultation questionnaires can be found in *Smoking Policy for the Workplace: an update* (HEA, 1999c) and *Towards Tobacco-free Environments: guidelines for local authorities* (HEA, 1999d). Also see the ASH website: www.ash.org.uk

3 – Support national media campaigns

Mass media campaigns, when they are properly developed and tested, efficiently implemented and appropriately evaluated, can be a strong element in tobacco control effort. Media campaigns can influence smoking behaviour (Sowden and Arblaster, 2000, 2002; Lantz et al., 2000; DH, 1998a) and may be especially appropriate for reaching those who are less educated (Buck and Godfrey, 1994; Macaskill et al., 1992) and those in poor communities (Jenkins et al., 1997). Message content, and the intensity and duration over which the messages are delivered appear to be important factors in determining the impact of mass media campaigns (Grey et al., 2000; Lantz et al., 2000).

The US Centers for Disease Control (CDC) have recently reviewed smoking cessation media campaigns from around the world for the World Health Organization. They have drawn together the lessons to be learned from successful campaigns such as being comprehensive, using multiple messages, executions and media; and working with other parts of tobacco control programmes. By maintaining a strong media presence for extended periods of time, they continuously remind individuals to quit smoking or not to start (Schar and Gutierrez, 2001).

Media campaigns should focus predominantly on adults, as the majority of cigarettes (>95%) are consumed by adults and adult smokers are a major factor influencing the uptake of smoking by minors. There is some evidence that the mass media can be effective in preventing the uptake of smoking in young people, but overall, the evidence is not strong (Sowden and Arblaster, 2002). Such campaigns are more likely to be effective as part of a larger campaign aimed primarily at adults (Hill, 1999).

Coordination of national and local media campaigns can reinforce both efforts. Events such as No Smoking Day have a long-standing record for creating an impact on both local and national levels. For ideas for planning local media campaigns see www.no-smoking-day.org.uk/campaign.htm (Tel: 020 7916 8070).

4 – Use free media coverage

There is some evidence that the use of broadcast and print media to get free discussion of tobacco control issues (also known as 'media advocacy') may affect

tobacco consumption (Buck and Godfrey, 1994), but its major role is in social marketing. This involves shaping the media agenda, prompting policy changes and influencing the social norms around smoking (Reid et al., 1992). A recent analysis of media coverage of changes in smoking behaviour in the US concluded that the level of coverage of smoking and health in the news media may play an important role in encouraging smokers to give up, but had no effect on adolescents taking up the habit (Pierce and Gilpin, 2001). Media advocacy techniques may be especially effective with poor communities (Jernigan and Wright, 1993) since low income groups, including smokers, are high consumers of television.

PCTs could consider their own media strategy by drawing up an annual plan for communicating with the media – and not only on tobacco issues. In some cases press releases will be opportunistic, but annual events offer a good opportunity for capitalising on national and regional news. For example, press-releasing quotes from a well known local GP on the importance of quitting around New Year's Day and No Smoking Day will add local significance and interest. The time of the Budget announcement is a good time to remind smokers that a tax increase just adds to the reasons they have for trying to give up and to let them know about local cessation services. Quotes issued in the name of the PCT provide an excellent opportunity as well for a PCT, as a relatively new organisation, to make itself known in the media.

Checklist for getting media coverage

First think about the following points:
- What you hope to achieve
- Who your campaign is aimed at
- How much you think it will cost
- How it will be supported by local activity and action
- How you plan to evaluate it (have you achieved what you hoped?)

Create a media plan:
- What stories or angles will attract the media?
- What information is needed for a newsworthy press release?
- Draw up a media list – names and contact numbers of relevant journalists
- Find out the deadlines for media you are targeting
- Find out how media contacts want you to communicate with them (press release, direct contact)
- Decide who will act as spokespersons
- Coordinate media schedules with partners who may also be using the media
- If the campaign is a long one, create a media calendar to ensure a constant supply of news items

5 – Monitor the advertising ban

The government has announced its intention to ban tobacco advertising. 'Indirect marketing' of cigarette brands is the growing and preferred marketing strategy of the tobacco industry, perhaps in response to threats of advertising restrictions. This type of marketing forsakes traditional advertising in favour of promoting cigarette brands through, for example, furnishings in shops and cafés (such as umbrellas, ashtrays etc.), same name products (such as fashion items) or free gifts. Gifts such as tee-shirts, caps, CD (compact disc) holders and sunglasses are often given away in venues that attract young people, such as clubs and bars.

Until legislation is introduced, the existing 'voluntary agreements' on tobacco promotion could be monitored locally, not so much because these restrictions have been found to be effective in preventing uptake of smoking, but because infringement of the rules offers opportunities for free media coverage. Those provisions include, for example, banning advertising on billboards near schools, and promotions in magazines for young people.

People working locally should be vigilant in monitoring any new marketing strategies, for example, using events at discos, student functions and the Internet to promote brands. Where possible, organisations such as colleges, universities and local authorities should prevent tobacco sponsorship of events on premises within their control.

6 – Reduce sales of cigarettes to children under 16 years old

Combining regular test purchasing with a high profile media approach has been found to be successful in reducing the incidents of reported sales of cigarettes to people under 16. Overall, the evidence of effectiveness of sales restrictions suggests that vigorous local enforcement of the law forbidding the sale of tobacco to under-16s can reduce sales (Stead and Lancaster, 2000).

This strategy has also been shown to have a small delaying effect on the uptake of smoking among children (US Department of Health and Human Services, 2000). There is little evidence, however, to suggest that it has

any effect on the uptake of smoking among children. Considerable resources are required both in terms of trading standards officers' and court time. The existing law is not being applied effectively (DH, 1998a). The Local Government Association and Local Authorities Co-ordinating Body on Food and Trading produced a new enforcement protocol to address this. Features of the protocol are listed below.

Proof-of-age card schemes have been developed, but the government recommends that a single system be agreed. The vending machine trade association, the National Association of Cigarette Machine Operators, has produced a stricter code for its members to clarify siting arrangements and monitoring for vending machines (DH, 1998a).

Enforcement protocol

- Local authorities should publish a clear statement on underage tobacco sales
- Ensure that all shops and vending machines display notices stating the law
- Use test purchases to assess local compliance by retailers. Gather information about premises likely to be breaching the law
- Use the media to raise the issue locally
- Educate retailers to increase compliance
- Detail enforcement action taken, prosecutions and fines, to act as a deterrent

7 – Encourage the introduction of smoking policies in schools

A formal, well publicised school policy on smoking reinforces non-smoking as the norm in society, supports health messages in the curriculum, and may have positive effects on smoking levels among pupils, staff and all adult users of the premises. One recent study in Wales demonstrated an association between a strong policy, strictly enforced, and lower pupil smoking (Moore et al., 2001). Additional potential benefits of school policies include reduced absenteeism, reduced costs and elimination of the harmful effects of passive smoking.

The National Curriculum Science Order recommends that teaching the harmful effects of tobacco, alcohol and other drugs should begin at Key Stage 2 (age 7-11). OFSTED's report *Drug Education in Schools* (OFSTED, 1997) and the Department for Education and Employment report *Protecting Young People* (DfEE, 1998) recommend teaching young people from the age of five upwards about the risks and consequences of tobacco, alcohol and drug use, together with teaching the life skills to resist the pressure to misuse these substances. Teaching should clearly cover issues relevant to the child's age and experience. This frequently entails tackling smoking and alcohol-related issues first, as these are the substances which young people will generally be exposed to first.

The Wired for Health site – www.wiredforhealth.gov.uk – provides health information for teachers and gives guidance on achieving the National Healthy School Standard. There are also links to other Wired for Health websites designed for Key Stages 1 to 4 and containing information for parents, teachers and pupils on smoking and other health and social development issues.

Checklist for a school's smoking policy

- Put the development of a smoking policy on the agenda
- Review the current situation considering smoking among staff, visitors and students
- Identify staff with sufficient skill and seniority to take responsibility for developing a new policy if necessary
- Form a working party involving key people from the school and community, if appropriate
- Establish a rationale for the policy
- Identify educational, health and economic reasons for introducing a policy or improving existing conditions
- Draft the policy
- Evaluate the draft policy by consulting with all relevant parties, identify potential constraints and problems
- Inform everyone about the policy before it is implemented
- Allow sufficient time for implementation of the new policy – three to six months is considered a reasonable time between initiating and implementing the policy
- Monitor the operation of the new policy
- Encourage news releases to the local press

Reducing smoking prevalence – suggested activities to support local action

SMOKING CESSATION					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Effectiveness and cost effectiveness are well-established (West et al., 2000; Raw et al., 1998; Fiore et al., 1996; NICE, 2002).	Depends on the particular intervention under consideration. See below.	Health professionals; local authorities; specialist smoking cessation coordinators; voluntary sector; local smoking alliance.	Smoking cessation skills; carbon monoxide monitor; leaflets. Although training schemes are available, nationally accredited courses should be established. Demonstrate cultural sensitivity.	Major component of government strategy to reduce smoking in England. Health Services Circular has set out guidelines on monitoring for the new services. The availability and accessibility of services should take account of cultural differences.	Health Services Circular 1998/234 and HSC 1999/087. *Smoking Kills* (DH, 1998a). *Inequalities in Health Report*, Cochrane Library www.update-software.com/clibhome/clib.htm. NHS Smoking Cessation Services. *Service and Monitoring Guidance 2001/02* (16). ASH (2000a). *Smoking cessation in primary care*. Technology Appraisal Guidance no 39. www.nice.org.uk
NICOTINE REPLACEMENT THERAPY (NRT)					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Doubles chance of success of smokers wishing to stop (Raw et al., 1998; Fiore et al., 1996; NICE, 2002).	Can double the effectiveness of an intervention, be it brief advice from a GP or intensive support through a specialist clinic, will-power, etc.	PHC, pharmacists, health promotion specialists.	Smoking cessation skills, access to NRT products.	Available on prescription as well as being available over the counter.	As above.
BUPROPION (ZYBAN)					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
An effective pharmacotherapy (Hurt et al., 1997; Jorenby et al., 1999; NICE, 2002).		GPs and those approved for prescribing through the PHC, pharmacists, etc.	Smoking cessation skills.	Prescription only.	www.nice.org.uk

Reducing smoking prevalence – suggested activities to support local action (cont.)

SMOKING CESSATION (CONT.)					
BRIEF ADVICE IN NHS AND PRIMARY CARE					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
(West et al., 2000; Raw, et al.,1998; Fiore et al., 1996).	Very brief advice (3 mins) can result in a 2% increase in number of smokers abstinent for 6 months or longer compared with no advice. Brief advice (10 mins) can result in a 3% increase. Adding NRT to brief advice can result in a 6% increase.	PHC team; link with other support services if appropriate, eg healthy living centres, hospital staff, doctors, nurses, midwives, etc.	Smoking cessation skills.	Potentially very high reach if advice is given to every smoker on every relevant occasion.	As above.
INTENSIVE SUPPORT (SMOKERS' CLINICS AND ONE-TO-ONE)					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
(West et al., 2000; Raw et al.,1998; Fiore et al., 1996).	Compared with no intervention intensive support can result in an 8% increase in the number of smokers abstinent for 6 months or longer.	See above.	Smoking cessation skills.	Reach lower than that for brief advice, but associated with a higher success rate. Resource intensive. Ease of access (eg convenient, safe location, timing) and cost (if any) are important considerations.	As above. The Maudsley smokers' clinic was highlighted as good practice in the tobacco white paper (DH, 1998a). Help2Quit: one-to-one cessation support as a routine part of GP clinical practice; 61% set a quit date at 4 weeks (DH, 2001e).
CESSATION ADVICE AND SUPPORT FOR HOSPITAL PATIENTS					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
(West et al., 2000; Raw et al., 1998; Fiore et al., 1996).	Result in a 5% increase in the number of smokers abstinent for 6 months or longer.		Smoking cessation skills.		
CESSATION ADVICE AND SUPPORT FOR PREGNANT SMOKERS					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
(West et al., 2000; Raw et al.,1998; Fiore et al., 1996).	Result in a 7% increase in the number of smokers abstinent for 6 months or longer.		Smoking cessation skills.		

Reducing smoking prevalence – suggested activities to support local action (cont.)

SMOKING CESSATION (CONT.)

TELEPHONE HELPLINES

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Evidence base for effectiveness is growing. *Thorax* guidelines indicate they may provide a valuable service (Raw et al., 1998). A meta-analysis reports a significant effect (Lichtenstein et al. (1996).	Quit rate of 15.6% (adjusted) reported in England with mass media campaign (Owen, 2000).	Providers of (national and local) helplines; workplace; public places; NHS; community groups, cessation services.	Smoking cessation skills; trained staff required.	Mass reach, easy and convenient for smoker. Guidelines are available for those wanting to set up local helplines. Alternatively, activities and literature could be undertaken to raise public awareness of and use of existing helplines. Can be used to promote other cessation support services in locality.	Meta-analysis from Lichtenstein et al. (1996). NHS Direct Helpline 0800 169 0169. Quit (charity) 020 7388 5775 Quitline 0800 002200.

OTHER TREATMENTS

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Insufficient evidence of effectiveness for hypnotherapy and acupuncture, etc. (Abbot et al., 2000; White et al., 2000).	Likely impact uncertain.	Private sector. Links with other smoking cessation providers. In view of lack of evidence base, consider contacting recognised professional associations for trained individuals.		Smokers should be given information about other treatments to enable them to make an informed choice without discouraging attempts to stop. Level of training likely to vary from none to sufficient to justify membership of a professional body (Raw et al., 1998).	British Hypnotherapy Association (BHA), 1 Wythburn Place, London W1H 5WL. Tel: 020 7723 4443; email: firebird@agonet.co.uk British Society of Hypnotherapists (BSH), 37 Orbain Road, London SW6 7JZ. Tel: 020 7385 1166. Association of General Practitioners of Natural Medicine (AGPNM), 38 Nigel House, Portpool Lane, London EC1N 7UR. Tel: 020 7405 2781. Institute of Complementary Medicine (ICM), PO Box 194, London SE16 1QZ. Tel: 020 7237 5165.

Reducing smoking prevalence – suggested activities to support local action (cont.)

REDUCE SMOKING IN PUBLIC AND WORKPLACES

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Associated with reduced consumption. Possible reductions in prevalence in the longer term (Reid, 1996; Buck and Godfrey, 1994; Brenner and Mielck, 1992).	A US study of employees reported a reduction of 5% in smoking prevalence and 10% in consumption after the introduction of workplace bans. Other benefits: recognises non-smoking as norm; protects non-smokers; increases public awareness and acceptance of health risks; may encourage adolescents not to start.	British Hospitality Association; The Restaurant Association; British Institute of Innkeeping; Brewers and Licensed Retailers Association; Association of Licensed Multiple Retailers; employers and employees; NHS.		Charter agreed between government and licensed hospitality trade. HSE backs a new Approved Code of Practice on smoking in the workplace. When approved, the code will provide practical advice on how to comply with the law.	*Smoking Policy for the Workplace: an update* (HEA, 1999c); *Towards Tobacco-free Environments: guidelines for local authorities* (HEA, 1999d); *Smoking Kills* (DH, 1998a); ASH joint report on smoking in the workplace www.ash.org.uk/html/workplace/html/workplace.html

MASS MEDIA CAMPAIGNS

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Mass media campaigns can enhance natural quit rate and may reduce relapse (Reid, 1996; McVey and Stapleton, 2000). May also reduce uptake of smoking in young people (Sowden and Arblaster, 2000).	Quit range 0-5% for adult interventions (Reid, 1996). Direct influence on climate of public opinion.	National and local media; community settings and activities; workplace and public places.	Costly. Requires minimal level of exposure and development of new messages to avoid consumer burn-out.	High reach. Works well with other interventions such as tax increases. Can support local cessation services. Focus should be adults.	DH smoking policy team, DH communications team www.givingupsmoking.co.uk Review of using mass media campaigns in England available from the HDA. The Cochrane Library is at: www.update-software.com/clibhome/clib.htm

FREE MEDIA COVERAGE AND NO SMOKING DAY

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Effectiveness lower than more intensive interventions but highly cost effective because the reach is much greater (Buck and Godfrey, 1994; Reid et al., 1992).	One year net quit rates estimated 0.3%-0.5% (Buck and Godfrey, 1994; Reid, 1996). Influence on public opinion. Provides basis for other initiatives. May contribute to impact of mass media campaign. Extends debate about smoking.	NHS, local government, commercial interests, voluntary agencies.	Cheaper than paid advertising but substantial resources required for generating stories. Good contacts with local media and the leisure and hospitality trade. Training in media advocacy.	Relies on good links with other agencies, eg voluntary sector, local government, hospitality trade to create local activities.	www.no-smoking-day.org.uk/campaign.htm Example of good practice: Roy Castle Good Air Awards.

Reducing smoking prevalence – suggested activities to support local action (cont.)

ADVERTISING BAN

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Possible effect on adult consumption and teenage prevalence (Sowden and Arblaster, 2000; Reid et al., 1992).	Impact of monitoring local infringement of regulations not known, but does offer opportunities for media advocacy.	Government; health promotion specialists, tobacco advocates and others can monitor.		Local activity could monitor infringements to current voluntary agreement and any future regulation.	Department of Health (1992) *Effect of Tobacco Advertising on Tobacco Consumption: a discussion document reviewing the evidence*. Smee, C. (chair). Department of Health. Economics and Operational Research Division. Issued with DH circular EL(92)71.

REDUCE ILLEGAL SALES

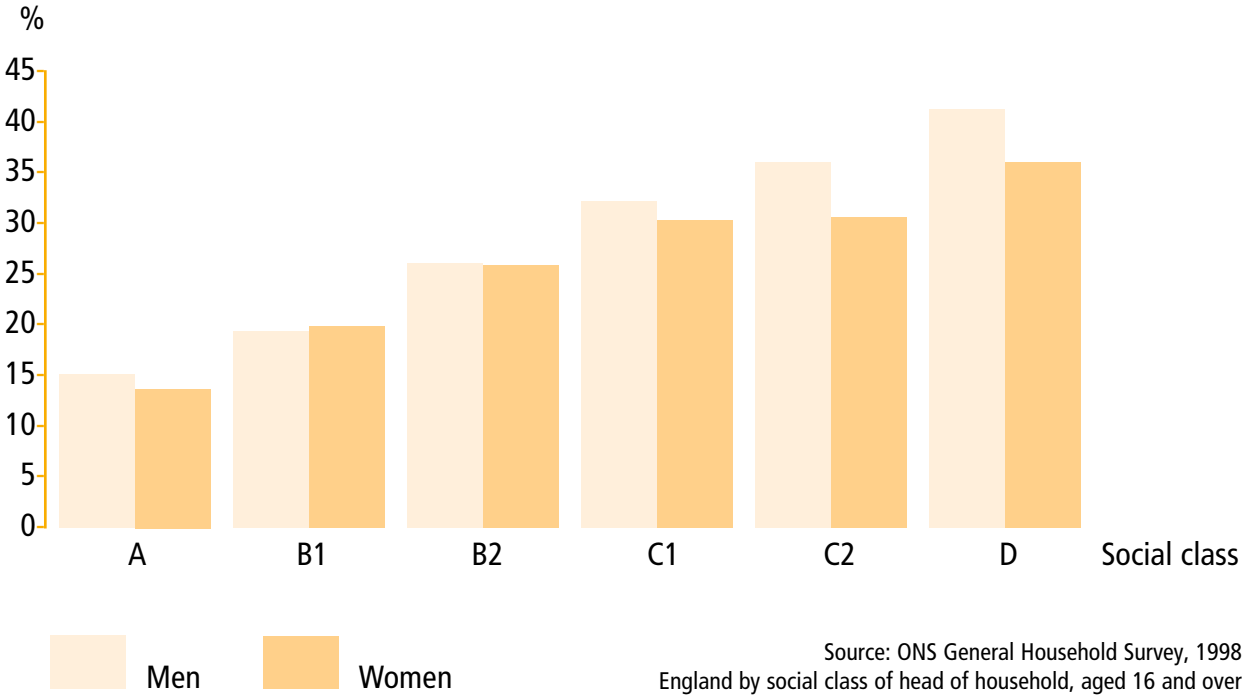
Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Local activity can reduce sales. May have a small delaying effect on children's uptake of smoking (US Department of Health and Human Services, 2000).	Local activity can reduce sales. Useful for generating publicity. May have a small delaying effect on children's uptake.	Magistrates, retailers, local trading standards officers, schools, parents, Local Government Association, local authorities; National Association of Cigarette Machine Operators.	Requires substantial resources.	Existing law states that it is illegal to sell tobacco products to under-16s. Enforcement problematic. Possibly adds to perception that smoking is a forbidden fruit (Kay Scott Associates, 2000).	National Association of Cigarette Machine Operators has produced a code for members. LGA and LAs have produced an enforcement protocol for local authorities.

SMOKING POLICIES IN SCHOOLS

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Impact on uptake of smoking uncertain.	Implementation varies so outcome unclear. Reinforces non-smoking as the norm. Other potential benefits include reduced absenteeism, reduced costs and elimination of passive smoking.	School teachers, governors, heads, parents, pupils, local community (for policies that involve non-smoking in school premises for community activities).		Supports health messages in the national curriculum.	*Smoking Policies in Schools: guidelines for policy development* (HEA, 1993). Further guidance in *Smoke-Free Schools: seven steps to success* (HEA, 1999e). www.wiredforhealth.gov.uk

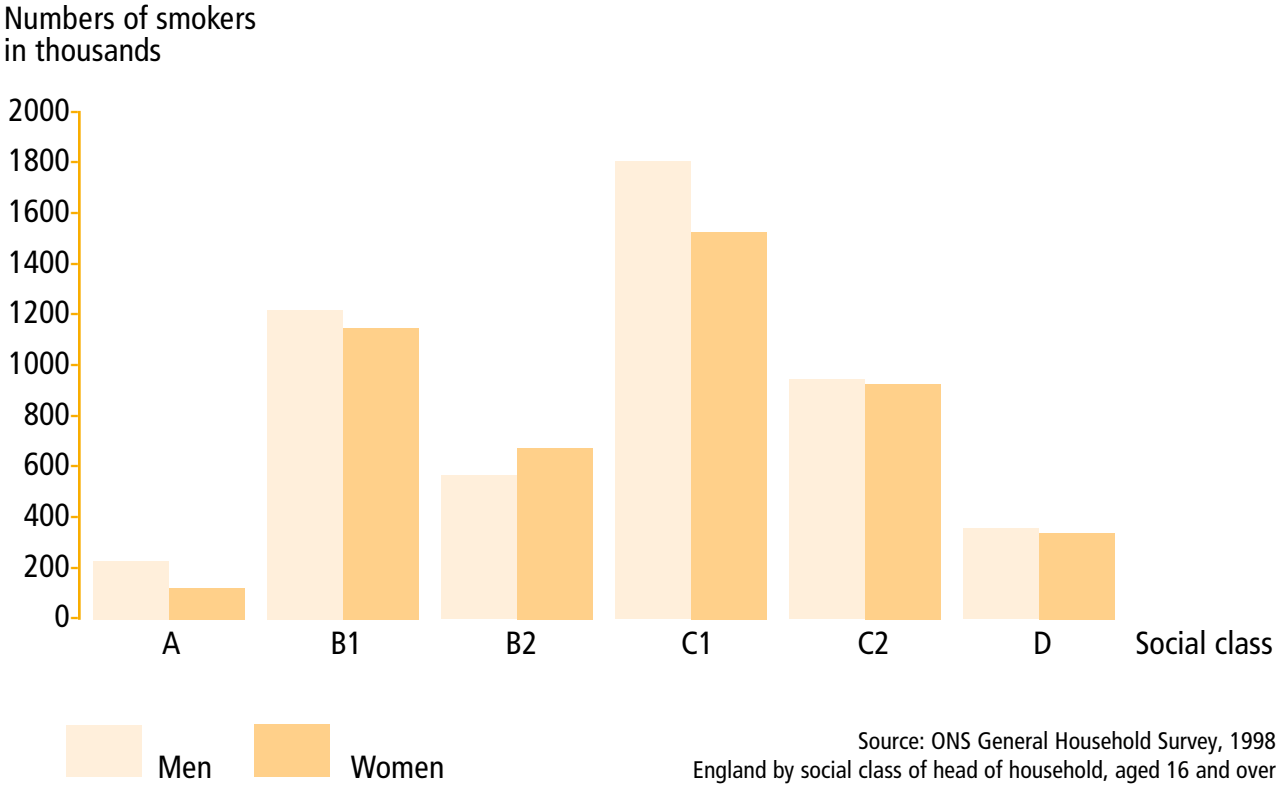
Annex

Prevalence of smoking, 1998, percentage of smokers within each social class



Source: ONS General Household Survey, 1998
England by social class of head of household, aged 16 and over

Prevalence of smoking, 1998, numbers of smokers within each social class



Source: ONS General Household Survey, 1998
England by social class of head of household, aged 16 and over

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Chapter 2 – Improving diet and nutrition

Introduction

While the links between some lifestyle factors such as smoking and certain cancers such as lung cancer have long been recognised, the links between diet and various cancers have been made much more recently. Although diet may not play a role in the development of all cancers, it is estimated that around one third of cancers are related to diet (Doll and Peto, 1981). In particular, diet has been recognised as contributing to the development of cancers of the colon, rectum, stomach, lung, and prostate. Obesity, particularly central obesity, where body fat is deposited around the waist and abdomen, increases the risk of developing post-menopausal breast cancer, and being overweight or obese increases the risk of developing endometrial cancer (DH, 1998).

Diet is therefore a risk factor for the development of some of the most commonly occurring cancers in England. Improving people's diets is an important public health measure, not only to reduce the rates of cancer but other diet-related chronic conditions such as coronary heart disease (CHD), stroke, type 2 diabetes and obesity.

Objectives of nutritional interventions

Dietary recommendations

Dietary recommendations to reduce the risk of cancer in the UK were first made by the Committee on Medical Aspects' (COMA) working group on diet and cancer in 1998. The group reviewed the links between various dietary factors and cancers at 15 sites in the body (DH, 1998). A briefing paper produced by the former Health Education Authority summarises the conclusions and recommendations of this report and is available at www.hda-online.org.uk (Health Education Authority, 1999a).

The report recommends, on a population basis:

- Increasing the consumption of a wide variety of fruits and vegetables
- Increasing intakes of dietary fibre from bread and other cereals (particularly wholegrain varieties), potatoes, fruit and vegetables
- Maintaining a healthy body weight (within the BMI range 20-25) and avoiding an increase during adult life
- Avoiding an increase in the average consumption of red and processed meat, current intakes of which are about 90g/day*
- Avoiding the use of beta-carotene supplements to protect against cancer and being cautious in using high doses of purified supplements of other nutrients.

Many of the key recommendations of the COMA report on cancer endorse those made by previous COMA reports, in particular COMA's 1994 report on the nutritional aspects of cardiovascular disease (DH, 1994). COMA stated that its recommendations to reduce the risk of cancers should be followed in the context of its wider recommendations for a healthy, balanced and varied diet, in particular one which is low in fat and rich in starchy foods (such as bread, other cereals and potatoes, and fruit and vegetables. The recommendations of COMA's reports provide the basis for the Balance of Good Health, a pictorial model that shows what a balanced diet means in practice (see p30).

In recent years, evidence has continued to accumulate about the links between specific aspects of diet and

* Individuals who consume more than 140g/day of red and processed meat (cooked weight) should reduce their intake. Red meat is defined as beef, lamb and pork; processed meats are defined as meat products such as sausages and burgers. In practical terms, individuals should eat some foods from the meat, fish and alternatives food group each day, but should make a wide variety of choices.

certain cancers, for example, the association between intakes of fruit and vegetables and cancers of the colon, rectum, stomach, oesophagus, mouth, pharynx, larynx and urinary tract (Steinmetz and Potter, 1996; World Cancer Research Fund and A.I.f.C. Research, 1997; La Vecchia and Tavani, 1998). Together with accumulating evidence of the benefits of increasing fruit and vegetable consumption in order to reduce the risk of CHD and other chronic conditions, this has led to the promotion of fruit and vegetables as being a key aspect of a healthy diet and a priority in current government policy. Indeed, increasing the population's average intake of fruit and vegetables to at least five portions a day is considered to be the second most important strategy in preventing cancers after reducing the rates of smoking (Day, 2000).

While the aim is ultimately to increase the population average daily intake of fruit and vegetables to at least five portions of around 80g each, a recent trial has shown that increasing intakes by the equivalent of around one portion per day may be beneficial in reducing the rates of chronic disease (Khaw et al., 2001).

Reducing inequity

There are inequalities in diet between those on higher and lower incomes (Acheson, 1998). The most striking difference is the variation in amounts of vegetables and, particularly, in the amount of fruit eaten by people in lower socio-economic groups. In the UK, average consumption is about three to four portions a day, though there are marked differences between social groups with unskilled groups tending to eat around 50% less than professional groups (Ministry of Agriculture, Fisheries and Food, 1998). This inequity has also been reported in children (Gregory et al., 2000).

Studies have shown that people on low income can describe a healthy diet as well as those on higher incomes (Lobstein, 1997), and that although levels of knowledge about diet increase in men as income level rises, among women levels of knowledge about diet are only significantly greater among those from the highest income groups (Rainford et al., 2000). Improving knowledge alone is ineffective in improving people's diets. Affordability and physical accessibility to foods such as fruit and vegetables have been identified as key barriers to eating a healthier diet (Lobstein, 1997; DH, 1996; DH, 2000b). *The Independent Enquiry into Inequalities in Health* (Acheson, 1998) recommended further development of policies that will ensure adequate retail provision of food to those who are disadvantaged. A report by the Social Exclusion Unit Policy Action Team 13 (Policy Action Team, 1999) confirmed that accessing affordable good quality fruit and vegetables within some local areas is difficult. Addressing these barriers is therefore a high priority within current government policy.

Black and minority ethnic groups

Improving the health of minority ethnic groups is also a priority in the government's drive to reduce social exclusion and inequalities in health. Further impetus was given by Acheson's report (1998) which recommended that the needs of black and minority ethnic groups should be specifically considered. The Health Education Authority (2000) found that among black and minority ethnic groups, understanding of healthy eating messages varied widely between groups, and knowledge of foods high in complex carbohydrates, fibre, fat and saturated fat was often poor across all ethnic groups.

Some aspects of the traditional diet among certain groups may be perceived as being healthier than among the general population. For example, fruit and vegetable intakes may be greater, but health professionals working with these groups have raised concerns that traditional cooking methods can use a lot of fat and vegetables are often overcooked. In addition, younger generations may eat a combination of a traditional diet and a more mainstream diet (Health Education Authority, 2000a). There is a need, therefore, both to raise awareness of the links between diet and chronic disease and to promote culturally relevant messages that take account of current dietary practices. Where traditional diets are consumed, the focus should be on reinforcing the positive aspects and might involve working with groups to develop healthier variations of traditional cooking methods in appropriate community settings.

'Older people'

Older people are frequently overlooked as a group that may be nutritionally vulnerable. The term 'older people' embodies those at several life-stages, and can include those who have not yet reached official retirement age (DH, 2001a). Many 'older people' may therefore benefit from a healthy diet such as that based on the Balance of Good Health in order to continue good health and to reduce the risk of conditions such as diet-related cancers,

CHD, stroke, obesity, diabetes and osteoporosis. 'Older people' do not comprise a homogenous group, however, and while many are healthy, others are frail and may require a more energy and nutrient dense diet in order to meet their nutritional requirements.

The National Diet and Nutrition Survey of people aged 65 and over (Finch et al., 1998) highlighted different concerns for older people living independently and those living in residential care, though there were common concerns for both including: low intakes of dietary fibre; intakes of saturated fat above recommended levels; and intakes of added sugars that were in excess of recommended amounts. The frequency with which sugary foods and drinks were consumed was of particular concern, as was the presence of root decay in those with natural teeth.

The National Service Framework for Older People has highlighted improving food and nutrition as a health promotion activity that can be of specific benefit to 'older people'. In addition to improving physical wellbeing, improving diet can have a beneficial effect on mental health, and promote self esteem and a sense of wellbeing (DH, 2001a).*

In developing nutritional strategies for 'older people', consideration should be given to the needs of different groups (Fletcher and Rake, 1998). Many older people are on low incomes and those living independently may lack access to shops and public transport in some areas. They may face other difficulties in accessing a healthy diet through impaired mobility, difficulty in carrying shopping, or through fear of venturing out due to crime (Health Education Authority, 1998a; Policy Action Team 13, 1999). People living alone may not be inclined to cook, or may lack the confidence or skills to do so.

Many of the interventions to improve access to food or improve cooking skills detailed in the tables at the end of this chapter may be useful as part of an overall strategy for promoting healthy eating among older people living independently, but may need some adaptation. For example, some food cooperatives have developed delivery schemes or fruit and vegetable box schemes that can be valuable to customers with mobility problems (see p45); and cooking skills clubs (see p43) could usefully focus on people who may find themselves having to cook for the first time.

In working with residential care homes for older people, it is important to ensure that the varying needs of healthy and more frail residents are met. A State Registered Dietitian (SRD) should be involved in any work in this area. As good oral health is an important factor in maintaining nutrient intakes in older people, it is advisable to involve community dental services. The Caroline Walker Trust has produced useful guidelines for those catering for older people in residential and nursing homes, and at lunch clubs and through community meals (Caroline Walker Trust, 1995).

Developing local strategies to promote healthy eating

The importance of addressing diet as a risk factor for diet-related cancers, CHD, obesity, type 2 diabetes and other chronic conditions is reflected in key policy documents, including: *National Service Framework for Coronary Heart Disease*; *The NHS Cancer Plan*; *The NHS Plan* and *National Service Framework for Diabetes* (DH, 2000a; DH, 2000b; DH, 2000c; DH, 2001c). Each of these require specific action to be taken at local level to promote healthy eating in order to achieve specific milestones. For example, the *National Service Framework for Coronary Heart Disease* required all NHS bodies, working closely with local authorities, to have agreed and be contributing to the delivery of local programmes of effective policies on promoting healthy eating by April 2001 (DH, 2000a). Access to affordable supplies of fruit and vegetables is a key issue within current government policy, reflected in *The NHS Plan* Implementation Programme for 2001-2002. This requires 'Health Authorities to prepare quantified plans to increase access to, and consumption of vegetables and fruit, particularly among those on low incomes, to support the national Five-a-Day Programme, which will be launched in 2001' (DH, 2001b).

Other relevant strategies that provide both opportunities to work in partnership and to improve access to a healthier diet, include Community Strategies and those with a regeneration focus such as Neighbourhood Renewal Strategies and the Single Regeneration Budget. It will be particularly important to work with initiatives led

* The Health Development Agency is currently producing a resource to support the implementation of Standard Eight of *The National Service Framework for Older People*: 'The promotion of health and active life in older age'.

by local government to encourage local and sustainable food production which may be supported by regional development strategies (DETR, 2000).

In practical terms, the development of local strategies to promote healthy eating to reduce the risk of cancer, CHD and obesity should be based on promoting a diet which is consistent with the Balance of Good Health (see box below), and which places a particular emphasis on increasing access to, and intakes of, fruit and vegetables.

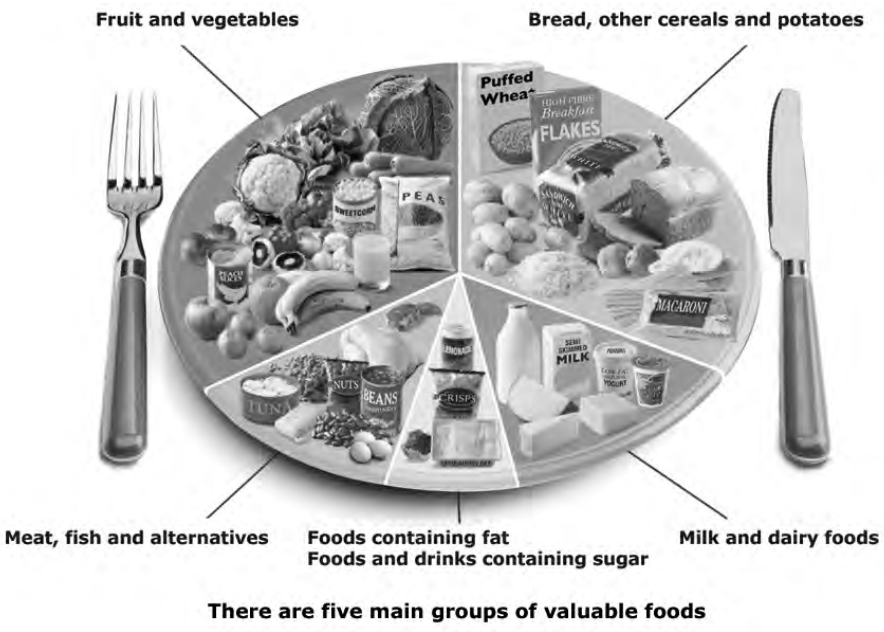
Local strategies should therefore focus on:

- Using culturally appropriate messages to promote a diet that is consistent with the Balance of Good Health (see box below). That is, a diet which alongside promoting fruit and vegetables, encourages the increased intake of starchy foods such as bread, other cereals and potatoes, moderate amounts of a wide variety of foods from the meat, fish and alternatives, and milk and dairy foods groups, and which limits fat (particularly saturated fat), salt and added sugars
- Increasing access to affordable, good quality supplies of fruit and vegetables, particularly in low income areas
- Encouraging an increase in the local population's intake of fruit and vegetables, aiming for at least five portions per day, and focusing particularly on areas where intakes are low
- Encouraging a physically active lifestyle and a healthy diet, that together enable individuals to achieve and maintain a healthy body mass index (BMI) in the range 20-25 and to avoid gaining weight during adulthood.

Effective strategies to promote healthy eating are generally those which work at several levels (such as individuals, groups and communities) and which address the barriers to dietary change and the maintenance of a healthy diet. Barriers to dietary change can be broadly divided into those that are 'circumstantial' and those that are 'attitudinal', and in terms of increasing fruit and vegetable intakes are well established (Marshall et al., 1995; Health Education Authority, 1994; Anderson et al., 1998; Cox et al., 1998; British Dietetic Association, 2001; Food Standards Agency, 2001).

The Balance of Good Health

A useful tool to support health promoters in promoting a balanced diet is the Balance of Good Health* (Health Education Authority, Department of Health, Ministry of Agriculture, Fisheries and Food 1994, now available from the Food Standards Agency). It shows the proportion of the diet that should come from the different food groups and can provide a consistent and easily understood message about a balanced diet. The Balance of Good Health has also been modified for use with black and minority ethnic groups. The British Dietetic Association and Sainsbury's have developed a version for use with African–Caribbean communities and the British Nutrition Foundation has produced a model suitable for use with the Chinese community. Dietitians at Wandsworth Community Health Trust, with support from Spillers Milling, have produced a version suitable for use with South Asian groups.



There are five main groups of valuable foods

* The Balance of Good Health does not apply to: children under two years of age, who need a diet that is higher in fat and lower in fibre-rich, starchy foods; to children between two and five years (a gradual transition towards a diet consistent with the Balance of Good Health is recommended for this age group); or to people with special dietary requirements or those under medical supervision.

'Circumstantial' barriers include:

- The ability to afford healthier choices, such as fruit and vegetables, particularly by those on low incomes
- Physical accessibility to affordable and good quality supplies, in areas that lack shops which stock fruit and vegetables, or that lack public transport.

'Attitudinal' barriers include:

- People's belief that they are eating enough fruit and vegetables already
- A lack of understanding of portion sizes
- Confusion about the healthiness of frozen, canned and dried products
- Lack of knowledge about the specific health benefits of a healthy diet
- Dislike of the taste, particularly of vegetables
- The influence of family members' taste, particularly children's likes and dislikes
- The belief that fruit and vegetables are not filling enough
- Lack of confidence to prepare and cook food
- Among children particularly, peer pressure and conforming to the social norm.

It is important to identify the barriers to change within the local population and then to select interventions that aim to address them. The box below gives an example of one or two interventions that could be used to address some of the common barriers to eating more fruit and vegetables.

The tables of suggested activities to support local action in promoting healthy eating, which can be found on p37-56, discuss a wide range of interventions, including the available evidence base as to their effectiveness and likely outcomes, the skills and resources which may be necessary to set them up, and useful sources of further information. Chapter 3 reviews the evidence base for the effectiveness of interventions to prevent and treat obesity and includes similar tables of suggested activities for local action.

Professional knowledge and expertise

Identifying the barriers and developing an integrated programme of complementary activities will require the input of people with a range of skills.

While most areas have access to a community dietitian, it is quite common for clinical duties to restrict the provision of their time in the community. In planning the resources needed to implement the strategy, it may be worth considering ring fencing a block of dietitian time to devote to community work. Public health nutritionists can provide the expertise to develop and implement a public health nutrition strategy and to work on other nutrition issues at a population level.

The Nutrition Society has in recent years introduced a registration system for Public Health Nutritionists (RPH Nutr). In addition, the Nutrition Society has also developed an associate registration scheme for newly qualified public health nutrition professionals who have not yet accumulated the three years' experience required for full registration as a Public Health Nutritionist. The Register of Public Health Nutritionists can be found at www.nutsoc.org.uk/Registration/register2001_files/register2001.htm or contact Jackie Landman at the Nutrition Society (020 7602 0228) for further information on the associate scheme.

A wide range of professionals from both the health sector and local government can contribute towards the

Barrier	Intervention
Difficulty in finding affordable, good quality fruit and vegetables locally	Set up community owned retailing and food cooperatives to introduce affordable supplies
Belief that the family is already eating a healthy diet	Information about at least five portions a day and portion sizes
Dislike of the taste of vegetables and a lack of confidence to prepare and cook them. A fear of waste and rejection by the family	Set up cooking skills clubs and tasting sessions, or develop 'cook and eat' sessions opportunistically as part of existing groups, eg women's groups, youth clubs

development of a strategy to promote healthy eating and to delivering this through local strategic partnerships. These might include: health promotion specialists; public health specialists; representatives from primary care trusts; community development workers; local authority housing; regeneration and sustainable development officers; employment advisers; representatives from the voluntary sector and from business and commerce.

Local people are an important addition to the skill base. Research suggests that efficiency and effectiveness of community based interventions can be improved by using local people to complement the work of health professionals. McGlone et al. (1999) suggest that 'if local food projects are to work, then they must genuinely involve local people'. Services provided by local people are often considered more appropriate and more accessible to the health needs of the community. Such services foster self-reliance, community participation and can help overcome barriers. They also allow access to typically hard to reach groups and can be particularly beneficial for black and minority ethnic groups.

These benefits are also two-way, as local people have the opportunity to develop their own skills. Exploratory work with this peer education approach (Hodgson et al., 1995; Kennedy et al., 1999) showed that it was possible to achieve both significant increases in nutrition knowledge and the potential for beneficial changes in the dietary practices of low income families. One successful approach appears to be one in which guided 'hands on' food preparation/cooking sessions allow the participants to acquire knowledge and skills. However, it was noted that this approach was resource intensive, particularly in professional staff time, and there is little evidence of effectiveness in terms of dietary change. This approach may result in potential health, social and economic benefits and therefore warrants further study.

General features of effective interventions

This section briefly considers the features of effective interventions intended both to promote healthy eating in general and those intended to prevent cancer and/or promote fruit and vegetables specifically. Chapter 3 considers interventions to prevent and treat obesity.

In 1997, the former Health Education Authority published a systematic review of the effectiveness of interventions designed to promote healthy eating among the general population (Roe et al., 1997). Eight of the 76 studies that were included focused on the promotion of fruit, vegetables or starchy foods or on interventions designed to reduce the risk of diet-related cancers. More recently, three reviews have been published which focus on more studies in these areas. All of these have been carried out in Canada or the US (Ciliska et al., 2000; Sahay et al., 2000; and the Agency for Healthcare Research and Quality, 2000).

The review by the Agency for Healthcare Research and Quality found that 39 of the 92 studies it included reported the results of interventions to increase fruit and vegetable intakes. These included a wide range of different types of intervention designed to improve diet (eg individual dietary counselling sessions, interventions with groups etc) and which were carried out in a range of different settings (eg schools, workplaces, the community and primary care settings). The review concluded that:

- Dietary interventions were positively associated with changes in fruit and vegetable consumption
- When fruit and vegetable intakes were measured separately, changes in fruit intakes were greater than changes in vegetable intakes.

Sixteen of the 22 studies that used fruit and vegetable intakes (combined) as an outcome measure reported statistically significant increases in intake. The authors calculated that the difference in intakes between intervention and control groups was on average 0.6 servings/day. They noted that interventions among children seemed more successful in increasing fruit intakes and interventions among adults in increasing vegetable intakes. In addition, interventions among groups at higher risk of developing disease were consistently more likely to report greater statistically significant increases in intake than among those in the general population (Agency for Healthcare Research and Quality, 2000).

There is much consistency in the findings of the four reviews by Roe et al., (1997), Ciliska et al., (2000), Sahay et al., (2000) and the Agency for Healthcare Research and Quality (2000). Each of these identified certain features as being characteristics of interventions that had been found to be effective. These can be summarised as interventions that:

- Focus on diet alone, or diet plus physical activity rather than tackle a range of risk factors
- Have clear goals which are based on theories of behavioural change, rather than those that rely on the provision of information alone
- Involve personal contact with individuals or small groups which is sustained over time
- Provide participants with personalised feedback on any changes in their behaviour and risk factors
- Promote changes to the local environment, for example in shops and catering outlets, to help people choose a healthy diet
- Respond to needs identified through needs assessment and involve the potential participants/community in planning and implementation
- Incorporate multiple strategies, designed to address a range of barriers to change
- Provide training and support to those involved in delivering the intervention, eg community workers, primary care staff, caterers
- Involve the family
- Are of adequate intensity and duration
- Give clear, strongly worded and simple messages
- Consider the political climate in which the intervention is being implemented by addressing policy priorities and taking up opportunities/resources which may be available to support the project
- Maintain communication between the implementing body and other organisations
- Use interactive activities involving food, such as hands on food preparation, cooking and tasting sessions.

It is recognised that every individual programme of interventions will differ, as it is essential that they address local needs and priorities. As such they will not all display every characteristic of effectiveness that is listed above. However, some underlying principles that could be considered to be key to the success of an intervention include the following:

- *Using a proven, effective theoretical base to encourage changes in people's behaviour*, through changes in knowledge and attitudes, the development of practical skills and through improving access to a healthier diet
- *Using multiple strategies which include the development of a supportive environment* in which healthier choices are affordable and available and in which the culture is supportive of healthy eating
- *Having sufficient intensity and duration*. For example, it is increasingly being recognised that community food initiatives such as food access projects take a minimum of two years to establish
- *Developing interventions through participatory approaches*, ie with the involvement of the potential participants. This applies particularly to work in the community and in schools.

Components of a local strategy

Local strategies should be based on needs assessment that first identifies the barriers to dietary change and should use integrated programmes of interventions that address those barriers to change. In devising a local strategy it is likely that interventions will be developed in a variety of settings.

The following sections summarise the general features, or common characteristics, of a range of interventions that appear to have been successful in settings such as schools, pre-school settings, the community, the workplace and primary healthcare. It may be useful to use these as a type of checklist against which to compare interventions that are planned as part of a local strategy.

The tables at the end of this chapter provide more indepth practical detail on developing interventions and the evidence of effectiveness for individual types of intervention. For example, community based cook and eat sessions, school fruit tuckshops, food cooperatives, and the use of healthier catering practices in the workplace.

Schools

A meta-analysis of 12 intervention studies to promote healthy eating in relation to CHD in schools concluded that they can have a significant effect in terms of improving diet (McArthur, 1998). Systematic reviews of health promoting schools and health promotion in schools by Lister-Sharp et al. (1999) found improvements in diet with a health promoting school/whole school approach. There were also other positive impacts such as increased mental and social wellbeing, staff development and improved social atmosphere in the school. Other approaches were effective in increasing dietary knowledge, but were less successful in changing other factors such as attitude towards diet.

Reviews have identified the following features for an effective school intervention (Contento, 1995; Roe et al., 1997, Lister-Sharp et al., 1999):

- Nutrition education interventions are more likely to be effective when they are derived from appropriate theory and research
- Interventions need adequate time and intensity to be effective
- Family involvement enhances the effectiveness of programmes for younger children
- Incorporation of self-evaluation or self-assessment and feedback is effective in interventions for older children
- Effective nutrition education includes consideration of the whole school environment and community
- Interventions in the larger community can enhance school nutrition education
- The most effective interventions focus on diet alone or diet and physical activity
- Sahay et al. (2000) noted the importance of undertaking needs assessment with pupils, parents, teachers and members of the wider community, and involving them in the development of schools-based interventions.

Pre-school settings

Early childhood experiences strongly influence dietary preference and good eating habits. While it may not have an immediate effect on morbidity and mortality rates, strategies to promote healthy eating among children will benefit in the longer term (Landon and Giles, 2002). They will also help to address the concerns raised by the National Diet and Nutrition Survey, of children aged one to four years. This included intakes of sugars that exceeded desirable levels, predominantly from soft drinks and confectionery (Gregory et al., 1995).

Acheson (1998) concluded that 'pre-school education or day care may be especially effective in improving the achievement and health of the most disadvantaged children'. A review by Tedstone et al. (1998) of the effectiveness of interventions to promote healthy eating in pre-school children aged one to five years found that pre-school and daycare centres were likely to be appropriate settings for interventions, and that parental involvement may enhance effectiveness of interventions and should be encouraged. In more detail the review reported that:

- One-to-one dietary counselling with mothers which was tailored to specific needs was successful in bringing about dietary improvements
- Traditional, video or computer-based teaching methods were successful in increasing nutrition knowledge, and the effectiveness was enhanced by including parents
- Repeated exposure to initially new foods was successful in increasing willingness to consume foods, but only if the intervention included tasting them
- The use of rewards to encourage the consumption of foods was not successful once the intervention had ended and the rewards had ceased. However, subsequent work by Woolner (2000) using a video and reward system with two to four year olds found that increases in intake of fruit and vegetables were sustained for up to 15 months following removal of the reward system.

Local community projects

Little rigorous evaluation of the effectiveness of small-scale projects has been carried out. The available evidence suggests that effective community interventions appear to:

- Focus on diet alone or diet plus physical activity
- Use a theoretical model as a base, eg models which focus on theories of changing people's behaviour, or improving access to a healthy diet
- Use a range of different interventions that work at different levels, eg with individuals, small groups, communities, and that make changes to the environment so that healthier choices are affordable and available (Contento, 1995; Roe et al., 1997).

McGlone (McGlone et al., 1999), in considering smaller-scale projects in particular, identifies the following characteristics of local community projects which appear to have been 'successful':

- Flexibility by agencies in responding to the needs of particular communities
- Access to secure, and ongoing, funds
- Professionals working in partnership with a community
- Projects that involve local people, and ensure equal respect
- Evaluation which is not confined to narrow clinical and behavioural measures; the inclusion of food purchasing patterns, structural changes and social outcomes, for example
- Striking a balance between partnerships and local ownership
- Training for professionals and members of the community to enable them to acquire skills for a new way of working.

In addition, McGlone suggests the following factors would also facilitate successful community based projects:

- Local and national networks which enable the sharing of experiences
- Government policies that do not deter volunteers (eg through affecting their eligibility for social welfare benefits)
- The provision of incentives for local projects and small businesses, such as tax relief.

Internationally, there have been few evaluated community based interventions that focus on the promotion of fruit and vegetables. In the US, the 5 A Day for Better Health Program is run in partnership by the National Cancer Institute and the vegetable and fruit industry. Launched on a national basis in 1991, the programme encourages the consumption of five portions of fruit and vegetables each day to reduce the risk of diet-related cancers. There are four key areas of activity: community initiatives; working with the media; promotional work at the point of purchase; and a research programme.

The evaluation of the 5 A Day for Better Health Program (Potter et al., 2000) reported increases in knowledge among the general population of the 'five a day' message from 8% in 1991 to 19% in 1997, with awareness being higher among women, younger people, whites and those with more education. Although there has been a steady increase in fruit and vegetable consumption during the life of the 5 A Day Program, it is difficult to assess the impact of the programme itself due to the lack of a control group. However, the authors of the evaluation suggest: 'The possibility cannot be ruled out that, without the 5 A Day Program, there would have been substantial decreases in vegetable and fruit consumption, paralleling the rapid increases in obesity over the same period' (Potter et al., 2000).

In England, the Department of Health funded five 'Five-a-day' pilot sites across the country (DH, 2000b). These are currently being evaluated and the findings will be used to inform the development of further Five-a-day community initiatives. The pilot interventions had a clear focus on promoting fruit and vegetables within the community setting and will make a useful contribution to the evidence base for interventions in this setting. See community approaches to promoting Five-a-day, p55.

Workplace

Three out of four good quality studies showed positive effects of healthy eating interventions in the workplace, with decreases in blood cholesterol of between 2.5%-10% (Roe et al., 1997). An HEA review of the effectiveness of health promotion interventions in the workplace (Peersman et al., 1998) identified four studies on healthy eating with adequate methodologies. Three show positive effects on fat, fruit and vegetable intake, intention to change the diet and self-efficacy. Sahay et al. (2000) identified two workplace interventions as examples of good practice: the Treatwell 5-A-Day study (part of the US 5 A Day for Better Health Program) (Sorensen et al., 1999) and the Working Well Trial (Sorensen et al., 1996).

Characteristics of an effective workplace intervention include:

- Visible and enthusiastic support and involvement from management
- Involvement by employees at all levels in the planning and implementation phases, so that there is a sense of ownership
- Screening and/or individual counselling
- Changes to the composition of best-selling foods provided in canteens and vending machines, and promotion at the point of purchase
- Tailoring interventions to suit the characteristics and needs of the employees
- Combining population-based policy initiatives with intensive individual and group-based interventions
- Building in sustainability, so that the intervention becomes embedded within normal practices
- Employees that enjoy the support of the family in making dietary changes
- Motivators such as incentives and competitions and events to launch or 'kick off' the intervention.

Primary healthcare

Most studies carried out in healthcare or institutional settings have focused on reducing intakes of fat, saturated fat or sodium, or on increasing fibre intakes. Participants in this setting are often at higher risk of developing diet-related conditions and, as such, may be well-motivated to make changes to their diet.

Various meta-analyses of studies carried out in these settings have shown that dietary interventions can lead to beneficial changes in biological markers such as blood

cholesterol levels (Brunner et al., 1997; Yu-Poth et al., 1999; Tang et al., 1998). Roe et al. (1997) included interventions in the primary healthcare setting, and four 'good quality studies' were identified. Modest and sustained effects on both blood cholesterol and dietary fat intake were achieved for dietary interventions only or for multi-factorial interventions.

The effectiveness of general practitioners in delivering dietary advice was examined in a systematic review by Ashenden (1997). This looked at ten studies but the variation in both outcome measures and the context in which the advice was given made it difficult to draw any firm conclusions. However, there was clear evidence overall that GP-based programmes could have a modest, if variable effect on health outcomes. The authors concluded, however, that to be effective as a public health measure greater GP involvement would be needed.

Characteristics of an effective intervention in the primary healthcare setting include:

- Small group or one-to-one counselling sessions
- Targeting higher risk groups. This is also more cost effective (Van der Weidjen, 1998; Wood et al., 1998)
- Family counselling and education for those at increased risk
- Tailoring to the personal characteristics of individuals (Roe et al., 1997; Sahay et al., 2000)
- Educational and behavioural frameworks which are client-centred
- Staff training and development (in both topic-based knowledge and in counselling skills)
- Low intensity interventions, such as mailed out computer-generated personalised information for well-motivated groups (Roe et al., 1997)
- Sahay et al. (2000) also identified the use of self-help strategies promoted through primary care settings as being promising.

Improving diet and nutrition – suggested activities to support local action

A WHOLE SCHOOL APPROACH TO PROMOTING HEALTHY EATING/FRUIT AND VEGETABLES. Uses a multi-component strategy that promotes healthy eating through the taught curriculum, through the catering at meal and breaktimes, and fosters a supportive environment and culture, which may involve the family and wider community.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Anderson et al. (2000) promoted fruit and vegetables via catering at lunch and breaks, gave tasting opportunities, and developed curriculum activities for ages 6 and 11. These included 'hands on' skills and parental involvement, resulting in increased intakes of around 0.5 portions/day, with increases in knowledge and some changes in taste preferences. See also: Lowe et al. (2002), using video and a reward system.	Can improve knowledge and attitudes towards healthy eating and can show small but valuable changes in intake of foods such as fruit and vegetables. Among primary aged children providing opportunities to taste previously inexperienced or disliked foods may change taste preferences, through either repeated exposure and use of rewards (Lowe et al., 2002) or through development of a positive, supportive culture among older peers, at school and at home (Anderson et al., 2000).	Sahay et al. (2000) suggests participatory approaches are important, involving: pupils, teachers, catering staff, parents, governors and the wider community. Development of a school food policy can be supported by a School Nutrition Action Group (SNAG).	Curriculum materials suitable for the age range concerned. Suitable, safe and hygienic venue and equipment for food preparation for 'hands on' skills development. Supplies of fruit and vegetables for tuckshops/ breakfast clubs/vending/ tasting sessions. Paid staff or volunteers for running breakfast clubs, tuckshops etc. Ordering supplies, handling money etc. Individual interventions are described later in these tables.	The government recently announced funding for a Food in Schools programme, an umbrella initiative for food-related activities in school. Adopting a whole school approach will contribute towards the NHSS. This approach can build on existing activities, eg breakfast clubs, tuckshops, cooking clubs and the taught curriculum and is likely to be more effective than individual activities in isolation.	*The Chips are Down – a guide to food policy in school.* By the Health Education Trust. Available from: The Chips are Down, PO Box 132, Stockport, SK1 3YW. Price £15. *School Food Action Group: healthy eating initiatives and food provision in primary and secondary schools.* By Anita Tull. Price £15. Available from: Common Cause Co-operative, The Green Room, 20 North Street, Lewes, East Sussex BN7 2PE. Email: comcause@commoncause.fsnet.co.uk For a summary of the work by Lowe et al. (2002), see www.fooddudes.co.uk See also subsequent tables for interventions in the school setting.

Improving diet and nutrition – suggested activities to support local action (cont.)

NUTRITIONAL STANDARDS FOR SCHOOL LUNCHES. New legislation introduced in April 2001 requires school lunches to meet minimum nutritional standards.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Roe et al. (1997) identified two good quality studies relevant to school meals: Ellison et al. (1989) and Ellison et al. (1990) showed passive manipulation of fat content reduced saturated fat intake by 2% and a similar increase in polyunsaturated fat intake. Whitaker et al. (1994) showed 3% increase in low fat choices when promoted. See also 'whole school approach'.	Compliance with legal requirement. Gives a sound basis to a whole school approach; will contribute to achieving the National Healthy School Standard. Clear guidance and framework for monitoring is provided. Should ensure good nutritional standards for free meals.	Local education authority (LEA), direct service organisation. Contract caterers, in-house dietitians. Local Authority Caterers Association (LACA) www.laca.co.uk Schools Nutrition Action Group initiative can help schools in developing a school food policy. Local healthy schools programme. Child Poverty Action Group, www.cpag.org.uk	Support for caterers from community dietitian or public health nutritionist in training in healthier catering practices and in monitoring compliance with the standards.	Pricing of healthier choices – and caterers' perceptions of the higher production costs. Introducing a school food policy to support adoption of the standards. Opportunity to review snack provisions at same time as breakfast clubs and vending machines. Meeting and monitoring standards is a legal requirement. *The Sodexho School Meals Survey: our children's approach to eating and lifestyle in the new millennium* (2000). For price and availability, tel: 01793 512112 or see www.sodexho.co.uk. New survey due in October 2002. McMahon, W. and Marsh, T. (1999). *Filling the Gap*. Child Poverty Action Group. £5, www.cpag.org.uk or 94 White Lion Street, London W1 9PF. Tel: 020 7837 7979. The website also contains briefing papers on school meals and healthy eating and school meals in Scotland.	*National Standards for school lunches, England. Regulations 2000*. Statutory Instrument No 1777. Stationery Office. £1.50. *Eating well at school: dietary guidance for school meal providers*. 1997. DfES Publications, PO Box 5050, Annesley, Nottingham, NG15 0DJ. Tel: 0845 6022260. Free. *School Meals Assessment Pack* (computer package assessing the nutritional quality of secondary school meals) produced by the National Heart Forum. SMAP, PO Box 7, London W5 2GQ. £45, cheques payable to BSS. *School Food Policy Guide* produced by the School Nutrition Action Group. Contact Joe Harvey, Health Education Trust. Tel/fax: 01789 773915. *Nutrition Guidelines for School Meals* (1992). Caroline Walker Trust, 22 Kindersley Way, Abbots Langley, Hertfordshire, WD5 0DQ. £10 inc p&p. *Chartwells Future of Food in Schools Report* (1998). Free from Penny Rolfe, Chartwells, Icknield House, 40 West Street, Dunstable, Beds LU6 1TA.

Improving diet and nutrition – suggested activities to support local action (cont.)

NATIONAL HEALTHY SCHOOL STANDARD (NHSS). Provides an umbrella framework for action in schools, supported by local services. Provides potential support for delivering against government priorities and can encourage the development of local strategic partnerships. Criteria for healthy eating are based on the implementation of a whole school approach.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Evaluation of pilot sites (Rivers et al., 2000) found conflict between healthy eating criteria and school meals contracts. Legal minimum standards for school lunches should overcome this. 'One Year On', an audit of activities linked to the NHSS, found that 59% of schools reported 'uptake of healthy foods' as a measure of monitoring impact (Rivers et al., 2001). During National Accreditation, 20% of case studies submitted by local partnerships as evidence of meeting the NHSS focused on healthy eating.	Addresses a range of risk factors for cancers and CHD as part of whole school approach. Has a formalised support network. Could be used to formalise and secure funding for any school-based initiatives. Allows a flexible approach to meeting standard criteria. NHSS support materials will facilitate strategic connections and help identify local partners as well as provide case study examples of good practice.	Local healthy schools programme coordinators based in LEAs or PCTs and working with local strategic planning groups.	Local programme coordinators will welcome the involvement of community dietitians, public health nutritionists, health promotion and public health specialists, school nurses and school caterers in meeting the standard.	Schools agree priorities with coordinators of local healthy school programmes, based on needs of pupils, teachers, parents and style of development. This is an opportunity to become involved in the strategic planning to meet the healthy eating standard. All LEAs have now signed up to achieve the National Healthy School Standard. It is anticipated that all partnerships will have met the requirements of the NHSS by April 2002.	*National Healthy School Standard Guidance and National Healthy School Standard: getting started.* DfES (1999). Available free from DfES Publications, PO Box 5050, Annesley, Nottingham NG15 0DJ. Tel: 0845 6022260. Your Healthy School section of www.wiredforhealth.gov.uk *Food – a fact of life* – a range of teaching resource material for primary and secondary schools. (British Nutrition Foundation). Contact 020 7404 6504 or www.nutrition.org.uk

Improving diet and nutrition – suggested activities to support local action (cont.)

BREAKFAST AND AFTER-SCHOOL CLUBS. The government has funded school breakfast clubs in areas of high deprivation, including health action zones and education action zones as part of its drive to tackle inequalities in health.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Evaluation of 34 breakfast clubs by the University of East Anglia, funded by Department of Health, due to be published 2002 (www.breakfastclubs.net). Evaluation of three 'models' in Scottish primary schools showed those offering both breakfast and play activities, with paid play coordinators, were more successful than those offering breakfast alone (MacGregor, 1999). After-school clubs are currently being run by Hackett et al., Liverpool John Moore's University. Evaluation is planned for 2002/3.	Offer broader benefits, eg pre- and after-school care, increased punctuality. MacGregor (1999) reported increased school attendance, improved behaviour in class and fewer discipline problems. Opportunity to encourage the intake of fruit or cereal, as juice or after school as snacks. May also help to address low intakes of iron and other micronutrients (Gregory et al., 2000). HEA Young People and Health survey (1999) revealed that almost one in five (18%) young people aged 11-16 years never (or hardly ever) had breakfast before school (males 13%, females 23%).	LEA direct service organisations. School caterers. Headteachers, school governors and parent-teacher associations (PTAs). Regional and local coordinators of healthy schools programmes. School Nutrition Action Groups (SNAGs). Kellogg's – www.breakfast-clubs.co.uk Neighbourhood Renewal projects/partnerships.	Paid staff to prepare food and supervise children and to coordinate play. Venue, facilities and equipment for the safe and hygienic preparation and storage of food. Activities/resources to occupy the children and encourage activity/play. Research support to evaluate success of programme.	Scottish study identified the following features as keys to being successful: – Parental support from planning stage – A perceived need – Active management group – Paid staff – A strong 'club' atmosphere – Strong sense of school ownership – Play was actively promoted. Could form part of a whole school approach to improving diet. Breakfasts and snacks offered need to reflect the Balance of Good Health, eg wholegrain cereals with semi-skimmed milk and fruit.	*Breakfast Clubs. A how to guide.* Kellogg's New Policy Institute and Kellogg's. Available from: www.breakfast-club.co.uk Street, C. and Kenway, P. (1998). *Fit for School – how breakfast clubs meet health education and childcare needs.* New Policy Institute. £12.50. Donovan, N. and Street, C. (1999). *Food for thought – breakfast clubs and their challenges.* New Policy Institute. £7.50. Reports available from: New Policy Institute, 109 Coppergate House, 16 Brune Street, London E1 7NJ. Tel: 020 7721 8421. *Breakfast clubs … a head start* (2000) available from www.dietproject.co.uk/toolkits/headstart.htm Scottish Community Diet Project, c/o Scottish Consumer Council, Royal Exchange House, 100 Queen Street, Glasgow G1 3DN. Tel: 0141 226 5261; email scdp@scotconsumer.org.uk *School Food Policy Guide* produced by the School Nutrition Action Group. Contact Joe Harvey, Health Education Trust. Tel/fax: 01789 773915.

Improving diet and nutrition – suggested activities to support local action (cont.)

SCHOOL-BASED COOKING SKILLS CLUBS. Cooking and food preparation skills compulsory within National Curriculum Food Technology (Key Stages 1 & 2, optional at Key Stages 3 & 4). National initiatives on cooking skills include Cooking for Kids, DfES, for Years 6 and 7, and Focus on Food cooking skills bus, run by the Retail Services Association and Waitrose.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Lang et al. (1999) showed a general dearth of cooking skills in the population and that schools are a key setting for learning such skills. Focus on Food is being evaluated by the University of Reading, results due during 2002. Cooking for Kids reported a range of benefits at end of first year, social as well as educational (Waldon, 1999, unpublished report). Moynihan et al. (2001) has reported on the practical aspects of setting up after-school cooking clubs.	Clubs can stimulate interest and confidence to develop cooking skills out of the school setting. Cooking for Kids reports opportunities to reinforce nutrition and food hygiene lessons taught in class; a head start in Year 7 food technology; getting to know new school/teacher in advance. Opportunity to build interest and enthusiasm for cooking skills.	DfES Cooking for Kids. RSA and Waitrose Focus on Food. LEAs. Headteachers, parents and school governors, school caterers, teachers of food technology; local chefs, restauranteurs and shops who may be willing to help/donate ingredients. Local healthy schools programme.	Access to school kitchens or community kitchens equipped for the safe and hygienic preparation and storage of food. Teaching staff/school meals staff willing to participate out of hours; parents or volunteers to assist with supervision. Ingredients and equipment. Funding sources, eg Education Extra; The Foundation for After School Clubs.	Clubs take place out of school hours or in holidays, and for most children this is a one day experience. Not a replacement for regular teaching of cooking skills. Can be a useful part of a whole school approach. For some children this may be one of very few opportunities to cook.	www.wiredforhealth.gov.uk Cooking for Kids project manual. Available free from Joe Monks at the Department of Health. Tel: 020 7972 2000. Focus on Foods campaign details and 'curriculum connections' materials to support classroom learning can be downloaded from www.waitrose.com/focusonfood Materials are also available from: cookschool@designdimension Tel: 01422 383191.

Improving diet and nutrition – suggested activities to support local action (cont.)

HEALTHY TUCK SHOPS, BREAK TIMES AND VENDING. Food and drinks available at break times are an important part of a whole school approach to healthy eating.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Moore et al. (2000) found no significant increase in intakes of fruit between intervention and control groups in a trial of fruit tuck shops in primary schools. However, Anderson et al. (2000) found a modest but significant effect on knowledge and attitudes towards fruit and vegetables and on intakes of fruit, by using a whole school approach to promoting fruit and vegetables in primary schools, which included tuck-shops Suggests that fruit tuck-shops may not be effective in isolation but may be part of an effective whole school approach. National School Fruit Scheme, currently being piloted in 500 schools (DH, 2000c).	Part of a whole school approach to healthy eating; can contribute towards the criteria for the NHSS. Reinforces the taught curriculum on healthy eating and oral health. Complements the new nutritional standards for school lunches. Provides opportunities to encourage fruit and vegetable intakes and promote snacks safe for teeth.	Local growers, markets, greengrocers, food co-ops and supermarkets. LEAs; school caterers. Local and regional NHSS programme coordinators. Headteachers, school governors, parents. School Nutrition Action Groups (SNAGs). Community development workers.	A dedicated person to manage ordering and preparation of fruit/vegetables. Facilities for the safe and hygienic storage, washing and preparation of fruit and vegetables. For tuck shops/vending, someone to manage the money. A pricing policy where fruit is purchased. Stock rotation and temperature in vending equipment.	*The NHS Plan* announced a National School Fruit Scheme where every child in nursery and aged 4 to 6 in infant schools will be entitled to a free piece of fruit every school day. Currently being piloted in 500 schools, with national roll out planned for 2004 (DH, 2000c). National Diet and Nutrition Survey of young people (Gregory et al., 2000) showed low intakes of fruit and vegetables and high intakes of confectionery and soft drinks. Fruit and vegetable intakes are lowest in households on low income and receiving benefits. Free EU intervention stocks of fruit could be useful and are available to schools, but must be used in addition to normal supplies and not used as part of canteen meals.	British Dietetic Association *Give Me 5 pack* www.bda.uk.com Information on EU intervention for stocks of fruit. From the Rural Payments Agency fruit and vegetable withdrawal section on 0118 968 7695. An information sheet for schools is available (form HOR 18). *School Food Policy Guide* produced by the School Nutrition Action Group. Contact Joe Harvey, Health Education Trust. Tel/fax: 01789 773915. *The National School Fruit Scheme*. (November 2000). Available free from: Department of Health, PO Box 777, London SE1 6XH. Tel: 0800 555777; fax: 01623 724524; email: doh@prolog.uk.com www.doh.gov.uk/schoolfruitscheme Summaries of FSA-funded work by Moore et al. (2000) and Anderson et al. (2000) available at www.food.gov.uk

Improving diet and nutrition – suggested activities to support local action (cont.)

COMMUNITY BASED COOK AND EAT SESSIONS. Mainly local initiatives, some based originally on the former Get Cooking! Programme. Some are specifically targeted at the needs of certain population groups, for example minority ethnic groups.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Caraher and Lang (1999) suggested that redesigned cooking and food classes changed diets of young people and their families. There is a general lack of cooking skills in the population, and confidence to cook varied with age and gender (Lang et al. 1999). Increased self-confidence and esteem in Get Cooking in Wales, (Caraher and Lang 1995). Saffron Food and Health Project (Dobson et al., 2000) suggests that the aim of community food projects must be to get people interested and improve confidence and basic cooking skills. Evaluations also report wider health benefits such as reducing social isolation, and building self-confidence, and may provide a forum in which to discuss other health issues. Ongoing research funded by the FSA: Wrieden et al., University of Dundee, The Cook Well Project, working with low income adults (results due 2002); and Moynihan et al., University of Newcastle, working on peer-led food clubs with older people recruited from luncheon clubs (results due 2005).	Sustain (1999) reported that such projects could increase nutritional knowledge and improve skills as long as the approach was relevant to participants' cultural and socio-economic circumstances. There has been some evaluation of projects with minority ethnic groups. Luton HAZ Asian Cookery Club is currently being evaluated with results due in 2002. See also Snowden (1999) regarding the processes involved in setting up such clubs; and Cash (1999) on the early development of Luton HAZ's Asian Cookery Club. Evaluation of a smaller-scale food skills programme for Asian women has been carried out by West Surrey Health Promotion Service. This found that confidence and basic skills increased and there were benefits from interacting socially. Increases in nutrition and food hygiene knowledge were seen, as were decreases in intakes of fat and sugar. However, these were not statistically significant due to the small numbers involved (Robinson, 2001).	Sessions could be run in groups such as women's groups, youth clubs; church, temples or religious settings; local catering colleges, and home economics teachers. Local voluntary sector organisations and community groups. Local Authorities Catering Association (LACA). Health visitors. Local retailers or gardening and allotment schemes for produce and ingredients. Neighbourhood Renewal partnerships, local employment schemes.	Venue, facilities and equipment for the safe and hygienic preparation and storage of food; funding; ingredients. A project leader with practical food preparation skills, food hygiene and nutritional knowledge. Link workers/peer educators, particularly for work with minority ethnic groups or young people. Budget management skills.	Could be used to encourage intakes of fruit and vegetables by providing opportunity to taste new varieties. May provide a way in to working with certain audiences, eg South Asian women, as a socially acceptable activity. There is currently emerging interest in intergenerational projects in which older people act as peer educators for younger groups.	www.haznet.org.uk www.food.poverty.hda-online.org.uk Saffron Food and Health Project: www.crsp.ac.uk Luton HAZ Asian Cookery Club has a website which includes some recipes. www.asiancookclub.com Copies of recipe pack available from: Nutrition and Dietetic Service, Luton and Dunstable Hospital, Luton LU4 ODZ. Tel: 01582 497162. *Get Cooking* and *Get Shopping pack* from Sustain. £14. Tel: 020 7837 1228. *OK! Let's Cook.* Recipe book. Healthy Norfolk 2000. £2. Tel: 01603 487990. *No Dosh Good Nosh.* Nightsafe, Blackburn. £1. Tel: 01254 587687.

Improving diet and nutrition – suggested activities to support local action (cont.)

COMMUNITY CAFES. Run on a local and not for profit basis, often part of a wider community centre offering other services. Aim to provide affordable (not necessarily healthy) meals in a sociable atmosphere and to reduce social isolation.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Not well documented. An evaluation of a community cafe in SE England (Kaduskar et al., 1999), could not determine whether the café was successful in its aim of providing cheap, good quality food.	Can help people access affordable meals. May reduce social isolation. Empowerment of project workers and development of their skills base. May provide point of access to other health and social services.	LA, EHO and trading standards. Voluntary and community groups. Funding could be available from Neighbourhood Renewal Fund, New Deal for Communities and Single Regeneration Budget. Links with local supermarkets, retailers, community owned retailing (food coops) and growing schemes; local catering colleges; LACA (investigate peer education of local volunteers); job centres for caterers seeking work; local employment schemes, Neighbourhood Renewal projects.	Venue, facilities and equipment for the safe and hygienic preparation of foods. A project leader with food preparation and bookkeeping skills. Training in food preparation and food hygiene for volunteers and paid staff.	Cafes reliant on external funding, and so sustainability may be an issue. Involving the community in development seems to lead to greater sustainability. Should be run as a proper business, complying with environmental health and trading standards. Local circumstances important: particularly good for people who are homeless, lack cooking facilities or are elderly/single on low income.	www.food.poverty.hda-online.org.uk www.haznet.org.uk *Just for Starters* from the Health Education Board for Scotland (0131 536 5500) gives starting up advice and recipes. *Heartbeat Award Pack: a caterers guide to the Heartbeat Award* (pack of 5), HBA certificates and window stickers (pack of 10 each). Available from Prolog. Fax: 01623 724524; email: doh@prolog.uk.com

Improving diet and nutrition – suggested activities to support local action (cont.)

COMMUNITY OWNED RETAILING (FOOD COOPERATIVES). Locally organised initiatives that can improve accessibility to foods such as fruit and vegetables in areas which lack affordable supplies locally. In some areas it is difficult to access affordable good quality fruit and vegetables (Policy Action Team: 13 of the Social Exclusion Unit, 1999).

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Evaluations of co-ops in Bolton and in Tower Hamlets and Stepney (Price and Sephton, 1995; Ostasiewicz, 1997) showed increased availability of fruit and vegetables. It allowed people to try new foods at affordable prices; increased their confidence and self-esteem, and developed new skills in those running the co-op. Co-operative Wholesale Society (CWS) has developed a model of how large retailers can foster small community ventures and assist development from volunteer project to mainstream retail provision (CWS, 1999). Co-ops were developed by some of the Five-a-day community pilots.	Likely to be broader than increasing the availability of fruit and vegetables alone, eg providing a social meeting place in the local community. Empowerment of local community and skills development in those running the co-op. Bolton Food Co-op developed spin-offs, supplying fruit to tuck shops in schools, and delivery to older people. The Tower Hamlets Co-op has subsequently developed a local farmers' market.	Local authority EHO and trading standards. Funding could be available from, eg Neighbourhood Renewal Fund, New Deal for Communities and Single Regeneration Budget. Suppliers such as local wholesalers, farmers' markets or community allotment and growing schemes. Increase buying power by linking with other local food co-ops. Business sector representatives, Chamber of Commerce representatives. Voluntary sector and community groups.	Venue, including hygienic storage space, and transport. Equipment such as till, scales, float etc. Start up costs and fuel costs. Staff including drivers and a bookkeeper.	Food co-ops are legal entities and have to run on a membership basis. Fees for membership can help with start up costs. Commitment of the staff is essential to ensure survival. Payment for their time may help. Need to comply with trading standards and environmental health regulations. Need to supply culturally appropriate foods. Food co-ops not viewed as a long-term solution but can be used alongside other regeneration initiatives to improve access. *The NHS Plan* states that the government will work with industry to increase provision of fruit and vegetables and where necessary to establish local food cooperatives.	*Start your own food co-op* video. Bolton Co-op. £15. Tel: 01204 360094/360095. *Food for Thought* report and video. Wolverhampton Food Co-ops Umbrella Group Ltd. £1. Tel: 01902 304851. *The Co-op start up pack.* CWS. Free. Tel: 0161 827 5349. CWS small grants Community Dividend Scheme (0161 827 5950). *Breaking the barriers: co-operating for social inclusion.* Manchester Co-operative Society. Sandwell Beacon site www.nhsbeacons.org.uk/ www.haznet.org.uk www.food.poverty.hda-online.org.uk

Improving diet and nutrition – suggested activities to support local action (cont.)

COMMUNITY GROWING SCHEMES. Allow communities to grow their own vegetables and fruit. May vary from city farms to allotments or schemes set up on wasteland. Can increase supplies of affordable vegetables and fruit locally; can be linked to food co-ops. Sometimes set up with an environmental rather than health agenda.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
The WHO identified that growing fruit and vegetables in urban areas offered a range of health benefits and simultaneously promoted a healthy environment and sustainable development (WHO, 2001). Sustain found that growing in urban areas can increase food access and contribute to better mental health (Sustain, 1999). Bradford Gardening for Health project, run with Bangladeshi women. Participants reported eating more fruit and vegetables, being more active, losing weight, and feeling more confident to go out alone (Hussain and Robinson, 2000).	May increase physical activity, reduce social isolation, and build confidence. Participants in the Bradford project initially grew familiar Asian vegetables, but then grew and started to eat British vegetable varieties which are cheaper. Also developed marketable gardening skills.	LA Agenda 21 coordinators. LA leisure or environmental services. Local horticultural colleges. Funding could be available, eg Neighbourhood Renewal Fund, New Deal for Communities and Single Regeneration Budget. National Society of Allotment and Leisure Gardeners Ltd. Tel: 01536 266576. There is currently interest in intergenerational projects in which older people may act as peer educators to younger groups.	Start up costs; land, equipment, storage, water supply, seeds. Project leaders with experience in gardening/horticulture who will need to be paid. A bookkeeper. If working with black and minority ethnic groups, may need a link worker.	Getting access to land – setting up an agreement for its use over a suitable period of time. Possible contamination of land in some areas. Sharing out produce between participants and/or selling it on to food co-ops, farmers' markets, community cafes etc. May be useful in areas of regeneration where access to affordable fruit and vegetables is poor. May help meet sustainable development priorities.	www.food.poverty.hda-online.org.uk *Growing food in cities.* Sustain. £10. Tel: 020 7837 1228. *CityHarvest.* Sustain. Full report, £30, summary £5. Tel: 020 7837 1228. Federation of City Farms and Community Gardens, *Starter Pack.* Tel: 0117 923 1800.

Improving diet and nutrition – suggested activities to support local action (cont.)

FARMERS' MARKETS. Markets which allow farmers and growers to sell directly to consumers, therefore reducing the price. Often set up as environmental initiatives and require produce to be grown within a certain radius of the market. Some focus on organic produce.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Farmers' markets offered good value for money. Provided an opportunity to buy fresh, local produce. Gave local people a sense of wellbeing and belonging. Provided a social meeting place. Also played role in revitalising the local rural economy (Bur et al., 1999; Bullock, 2000).	Improved access to affordable fruit and vegetables. Retail outlet for community growing schemes. Environmental benefits in that produce is not transported great distances. Increased social capital.	Local authority and trading standards. Any local growers associations. Local Agenda 21 coordinator. National Association of Farmers' Markets. Tel: 01225 787914. Soil Association Local Food Links dept. Tel: 0117 914 2426.	Staff (paid or voluntary) to liaise with local council, growers and consumers. Suitable venue in proximity to area of need. Church halls, schools, community centres may be possible venues. Access to growers willing to participate within the locality. Staff needed to run the stall – farmers' markets often run out of normal working hours, ie at weekends/bank holidays.	Needs help and support from local authority. Need to encourage growers to participate. Needs publicity and an accessible venue not requiring costly public transport. Ensure bona fide growers only participate. May improve access to retail services and increase supply of affordable fruit and vegetables. May affect trade in local small shops and existing markets. May help meet local sustainable development priorities.	The National Association of Farmers' Markets has a list of farmers' markets. Tel: 01225 787914. www.farmersmarkets.net 'Eco-logic' publications on farmers' markets. Tel: 01225 484472. The Soil Association provides training on setting up and running a farmers' market. Contact 0117 914 2426.

Improving diet and nutrition – suggested activities to support local action (cont.)

COMMUNITY SHOPS AND SIMILAR SCHEMES. Set up in response to closure of local shops on housing estates or in rural areas. May be run on a not for profit basis, usually by volunteers.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Community shops are a recent innovation that have not yet been evaluated in terms of their impact on promoting healthy eating.	Improved access to foods such as fruit and vegetables. Useful in rural areas where public transport is poor. Shop staff can develop marketable skills and gain work experience. Can be part of Neighbourhood Renewal initiatives.	Local authority, environmental health department and trading standards. Village Retail Services Association (VIRSA). Tel: 01305 259383. Voluntary sector and community groups. Representatives from local business or Chamber of Commerce.	Project leaders with retail experience and/or bookkeeping skills. Driver and transport to travel to wholesalers. Funding from grants or subsidies. Funding could be available from Neighbourhood Renewal Funds, New Deal for Communities and Single Regeneration Budget. Suitable premises with storage facilities and equipment in the locality, which complies with environmental health and health and safety regulations.	'Not for profit' therefore dependent on grants or subsidies. Membership fees can help start up costs. Must comply with trading standards, environmental health regulations. In some areas more appropriate to take people to shops rather than shops to people (Policy Action Team: 13, 1999). Could help improve access to fruit and vegetables. May contribute to Neighbourhood Renewal strategies.	*How to make your community shop succeed.* Community Enterprise Ltd. Tel: 0131 475 2345. *Village Shops and Post Offices: a guide to deployment of village investment to rescue, sustain and revive.* VIRSA. £15. Tel: 01305 259 383. *If the village shop closes … a handbook on community shops.* Oxford Rural Community Council. £3.50. Tel: 01865 883488.

Improving diet and nutrition – suggested activities to support local action (cont.)

TRANSPORT TO SHOPS SCHEMES. Can be run on a local basis or by linking with supermarket chains or local retailers.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Case study Hackney Community Transport developed to increase access to local activities for disabled and older people. 'Plusbuses' now run every 30 minutes on a fixed route which links up the local hospital, day centres, schools, shops and other transport interchanges.	Access to mainstream shops and services (PAT: 13, 1999). Overcome difficulties experienced by people in carrying heavy fruit and vegetables from shops.	Local supermarkets and local Chamber of Commerce. Local public transport providers and community transport providers. Local authority transport planners. Local voluntary and community groups.	Drivers, vehicles, funding to support running costs etc. Insurance and compliance with safety regulations.	Areas that need to be linked, frequency of services. Linking with local retailers' bus schemes. Schemes may be very useful in increasing access to affordable supplies of fruit and vegetables.	Community Transport Association. Tel: 0161 367 8780. *Ferguslie Park Access to Shopping project report.* Tel: 0141 887 9650. www.haznet.org.uk

SUPERMARKET TOURS. Usually led by a dietitian or nutritionist with small groups of consumers. May focus on interpreting food labels and health claims, and on selecting foods and discussing healthier preparation methods. Sometimes used with groups with a particular area of interest, eg diabetes.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
A Supermarket Safari scheme showed an increase in self-reported 'healthy' purchases and behaviour compared to controls, one month after a 2-hour tour, but study was of poor quality (Silzer et al., 1994). Provision of individualised support in small groups resulted in changes to food selection and preparation providing a catalyst for change (Church and Drake, 1999).	May be useful as part of a wider programme of healthy eating supermarket initiatives. In some cases, initiatives with large retailers need to be organised with the permission of the head office. Roe et al. (1997) found four good quality supermarket studies: three point of purchase labelling, one video feedback, which showed increases in sales of promoted products while study was running. Narhinen et al. (2000) reported increased sales in actively promoted products of 37-49%.	Supermarket nutritionists based in head office. Community dietitian or public health nutritionist. Local press. Groups with particular interest – diabetics, mothers of young children etc.	Dietitian/public health nutritionist. Good relationship with local supermarket and ability to identify and use PR opportunities.	Useful for groups with a particular focus, for example diabetics. Useful to base the tour on the Balance of Good Health and to focus on fruit and vegetables. Key messages could include 'What counts?' and 'What is a portion?' Opportunity to make links with local retailers.	Retailers' own materials based on the Balance of Good Health could be used as a resource.

Improving diet and nutrition – suggested activities to support local action (cont.)

CATERING AWARDS. For example, the Heartbeat Award, which is nationally recognised but locally run, made to caterers who adopt healthier practices, have good standards of food hygiene and offer non-smoking seating. Usually run by LA environmental health officers in partnership with dietitians and health promotion specialists.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Can result in greater access to healthier choices. A quarter of HBA premises reported increases in sales of some healthier items, but sales of less healthy choices tended to remain the same (Holdsworth et al., 1999). Another HBA evaluation showed greater provision of some healthier foods, healthier options and greater commitment to healthy eating (Warm et al., 1997).	Benefits to caterer include better relationships between caterers and environmental health dept; good PR; commitment to customer care and food hygiene training. Evaluation of the Scottish Healthier Choices Award showed half the premises surveyed experienced an increase in profits following receipt of the award, while most of the rest showed no change in profit (Market Research Scotland Limited and Health Education Board for Scotland, 2000). Difficult to demonstrate the effect of the scheme on the overall diet of consumers.	Caterers, catering trainers, employers, occupational health nurses. Health promotion specialists/ public health specialists with an interest in evaluation.	Environmental health, dietetics and health promotion expertise on smoking policies. Partnership working skills. Evaluation skills. Time for processing annual 'renewals' in addition to new applications. Funding to support scheme; PR support.	To maximise impact may be best concentrated in venues where the same people eat every day, eg workplaces, prisons etc. Needs to have both dietetic and environmental health officer input, and requires a good working relationship between the two departments. Evaluation is vital, as funders may seek evidence of benefits before committing resources to continue the scheme. This will also help to build evidence base nationally.	*Heartbeat Award Pack: a caterers guide to the Heartbeat Award* (pack of 5), HBA certificates and window stickers (pack of 10 each). *The Heartbeat award: a guide to evaluating effectiveness* (HEA, 1998). *The Heartbeat Award: making the most of the media* (1996). All Heartbeat Award publications and resources are available from Prolog. Fax: 01623 724524; email: doh@prolog.uk.com *Catering for Health* (2001). Available free from the Food Standards Agency. Tel: 0845 606 0667. *Dine Out: Eat Well.* FSA leaflet 0004. Available free from the Food Standards Agency. Tel: 0845 6060667. *Tipping the Balance* video and workshop notes (2000). Available free from the Food Standards Agency. Tel: 0845 606 0667.

Improving diet and nutrition – suggested activities to support local action (cont.)

ADOPTION OF HEALTHIER CATERING PRACTICES IN WORKPLACE CATERING AND HIGHLIGHTING 'HEALTHIER' CHOICES. Working with caterers is an important element of a 'whole workplace approach' and an opportunity to influence people's diets on a regular basis.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Positive effect on food choices for the duration of interventions, modifying recipes or highlighting healthier choices in variety of settings. No good quality studies in a workplace setting (Roe et al., 1997). Increase in sales of low fat meals in the workplace when highlighted with symbols on menus and posters (Levin, 1996). Making small changes to best selling dishes can be effective in promoting healthier choices; presentation is important. Promoting menu items successful where parallel choices are on offer (HEA, 1998b).	Around an eighth of energy, fat, and saturated fat in the diet is from the food eaten away from home. Workplace caterers may prepare a significant proportion of meals for regular customers and so have an important influence on the overall diet. Caterers are ideally placed to encourage the uptake of vegetables and fruit. Strategies can include: incorporating vegetables into best selling dishes; including vegetables, salads, fruit as part of 'meal deals'; offering fruit as snacks at breaks and in vending; offering pure juices as drinks.	Caterers, service staff, catering managers, chef trainers. Workplace management, human resources, occupational health. Contract caterers, dietitians/in house chef trainers. Community dietitians, public health nutritionists, workplace health promotion specialists/ public health specialists. Local business and community groups.	Some training of caterers and service staff. Basic research skills to carry out needs assessment among customers.	Workplace offers a major opportunity to gain access to, and communicate with, a large proportion of the adult population. Acknowledged by government as a useful setting for general health promotion. Covert changes to the menu overall has potential to benefit all customers; promoting healthier options only benefits customers that choose them. Should extend to vending and snack provision and to hospitality catering. May help caterer qualify for a Heartbeat Award.	*Tipping the Balance* video and workshop notes (2000). Available free from the Food Standards Agency. Tel: 0845 606 0667. *A caterer's guide to the Heartbeat Award*. Available from Prolog. Fax: 01623 724524; email: doh@prolog.uk.com *Dine Out: Eat Well*. FSA leaflet 0004. Available free from the Food Standards Agency, Tel: 0845 6060667. *The National Catering Initiative: promoting healthier choices*. Available from the HDA, Holborn Gate, 330 High Holborn, London, WC1V 7BA. *Framework for Action. Health at work in the NHS* (HEA, 1999). HDA, PO Box 90, Wetherby, Yorkshire, LS23 7EX. Tel: 0870 121 4194; fax: 0870 121 4195; email: hda@twoten.press.net *Catering for Health* (2001). Available free from the Food Standards Agency. Tel: 0845 606 0667.

Improving diet and nutrition – suggested activities to support local action (cont.)

WORKPLACE INTERVENTIONS TO PROMOTE HEALTHY EATING AND TO INCREASE FRUIT AND VEGETABLE INTAKES WHICH TAKE A 'WHOLE WORKPLACE' APPROACH.
Multi-component strategies which promote healthy eating through the food offered in the canteen and vending, and the development of a supportive environment which has the commitment of senior management and may involve educational and behaviour change strategies led by occupational health staff.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
The Treatwell 5-A-Day study in the US used multi-component strategies including individual behaviour change, family support and changes to workplace catering (Sorensen et al., 1999; 1998). The Working Well Trial also used multi-component strategies at individual and organisational levels, including educational and skills development activities, plus environmental change (Sorensen et al., 1996). Buller (1999), using a peer education approach with employees mainly from low income or ethnic groups, found a positive effect on fruit and vegetable intake persisting at six months follow-up.	The Treatwell study reported an increase of 0.5 servings/day of fruit and vegetables in those with family support elements compared to 0.2 servings/day in those without the family support element. The Working Well Trial showed an average increase of 0.18 servings/day of fruit and vegetables.	Participants should be involved in the planning and design of the strategy. Commitment from management is needed at the outset. Occupational health, catering staff, catering managers, human resources. Contract caterers, in-house dietitians. Community dietitians, public health nutritionists, workplace health promotion specialists/ public health specialists. Business and community groups.	A participatory approach to development is recommended (Sahay, 2000). Skills in needs assessment and evaluation. Some training of caterers may be necessary. Funding/facilities for kick off event. Longer-term funding to ensure sustainability, alongside long-term commitment from management. Inclusion in a 'vision and values' document for the organisation may be useful.	The workplace offers a major opportunity to gain access to, and communicate with, a large proportion of the adult population. Health promoters may wish to target certain types of workplace, particularly those which employ low income groups likely to have lower than average fruit and vegetable intakes. Multi-component strategies require a 'whole workplace' approach and target not only behaviour of individuals but the development of a supportive environment and culture. Requires commitment from the management and development with participants.	*Tipping the Balance* video and workshop notes (2000). Available free from the Food Standards Agency. Tel: 0845 606 0667. *A caterer's guide to the Heartbeat Award.* Available from Prolog. Fax: 01623 724524; email: doh@prolog.uk.com *Dine Out: Eat Well.* FSA leaflet 0004. Available free from the Food Standards Agency. Tel: 0845 606 0667. *The National Catering Initiative: promoting healthier choices.* Available free from the Health Development Agency, Holborn Gate, 330 High Holborn, London WC1V 7BA. *Framework for Action. Health at work in the NHS* (HEA, 1999). Available free from HDA, PO Box 90, Wetherby, Yorkshire LS23 7EX. Tel: 0870 121 4194; fax: 0870 121 4195; email: hda@twoten.press.net *Catering for Health* (2001). Available free from the Food Standards Agency. Tel: 0845 606 0667.

Improving diet and nutrition – suggested activities to support local action (cont.)

PROMOTING HEALTHY EATING IN PRE-SCHOOLS, SUCH AS FAMILY CENTRES RUN BY SOCIAL SERVICES OR PRIVATE DAY NURSERIES. Can include educational strategies for parents/carers and children, and encompass healthy catering/snacks/drinks and packed lunch policies.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Pre-school and day care centres were likely to be appropriate settings for interventions (Tedstone et al., 1998).	Increase childcarers', children's and parents' nutritional knowledge. Improve main meal provision and between-meal snacks and drinks.	Health promotion/public health specialists. Local authority early years adviser. Voluntary sector, eg Pre-School Learning Alliance, National Childminding Association. Local Sure Start programmes working in partnership with parents.	Community dental staff and community dietitians can provide specialist knowledge and local data, eg on oral health of under-5s.	A comprehensive healthy eating policy should include all meals, should consider children with special requirements and should foster good eating skills and table manners. A more limited policy may not cover between-meal snacks.	www.surestart.gov.uk/home.cfm includes a comprehensive contact list for under-5s agencies, and web links. Caroline Walker Trust (1998). *Eating Well for Under-5s in Childcare. Practical and nutritional guidelines*. 22 Kindersley Way, Abbots Langley, Hertfordshire, WD5 0DQ. Cost £12.95 inc p&p. See also: www.cwt.org.uk/publication.html Watt, R. (ed) (1999). *Oral health promotion: a guide to effective working in pre-school settings*. HDA. £20. Available from: HDA, PO Box 90, Wetherby, Yorkshire L23 7EX. Tel: 0870 121 4194; fax: 0870 121 4195; email: hda@twoten.press.net

Improving diet and nutrition – suggested activities to support local action (cont.)

PROMOTION OF HEALTHY EATING/FRUIT AND VEGETABLES THROUGH PRIMARY CARE SETTINGS					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
NHS CRD York (1995) identified more effective approaches as: intensive; working at different levels; involving a range of professionals; using one-to-one or peer support approaches; and developing skills. Roe et al. (1997) and Sahay et al. (2000) identified tailoring to individual needs; and Sahay et al. also identified self-help strategies as being an example of promising practice.	Most studies have focused on reducing fat and saturated fat intake to reduce blood cholesterol, and have appeared to have a modest effect, eg Okene et al., 1999; Price, 2000; Steptoe, 1999. Fewer have focused on fruit and vegetable intakes. John et al. (2001) used a negotiation model to encourage increased intake. Self-reported intakes increased in the study group by 1.4 portions/day compared to 0.1/day in controls, giving totals of 4.9 and 3.5 portions/day respectively, along with increased plasma levels of some antioxidants. Steptoe et al. (in progress), University College London, are currently trialling behaviourally oriented dietary counselling with low income adults (results due 2002). Currently being evaluated in the Wirral is a HAZ-funded project providing 200 GP-referred patients with £6 of vouchers for fruit and vegetables for 10 weeks, along with recipes.	Dietitians/community dietitians to train GPs, practice nurses, health visitors, and support staff.	Dietitian to provide training in nutrition and dietary counselling techniques.	Has the potential to reach large numbers. Health professionals are trusted sources of information. But scope can be limited by lack of time and training/confidence in nutrition and dietary counselling among GPs and nurses. Increasing nutritional knowledge among GPs/nurses is likely to be more effective if counselling skills are also developed. Ockene et al. (1999) found it more effective to train GPs and support staff than GPs alone.	Scottish Intercollegiate Guidelines Network (1999) *Lipids and the primary prevention of CHD.* For more information about the Wirral Take Five! Project contact: ian.chalmers@wwccnt.nhs.uk

Improving diet and nutrition – suggested activities to support local action (cont.)

COMMUNITY APPROACHES TO PROMOTING FIVE-A-DAY. Use multi-component strategies to promote fruit and vegetables as part of an overall balanced diet in a variety of settings within a community, eg through schools, workplaces, primary care, retailers, community projects and the media. Designed to address barriers to fruit and vegetable consumption and include interventions to improve access to, and affordability of, supplies alongside projects which develop skills and knowledge.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
US study (Potter et al., 2000) showed increases in knowledge of the Five-a-day message from 8% in 1991 to 19% in 1997 – awareness was higher among certain groups. However, although intakes of fruit and vegetables have increased over the same period, it cannot necessarily be attributed to the programme due to lack of a control group. Data from the English Five-a-day pilot sites are still undergoing analysis. Final findings are expected in 2002.	Increases in awareness of the Five-a-day message and improved access to affordable supplies of fruit and vegetables may be pre-cursors to dietary change. Improving access, availability and awareness were key aims of the pilot interventions, funded in England by the Department of Health.	The pilot sites have worked within a range of settings in the community and so have involved teachers, primary care staff, workplace and school caterers, retailers large and small, journalists, community workers and volunteers, nursery and play group workers. In many cases they have provided 'training' in the Five-a-day message and in some cases, eg with primary care, staff training in dietary counselling, in order to 'cascade' the message to the public.	A dedicated and enthusiastic project manager, ideally with community development skills, to 'drive' the project, supported by other professionals such as community dietitians, health promotion specialists, Local Agenda 21 coordinators. Administrative support is essential, as are office facilities and storage space for materials. Evaluation expertise from local academics/public health departments is invaluable. Partnerships with other groups working on issues that share a common agenda are important and may come from unexpected quarters. The genuine involvement of the local community is essential.	The pilot sites have responded to community needs identified through needs assessment including food mapping. Development should ideally be through participatory approaches which genuinely involve the local community and so can lead to sustainability in the long term. The importance of planning an 'exit strategy' and achieving self-sustaining programmes has been highlighted. Working in partnership has allowed the pilot sites to draw on existing work and to extend the potential 'reach' of projects. Networking can help explore wider opportunities.	The data from the initial Five-a-day pilot sites are currently being analysed. The learning from the pilot sites is being used to develop a resource which will inform the development of further Five-a-day community initiatives. Further information is available at: www.doh.gov.uk/fiveaday and in *Five-a-day update* autumn 2001. Available from Department of Health, PO Box 777, London SE1 6XH. Tel: 0800 555777; fax: 01623 724524; email: doh@prolog.uk.com *At least five a day – strategies to increase fruit and vegetable consumption* (1997). National Heart Forum. www.heartforum.org.uk *'Give Me 5' pack*. British Dietetic Association. www.bda.uk.com

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Chapter 3 – Reducing overweight and obesity

Introduction

Definition of overweight and obesity

Obesity is a condition in which body fat stores are enlarged to an extent that impairs health. In adults, body mass index (BMI) is a commonly used measure of body fat. It is calculated by dividing the individual's weight (kg) by the square of his or her height (m). A desirable range corresponds closely to the range of BMI from 18.5-25. So a person who weighs 65kg and who is 1.73m tall has a BMI of 65/(1.73 x 1.73) = 21.7kg/m^2, which is in the desirable range.

It is arbitrary to choose a value for BMI above which a person is deemed obese: mortality starts to increase significantly somewhere between BMI 25 and 30, and increases rapidly at values of BMI above 30. However, it is usual practice to classify a person with a BMI between 25 and 30 as overweight, and a person with a BMI above 30 as obese.

The health hazards of obesity are compounded by the influence of fat which is distributed around the waist, more typical of obese men than women. For this reason, the waist circumference and waist-hip ratio are also used to assess the risks associated with obesity. Though there is no consensus about the cut-off points that define obesity using these indicators, a report by the World Health Organization suggests that increased risk is present when the waist circumference exceeds 94cm (37 inches) for men or 80cm (32 inches) for women (WHO, 1997).

Prevalence of overweight and obesity

In line with trends in many other countries, the prevalence of overweight and obesity in adults has increased in England in recent decades (Table 1). The prevalence increases with age and is greatest among those of low socio-economic status (particularly in women), and those from certain ethnic minorities, particularly Asians and African-Caribbeans.

Ethnic minorities. The observed prevalence of generalised obesity in men is lower in ethnic groups compared with the general population, particularly Bangladeshi and Chinese groups. Among women, the proportion classified as obese was again very low in the Chinese and Bangladeshi groups. However, levels of obesity significantly higher than in the general population are found in Pakistani (25.6%) and black Caribbean (31.9%) women.

Table 1: The prevalence of overweight and obesity in adults (aged 16-64) in England in 1999

Weight category	Men	Women
Overweight (BMI 25-30 kg/m^2) 16-64 years	42%	31%
Obese (BMI >30kg/m^2) 16-64 years	19%	22%
Overweight or obese 16-24 years	28%	30%
Overweight or obese 55-64 years	74%	70%
Percentage point increase in overweight or obesity 1994-1999, 16-64 years	+5%	+5%

Source: *Health Survey for England 1999*, Department of Health (DH, 2001)

Table 2: The prevalence of overweight and obesity in adults (aged 65+ years) in England in 2000

Weight category	Men	Women
Overweight (BMI 25-30 kg/m^2) 65-79 years	51%	42%
Obese (BMI >30kg/m^2) 65-79 years	22%	27%
Overweight (BMI 25-30 kg/m^2) 80+ years	49%	38%
Obese (BMI >30kg/m^2) 80+ years	20%	26%

Source: *Health Survey for England 1999*, Department of Health (DH, 2002)

Children. In the UK, reports suggest that the prevalence of obesity among children of all ages is increasing (Reilly et al., 1999a, 1999b; Rudolf et al., 2001). For example, data from the *National Study for Health and Growth* show a dramatic rise in the proportion of overweight primary school children (aged 4-11 years) in the UK between 1984 and 1994 (Chinn and Rona, 2001). The data for England showed that overweight increased in boys from 5.4% to 9.0% and in girls from 9.3% to 13.5%. Data from a large survey of young children (aged one month to four years) in England showed a similar rise in the prevalence of overweight (Bundred et al., 2001).

There is some evidence that the prevalence of overweight and obesity in children may increase with increasing social deprivation (Kinra et al., 2000), but this has not been shown consistently (Parsons, 1999).

In addition, obesity in childhood is known to be an independent risk factor for adult obesity (Parsons et al., 1999). Children are more likely to be obese if they have an obese parent, and this risk increases if both of their parents are obese (Parsons et al., 1999).

It should be noted that the simple classification of BMI for obesity in adults is not applicable to children, since the ratio of velocity of weight gain to height gain changes during normal growth, especially around puberty. For example, the BMI of a boy or girl on the 50th centile at age one year is 17.5kg/m^2, then falls to 15.5kg/m^2 at age six years, and climbs to 21kg/m^2 at age 18 years. Therefore, age and sex-specific reference data (centile cut-off points on charts) are necessary to interpret the measurement. For the UK, national reference data for BMI are available (Cole et al., 1990). These data represent the BMI of British children in 1990 and are widely available in the form of centile charts (Wright et al., 2002). There is debate about which centiles should be classified as overweight and obese. Reilly et al. (2002) indicate that for clinical practice, children above the 91st centile should be classified as overweight, and children above the 98th centile as obese. US guidelines for the evaluation and treatment of obesity in children (Barlow and Dietz, 1998) recommend that children with a BMI greater than or equal to the 85th percentile with adverse physical or psychological problems associated with obesity, or with a BMI greater than or equal to the 95th percentile, with or without associated problems, undergo evaluation and possible treatment.

Why has the prevalence of overweight and obesity increased?

The increasing prevalence of overweight and obesity in the UK is not due to genetics, as there have been relatively few changes to the 'gene pool' during the period in which obesity has increased but rather it is related to two major lifestyle factors: the energy content of the diet and an increasingly sedentary lifestyle (Prentice and Jebb, 1995). The percentage of energy from fat in the diet has increased significantly since 1950. This is, in part, due to a decrease in eating family meals and an increase in eating food outside the home.

The number of hours spent watching television has increased since the 1960s and a more automated lifestyle (domestic appliances, use of a motor car, and more sedentary occupations) reduces the amount of physical activity incorporated into daily life. The population is therefore more sedentary and as a result average daily energy expenditure has fallen. Prevention and treatment of overweight and obesity must rely on both a reduction in energy intake and an increase in energy expenditure.

Overweight and obesity as risk factors for cancer

A number of expert committees have critically reviewed the evidence on diet and cancer, and included evidence on overweight and obesity and cancer.

A report published by the World Cancer Research Fund (WCRF, 1997) concluded that there was reasonable evidence that overweight and obesity increases the risk of cancer of the endometrium, and probably increases the risk of post-menopausal breast cancer, cancer of the kidney, and cancer of the colon.

In the UK a Committee on Medical Aspects of Food Policy report (COMA) (DH, 1998) made similar conclusions (except for cancer of the kidney), and added that there is increasing evidence that central obesity (where obesity is predominately found around the stomach rather than the bottom and hips) is associated with higher rates of post-menopausal breast cancer. Both reports supported current recommendations to maintain a healthy body weight, in the BMI range 20-25kg/m^2.

A report has recently been published on the role of weight control and physical activity in cancer prevention, produced by the International Agency for Research on Cancer (IARC), which is part of the World Health Organization. The report states that there is now consensus that some cancers are more common in those who are overweight (IARC, 2001). (This report will be published as an IARC Handbook in autumn 2002.)

The evidence on association between overweight and obesity and cancer is strongest for post-menopausal breast cancer and cancers of the endometrium, gall-bladder and kidney, and may also contribute to cancers at several other sites. About 5% (3% men, 6% women) of all cancers might be prevented if no individual had a BMI greater than 25 (Bergstrom et al., 2001). Exclusion of smoking-related cancers would increase this estimate to about 7%.

A large prospective cohort of non-smokers in America, where obesity is more prevalent, provides the strongest evidence on BMI and cancer mortality (Calle et al., 1999). The authors conclude that about 10% of all cancer deaths among American non-smokers (7% in men, 12% in women) are caused by overweight and obesity. The European Prospective Investigation into Cancer and Nutrition (EPIC) study, a large longitudinal observational study, will provide unique data on nutritional risk factors, including obesity, for cancer (Riboli, 1992).

Overweight and obesity are important risk factors for a number of other chronic conditions including coronary heart disease, stroke and type 2 diabetes. The National Audit Office estimated that over 30,000 deaths were attributable to obesity in 1998 (National Audit Office, 2001).

Benefits of weight reduction in reducing cancer risk

Although evidence exists that overweight and obesity are associated with an increased risk for some cancers, it has not been confirmed that weight loss would reduce risk (IARC, 2001). However, the IARC panel suggested that despite the lack of direct evidence, hormonal changes produced by weight loss seem likely to reduce the risk of some cancers.

Reducing inequity

As already highlighted, overweight and obesity tend to be more common in adults from lower socio-economic groups (particularly for women) and certain ethnic groups. This should be considered when planning obesity prevention and treatment interventions. There is some evidence that advice on weight loss may be less effective in terms of weight change in lower income groups (Jeffery and French, 1997). The particular needs of these groups will need to be addressed in any intervention.

Epidemiological evidence suggests that there are a number of groups who are most at risk of gaining weight (Garrow and Summerbell, 2000). These groups are:

- South Asians
- African-Caribbeans
- Those living in socially deprived areas
- Smokers planning to stop (*Need to liaise with smoking cessation planners*)
- Previously overweight or obese people who have lost weight
- People with disabilities (both mental and physical)
- Children with at least one obese parent.

Identification of individuals or groups who are at risk of associated obesity co-morbidities is an essential element of any strategy to reduce the increased prevalence of overweight or obesity. Consideration should also be given to access to services for people with disabilities who may suffer a range of additional barriers to managing their weight and participating in weight loss programmes. There is no evidence to suggest effective interventions in this area, but training in identifying and prescribing appropriate strategies is likely to be required.

Sources of evidence of effectiveness of interventions to treat or prevent obesity

A number of systematic reviews of best evidence (from randomised controlled trials where available) have dealt with the management of obesity. An evidence base document on effective interventions for the management of obesity will be available from August 2002 (www.hda-online.org.uk/evidence). This database will include evidence on lifestyle and also alternative therapies for weight loss.

In addition, an extensive systematic review of the long-term outcomes of the treatments of obesity and implications for health improvement and the economic consequences for the NHS is being conducted (personal communication, Alison Avenell). This review will be published as a Health Technology Assessment (HTA) monograph, with an expected publication date of April 2003 (www.hta.nhsweb.nhs.uk).

The systematic reviews on obesity from the US (National Heart, Lung, and Blood Institute, 1998), Canada (Douketis et al., 1999), and Scotland (Scottish Intercollegiate Guidelines Network, 1996) considered the prevention and treatment of obesity in adults only. The systematic review on obesity conducted by the NHS Centre for Reviews and Dissemination (Glenny et al., 1997) considered the prevention and treatment of obesity in both adults and children. Another systematic review (Hardeman et al., 2000) considered the prevention of obesity only, using evidence from studies of different designs.

Two Cochrane reviews, one on the prevention of childhood obesity (Campbell et al., 2002) and the other on the treatment of childhood obesity (Summerbell et al., 2002), are updates of the relevant sections published previously by the NHS Centre for Reviews and Dissemination. A review of interventions to improve the health professional's management of obesity (Harvey et al., 2001) provides insight into the ways in which professional practice in this area may be improved.

The National Institute for Clinical Excellence has conducted systematic reviews of randomised controlled trials and has produced guidance for two anti-obesity drugs, Orlistat and Sibutramine (NICE, 2001a, 2001b). NICE has issued similar guidance on surgery as a treatment for obesity (NICE, 2002).

Sources of recommendations or clinical guidelines on the prevention and management of obesity

A number of the reviews cited above also provided recommendations or guidelines for management of obesity in adults (National Heart, Lung, and Blood Institute, 1998; Douketis et al., 1999; Scottish Intercollegiate Guidelines Network, 1996). In addition:

- The National Audit Office published an important report in 2001, *Tackling Obesity in England* and made a number of health policy recommendations (NAO, 2001). Devising and implementing local obesity strategies was a key recommendation. The report highlighted the *National Service Framework for Coronary Heart Disease* which states that:

  'By April 2001, all NHS bodies working closely with local authorities will have agreed and be contributing to the delivery of local programmes of effective policies for promoting healthy eating and physical activity and reducing overweight and obesity.' (DH, 2000).

  The NAO report refers to Health Development Agency guidance (HDA, 2001) to support the preventive aspects of the NSF for CHD; this chapter has been updated in the context of cancer prevention and new evidence since that publication.
- A US expert committee has published recommendations for the management of childhood obesity (Barlow and Dietz, 1998).
- Two agencies are expected to publish clinical guidelines for the management of childhood obesity in 2002 (Scottish Intercollegiate Guidelines Network, available at www.sign.ac.uk; Royal College of Paediatrics, London).
- The National Health and Medical Research Council of Australia is currently developing a guideline for the management of overweight and obesity in adults and children, expected publication date 2002 (www.health.gov.au/hfs/nhmrc/advice/mgtobsty.htm).

Objectives of weight management

Prevention of obesity, treatment of obesity, and sustainability of weight loss after the intervention are all important in a weight management strategy.

Prevention of overweight and obesity

The main objective in preventing obesity in people is not to simply avoid obesity, but also to avoid overweight and maintain a healthy fat distribution. This is particularly important in young people since most people tend to become fatter with age. Children and young adults who are overweight or obese are at high risk of being overweight or obese in later life (Parsons, 1999).

Treatment of overweight and obesity

In the treatment of patients with established obesity there are two main objectives:

- To assist the patient to achieve a weight at which the health risks of obesity are reduced to the lowest possible level for this patient
- To maintain, or restore if necessary, the patient's self-esteem.

In the US, the National Heart, Lung and Blood Institute guidelines (NHLBI, 1998) have suggested that weight loss programmes in adults should aim initially to reduce body weight by 10% from baseline, at a rate of one or two pounds (approximately 0.5-1kg) a week, for six months.

The Scottish Intercollegiate Guidelines Network (SIGN) recommends a period of 12 weeks' weight loss followed by a 12 week weight stabilisation period in order for energy expenditure to readjust (SIGN, 1996). However, smaller weight losses such as 5kg in a man or woman of average height with a body mass index of 30, on the boundary between the overweight and obese categories, can result in health benefits such as reduced back and joint pain, improved lung function and psychological benefits (SIGN, 1996; Royal College of Physicians of London, 1998).

As stated earlier, in relation to children there is a debate about which centiles should be classified as overweight and obese. The main strategies are to help children to grow into their weight or slow the rate of weight increase relative to growth.

Glossary – description of 'lifestyle' weight management interventions

Behavioural therapy. Cognitive behaviour modification and behavioural skills training to modify eating and physical activity habits. These interventions are commonly used to prevent weight regain in conjunction with dietary therapy (see tables of suggested activities later in this chapter for examples).

Family therapy. Behavioural therapy sessions involving all members of the family rather than individual counselling of the affected member (to be used in the prevention of obesity in children specifically).

Dietary therapy. An overview of the range and features of weight-reducing diets used by adults is available (Summerbell, 1998). Two main types of dietary therapy are a low-energy diet (800 to 1500kcal daily), and a very-low-energy diet, (less than 800kcal daily, which usually consists of a protein-enriched liquid).

Advice on a low energy diet often involves 'calorie counting', or the allowance of certain foods on a graded scale. The traffic light system is an example of a graded scale where low energy dense foods, such as fruit and vegetables, are green, and high energy dense foods, such as those high in fat and sugar, are red. Most commercial slimming concerns use this type of approach. A diet which is unrestricted in terms of energy, but is low in fat and/or includes a large amount of fruit and vegetables has shown to be effective, but a diet which is both restricted in terms of energy *and* is low in fat has been found to be more effective (Astrup, 2001).

In practical terms, weight-reducing diets should be based upon the principles of a healthy, balanced diet. As a result, any diet should be varied, low in fat, contain plenty of fruit and vegetables and a reasonable amount of starchy foods (such as bread and other cereals, potatoes, pasta and rice), and some high protein foods such as meat, milk and milk products and eggs (most cheeses are high in fat, although the lower fat cheese may be included in weight-reducing diets).

Since there is good evidence that diets rich in fruit and vegetables are independently protective against cancer (see nutrition chapter, p27), the inclusion of these foods in weight-reducing diets should be strongly encouraged.

Little is known about the weight-reducing diets used by children. Particular attention should be paid to the protein and calcium content of weight-reducing diets for children.

Many 'fad' weight-reducing diets work on the basis of selective food restriction. Diets which restrict food choice are liable to result also in a decrease in energy intake (Rolls, 1986). However, these diets are usually unsustainable in the long term, and promote weight cycling (or yo-yo dieting) (Summerbell, 1998).

Exercise therapy. The primary goal is to move sedentary people into moderate levels of physical activity, and to move moderate level individuals into more vigorous levels. Accumulation of daily physical activity should be the key. (See chapter on increasing physical activity for further information and evidence to support advice, p83.)

Features of effective interventions

Evidence from the systematic reviews cited in the table of key documents, p70, was used to provide the following summary. A number of themes are emerging on what strategies are the most effective in preventing and treating obesity, and maintaining weight loss. Effective interventions for obesity include:

- Diet, physical activity and behavioural strategies for adults in combination where possible
- Reduce sedentary behaviour in obese children and family therapy
- Maintenance strategies, eg continued therapist contact
- Drugs
- Surgery for morbidly obese.

Prevention of overweight and obesity

There are two key aims for both children and adults. The first is to encourage a healthy, varied diet, which is low in fat and includes plenty of fruit and vegetables and starchy foods. The second is to reduce sedentary behaviour, and if appropriate increasing habitual exercise levels in a sustainable context. See Chapters 2 and 4 on effective approaches to addressing these aims.

Treatment of overweight and obesity

In children the aim is to focus on reducing sedentary behaviour and dietary change in combination. In terms of increasing children's physical activity, a more active daily lifestyle should be encouraged, rather than structured aerobic exercise schedules. It appears to be more effective to promote less sedentary lifestyles (eg less opportunity to eat excessively while watching the TV) than simply attempt to increase activity, eg through active play and sport.

In adults the aim is to use diet, physical activity and behavioural strategies, in combination where possible. Modest, regular bouts of physical activity can lead to weight loss and additional health benefits, such as improved cardiovascular function. The type of exercise is not important and short bouts of walking can cumulatively be of much benefit. A gradual, incremental step-wise approach seems to have the most beneficial long-term effect. Small, sustainable modifications in diet, in terms of reducing energy and fat intake, and exercise are more effective than more restrictive strategies. With small steps, the family/individual can accommodate the required lifestyle modifications.

In some adults the additional use of anti-obesity drugs may enhance weight loss (National Institute for Clinical Excellence, 2001a, 2001b). The anti-obesity drugs currently licensed in the UK are Orlistat and Sibutramine, and NICE has advised that they should only be used where patients have already lost a certain amount of weight by changing their diet and levels of physical activity. In addition, NICE guidance emphasises the need to use these anti-obesity drugs alongside diet, physical activity and behavioural strategies.

Surgery for obesity is performed rarely in the UK, and only in adults, although evidence of its effectiveness is good (Glenny et al., 1997). It is usually reserved for the extremely obese patient with life threatening co-morbidities. NICE has issued guidance on surgery as a treatment for morbid obesity (NICE, 2002). Some alternative therapies have been promoted as weight loss therapies, although the evidence of their effectiveness comes primarily from poor quality studies (not randomised controlled trials) (Glenny et al, 1997).

Maintenance of weight loss

The evidence on effective interventions for the maintenance of weight loss is of poorer quality compared with that for the prevention and treatment of obesity. This evidence suggests that overweight and obese people should be encouraged to integrate changes to their lifestyle over an extended period of time to maintain the benefit of initial weight loss (Tremblay et al., 1999). In particular:

- A combination of diet and physical activity (in conjunction with behavioural counselling) is probably more effective in sustaining weight loss than diet or exercise alone in adults
- The type of activity does not seem important
- Maintenance strategies should include continued support, for example self-help peer groups, relapse prevention strategies and continued therapist contact (either face-to-face individual or group sessions, or by phone, mail, and/or Internet).

More detail can be found in the tables of suggested activities in this chapter. Potential barriers to effective obesity management may include:

- Lack of access to appropriate support services
- Lack of motivation by professionals due to negative perceptions of overweight and obese people
- Efficacy of treatments
- Awareness of the significance of obesity in health terms.

There have been few evaluations of interventions in primary care (Hughes and Martin, 1999). Likewise there is little information about how clinical practice in a primary care setting or the organisation of care in this area might be improved (Harvey et al., 2001). Reminders to providers to perform specific actions and interventions to improve shared care across existing services may be worth further exploration. So may the use of intensive in-patient services, although the cost may well prove prohibitive. Brief educational interventions for GPs and practice nurses on obesity management can provide a cheaper alternative.

There has been little research carried out on the efficacy of commercial weight loss programmes. Although anecdotal evidence from clients is good, better evidence of the cost effectiveness of commercial programmes is needed. It is worth noting that patients who self-select, and pay to attend a commercial slimming club or pay for specialist slimming products, may well be different to those using primary care services for obesity management. Partnerships with commercial slimming programmes to deliver the most appropriate weight management services for the client could be explored.

Where possible, the intended target group should be consulted to establish what strategies are most appropriate and it is important to monitor the process of delivering interventions along with the impact. Accurate recording of baseline data (such as attendance and follow-up rates, and data which maps access to services in relation to need) at the local level and the establishment of clear objectives can aid this. It is impossible to measure the impact of an intervention where the aims and objectives are too vague and multi-faceted.

Key documents and information sources on obesity

Toolkits/recommendations/clinical guidelines for health professionals on managing obesity based on systematic reviews of the evidence:	**How to access**
The National Heart, Lung, and Blood Institute (NHLBI). *Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults*. The Evidence Report. A practical guide to the Evidence Report. Reference: NHLBI, 1998	www.nhlbi.nih.gov/guidelines/obesity/ob_home.htm www.nhlbi.nih.gov/guidelines/obesity/prctgd_c.pdf
The National Heart, Lung, and Blood Institute (NHLBI). *Aim for a healthy weight* is an excellent interactive website for both health professionals and patients. It lists a number of useful strategies to help treat obesity, based on the Evidence Report (NHLBI, 1998). Examples included are weight goal records, food substitution ideas and food preparation leaflets, a guide to behavioural change strategies, exercise programmes for gradual build up of activity/fitness. Consideration should be given to making this available to health professionals. Reference: NHLBI, 1999	www.nhlbi.nih.gov/health/public/heart/obesity/lose_wt/index.htm
Scottish Intercollegiate Guidelines Network Obesity in Scotland (SIGN). *Integrating prevention with weight management*. Reference: SIGN, 1996	www.sign.ac.uk
Douketis et al., with the Canadian Task Force on Preventative Health Care (1999). *Periodic health examination, 1999 update: 1. Detection, prevention and treatment of obesity.* Reference: Douketis et al., 1999	See reference
Barlow and Dietz (1998) *Obesity evaluation and treatment: expert committee recommendations.* Reference: Barlow and Dietz, 1998	www.pediatrics.org/cgi/content/full/102/3/e29
Garrow and Summerbell (2000). A comprehensive overview of obesity as part of the Health Care Assessment Series. It covers the epidemiological data, services available and the effectiveness of interventions for the prevention and treatment of obesity in adults and children. Reference: Garrow and Summerbell, 2000	http://hcna.radcliffe-online.com/obframe.html
Toolkits/recommendations/clinical guidelines for health professionals on managing obesity NOT based on systematic reviews of the evidence	
International Agency for Research on Cancer (IARC). Report of International Working Group: *The role of weight control and physical activity in cancer prevention.* Reference: IARC, 2001	www.iarc.fr/pageroot/UNITS/Chemoprevention2.html
Faculty of Public Health Medicine, London. *Tackling obesity: a toolbox for local partnership action*. Reference: Davis et al., 2000	Tel: 020 7935 0243 Email: enquiries@fphm.org.uk
British Heart Foundation (BHF). *So you want to lose weight… for good: a guide to losing weight for men and women*. Written by Paula Hunt. Publication No M3. Reference: BHF, 2000	https://www.bhf.org.uk/publications/secure/z_index.html
National Obesity Forum (NOF). *Guidelines on management of adult obesity and overweight in primary care*. Reference: NOF, 2001	www.nationalobesityforum.org.uk

Other useful resources	How to access
A directory of projects of weight management, compiled by the Department of Health, is available in each Regional Office. Three main themes emerged: that weight loss is rarely maintained, that multi-component programmes are more successful and that regular follow-up is important. Reference: Hughes and Martin, 1999	See reference
Clinical Evidence. *Relevant sections*. A summary of the evidence from systematic reviews, where available, on various health-related topics. Reference: Clinical Evidence, 2001	Available via the NeLH website: www.nelh.nhs.uk/default.asp
National Audit Office (NAO). *Tackling Obesity in England*. Reference: NAO, 2001	www.nao.gov.uk
World Health Organization (WHO). *Obesity: preventing and managing the global epidemic.* Reference: WHO, 1997	www.iotf.org
Health Development Agency (HDA). Online evidence base on obesity.	www.hda-online.org.uk/evidence
Cochrane systematic reviews on obesity *Low fat diets for the treatment of obesity* (Pirozzo et al., 2002) *Interventions for preventing obesity in children* (Campbell et al., 2002) *Interventions for treating obesity in children* (Summerbell et al., 2002) *Intervention for improving health professionals' management of obesity* (Harvey et al., 2001)	Available via the NeLH website: www.nelh.nhs.uk/default.asp
Organisations dedicated to obesity The International Obesity Task Force Association for the Study of Obesity	 www.iotf.org www.aso.org.uk
Patient-centred organisations/charities National Association to Advance Fat Acceptance (NAAFA) The Obesity Awareness and Solutions Trust (TOAST) Weight Concern	 www.naafa.org www.toast-uk.org.uk www.weightconcern.com Brook House, 2-16 Torrington Place, London WC1E 7HN. Tel: 020 7679 6636

Unless otherwise stated, the evidence cited below is taken from the systematic reviews cited in the table of key documents, p70.

Reducing overweight and obesity – suggested activities to support local action

COMMUNITY

INDIVIDUAL WEIGHT MANAGEMENT INTEGRATED WITH POPULATION INTERVENTIONS

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Individual strategies may be most effective alongside wider environmental interventions (Jeffery, 1995; Nestle and Jacobson, 2000).	Increase accessible and safe settings to promote physical activity. Greater access to affordable and healthy food options.	Strategic health authorities, primary care trusts. Education sector. Local environment planners.	Awareness of the complexities in the aetiology of obesity and an understanding of the multi-factorial approach to reducing obesity.	Mass media has limited short-term impact on physical activity participation, but may have an impact in encouraging a climate of change (Cavill, 1998).	

SMALL BUT STEADY CHANGE IN DIET AND ACTIVITY

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
For treatment, weight loss about 1 to 2lbs/week for a period of six months. In the longer term, weight loss can be maintained. For prevention, women who did some form of moderate exercise on a regular basis, gained weight more slowly than those who were less active (Sherwood et al., 2000).	Reduce weight by about 10% of baseline weight. Prevention of relapse to previous weight level.	Primary care team. Dietitians. Behavioural therapists.	Skill in encouraging patients who may become disillusioned with slow loss.	There is cumulative benefit in frequent, but short spells of physical activity.	

COMBINE DIET, PHYSICAL ACTIVITY AND BEHAVIOURAL THERAPY

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
A combination of interventions is most effective. Evidence suggests that effects are short term.	Improved links between leisure facilities, caterers, local authorities and health authorities.	Nutrition and physical activity experts. Behavioural therapists.	Regular meetings between different sectors will be required. Identify lead person or organisation.	Frequent ongoing contact is suggested to help maintain the benefits.	

Reducing overweight and obesity – suggested activities to support local action (cont.)

SCHOOLS

SECONDARY PREVENTION IN SCHOOLS. Whole school approach (defined below) (Goran et al., 1999; Story, 1999).

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Mean reduction in % overweight was about 10% (Story, 1999). Younger (pre-adolescent) interventions more successful. This is based on short-term follow-up (mostly less than six months).	Prevent increases in weight in already overweight children.	School nurses. Teachers. Counsellors. Local healthy schools programme.	Access to gyms, playing fields etc. Children can eat up to two meals per day in schools. Families not to incur the cost (Goran et al., 1999).	Need longer-term data to see if weight loss can be sustained. Potential harmful effects (stigmatisation, eating disorders, labelling) may result. Potential framework for PSHE.	A summary of the side effects of treatment in children can be found in Epstein et al. (1998). An NHS website providing health information for teachers, Wired for Health, provides useful information: www.wiredforhealth.gov.uk

PRIMARY PREVENTION IN SCHOOLS. Whole school approach, defined as involving all staff (not just teachers) in modifying curriculum, play time, before and after school experience.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Approach shown to be effective (Story, 1999).	Prevent children becoming overweight or obese.	Local authorities. Food sector. Leisure facilities managers. Teachers. School-based counsellors. Youth workers/youth clubs. Parents. Local healthy schools programme.	As above.	Provide a culturally appropriate intervention. Include classroom health education classes. Potential framework for PSHE.	A systematic review on health promotion in schools is available (Lister-Sharp et al., 1999). An NHS website providing health information for teachers, Wired for Health, provides useful information: www.wiredforhealth.gov.uk

SUPPORTIVE AND RESPECTFUL APPROACH

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Qualitative interviews of US children (Story, 1999). Increased adherence if approached in sensitive manner.	Build self-confidence and self-esteem.	Teachers. School-based counsellors. Parents. Local healthy schools programme.	Will require trained youth counsellors/dietitians.	Psychological impact.	

Reducing overweight and obesity – suggested activities to support local action (cont.)

CHILDREN

THE STOPLIGHT DIET. Treatment in children pre-adolescence. Stoplight Diet has 'red' for foods best avoided, 'amber' for foods in moderation and 'green' for plentiful.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Younger children achieved better weight loss, and maintenance of loss (Epstein et al., 1998).	Weight loss. Modification of eating and exercise behaviours.	School-based health carers (dietitians, school nurse etc). PE teachers. Family. School caterers.	Leaflets on diets.	Ensure the child has adequate nutrition for growth. Monitor psychological impact on children.	Epstein, L. H. and Squires, S. S. (1998). *The Stoplight Diet for Children.* Boston, MA: Little, Brown and Co.

REGULAR DAILY ACTIVITY IN CHILDREN. COMBINE DIETARY ADVICE AND EXERCISE

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Integrating regular activity into daily life is more effective than structured aerobic exercise. Effect was maintained at two-year follow-up (Epstein et al., 1998).	Regular physical activity in daily life becomes the norm.	School. PE teachers. Exercise specialists. Family. Local parks and recreation areas. Local healthy schools programme. Health authorities.	Education for parents and children will be required.	Safety issues with local urban planners and recreational division to ensure safe play areas.	The British Heart Foundation produces a number of useful leaflets and other resources. www.bhf.org.uk

ENCOURAGE LESS SEDENTARY LEISURE TIME

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Trial of reducing TV watching resulted in decreased adiposity (Robinson, 1999). Trial of a reward system for decreasing sedentary behaviour showed reduction in % overweight (Epstein et al., 1995).	Increased activity. Less 'snacking' time.	Parents. Teachers. Youth workers. Local healthy schools programme. LA sports and leisure services	Teachers to explain how to be selective in choice of TV watching. Leaflets to parents about recording child's activities etc. TV monitoring boxes could be considered.	Long-term outcome not yet known.	

Reducing overweight and obesity – suggested activities to support local action (cont.)

CHILDREN (CONT.)

INCREASE FRUIT AND VEGETABLE CONSUMPTION

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Children at high risk of developing obesity (with at least one obese parent) were less likely to develop obesity when consuming a diet high in fruit and vegetables compared with a diet low in fat (Epstein et al., 2001).	Reduction in risk of developing obesity. Increased consumption of fruit and vegetables.	Dietitians. School catering staff. Parents. Teachers.	Education for school caterers and parents on how to encourage children to eat more fruit and vegetables in a way which they will enjoy, eg providing fresh fruit salad daily.	Cost and labour considerations; access to fresh fruit and vegetables.	See chapter 2 on diet and nutrition, p27.

FAMILY GROUP SESSIONS WITH DIETARY ADVICE, AND REGULAR VISITS TO GP

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Prevented progression to severe obesity in adolescence in 10 and 11 year olds (Flodmark et al., 1993), but no difference at one-year follow-up. A trial with 10-year follow-up showed that involvement of parent and child was most effective (Epstein et al., 1998). Inclusion of mastery element (taking control of own behaviours) and use of rewards were found to be more effective in reducing weight in children.	Encourage changes in habitual lifestyle by all family members.	Counselling services. Dietitian. PCTs. School nurses.	Better multi-agency communication working between those involved in providing the service. This may involve liaison meetings.	One study shows that if the child and parent are counselled separately, better weight loss is achieved. Both are involved in the process, but seen apart. Self-monitoring and goal setting praise are suggested. Gradual behavioural therapy over a longer period of time had a better long-term effect than intense sessions (Epstein et al., 1998).	

Reducing overweight and obesity – suggested activities to support local action (cont.)

PRIMARY CARE LEVEL

INDIVIDUALISED ADVICE AND RISK ASSESSMENT. PROVIDE REGULAR FOLLOW-UP CONTACT

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Group sessions appeared more effective (Hughes and Martin, 1999). Sustained weight loss in primary care settings is uncommon (Hughes and Martin, 1999).	Appropriately tailored interventions for particular groups lead to better compliance and effective outcomes. Can be used for higher risk groups such as minority ethnic or disabled groups.	Primary care teams. GPs. Community dietitians. Community (ethnic group) link workers. Health visitors.	Link with local community groups working with minority ethnic groups. Language skills, recognition of cultural and religious requirements. See diet and nutrition chapter for interventions, p27.	Assessing readiness to change is important when recommending a weight reduction programme (Dietz, 1999). Identify barriers (access to affordable, nutritious food, childcare arrangements, opening hours of facilities etc).	A framework has been developed that runs through the stages of promoting exercise for weight management, from assessing readiness to change to the process of change and interventions (Biddle and Fox, 1998).

EXERCISE AS INTEGRAL PART OF INTERVENTION. Encourage friends and family to accompany participant (maybe a buddy scheme where participants can link up with another member of the group).

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Moderate (short-term) effects of primary care-based counselling and interventions tailored to particular needs with written materials had a stronger effect (Eakin et al., 2000).	Increased activity as part of everyday living. Better balance of energy intake and expenditure.	PCGs/PCTs. Practice nurses. Leisure facility personnel. Some health visitors have this role.	Training for primary care teams on the role of physical activity. See physical activity chapter for interventions, p83.	A motivated coordinator and supportive team may improve outcomes. Patients should be given choice of activity (including home-based) (Hillsdon, 1998). Exercise referral schemes can identify suitable candidates and establish the responsibilities within a programme between the parties (Hughes and Martin, 1999). But recruitment and adherence may be fairly low and not reach those with most to gain (Hillsdon, 1998).	

Reducing overweight and obesity – suggested activities to support local action (cont.)

PRIMARY CARE LEVEL (CONT.)

ENERGY RESTRICTED DIET (1,000-2,000 KCAL/DAY) RATHER THAN A FAT RESTRICTED DIET (22-26 G/DAY)

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
RCT showed greater weight loss in the energy restricted diet at 18-month follow-up.	Healthier diet, lower energy and fat intake.	Dietitians. Practice nurse.	Training for health professionals. See diet and nutrition chapter, p27.		See diet and nutrition chapter, p27.

SPECIALIST WEIGHT LOSS CLINIC WITHIN A GP PRACTICE

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
A weekly clinic (with a health visitor) achieved weight loss even at a year follow-up. 33% achieved a 10% weight reduction and 6% maintained this loss at a year (Sleath, 1999).	Maintenance of weight loss through regular follow-up.	PCT. Health visitor. Community dietitian. Health authorities.	Room in the practice. Training for a health visitor (which could be shared between practices in the area).	Cost. Potentially nominate an obesity coordinator within each practice.	

IMPROVE HEALTH PROFESSIONALS' MANAGEMENT OF OBESITY THROUGH BRIEF TRAINING SESSIONS AND PROVISION OF APPROPRIATE RESOURCES

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Brief training sessions for GPs and practice nurses improves health professionals' management of obesity (Harvey et al., 2001).	Increased effectiveness of weight management advice by primary care team.	Dietitians. Primary care team, including GPs. Health authorities.	Will require training sessions and resources delivered by dietitians.	Cost and time implications.	A local obesity strategy may help focus the requirement and implementation of this training (NAO, 2001). Accredited training courses on obesity management are being developed. An accredited one week course on nutrition for health professionals is available and currently runs once a year in Southampton, Nottingham and Scotland. Contact Janice Taylor, University of Southampton. Tel: 023 8079 6317.

Reducing overweight and obesity – suggested activities to support local action (cont.)

MAINTENANCE OF WEIGHT LOSS

FREQUENT CONTACT OVER LONG TERM

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Systematic review showed any type of frequent contact led to less weight gain. Interventions should be at least six months and incorporate continuing contact to prevent weight regain. Face to face contact (house visits) shown to be effective in reducing weight regain in one RCT, more so than phone or letter contact.	Reduce weight regain.	GPs. Practice nurse or weight specialist.	Resources to follow up over longer time period required (staff/phone calls/letters etc). Frequent or long-term follow-up may require extra practice resources.	Self-help peer groups, self-management techniques and family or spousal involvement may all be of some help.	A framework has been developed that runs through the stages of promoting exercise for weight management, from assessing readiness to change to the process of change and interventions (Biddle and Fox, 1998).

PROVISION OF HOME EXERCISE EQUIPMENT. Also supervised exercise sessions with simple behavioural therapy (SBT) at one year, compared to SBT and simple exercise.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Improved weight loss achieved with provision of exercise equipment for the home, combined with advice on continuous exercise (vs intermittent). Supervised exercise sessions (three times a week for 12 weeks) plus SBT was more effective in weight loss at one year, but another found that supervised walks or a personal trainer resulted in less weight loss than SBT alone.	Cumulative daily activity can be of benefit in a weight control programme and can improve adherence (Jakicic et al., 1995). Access to home exercise equipment facilitates the maintenance of adherence further (Jakicic et al., 1999).	Physical activity adviser. Counselling services.	Supervised sessions require extra resources. Liaison with leisure facilities or local suppliers may make it easier to provide home-based equipment (consider a renting scheme).	Approach can encourage sedentary people to become more active. Smaller bouts of activity may appear more attainable. Aim to accumulate about 30 minutes of activity per day.	

COMMERCIAL WEIGHT LOSS PROGRAMMES

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Evidence that better weight loss is achieved in group settings (Davis et al., 2000).	Improve psychological well-being. Make the process of losing weight more enjoyable.	Partnership with public sector.	Motivated class leader may be important.	Evaluation tools for commercial weight loss programmes are needed (Conley, 1998).	

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Chapter 4 – Increasing physical activity

Introduction

There is international consensus that a physically active lifestyle is important for health and has great potential for health gain (eg World Health Organization/Federation of Sports Medicine, 1995; US Department of Health and Human Services, 1996). Physical inactivity is highlighted in *The NHS Cancer Plan* (DH, 2000a) as a risk factor which can contribute to the development of cancers. Epidemiological evidence also shows that physical activity has benefits for a range of cardiovascular disease, diabetes and mental health (eg US Department of Health and Human Services, 1996; Health Education Authority, 1995a). The importance of promoting physical activity is highlighted in *The NHS Plan* (DH, 2000c), *National Service Frameworks for Mental Health* (DH, 1999) and *Older People* (DH, 2001b). The *NSF for Coronary Heart Disease* states that:

> *'... all NHS bodies working closely with local authorities will have agreed and be contributing to the delivery of local programmes of effective policies on … increasing physical activity.'* (DH, 2000b)

Increasing physical activity also fits into many of the key local authority policy frameworks such as regeneration, transport, community safety and sustainable development (eg Social Exclusion Unit, 2001; DETR, 2000a; DTLR, 2001).

Epidemiological association between physical inactivity and cancers

Which cancers are linked with inactivity?

Evidence linking inactivity and a variety of cancers has grown over the last decade (Thune and Furberg, 2001). The 1996 Surgeon General report on physical activity (US Department of Health and Human Services, 1996) noted that:

- Regular physical activity is associated with a decreased risk of colon cancer
- There was no association between physical activity and rectal cancer
- Data were too sparse to draw conclusions regarding a relationship between physical activity and endometrial, ovarian or testicular cancers
- Despite numerous studies, existing data are inconsistent regarding an association with breast or prostate cancers.

More recently, a number of authors have reviewed the epidemiological evidence around physical activity and specific cancers, and there are an increasing number of reviews of cancer risk in general.

A Canadian workshop on physical activity and cancer prevention in March 2000 presented a systematic review of the published literature on the aetiological role of physical activity in relation to cancer (Marrett, L. et al., 2000). It included an assessment of the frequency, intensity and duration of physical activity associated with cancer risk reduction.

The review divided the overall weight of evidence for each cancer into four categories. These are:

- **Convincing** – epidemiological studies show consistent associations, with little or no evidence to the contrary. There should be a substantial number of acceptable studies (20+), preferably including prospective designs, conducted in different population groups and controlled for possible confounding factors. Exposure data should refer to the time preceding the occurrence of cancer. Dose response relationships should be supportive of a causal relationship. Associations should be biologically plausible. Laboratory evidence is usually supportive.

Summary of the epidemiological evidence on the association between physical inactivity and various cancers

Site	Consistency of evidence for a risk reduction with increased physical activity levels*	Overall level of scientific evidence
Colon	42 of 48	Convincing
Breast	22 of 33	Probable
Prostate	14 of 23	Possible
Lung	7 of 10	Insufficient
Testis	2 of 5	Insufficient
Ovary	1 of 4	Insufficient
Endometrium	7 of 11	Insufficient

* Number of papers showing reduction in risk and total number of papers looking at association Based on Marrett, L. et al. (2000)

- **Probable** – epidemiological studies showing associations are either not so consistent, with a number of studies not supporting the association, or the number or type of studies is not extensive enough to make a more definite judgement. Mechanistic and laboratory evidence is usually supportive.
- **Possible** – epidemiological studies are generally supportive, but are limited in quantity, quality or consistency. There may not be supportive mechanistic or laboratory evidence. Alternatively, there are few or no epidemiological data, but strongly supportive evidence from other disciplines.
- **Insufficient** – there are only a few studies, which are generally consistent, but really do no more than hint at a possible relationship. Often, more well-designed research is needed.

These categories are based on an adaptation of the World Cancer Research Fund/American Institute for Cancer Research categories used in a review of nutrition and cancer prevention. The table above summarises this assessment of the strength of the evidence in seven cancers.

Possible mechanisms

Various mechanisms have been suggested as being involved. These include restriction of activity by pre-existing disease, dietary influences including overall energy balance, intake and bioavailability of minerals, antioxidant vitamins and fibre and relative proportions of protein and fat ingested.

Links between regular activity and other cancer risks are generally not strong, although endurance athletes are not usually smokers and regular leisure activity is associated with high socio-economic status, which the authors note tends to reduce exposure to airborne carcinogens.

Obesity is a major component of the exercise-cancer relationship (see Chapter 3). A variety of biological mechanisms have been suggested, including changes in hormonal influences, changes in immune functioning and speeding up of passage of faecal matter through the colon (see eg Shephard and Shek,1998; US Department of Health and Human Services, 1996; Thune and Furberg, 2001).

What level of activity is needed?

The general physical activity recommendation is for adults to achieve a minimum of 30 minutes of moderate activity at least five times a week (DH, 1996), and is appropriate as a baseline in reducing the risk of cancers. Reviews of evidence looking at cancer risk at different levels of physical activity have found dose-response effects, showing reduced risks as the level of activity increases. A dose-response effect is one in which a greater amount of what is being studied (here physical activity level) is associated with a larger response. The presence of a dose-response effect is an important step in suggesting that two factors (here physical activity and cancer) are causally related.

The dose-response effect was particularly seen when the subjects took part in activity of at least moderate intensity. This was found particularly when looking at colon cancer (Thune and Furberg, 2001). The review by Marrett et al. (2000) notes that physical activity should comprise at least 30-45 minutes of moderate to vigorous activity on most days of the week.

What is the public health impact of inactivity on cancer?

To understand the impact of a risk factor such as inactivity on the population as a whole it is necessary to know both the relationship between inactivity and health outcomes (in this case cancers) and the prevalence of inactivity in that population. Because of the high prevalence of inactivity (see table below) there is a substantial population-wide benefit from increasing physical activity. This is frequently presented as a population attributable risk (PAR). It is calculated from the prevalence of a risk factor in that population (here the risk factor being inactivity) and the relative risk associated with that factor. Using data from the US, Powell and Blair (1994) estimated the PAR for inactivity in relation to colon cancer to be 32%. As levels of inactivity are similar in this country to those in the US, it is likely that a figure for England would be similar. A full description of the application of population attributable risk estimates in relation to physical activity can be seen in Macera and Powell (2001).

Objectives of physical activity interventions

As stated above, the current guideline is to achieve 30 minutes of moderate intensity activity (such as brisk walking, heavy gardening and heavy housework) on at least five days of the week (DH, 1996). Walking and cycling are frequently cited as examples of how to achieve this recommendation (WHO, 1995; US Department of Health and Human Services, 1996).

Overall, the prevalence of physical activity is low. Data from the 1998 Health Survey for England found 37% of men and 25% of women met the current guidelines for activity (30 minutes of activity per day on at least five days of the week). These levels drop with age. Participation is lower among many black and minority ethnic groups.

Activity levels in children aged 2-15 were examined in the 1997 Health Survey for England (Joint Surveys Unit, 1998). Participation in all types of physical activity was summarised into a frequency-duration scale, which took account of average time spent participating in physical activities, and the number of active days in the last week. This summary measure showed that overall participation was lower among girls than among boys. In both sexes there was a decline after about age eight, but the decline was steeper among girls than boys. By age 15, only 36% of girls engaged in physical activities for at least 30 minutes on most days. In contrast, 71% of boys aged 15 participated in physical activities for at least 30 minutes on most days.

Features of effective interventions

Effective interventions are appropriate to the target groups (such as older people, people with disabilities or specific ethnic groups), are developed with community involvement and focus on addressing barriers to participation and how these may be overcome. Barriers to participation include lack of perceived need to be active, lack of time, negative perceptions of 'exercise' and negative past experiences. Practical barriers include cost of facility use, access to facilities and lack of equipment. Cultural issues, such as the need for single sex sessions, are important in ensuring participation by all ethnic groups. For particular hard to reach groups, ensuring participation is likely to require proactive outreach work (HEA, 1997a; HEA, 1997b; HEA, 1998a; HEA, 1998b; HEA, 1999b).

Hillsdon et al. (1995) found that effective interventions to promote physical activity required personal instruction, continued support, and exercise of moderate intensity which does not depend on attendance at a facility. The exercise should be easily included in an existing lifestyle and should be enjoyable. They note that walking most readily fits these criteria.

The US Task Force on Community Preventive Services has recently produced a report on recommendations on community interventions to increase physical activity

Percentage of men and women in England meeting current physical activity guidelines, by age, 1998

Age group	16-24	25-34	35-44	45-54	55-64	65-74	75+	All ages
Men	58	48	43	36	32	17	7	37
Women	32	31	32	30	21	12	4	25

Source: Joint Surveys Unit, 1999

(Centers for Disease Control and Prevention, 2001). It found evidence to recommend or strongly recommend interventions in six areas. These were:

- Community wide campaigns
- Point of decision prompts to encourage stair use
- School-based physical education
- Social support interventions in community settings
- Individually adapted health behaviour change programmes
- Creation or enhancement of access to places for physical activity combined with outreach activities.

A further publication is anticipated in 2002.

Components of a local strategy

An important step in the effective promotion of physical activity is the development of a comprehensive local strategy that encourages partnerships between a variety of professionals and community groups. Reviews of effective policy development emphasise the importance of a strong evidence base, ownership by a range of stakeholders, community involvement, needs analysis and evaluation (HEA, 1995a; Foster, 2000).

A comprehensive local strategy will include elements in a variety of different settings, addressing different target groups. Chapter 8 contains a more detailed discussion about the process of developing a local strategy.

Healthcare interventions

Interventions in healthcare settings can increase physical activity (Simons-Morton et al., 1998). Long-term effects are more likely with continuing intervention and multiple intervention components such as supervised exercise, provision of equipment, and behavioural approaches (Simons-Morton et al., 1998).

A benefit of primary care based intervention is that they can reach a high proportion of the population (Harland et al., 1999). Studies of effectiveness have shown them to be moderately effective, at least in the short term (Marcus et al., 1998b; Bull and Jamrozik, 1998; Harland et al., 1999). Harland et al. found the effectiveness of an intervention producing a change in behaviour increases with the intensity of the intervention. A review of brief advice as part of a routine consultation by Lawlor and Hanratty (2001) found some benefit in studies with short-term follow-up, while only one of four studies with long-term follow-up (4-12 months) found a sustained effect.

The authors note that as the majority of trials were from the US, these results may not be applicable to the UK as the structure of primary care is different. Eakin et al. (2000) reviewed interventions in primary care, including more vigorous approaches such as counselling. They found these interventions to be moderately effective in the short term, with more uncertainty about long-term maintenance. They noted that interventions that were tailored to participant characteristics and offered written materials to patients produced stronger results.

Exercise referral schemes

There has been a significant and sustained growth in exercise referral schemes over the last ten years. The most common model involves primary care staff (usually practice nurses or general practitioners) referring patients to leisure centres for advice and assistance in increasing physical activity. Although there is a lack of rigorous evaluation of these programmes, that which exists shows some evidence of short-term increases in levels of activity. However, there was no evidence of long-term impact on sustained behaviour change. Data from case studies suggest impact in a range of parameters on a variety of people. The effectiveness of the schemes may be improved when:

- Staff are trained in behaviour change strategies
- Quality supervision is achieved by adequate practitioner-patient ratios
- Liaison between health and leisure service personnel is established and maintained
- Community based networks offer support beyond the referral period, incorporating sustained, active living (Riddoch et al., 1998).

Some practitioners have expressed concerns about the amount of time and resources required to set up and run high quality referral schemes that only address the needs of a small section of the population (Harland et al., 1999). Targeting of appropriate referrals will be an important task where schemes are adopted.

The Department of Health document *Exercise referral systems: a national quality assurance framework* aims to improve standards among existing exercise referral schemes, and help the development of new ones (DH, 2001a). It offers guidance and recommended quality standards, but does not propose a national or regional process for the approval, registration and monitoring of schemes.

Workplace

Workplaces provide an organisational structure for the coordination of health programmes and an appropriate setting for developing supportive relationships for behaviour change (Centers for Disease Control and Prevention, 2001). Existing research, although not conclusive, shows that workplace-based interventions can lead to increases in physical activity (Dishman et al., 1998; Bovell, 1992; Shephard, 1990). A booklet is available containing ideas for introducing workplace physical activity with examples of three case studies (Elder, 1996). Some interventions to promote active commuting using written materials have shown increases in physical activity levels (Mutrie et al., 1999) (see also 'Physically active transport', overleaf).

Mass media

In mass media interventions, the number of contacts and tailored interventions were important in increasing effectiveness but there was little impact on long-term physical activity behaviour (Marcus et al., 1998a).
A review of mass media campaigns (including paid and donated promotions using a variety of media singly or in combination, but excluding other components such as support groups and community events) found inconsistent evidence of effectiveness in increasing physical activity, a minimal number of studies and limitations in the design and execution of available studies (Centers for Disease Control and Prevention, 2001).
As a result, the recommendation of the US Task Force on Community Preventive Services is that there is insufficient evidence to recommend the interventions. They note that this is not the same as evidence of ineffectiveness.
Large-scale, high intensity community wide campaigns with elements such as support and self-help groups, counselling, risk factor screening, community events and creation of places for physical activity (eg walking trails) have been shown to be effective.

Schools

Physical activity programmes in schools have been associated with a number of positive changes.

Modifications to curricula and policies to increase activity, increase the time spent in PE classes or the amount of time active during PE classes have been found to be effective in increasing levels of physical activity. These interventions could include changing the type of activities used or changing the rules to increase general levels of activity. Specific interventions aimed at reducing TV viewing and video game playing can help reduce overweight in schoolchildren, although they are less successful in increasing levels of activity (Centers for Disease Control and Prevention, 2001). There is less evidence to support effectiveness of classroom-based health education focusing on information and behavioural skills, or classes taught in university or college settings.

Most interventions are developed as a result of collaboration between schools and external advisory and support services, in the context of local healthy schools programmes (HEA, 1998a). Reviews of activity promotion in schools have concluded that:

- Appropriately designed, delivered and supported physical activity curricula can enhance current levels of physical activity and can improve physical skill development. Quality of teacher skills, knowledge and experience is significant
- Young people benefit from access to suitable and accessible facilities and opportunities for enjoyable physical activity. These need to be appropriate for the religious and cultural needs of people from minority ethnic groups
- Interventions are likely to be more effective when young people are involved in planning of programmes
- Well-designed schemes adopt a whole school approach to the promotion of physical activity including:
  - A physical and health education curriculum
  - Extra-curricular activities
  - Links with the local community
  - Safe transport routes to schools
  - A mechanism to demonstrate how increases in the level of participation in regular physical activity will be measured.

(Shephard, 1990; Simons-Morton et al., 1998; Pieron et al., 1996; Harris, 1997; Sallis et al., 1990; Sallis et al., 1993; Mulvihill et al., 2000)

A qualitative exploration of the views of young people (11-15 years old) shows clear gender differences, with young women less likely to engage in active pursuits. A flexible and differentiated approach to physical activity promotion may be required to meet the needs and preferences of this group.

Travel to school also offers an opportunity to increase levels of daily physical activity. See 'Physically active transport', overleaf.

Older people

The *National Service Framework for Older People* (DH, 2001b) sets out standards and milestones for improving the health of older people, including maintaining and promoting physical activity. A forthcoming Health Development Agency document looks at supporting the delivery of Standard 8 of this framework (HDA, 2002, forthcoming). Substantial health benefits are associated with physically active lifestyles throughout the life-span, including those in the latter half of the life course. It is important to note that, more than most other population groups, older people differ substantially in their functional ability and in their past experience of activity. Level of functional ability is obviously a key factor in developing appropriate activities in this age group. Addressing the various needs of this diverse group is an important element of developing a comprehensive local physical activity strategy.

Physical activity promotion for older people should:

- Provide opportunities for affordable, accessible physical activity (particularly for those least likely to take part)
- Address psycho-social needs and combine fun and socialising with physical activity
- Involve older people in the planning, implementation and evaluation of programmes
- Address the specific needs of different groups
- Address the political, social and economic barriers which discourage older people from participating
- Ensure the indoor and outdoor environment is safe and pleasant to take exercise.
  (HEA, 1995a; Walters et al., 1999)

A WHO consensus statement exists on physical activity in older adults (WHO, 1996). It notes that there are considerable variations within the group from fit and healthy to unfit and dependent individuals. Appropriate activity will vary for these groups. The statement notes that:

- Activities need not necessarily be performed in supervised settings
- A variety of activity types can confer benefits
- The focus should be on simple and moderate forms of exercise
- Components to consider include aerobic exercise, muscular strength, flexibility and balance
- Exercise should meet individual needs and expectations
- Exercise should be relaxing and enjoyable
- Exercise should be regular, if possible daily.

Physically active transport and environmental approaches

Transport offers considerable potential for health-enhancing physical activity. Cycling and walking can be of suitable intensity, and trips such as commuting or travel to school are regular, frequent and often of a suitable length (70% of journeys are less than five miles, 44% less than two) (DETR, 2000d). There is evidence of 'suppressed demand' for cycling and walking. A survey by MORI for the Commission for Integrated Transport (Commission for Integrated Transport, 2001) found that 47% of people said they would cycle more and 65% would walk more if problems were addressed. The major barriers identified are shown below.

Main barriers to cycling and walking

Barriers to cycling

Issue	Percentage who would cycle more if issue addressed
Better/safer cycle routes	32%
More cycle routes	31%
Better facilities for parking bicycles	28%
More considerate attitude from drivers	26%

Barriers to walking

Issue	Percentage who would walk more if issue addressed
Cracked pavements	32%
Safer walking routes to shops and local facilities	26%
Better lighting	26%
Fewer cars on the road	20%
More pedestrian crossings	19%

Source: Commission for Integrated Transport, 2001

Average distance travelled per year by foot has declined over recent years, from 244 miles in 1985/6 to 191 miles in 1997/9 – a drop of 22% (DTLR, 2002). Hillsdon et al. (1995) found that walking was the activity most likely to fulfil the criteria for a successful intervention in free-living populations (moderate intensity activity not requiring attendance at a facility which is enjoyable and can easily fit into activities of daily life). Walking and cycling to work has been shown to lead to improved health outcomes (Vuori and Oja, 1999). Mutrie et al. (1999) found significant increases in walking to work using written interactive promotional material, although no increases in cycle commuting. Evidence suggests that promoting workplace-based cycling requires attention to environmental factors, both in the workplace (eg cycle parking and showers) and to the road environment (eg safety).

Walking and cycling to school can form part of a school travel plan. Reviews of case studies by the DETR have demonstrated that school travel plans can increase the numbers walking and cycling to school (DETR, 2000a).

Improving access by the creation of suitable facilities for physical activity and reducing barriers to their use can be effective in promoting physical activity, combined with informal outreach activities (Centers for Disease Control and Prevention, 2001). Such facilities include walking and cycling routes or trails, including 'active transport' routes to a wider range of facilities. Barriers to access include factors such as cost of use of facilities as well as the barriers to active transport mentioned above.

Programmes aimed at achieving voluntary travel behaviour change by 'personalised journey planning' have achieved substantial increases in walking and cycling. Personalised journey planning is the use of a set of techniques or approaches that provide individualised analysis and advice to people based on their journey making characteristics, with the aim of achieving change in method of transport used. Such approaches have to be developed in coordination with infrastructure and service approaches and 'involuntary' policies such as parking fees.

In 2001, DETR commissioned a review of personalised journey planning techniques. The review noted that although a full evaluation of effectiveness was not possible, some initiatives had produced very encouraging results. Effectiveness was generally found to be a product of the relevance of the specific technique to the situation in which change is wanted, the details of the way in which an approach has been adapted to the particular situation and the thought, care, effort and resources that have been put into execution (Steer Davis Gleave, 2001). One such approach is TravelSmart, the registered trade mark of a scheme in Western Australia. It is designed to inform and motivate people to use alternative transport modes to the car, including cycling and walking. It reported increases of 16% in walking and 91% in cycling two years after implementation (Department of Transport, Western Australia, 2000).

Interventions such as signs posted to increase stair climbing (Blamey et al., 1995; Brownell et al., 1980; Kerr et al., 2001a; Kerr et al., 2001b; Centers for Disease Control and Prevention, 2001) also have been shown to be effective.

Social support in community settings

The US Task Force on Community Preventive Services found adequate evidence to recommend strongly interventions based around social support in community settings (Centers for Disease Control and Prevention, 2001). These focused on building, strengthening and maintaining networks that provide supportive relationships for behaviour change. Interventions included setting up buddy systems, contracting with another person to complete specified levels of activity, and establishing walking or other groups to provide friendship and support. This can be done either by developing new social settings or within existing settings such as the workplace or schools. The review of exercise referral schemes noted that developing community based networks can support long-term maintenance of behaviour change following formal involvement in primary care exercise referral schemes (Riddoch et al., 1998).

Reducing inequity

Deprived groups are twice as likely to be sedentary as the most affluent groups (Gordon et al., 1999). A higher proportion of men in lower social classes participate in moderate or vigorous activity but this is mainly due to occupational physical activity. This trend does not apply to women. A higher proportion of men and women in the non-manual occupations participate in sports and leisure activities compared to those in manual occupations.

The characteristics of good practice in work on physical activity and inequalities include:

- Outreach work with disadvantaged groups
- Part of a broad approach which includes social, policy and environmental measures
- Involving the targeted communities
- Developing new partnerships with professionals who have good access to 'hard to reach' groups. (HEA, 1999b)

Barriers to participating in physical activity among *black and minority ethnic groups* tend to be similar to many of those in other groups, including lack of time and concerns about body shape. Additional barriers include racism, cultural inappropriateness (eg lack of single sex provision), the importance of family responsibilities and language issues (HEA, 1997a). More single sex exercise facilities may encourage uptake among Asian women (HEA, 2000).

Participation in physical activity tends to be low among *people with disabilities*. A key issue is for people with disabilities to participate in activities which they enjoy, perceive as supportive in maintaining activities of daily living and which can be incorporated easily into routine life. Activities must be:

- Appropriate from a social, environmental and physiological perspective
- Planned in close cooperation with the target group
- Involve specialist advice where appropriate.

Useful sources of information about community based programmes	How to access
The National Heart Forum, supported by the British Heart Foundation and the HDA, has produced a physical activity handbook for developing local programmes. *Let's Get Moving* gives practical advice to local partnerships to those putting together strategies, policies and action plans around promoting physical activity in the community.	The handbook is published by the Faculty of Public Health Medicine in collaboration with the National Heart Forum and with input from the British Heart Foundation and the HDA. It is available from Louise Allcoat at the FPHM (Tel: 020 7935 0035).
The European Heart Network has produced a report *Physical Activity and Cardiovascular Disease Prevention in the European Union*. It summarises the evidence on the relationship between physical activity and cardiovascular health and provides recommendations to encourage a more active environment.	This report can be accessed at www.ehnheart.org/pdf/activity.pdf
Europe on the Move! has produced *Guidelines for Health-Enhancing Physical Activity* (HEPA). This looks at the experience of promoting physical activity in four EU countries (Netherlands, Finland, Switzerland and England).	http://bli.fysisktaktiv.nu/dnload/guidelines.pdf
Promotion of Transport, Walking and Cycling in Europe: Strategy Directions is a web accessible document that includes useful and practical information on promoting transport, walking and cycling. It suggests strategies, defines targets, and provides advice on funding, advocacy and lobbying, monitoring and evaluation.	http://bli.fysisktaktiv.nu/dnload/strategy.pdf
Moving on: International perspectives on promoting physical activity is a report of a symposium in 1994 designed to support the Physical Activity Task Force in its role of developing a national strategy for promoting physical activity in England (Killoran et al. (eds) 1995).	Available from the HDA website www.hda-online.org.uk
A community approach to behavioural change in the promotion of physical activity is published by the CDC in the US. It is aimed at all those interested in a community wide strategy (central and local government, transport, health & community planners, exercise specialists and health professionals, community groups, businesses, schools, colleges and universities etc.).	www.cdc.gov/nccdphp/dnpa/pahand.htm
The CDC has a report entitled *Physical Activity and Health* which covers the promotion of physical activity in our daily lives.	www.cdc.gov/nccdphp/sgr/summary.htm
The CDC has also published a set of guidelines on the promotion of physical activity in children and adolescents with guidance on the benefits and consequences of physical activity.	www.cdc.gov/nccdphp/dash/guidelines/physact.htm
In 2001 the US Task Force on Community Preventive Services published a report on recommendations of community interventions to increase physical activity. A further report is anticipated in 2002.	The Communityguide website www.thecommunityguide.org/home_f.html Report: www.cdc.gov/mmwr/pdf/rr/rr5018.pdf

Increasing physical activity – suggested activities to support local action

PRIMARY CARE LEVEL

INDIVIDUAL PATIENT RISK ASSESSMENT AND ADVICE. Individual advice is closely related to counselling for behaviour change, with no clear dividing line either in research terms or practice. Frequently advice is shorter, and takes a more authoritarian nature.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Some evidence for short-term effectiveness but no evidence of sustainability (Marcus et al., 1998; Bull and Jamrozik, 1998b; Eakin et al., 2000; Lawlor and Hanratty, 2001).	Identification of levels of activity, interventions based on predicted risk. Brief interventions that focused on physical activity only, which were tailored to participant characteristics and offered written materials, produced stronger results than longer interventions addressing several risk factors with no support material (Eakin et al., 2000).	Primary healthcare staff.	Assessment protocols, tailored advice, responsive to client's needs; knowledge of health impact of physical activity on health. Knowledge of local facilities useful. Knowledge of messages about physical activity may be low among PHC staff.	Focus on active living likely to be appropriate for many people.	

COUNSELLING FOR BEHAVIOUR CHANGE. Counselling is used to refer to a more in-depth approach, frequently implying a mutual alliance or client-centred focus.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Frequent professional contact is associated with adherence (Hillsdon et al., 1999); long-term effects are more likely with continuing interventions and behavioural approaches (Simons-Morton et al., 1998). Evidence of moderate effectiveness in the short term, questions remain about long-term maintenance (Eakin et al., 2000).	Sustained behaviour change in target group, possible reduction in risk factors (eg hypertension) in target group.	PHC staff, physiotherapists, leisure professionals.	Motivational interviewing. Good knowledge about physical activity and local facilities.	Availability and time of PHC staff. Most effective in those actively contemplating increasing levels of physical activity.	

Increasing physical activity – suggested activities to support local action (cont.)

PRIMARY CARE LEVEL (CONT.)

PHYSICAL ACTIVITY (EXERCISE) REFERRAL. The most common form in this country consists of referral by a member of the primary care team to facilities such as leisure centres or gyms for supervised exercise programmes.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Small but possibly meaningful improvements achieved (Riddoch et al., 1998). No evidence of long-term impact.	Effective partnership between health and leisure services, identification and referral of appropriate patients, sustained behaviour changes. Evaluation suggests may help in achieving outcomes other than increases in physical activity (eg social support, self-confidence, quality of life).	GP, PHC staff, leisure service personnel, healthy living centre staff.	Collaboration with leisure services trained staff, community networks to support post-referral. Costly. Resource-intensive.	Effectiveness improved when: staff are trained in behaviour change strategies, quality supervision is achieved by adequate patient/practitioner ratios. Developing community based networks can support long-term maintenance of behaviour change. Opportunities for targeting groups with clinical conditions which puts them at risk. The use of gyms and similar leisure centres can be a barrier in itself for some groups who perceive this type of environment as threatening and not welcoming.	Riddoch et al. (1998). www.hda-online.org.uk/downloads/pdfs/effective_primcare.pdf Exercise Referral National Quality Assurance Framework (DH, 2001a). www.doh.gov.uk/exercisereferrals

Increasing physical activity – suggested activities to support local action (cont.)

TRANSPORT

PROMOTION OF ACTIVE TRANSPORT

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Walking is a key intervention to promote active lifestyles (Morris and Hardman, 1997). Environmental changes are important to facilitate its uptake. Areas which promote the needs of cyclists and pedestrians have above average use of these modes (eg York transport policy – DETR, 1996).	Reduced danger to pedestrians/cyclists encouraging greater active transport; modal shift towards these transport choices.	Local authorities, education services, transport, planning; business; NGOs. Local road safety officers. Police. Community Strategies/ Neighbourhood Renewal. TravelWise www.travelwise.org.uk/index.htm Travel plan coordinators.	Cross-sectional financing through HIMPs possible. Skills – joint working, target setting and planning.	Production of local transport plan a requirement for local authorities. Promotion of cycling and walking is encouraged, as is joint working with, eg PCT. Schemes addressing danger from vehicles, eg 20 mph zones have shown dramatic accident reduction outcomes (61% drop in pedestrian casualties and a 67% drop in child pedestrian and cyclist casualties – Webster et al., 1996). DTLR Challenge Fund now funding 61 Home Zone projects in the UK. www.local-transport.dtlr.gov.uk/hzone	HEA (1998c). *Transport and Health.* www.hda-online.org.uk/downloads/pdfs/trans_health_brief.pdf HEA (1999a) *Making THE links* www.hda-online.org.uk/downloads/pdfs/making_the_links.pdf HEA (1999c). *Active Transport.* www.hda-online.org.uk/downloads/pdfs/activetransport.pdf DETR (2000c). *Encouraging walking.* www.local-transport.dtlr.gov.uk/walking/ Home Zones: www.homezones.org www.roads.dtlr.gov.uk/roadnetwork/ditm/tal/traffic/10_01/index.htm WHO (1998). *Walking and cycling in the city.* www.who.dk/environment/pamphlets

Increasing physical activity – suggested activities to support local action (cont.)

SCHOOLS

NATIONAL HEALTHY SCHOOL STANDARD. The overall aim of the programme is to help schools become healthier schools through supporting the development and improvement of local programmes in a variety of areas, including physical activity.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Positive outcomes have been reported following implementation of physical activity programmes in schools. The US Task Force on Community Preventive Services found the evidence for school-based physical education to be sufficient to strongly recommend the approach (Centers for Disease Control and Prevention, 2001).	The standard is for schools to offer all pupils at least 2 hours of physical activity a week within and outside the National Curriculum. Encourages staff, pupils, parents/carers and other adults to become involved in promoting physical activity. Physical activity participation may enhance academic performance and encourage lifelong physical activity.	Staff, pupils, local education authority (LEA), healthy schools network, leisure services, transport department, NGOs (eg Sustrans).	In-service training of teachers.	Provides positive environmental impact (eg reduced car travel). Helps fulfil National Curriculum requirements for Science and PE as well as contribute to the National Framework for PSHE. The criteria for achieving the standard are that the school: – Has a whole school approach to the promotion of physical activity – Offers all pupils a minimum of 2 hours physical activity a week within and outside the National Curriculum – Is aware of a range of relevant initiatives and networks and takes advantage of appropriate opportunities to promote and develop physical activity – Encourages its staff, pupils, parents/carers and other adults to become involved in promoting physical activity and develop their skills, abilities and understanding through appropriate training.	The National Healthy School Standard (NHSS) identifies criteria on physical activity to inform good practice and the implementation of a whole school approach (National Healthy School Standard, 2000). www.wiredforhealth.gov.uk/healthy/physical_activity_report__v.pdf NHSS support material on physical activity for primary and secondary schools. www.wiredforhealth.gov.uk/healthy/healint.html British Heart Foundation. *Active School Resource Pack*. http://212.67.212.10 www.wiredforhealth.gov.uk

Increasing physical activity – suggested activities to support local action (cont.)

SCHOOLS (CONT.)

SCHOOL TRAVEL PLANS (INCLUDING SAFER ROUTES TO SCHOOL). School travel plans may include improved pavements or crossings, pedestrian and cycle training, escort schemes such as 'walking buses' – comprising two volunteer parents, one to 'drive' and one to 'conduct' a trolley to carry school bags, and a long line of children – and enhanced facilities within the school.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Case studies have shown increases in cycling, walking and bus use (eg walking buses) (DETR, 2000b). www.local-transport.dtlr.gov.uk/schooltravel/bpgla/casestudies/index.htm	Improved environment for cycling and walking. Changes in use of motorised travel to school. Reduced road danger.	Staff, pupils, parents, local transport planners, NGOs (Sustrans), school governors, public transport providers, cycle and walking groups, police.	May involve physical changes to road layout or school environment. Provision of safe cycle parks, provision of other facilities (such as lockers for storing cycle bags etc.).	School travel plans are supported by Integrated Transport White Paper (DETR, 1998). Can be incorporated into local transport plan (LTP). Links to local environmental concerns (Community Strategy, LA21). Links to National Healthy Schools Strategy.	The School Travel Advisory Group (STAG) report is available at www.local-transport.detr.gov.uk/schooltravel/index.htm#1998-1999report DETR. *School travel strategies and plans: a best practice guide* (www.local-transport.detr.gov.uk/schooltravel/bpgla/index.htm) *School travel strategies and plans case studies report* www.local-transport.detr.gov.uk/schooltravel/bpgla/casestudies/index.htm. Provides case studies of urban and rural schools. Sustrans' Safe Routes to Schools programme can be accessed at: www.saferoutestoschools.org.uk

Increasing physical activity – suggested activities to support local action (cont.)

WORKPLACE INTERVENTIONS

'GREEN' TRANSPORT PLANS (GTPs) (ALSO CALLED TRAVEL PLANS). Aimed at reducing car use for travel to work and for business, a typical plan is a package of practical measures to encourage staff to choose alternatives to single-occupancy car use.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Schemes to promote walking to work can be effective (*Walk in to work out,* Mutrie et al., 1999). 'Walk in to work out' doubled rate of walking to work. Changes in travel modes when GTPs have been implemented.	Percentage of employers with developed transport plans. Changes workplace travel.	Staff, unions, local transport planners, local public transport providers.	Provide safe parking for bicycles, and showers.	Promotion of GTPs need not be confined to health service sites. Workplace cycling promotion in particular requires environmental changes (in workplace and on road). DTLR will be producing a best practice guide to travel plans (green transport plans) in 2002.	Transport 2000. *Healthy Transport Toolkit.* Tel: 020 7613 0743. DTLR advice for government departments. *Green transport guide.* www.defra.gov.uk/environment/greening/fleet/gcont.htm DH and DTLR pack *Walk in to work out* (based on the work of Mutrie et al.) provides practical assistance to increase the proportion of those cycling or walking to work. Available from DTLR Free Literature. Tel: 0870 1226 236.

STAIR USE PROMOTION

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Several authors have found stair use promotion to be effective (eg Blamey et al., 1995; Kerr et al., 2001a, 2001b; Centers for Disease Control and Prevention, 2001). Kerr et al. (2001b) found a sustained increase over a six month period using signs on stair risers, even after removal of the signs.	Stair use to become the norm. Increased prominence of stairs in building design compared to lifts/escalators. Increased use of stairs can be sustained over prolonged periods (six months) and after removal of prompts.	Staff, unions, employers, architects.		Cheap intervention. Objectives allied with environmental concerns (reduction in use of electricity).	

Increasing physical activity – suggested activities to support local action (cont.)

ENVIRONMENT/LEISURE SERVICES

**PROMOTING USE OF FACILITIES INCLUDING LEISURE AND SPORTS CENTRES, COMMUNITY CENTRES ETC.
LOCAL COMMUNITY INTERVENTIONS FOR MINORITY GROUPS (EG TARGETED HEALTH WALKS PROGRAMMES).**

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Access and cost are important determinants for many groups. Involving 'hard to reach' groups likely to increase uptake and appropriateness of projects. US Task Force on Community Preventive Services noted the evidence for creating or enhancing access to places for physical activity was sufficient to strongly recommend this approach (Centers for Disease Prevention and Control, 2001).	Identify groups not participating in local provision. Increased participation by 'hard to reach' groups. Involvement in design and running of projects by representatives from specific local groups such as older people, BMEG, young people, people with disabilities. Creation of or enhancing access to increased activity as measured by: percentage of persons exercising three or more times per week, self-reported exercise levels and energy expenditure. Also effective in increasing aerobic capacity.	Leisure services; professionals/community leaders involved with 'hard to reach' groups, PHC; community groups; healthy living centres; consider Neighbourhood Renewal strategy.	Audit and evaluation skills, translation, knowledge of local facilities. Community development skills. Separate changing areas. Provision of appropriate facilities.	Cultural and language issues may be important. 'Sporty' connotations of leisure and exercise centres can be offputting. Funding is available from a range of New Opportunities Fund programmes. Healthy living centre funding now closed. Current programmes which could be relevant to promoting local physical activity include: Green Spaces and Sustainable Communities (£125m); New Opportunities for PE and Sport (£581.25m); Activities for Young People (£38.75m). www.nof.org.uk/index.htm (Figures in brackets indicate funding available in England over the whole period of the programme.)	HEA titles below available from HDA distributor. Tel: 0870 121 4194. *Physical activity and inequalities briefing.* www.hda-online.org.uk/downloads/pdfs/pactivity_ineq.pdf *Promoting physical activity with black and minority ethnic groups.* HEA, 1997a. *Promoting physical activity with disabled people.* HEA, 1997b. *Promoting physical activity with older people.* HEA, 1998b. Confederation of Indian Organisations run an exercise project to increase levels of walking in the Asian community in Leicester. Contact Sandeep Rohit. Tel: 0116 225 9299 for details.

Increasing physical activity – suggested activities to support local action (cont.)

ENVIRONMENT/LEISURE SERVICES (CONT.)

HEALTH WALKS AND OTHER NON-FACILITY BASED PHYSICAL ACTIVITY. BRITISH TRUST FOR CONSERVATION VOLUNTEERS (BTCV) GREEN GYMS PROJECT. Green Gyms involve participation in practical conservation projects such as pond or walkway construction, clearance of sites etc.

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Health walks – uncertainty about who participates and impact on other physically active behaviours. 11% of the Sonning Common population took part; three times more women than men (Bartlett et al., 1998). Some evidence of shift from car journeys to walking/cycling. Evaluation of Green Gyms has shown increases in activity levels and cardiovascular fitness (Dewhurst, 2000a, 2000b) as well as other health/quality of life benefits.	Local health walks, partnerships with transport/environment services, raised profile of physical activity, addresses some safety issues.	PHC staff, environment, planning and transport professionals, leisure services, Agenda 21. BHF/CA. BTCV. Other local environment/conservation organisations.	Maps and/or marked routes, trained leaders. Conservation skills, construction skills, leadership, health and safety.	Participants tend to be older and from higher socio-economic groups. Consider community gardening schemes or gardening on prescription.	The Walking the Way to Health partnership offers support and grants to organisations hoping to run schemes. www.whi.org.uk/home.asp BTCV runs a project to support the setting up and development of Green Gyms. See www.btcv.org/greengym/index.html

Increasing physical activity – suggested activities to support local action (cont.)

COMMUNITY STRATEGIES/NEIGHBOURHOOD RENEWAL

INTEGRATION OF LOCAL PLANS

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Environment important for informal physical activity (eg walking, active play). US Task Force on Community Preventive Strategies noted that the evidence was sufficient to strongly recommend interventions to create or enhance access to places for physical activity (Centers for Disease Prevention and Control, 2001).	Development of effective intersectoral partnerships. Provision of safe, appropriately built design for active, high quality lifestyles.	Communities, local planners, architects, developers, business, Regional Development Agencies (RDAs), government offices, police.	Skills in developing partnerships across sectors.	Local government has a duty to produce a community strategy in consultation with other parties. This is the overarching strategy to promote the local social, economic and environmental wellbeing of the area. Local strategic partnerships (LSPs) are the mechanism for bringing together representatives from private, business, community and voluntary sectors. Aligning local plans and community strategies as part of LSPs is important to optimise local health organisations, and partners' capacity to deliver action on health improvement and to contribute to neighbourhood renewal. www.doh.gov.uk/himp/himpguidance.htm#oct01	*Community strategy guidance.* www.local-regions.dtlr.gov.uk/pcs/guidance See also NOF funding available in several programme areas. www.nof.org.uk/index.htm HDA (2001). *Cross-sector funding on transport and health.* www.hda-online.org.uk/downloads/word/csfunding.doc WHO (1998). *Walking and cycling in the city.* www.who.dk/environment/pamphlets HDA (2002). *Community Strategies and Health Improvement: a review of policy and practice.* Tel: 0870 121 4194; www.hda-online.org.uk/downloads/pdfs/cs&hi.pdf

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Chapter 5 – Alcohol

Introduction

Epidemiological studies have clearly indicated that alcohol is causally related to cancers of the oral cavity and pharynx, larynx, oesophagus and liver, and suggestive but inconclusive data for a causal role in rectal cancer (Seitz and Homann, 2001; Royal College of Physicians, 2001). There is an association between drinking alcoholic beverages and increased risk of breast cancer, which is subject to ongoing review by the Department of Health's Committee on Carginogenicity (COC) to consider if a causal relationship exists (www.doh.gov.uk.coc/coc.htm). These studies demonstrate that those who drink alcohol are at increased risk of these cancers compared to non-drinkers, the risk of which increases with increasing levels of alcohol intake (Single et al., 2000).

There is a strong dose dependency relationship between the amount of alcohol (ethanol) consumed and the relative risk of cancer. As an example, Seitz and Homann (2001) cite a French study showing high relative risks (after adjustment for tobacco smoke) for hypopharynx carcinoma in men drinking more than 160g a day.

Advice from COC is that an increase in relative risk for head and neck cancers can be identified at intakes of 40g ethanol/day and above. It is also important to recognise the additive effects of carcinogens, in particular, smoking and alcohol combined. It has been estimated, for instance, that up to 80% to 90% of cancers of the oral cavity, pharynx and larynx can be avoided by abstaining from smoking and alcohol (Seitz and Homann, 2001).

Alcohol misuse is thought to be a major cause in about 3% of all cancers in England and is highlighted as an area for preventive activity in *The NHS Cancer Plan* (DH, 2000a).

Recommended levels

Since the mid-1980s, measurement of alcohol use and problem alcohol use or alcohol misuse is commonly provided in terms of 'units' of alcohol, and 'sensible'

A 'unit' of alcohol

The alcohol content of a given beverage is calculated from its percentage alcohol content by volume (%ABV). A 'unit' of alcohol is the amount contained in half a pint (284ml) of beer, a single glass (125ml) of table wine (9% ABV), a single glass (50ml) of fortified wine, for example sherry, or a single measure (25ml) of spirits. A 'unit' approximates to 10ml or 8g of pure alcohol.

Guidelines for 'sensible' drinking

Until 1995, assessment of alcohol-related risk was based on a measure of weekly intake of alcohol. For men, drinking <21 units a week and for women <14 units a week was considered to carry low risk of incurring alcohol-associated harm. Intakes between 22-50 units (men) and 15-35 units (women) were described as hazardous drinking and associated with 'intermediate risk'. Intakes of >50 units (men) and >35 units (women) were 'high risk'. A couple of alcohol-free days per week were recommended.

In 1995, the Department of Health issued new guidelines based on daily intake. In brief, it was stated that regular consumption of 3-4 units a day (men) and 2-3 units a day (women) would not accrue a significant health risk. Drinking consistently more would be associated with progressive risks to health. The guidelines recommend 48 alcohol-free hours after any occasion on which a person drinks more than the daily benchmarks.

Information from: *Sensible Drinking – the report of an Interdepartmental Working Group* (1995) Department of Health, London; *Medical Students' Handbook: alcohol and health* (1998) The Medical Council on Alcoholism, London.

drinking is defined in terms of the number of units consumed weekly or daily. The recommendations to adopt the 1995 daily consumption measures (see box, previous page) were criticised by many health professionals (eg Marmot, 1995) and the working party of the Royal Colleges of Physicians, Psychiatrists and General Practitioners recommended 'no change in the health education advice that 21 units/week for men and 14 units/week for woman are sensible limits' (Royal College of Physicians, 1996). Many agencies now use both weekly and daily guidelines.

Prevalence and patterns of alcohol use

Alcohol consumption: recommended levels

Most people in Great Britain drink alcohol, with only 9% of men and 14% of women aged 16 and over classifying themselves as non-drinkers in 2000. The mean weekly consumption has risen slightly during the last decade from 15.9 units in 1992 to 16.4 units in 1998 for men and from 5.4 units in 1992 to 6.4 units in 1998 for women. Over the same period the percentage of men drinking over the recommended levels has remained steady at around 27%, but the percentage of women exceeding recommended weekly levels has risen from 11% in 1992 to 15% in 1998 (Office for National Statistics, 2001).

Looking at daily consumption levels, 39% of men and 23% of women in 2000 had drunk in excess of the daily recommended levels (over 4 units for men and 3 units for women) on at least one day in the week prior to the interview. Young people aged 16-24 are the heaviest drinkers with 50% of males and 42% of females drinking more than the daily recommended levels (Office for National Statistics, 2001).

Alcohol use among younger children (11-15 years) has been rising, with average weekly consumption among those children in England who drink increasing from 5.3 units a week in 1990 to 10.4 units in 2000 (DH, 2001).

Binge drinking

The introduction of guidelines on daily consumption of alcohol has emphasised the importance of examining the harmful effects of binge drinking or heavy episodic drinking. Definitions of 'binge drinking' vary in the literature. In North America, 'binge drinking' is often measured as five or more drinks in a row for men and four for women (Newburn and Shiner, 2001). In the UK, cut-off points are higher. A survey of adults commissioned by the former Health Education Authority defined a heavy drinking occasion as eight or more units in a single session for men and six or more for women (Rowlands, 1998, cited in Newburn and Shiner, 2001). In a report from the Royal College of Physicians (2001) 'binge drinking' is defined as:

> *'A man who regularly drinks 10 or more units in a single session, or a woman who regularly drinks 7 or more units in a single session.'*

The lack of consensus on the definition of 'binge drinking' is even greater in relation to young people. A European Survey of young people aged 15-16 considered 'binge drinking' as having consumed at least five drinks in a row on at least three occasions during the previous 30 days (Hibell et al., 2000), but a variety of different measures have been used (see Wright, 1999 for further discussion).

Differences between social groups

Within the broad national pattern of alcohol use, there are considerable differences between social groups. National statistics and research studies indicate that, as well as sex and age, socio-economic status, ethnicity and geographical area of residence are among the factors linked to levels and patterns of harmful alcohol consumption (ONS, 2000). For example, Marmot and Feeney (1999) have shown clear links between social inequalities and harm associated with alcohol use; alcohol-associated mortality and the experience of alcohol-related harms increase as social class decreases, despite the fact that research studies have not found significantly higher levels of consumption in social class five (Kaner, 1999).

Research by Purser et al. (2001) in the West Midlands has identified black males as a group at risk of drinking over recommended levels and experiencing alcohol-related harm. National figures show that consumption levels are higher among men in the north and north west regions of England compared to other regional areas, and that women in professional occupations are heavier drinkers than women in other socio-economic and professional groups. Groups at risk of harmful drinking are:

- Males from lower socio-economic groups
- African-Caribbeans, especially males
- Women in professional occupations
- Young people between the ages of 18-24
- Homeless people
- People using illegal drugs
- People with mental health problems
- Refugee populations.

While not all heavy or problem drinkers belong to socially disadvantaged groups, the apparent link between alcohol use and social and health inequalities has become a matter of policy concern. Groups who have in some way become marginalised or socially excluded may also be particularly at risk – for instance, homeless people, people with mental health problems or refugee populations. As yet, there is little research in the UK on drinking patterns among these groups or on effective ways to address the problem of social disadvantage, alcohol use and health inequalities.

Although the available data do not allow us to draw conclusions about which individuals or groups, among those who drink over recommended levels, are most at risk of developing cancer, the data from surveys mentioned above highlight the considerable scope for preventive action to reduce risk at both population and individual levels. Furthermore, the epidemiological evidence clearly indicates a need for awareness of the possible role of alcohol in increasing the risks of cancer among vulnerable groups.

Objectives of alcohol interventions

To reduce alcohol consumption, problem drinking and alcohol-related harm across the whole population, as well as targeting high risk behaviours.

Although the government's white paper *Saving Lives: Our Healthier Nation* (DH, 1999) did not address the link between alcohol and cancer, it did undertake to develop a new strategy to tackle alcohol misuse. It stated that an effective strategy to tackle alcohol misuse needs the cooperation of all those concerned with alcohol: health and social services, schools, the alcohol industry, law enforcement agencies, government and the general public (DH, 1999). The report also stresses that the interrelation of these policy tools is of particular importance.

The broad aims of *Saving Lives: Our Healthier Nation* (DH, 1999)

- To encourage people who drink to do so sensibly in line with guidance, so as to avoid alcohol-related problems.
- To protect individuals and communities from anti-social and criminal behaviour related to alcohol misuse.
- To provide services of proven effectiveness that enable people to overcome their alcohol misuse problems.

Addressing alcohol misuse: strategic aims

WHO working group

The World Health Organization (WHO) Working Group on alcohol and health identified two different approaches to the reduction of alcohol misuse and alcohol-related harm (WHO Working Group, 1995) (see box).

WHO: strategic aims

- To persuade individuals to drink in a certain way by the provision of information and advice.
- To change the drinker's environment to help shape drinking patterns and drinking contexts.

Proposals for a national strategy for England

The current government is preparing a new national strategy to tackle alcohol misuse. This will set out a practical framework for a positive response to the recognised health and social harms associated with alcohol.

Consultation with a wide range of agencies and professionals has already taken place and has been distributed in the report *Proposals for a national strategy for England*. This is a discussion document submitted to the Department of Health in 1999 by Alcohol Concern, the agency conducting the consultation exercise. The report reflects the aims and objectives stated in *Saving Lives: Our Healthier Nation* and reiterates the objectives of the WHO report (1995) in identifying the following areas for preventive action:

- Taxation and pricing
- Licensing
- Community safety: designing out drink disorder
- Drink driving
- Controlling the promotion of alcohol: advertising, broadcasting, sponsorship and packaging
- Changing attitudes: campaigns to promote responsible drinking
- Support and treatment.

The Alcohol Concern document suggests that the aims of a national strategy should be to reduce:

- The level of alcohol-induced ill health
- The number of alcohol-related injuries

- The rate of alcohol-related crime
- The number of alcohol-related road accidents
- Economic loss in the workplace due to alcohol.

Although these aims are not specifically directed towards achieving a reduction in cancer morbidity or mortality, they do support action to reduce the incidence of cancers by tackling alcohol misuse, which in the long term will reduce the burden of cancer.

Developing effective interventions

The strategies and approaches to tackling alcohol misuse outlined above include both a population-based approach and a 'lifestyles' approach targeting 'high risk' groups and behaviours. The aim is to initiate and sustain changes in the environment and in drinking contexts as well as in individual lifestyles. To achieve these aims, a comprehensive approach which includes action at both national and local levels is necessary.

Action at national level

At a national level, pricing (controlled through taxation) has been shown to be an effective mechanism for reducing alcohol consumption and most likely to have the largest and quickest impact on drinking habits, including the drinking of young people (Raistrick et al., 1999; Ponicki et al.,1997; Harkin et al., 1995; Edwards et al., 1994). Although pricing and taxation are not determined at a community level, and therefore will not be covered in this chapter, it is important to emphasise that communities and local groups have a role to play in the formation of national policy – for instance, by scrutinising national plans and policy changes for their effects at local level and by bringing pressure to bear on government to implement changes beneficial to public health. The relationship between national and local strategy is complex and action at one level may support or frustrate action at another.

Developing local strategies

Research has identified strategies that have been shown to be effective in some areas (eg see Health Evidence Bulletins, 2000). While there is good evidence to support the potential effectiveness of some approaches, the evidence for other interventions is much less solid and in many instances (eg preventive intervention in families) requires further studies to test suggestions derived from the literature.

In considering the interventions discussed below and in the table at the end of this chapter, it is necessary to be aware of the many deficiencies in the research which limit the extent to which findings may be generalised across population groups or local areas. It is recommended that action to implement specific prevention and early intervention approaches be based on consultation with appropriate local 'experts' and agencies and on in-depth examination of available research.

Adopting a 'community' approach

The literature on 'community' approaches to tackling alcohol problems indicates considerable diversity of meaning. At the simplest level, the term 'community based' is used. This usually implies projects and programmes delivered within a particular geographical area ('catchment area approaches'). Other usages of the term imply the need to mount programmes which tackle identified local problems from a number of different, coordinated perspectives. For instance, the problem of underage purchasing in an area might be addressed through educational messages in the local media, mounting schools' projects and strengthening enforcement procedures – all demanding collaboration among different local agencies.

Agencies which could be involved in a community action plan

- Health professionals (general practitioners, practice nurses, hospital doctors and nurses, health visitors, community psychiatric nurses)
- Teachers (schools, colleges of further education, universities) and educational authorities
- Youth workers (statutory and voluntary)
- Youth clubs
- Church groups, recreational groups, ethnic groups, voluntary groups (eg for homeless people, refugees)
- Police, youth offending teams, probation service, local magistrates
- Community safety groups
- Local authority departments
- Social services
- Self-help groups (eg Alcoholics Anonymous)
- Parents groups, tenants associations
- Local brewers, distributors, licensees
- Media (local newspaper, radio).

Frequently, community approaches continue to target the individual behaviour of a specific group of people and are

implemented without any clear theoretical framework to guide the coordination and evaluation of the different activities.

By contrast, a number of programmes have adopted an approach that focuses on the health of communities rather than the health of individuals. Typically, this approach begins from the premise that problems arise within a dynamic, changing system of interaction – the community – and that the most effective preventive strategies seek to alter or adapt the system that produces the problem. In relation to alcohol, Holder (1999) distinguishes three main ways in which the community system perspective differs from the 'catchment area' perspective:

- The system perspective considers a potentially wide-ranging set of alcohol-involved problems rather than addressing a single problem behaviour or condition
- The approach studies the entire community as a whole rather than focusing on individuals at risk
- It employs interventions that alter the social, cultural, economic and physical environment in such a way as to promote shifts away from conditions that favour the occurrence of alcohol-involved problems.

The systems approach may entail concurrent action to change drinking norms and behaviours in the community as a whole, to control the availability of and access to alcohol, to improve the enforcement of existing legislation, and so on. (For a discussion and examples of this approach see Holder, 1999; Hanson et al., 2000; Holmila, 1997.)

Interventions discussed below and outlined in the table at the end of the chapter may be implemented as 'stand-alone' projects, or they may constitute some of the possible elements of either a 'catchment area' approach or a community systems approach. In the latter case, how interventions are selected and implemented will depend on enhancing understanding of the community as a system and of the structures and processes that result in, or perpetuate, alcohol-related harm.

As Holder (1999: 10) has noted:

> *'A national perspective cannot effectively guide interventions at local level. To develop effective community-level prevention, policy makers must understand how each of the community's subsystems influences alcohol use and thus contributes to alcohol-involved problems.'*

Evaluating the community systems approach

The community systems approach has received considerable support and some studies have reported success in changing elements of community structures and processes, although there were few indications of substantial changes in harmful drinking and alcohol-related harm (eg see Holmila, 1997 for discussion of evaluation).

However, as researchers such as Hanson et al. (2000) and Holder (1999) have pointed out, a summative evaluation of a community intervention programme is often not possible as it is generally too difficult – and costly – to mount research or evaluation which

Elements of local strategies may include:

- Public information campaigns and educational messages
- School education programmes
- Brief interventions – comprising opportunistic brief interventions and brief treatments
- Intervention to prevent disruptive family environments
- Interventions to control access to alcohol:
  - Restrictions on sales outlets
  - Responsible server intervention
  - Enforcement of minimum purchasing age
- Interventions tackling drinking contexts and environments:
  - Public houses
  - Drinking in public places
  - The workplace

Measuring the impact of community programmes

To evaluate the effectiveness of community interventions and monitor changes over time, a Health Education Authority (HEA) study (Thom et al., 1999) has emphasised the importance of collecting baseline data on health and social harms and identifying appropriate indicators and measures to monitor change over time. This HEA initiative used a community consultation process which indicated the extent of interest in local areas in evaluating action and measuring change in alcohol-related harms. Local groups were provided with guidance on the identification of indicators and measures of harm, and encouraged to consider multiple approaches and methods of assessing and measuring alcohol-related harms over time.

conforms to contemporary, Western notions of 'scientific rigour'. Nevertheless, local groups should be encouraged to collaborate in designing methods of evaluating interventions within a community and to consider:

- Evaluation of the outcomes of specific projects on individuals/target groups and community systems (structures and processes)
- Evaluation of the effectiveness of a comprehensive programme of intervention in changing the systems and processes related to harmful drinking and alcohol-related harm.

Interventions

Public information campaigns and educational messages

Information campaigns have been shown to improve knowledge and raise awareness, and their effectiveness can be maximised by placing the campaigns within the broader context of more comprehensive community action (Gorman and Speer, 1996; Gerstein and Green, 1993).

Educational messages have been shown to be more effective in reducing alcohol misuse if tailored to specific sub-groups of recipients, such as pregnant women or drivers (see studies cited in Raistrick et al., 1999); if they are supplemented with more interactive, or personally directed interventions such as a letter to target households sent prior to the campaign (HEA, 1997; Anderson et al., 1994; Anderson, 1995).

Campaigns can also contribute to an effect on the social climate surrounding drinking (Holder, 1994), particularly when combined with pressures from legal and other restrictions (Anderson et al., 1994; Harker et al., 1995). Such supportive measures might include ensuring that age restrictions on the purchase of alcohol are enforced, that drink driving legislation is implemented effectively, or restricting the number of licensed premises in the community.

Overall, evidence of the effects of public education and awareness campaigns on behavioural change is poor. The evaluation literature on mass media campaigns has mostly shown no short-term impact on drinking or alcohol-related harm (Montonen, 1996).

School education programmes

A systematic review of alcohol misuse prevention programmes for young people concluded that no one type of programme could be recommended due to a lack of reliable evidence (Foxcroft et al., 1997). However, more recent studies and a meta-analysis of 120 school-based adolescent drug (including alcohol) prevention programmes for pupils age 9-18 have emphasised the comparative effectiveness of programmes which employ interactive approaches to the delivery of drug education (Tobler and Stratton, 1997; Tobler, 2001; Anderson and Plant, 1998; HEA, 1997; Gorman, 1996; May, 1991).

Such programmes may, for instance, involve pupils in designing posters and leaflets to deliver 'alcohol messages' to their peers, engaging in role play or problem solving activities around issues which include alcohol use.
The research highlights a number of essential practice points for the development of successful school education. In considering the points listed in the box below, it should be kept in mind that most studies agree on the greater potential effectiveness of interactive approaches, but that the research evidence for school programmes is still weak.

Essential practice points for successful school education programmes:

- Interactive programmes are more effective than non-interactive programmes
- Interactive approaches are characterised by encouraging pupil-to-pupil communication undertaken in small group activities which allow pupils to practise and improve interpersonal skills
- Programmes should convey credible messages delivered by credible messengers
- Successful programmes challenge overestimations of the extent of drug use among pupils' peers
- Delivering interactive programmes requires teachers to shift away from 'instructing classes' to 'facilitating groups'
- Intensive programmes using interactive methods should be followed up by booster sessions
- Programme development should be based on needs assessment, should include social influence and skill training, and be supported by parental training, local media and community involvement
- Implementing interactive programmes requires support from policy makers and education administrators, and training to give teachers the skills and the confidence to work in what may be unfamiliar ways.

Brief interventions

The evidence in support of brief interventions is good. Brief interventions could be implemented as a first step in a stepped model of care, whereby patients receiving a brief intervention are followed up and those who have not benefited are offered increasingly intensive interventions (Heather, 2001).

In 1993, a report from the Nuffield Institute of Health, based on a review of 29 randomised controlled trials, concluded that brief interventions, consisting of assessment at intake and provision of information and advice, 'were effective in reducing alcohol consumption by 20% in the large group of people with raised alcohol consumption'. For instance, a World Health Organization study involved just five minutes of advice along with a 15 minute assessment. It recruited 1,655 heavy drinkers from medical settings in ten countries and clearly demonstrated that a minimal intervention is effective in reducing alcohol consumption and improving health (Babor and Grant, 1992). Subsequent research has confirmed that brief interventions are as effective as more expensive specialist treatments for many hazardous and less severe drinkers (see review in Heather, 2001).

However, questions have arisen concerning the suitability of brief interventions for different groups of people and for people with different degrees of problem drinking or dependency. It has been found, for example, that severely dependent drinkers tend to benefit from more intensive treatments (Edwards and Taylor, 1994).

Brief interventions tend to be seen as a homogeneous category but, in fact, vary considerably in the intensity, duration and mode of delivery and in the contexts in which they are delivered. They may be delivered in clinical or non-clinical settings as well as in specialist alcohol treatment settings. Heather (2001) points out the importance of distinguishing between two types of brief interventions:

- Opportunistic brief interventions (OBIs) take place in community settings, are delivered by non-specialist personnel such as primary healthcare staff, nurses, hospital physicians, probation officers (etc) and are directed at excessive drinkers who are not seeking help for their drinking
- Brief treatment (eg a few sessions of counselling) consists of relatively brief forms of treatment delivered by staff in specialist alcohol or addiction services to people who have approached these agencies on account of their problem drinking.

Heather (1995, 2001) concluded that the evidence for the effectiveness of opportunistic interventions in non-specialist settings is much stronger than for brief interventions in specialist alcohol settings with those seeking help for their drinking and, therefore, much more likely to be dependent or suffering more severe alcohol-related harms. OBIs also tend to be shorter, less structured, less theoretically based and cheaper than those offered to patients attending specialist clinics. Questions still remain, however, about the effectiveness of OBIs for different target groups (eg men and women, see Poikolainen, 1999).

Primary care

The effectiveness of brief interventions in primary care is based on good evidence from randomised controlled trials (Wallace et al.,1988; Anderson and Scott, 1992; Babor and Grant, 1992; Israel et al., 1996). Richmond and Anderson (1994), in their review of randomised controlled trials, found that very brief GP advice results in a reduction in alcohol consumption of around 25-35% and a reduction in the proportion of excessive drinkers of around 45%. The cost effectiveness of brief interventions in primary care settings has been supported in recent research (Wutzke et al., 2001) and in a meta-analysis of 12 randomised controlled trials (Wilk et al., 1997).

General hospital

Based on UK studies in accident and emergency departments, it has been estimated that at least 10% of attendances are due to alcohol misuse. A higher percentage of patients with head or facial injuries are admitted to orthopaedic wards. In 1998, drink driving was responsible for 2,940 serious casualties, many of whom were likely to have presented to A&E departments. These figures represent only the tip of the iceberg of the visible burden of alcohol on hospital services (Royal College of Physicians, 2001).

Minimal alcohol interventions in general hospital wards have been found to be effective in reducing alcohol-related harm (Chick et al., 1985; Saunders et al., 1985; Elvy et al., 1988; Heather, 1996). A single session of counselling from a nurse lasting up to one hour in a medical ward was found to be effective in reducing alcohol-related problems at 12-month follow-up (Chick

et al., 1985). Heather (1996) reported that male heavy drinkers given brief counselling at the bedside showed a significantly greater reduction in consumption at six months follow-up than a non-intervention control group. In addition, minimal alcohol interventions have been found to be effective in the A&E setting (Antti-Poika, 1988; Gentilello et al., 1995; Dunn et al., 1997).

Family interventions

Reviews have demonstrated that family social learning and family processes are important influences on adolescent alcohol use in both positive and negative ways. There are a number of family treatment models and approaches available (eg O'Farrell, 1993; Foxcroft and Lowe, 1991) although these are most often directed towards families where drinking problems already exist rather than towards the prevention of problem drinking.

Prevention programmes rarely use the family as an integral part of their approach (Elmguist, 1995; Foxcroft et al., 1997; Foxcroft and Lowe, 1997) although there is much discussion on the need to involve parents in alcohol and drugs education approaches. The effects of being brought up in a family where there are alcohol problems have been well documented, but the risk of family disharmony has been highlighted as a more important risk factor than parental drinking per se (Velleman and Orford, 1993).

From a prevention point of view, professionals who work with families, children, or people with drinking problems need to be aware of the risks to children and adolescents as well as of the range of protective factors which might be built into general treatment and prevention work with families. Such interventions might include: working towards the provision of a stable family environment or providing support for activities and contacts outside the family. Currently, there are no studies on the effectiveness of family prevention approaches.

Programmes to strengthen families are being evaluated elsewhere and there is evidence to indicate that such programmes are successful. For example, there is good evidence for the effectiveness of the Strengthening Families Program for parents and young people (aged 10-14) which is designed to prevent teenage substance abuse and other behavioural problems by strengthening parenting skills and building family cohesion (Molgaard and Spoth, 2001; Spoth et al., 2001).

Drinking contexts and environments

There is reasonable consensus that a number of strategies concentrating on the drinker's environment have an effect on the levels of alcohol-related harm (Edwards et al., 1994; WHO, 1995; Plant et al. eds., 1997). Such strategies may aim primarily at harm reduction – to reduce alcohol-related harm even if people drink the same amount – or to encourage lower consumption of alcohol and a reduction in intoxication.

Local initiatives can aim:

- To reduce alcohol-related public nuisance, eg by curbing underage purchasing of alcohol or restricting drinking in public places such as town centres or public parks
- To reduce alcohol-related violence, eg by introducing shatterproof glasses in public houses, by encouraging the provision of food in drinking venues, by introducing server training to reduce the incidence of intoxication
- To reduce drink driving, eg by encouraging substitute driver schemes, by providing public transport or by positioning taxi ranks near drinking venues
- To encourage drinking within recommended levels, eg by providing information about alcohol at drinking venues – labelling containers with clear information about alcohol content and, possibly, with health warnings.
  (For discussion and examples of such approaches, see Plant et al., 1997.)

Clearly, some of these initiatives are designed to address problems of intoxication and harms related to drunken behaviour rather than the health effects of excess consumption which might be associated with cancer. However, enforcement initiatives and attempts to restrict access to alcohol are important in addressing social attitudes to alcohol misuse, and in encouraging a

Strategies to change the drinking environment include:

- The enforcement of the minimum purchasing age
- Improving consumer information, eg standard labelling of alcohol containers
- Restrictions on sales outlets
- Responsible server intervention
- Prevention of intoxication in public places
- Introduction of workplace policies and responses.

more responsible approach to the use of the substance which might be expected to have an indirect effect on alcohol consumption in the longer term.

Evidence for the effectiveness of these approaches largely comes from the US and Australia and is not conclusive. However, there are examples that indicate the potential contribution of strategies targeted at changing drinking environments.

Raising and enforcing the minimum purchasing age

In the US raising the legal drinking age from 16 to at least 21 years has been shown to significantly reduce road vehicle accidents (Wagenaar, 1993) – although it is questionable whether it would be acceptable to have a drinking age higher than the voting age (Anderson and Lehto, 1994), and whether this is transferable to the UK. However, a study in an English seaside resort has demonstrated that the enforcement of existing licensing legislation can have an impact on the level of alcohol-related arrests. In this study, intensive visits by police officers to licensed premises to check for underage drinking and customer intoxication resulted in a 20% reduction in recorded offences (Jeffs and Saunders, 1983).

In the UK research has shown the ease with which alcohol may be purchased by minors, especially girls (Willner et al., 2000). Effective police action to enforce existing legislation was found to reduce sales, but this was not sustained when police action ended.

Other approaches to addressing underage purchasing include introducing a 'proof of age' identity card. Although pilot schemes seemed promising, there is no evidence that the cards substantially influenced behaviour and young people have little difficulty in finding ways around such restrictions.

Improving consumer information at the point of purchase

There is considerable public support for standard unit labelling of alcohol containers (Stockwell and Single, 1997). This would help consumers to assess alcohol intake. A large-scale impact evaluation of container labelling in the US indicated the need for a long timescale in measuring the penetration of labelling information to the public; the study found that the labelling was reaching its intended target groups after four to five years of exposure. Evidence for behavioural changes was less clear, but there appeared to have been some influence on high risk behaviours such as drink driving and alcohol consumption during pregnancy (Greenfield, 1997).

Restrictions on sales outlets

Restrictions on the number and density of outlets are aimed at preventing health and public order problems by limiting the alcohol supply. There is clear evidence to demonstrate that a major decrease in the availability of alcohol, through restricting the number of outlets can result in a decrease in total consumption and alcohol-related problems, although there is less evidence on the effect of density of outlets on these outcomes (Anderson and Lehto, 1994).

Limits to hours and days of alcohol sale have been imposed primarily with the aim of safeguarding public order, but these controls can have an influence on total alcohol consumption and have been shown to help in the reduction of alcohol-related harm. Studies on the effects of changing these limits have shown a correlation to changes in police interventions in domestic disturbances and traffic accidents, but little detectable changes in consumption (Anderson and Lehto, 1994).

Responsible server intervention

Responsible server interventions usually require staff to identify clients who are intoxicated, to refuse to serve clients who are intoxicated or to take other actions designed to reduce drunkenness-related violence, fights, drink driving or other harms. These strategies have been shown to be effective in terms of reducing alcohol consumption, particularly targeting high risk individuals, such as single males under 25 years and those already drunk (Lang et al., 1995; Saltz, 1997).

In the UK, the British Institute of Innkeeping, a professional body for the licensed retail sector, offers a National Bar Person's Certificate. The SIPS project (Server Intervention Scotland), managed by Alcohol Focus Scotland, runs training courses. More research is needed on the effectiveness of such approaches.

Introduction of workplace policies

It has been argued that the workplace can be an effective setting within which to influence patterns of alcohol consumption and reduce alcohol-related problems. Interventions are likely to be beneficial when placed in the context of a workplace alcohol policy covering drinking at the workplace, workplace discipline,

recognition and help for those with alcohol-related problems, and alcohol education (Hermansson et al., 1998; Henderson et al., 1995; Fauske et al., 1996; Faculty of Public Health Medicine, 1996).

Brief interventions may also work well in this setting (Hermansson et al., 1998), and the banning of alcohol across the working day seems to be gaining support within industry (Alcohol Concern and Personnel Today, 1995).

A review of the literature published in peer-reviewed journals between 1970 and 1995 identified 24 papers reporting the results of studies on the impact of workplace interventions on alcohol consumption and alcohol-related behaviour (Roman and Blum, 1996). The authors highlight the methodological problems in this body of work and the difficulty in coming to any firm conclusions about effectiveness. The outcomes measured in different studies included:

- Changes in attitudes and knowledge about alcohol problems
- Changes in predispositions to refer people with alcohol problems for assistance
- Reduction in the amount of alcohol consumed or in unhealthy drinking practices
- Changes in work behaviours, eg improved job performance, reduction in absenteeism.

Programmes which offered employee assistance with drinking problems as a core component reported a high degree of success across a number of measures. It was emphasised that training and interventions modelled on employee assistance programmes (EAP) were complementary, not substitutes for each other. However, it was not clear which specific components of the programme designs contributed to effectiveness.

Roman and Blum's (1996) review suggests the following:

- There is strong evidence that worksite interventions including core components of employee assistance programmes are effective in rehabilitating employees with alcohol problems
- There is good evidence that worksite training on alcohol affects the attitudes of supervisors and employees for a reasonable period of time after completion of training.

More recent reviews have reported debate on the effectiveness of EAPs and have been critical of evaluation studies, in particular, of the emphasis on process rather than outcome evaluation (for a review and evaluation of workplace strategies, see Allsop et al., eds, 2001).

Alcohol – suggested activities to support local action

PUBLIC INFORMATION CAMPAIGNS AND EDUCATIONAL MESSAGES

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Can raise awareness and increase knowledge although little evidence of effect on behaviour. May be more effective: – If there is a clear message – If supplemented by other interpersonal interventions (eg letter sent prior to the campaign) – To target specific risk groups or risk behaviours, eg drink driving; alcohol use in pregnancy (see refs in Raistrick et al., 1999: 159; Edwards et al., 1994).	Eg drink driving campaigns found to raise public awareness of risk and of penalties (Holder, 1994). Media advocacy has been effective in reducing the illegal sale of alcohol to children, raising support for changes in alcohol availability on university campuses, and gaining support for alcohol control policies (see refs in Raistrick et al., 1999: 160).	Local media, voluntary groups, health promotion workers. Teachers, police, parents, peers, health workers, specialist alcohol workers may be involved in delivering educational messages.	Training in use of media; considerable resources may be needed.	Acceptability of awareness messages generally higher if seen to provide the basis for informed choice; national and local coordination may result in more effective campaigns (Raistrick et al., 1999).	Alcohol Concern. contact@alcoholconcern.org.uk www.alcoholconcern.org.uk Portman Group. portmangroup@compuserve.com www.portman-group.org.uk Tacade – educational materials/projects. ho@tacade.demon.co.uk Aquarius – information, educational materials, counselling. whitehouse@aquarius.org.uk DfES: Wired for Health website. www.wiredforhealth.gov.uk Foetal alcohol syndrome – network provides information. www.fas-info.org.uk Medical Council on Alcoholism – information and publications especially useful for health professionals. www.medicouncilalcol.demon.co.uk

Alcohol – suggested activities to support local action (cont.)

SCHOOL EDUCATION PROGRAMMES

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Lack of reliable evidence on effectiveness regarding behavioural changes (Foxcroft et al., 1997); meta-analysis showed effectiveness of interactive approaches (Tobler and Stratton, 1997; Tobler, 2001). Effectiveness of some programme elements in changing attitudes, awareness and short-term behaviours (HEA, 1997; Gorman, 1996; Anderson and Plant, 1998).	Elements of effective programmes: they are interactive, use small groups, practise interpersonal skills, challenge assumptions and stereotypes, convey credible messages, use credible messengers.	Teachers, police, parents, peers, health promotion workers, specialist alcohol workers.	Skills in developing and presenting educational programmes in schools/youth clubs and to other target groups. Training in interactive teaching approaches and group facilitation needed. Appropriate materials required. Evidence varies regarding who is best placed to deliver educational messages. 'Messengers' need to be credible to target group and convey 'credible' messages.	Current trends towards integrating drugs awareness within a lifeskills programme.	Alcohol Concern. www.alcoholconcern.org.uk Portman Group. www.portman-group.org.uk Tacade – educational materials/projects. ho@tacade.demon.co.uk Aquarius – information, educational materials, counselling. whitehouse@aquarius.org.uk

BRIEF INTERVENTIONS (BIs). (Opportunistic brief interventions; brief treatment)

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Good evidence (reviewed in Nuffield Institute for Health, 1993; Richmond and Anderson, 1994; Heather, 2001). WHO cross-national study found BI effective (Babor and Grant, 1992). Poikolainen (1999) – meta-analysis of 14 data sets found extended BI decreased alcohol intake, especially for women.	Studies in primary care, A&E departments, surgical and medical wards indicate that BIs can achieve a reduction in consumption (eg brief advice from a GP can achieve a 25-35% reduction in alcohol consumption (Wallace et al., 1988). Some studies have found no reduction in consumption but significant improvements with respect to alcohol-related problems (eg Chick et al., 1985). (Evidence from other A&E departments in Gentilello et al., 1995; Dunn et al., 1997.)	Health professionals (GPs, nurses, hospital doctors); social workers; criminal justice workers (eg probation), specialist alcohol workers.	Training of generalist workers to identify and respond to problem/excessive drinking; integration of intervention in alcohol consumption as part of professional role expectations.	Many generalist workers are resistant to implementing brief interventions. There is still debate around the evidence (see Poikolainen, 1999). Questions regarding type of intervention, for which target group, etc still important.	WHO project on brief interventions. www.alcohol-phaseivproject.co.uk Online brief intervention: www.downyourdrink.org

Alcohol – suggested activities to support local action (cont.)

ENFORCEMENT OF MINIMUM PURCHASE AGE					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Some evidence to suggest that enforcing the minimum drinking age would influence alcohol-related harms – public health aspects such as road accidents, and drunkenness-related violence and problems.	Enforcement of existing legislation shown to decrease level of alcohol-related arrests (Jeffs and Saunders, 1983); levels of sales to minors fell in three US communities (Grube, 1997); raising the legal drinking age (US) reduced road vehicle accidents (Wagenaar, 1993).	Police, licensees, pub watch schemes, supermarkets.	Communication skills to challenge underage customers; sufficient police presence to initiate and sustain change. (Willner et al., 2000).	It is not always easy for serving staff to recognise underage buyers, especially girls (Willner et al., 2000). Enforcement interventions need to be sustained over time (see Grube, 1997). Server training important (see p121).	Home Office: responsible for collection of data on licensing. Department of Culture, Media and Sport (DCMS) responsible for licensing policy, alcohol and entertainment. Home Office website: www.homeoffice.gov.uk Home Office email: public.enquiries@homeoffice.gsi.gov.uk DCMS email: enquiries@culture.gov.uk Alcohol and Crime Toolkit and Action Plan. www.crimereduction.gov.uk Portman Group. www.portman-group.org.uk (eg proof of age cards). Licensing authorities at local level.

Alcohol – suggested activities to support local action (cont.)

STANDARD LABELLING OF ALCOHOL CONTAINERS					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Evidence of some effects on awareness; possible effects on behaviour change (Greenfield, 1997).	Australian studies indicate: unit labelling assists drinkers to follow low risk drinking; high public support for labelling (Stockwell and Single, 1997); US, National Impact Study – some evidence of influence on high risk behaviours, eg drink driving and drinking in pregnancy (Greenfield, 1997).	Alcohol manufacturers and distributors.		Most likely benefit to those motivated to monitor their drinking.	Home Office: responsible for collection of data on licensing. Department of Culture, Media and Sport (DCMS) responsible for licensing policy, alcohol and entertainment. Home Office website: www.homeoffice.gov.uk Home Office email: public.enquiries@homeoffice.gsi.gov.uk DCMS email: enquiries@culture.gov.uk
RESTRICTIONS ON SALES OUTLETS (HOURS/DAYS OF SALE), NUMBER AND DENSITY OF OUTLETS					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Evidence unclear. Effects of restricting density appear to be dependent on other factors in the local context. Restrictions on hours and days of sale are also connected to changes in related harms which need to be examined within local contexts (Anderson and Lehto 1994).	Restricting number of outlets results in decrease in consumption; no evidence for other restrictions.	Local licensing authorities, police, community safety forums.		For a recent review which considers the complexity of factors influencing local action and effectiveness of interventions see: Stockwell and Gruenewald (2001).	Local police, local licensing authorities.

Alcohol – suggested activities to support local action (cont.)

RESPONSIBLE SERVER INTERVENTION (RSI)

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Considerable evidence that RSI can be effective in reducing alcohol consumption, especially among high risk individuals and especially if supported by other factors (Lang et al., 1995; see review in Saltz, 1997).	Studies indicated that RSI can lower the number of individuals over the legal limit of intoxication; and that trained staff more often intervened to prevent sales to intoxicated customers (Lang et al., 1995; Saltz, 1997).	Publicans, retailers, door staff in pubs and venues.	May need training to identify clients at risk, and in refusal to sell or supply alcohol. Other factors are important, eg availability of food; short awareness/training may be insufficient.	Need for sustained effort as there is often high turnover of serving staff. Need to consider business issues (profit). This intervention supports efforts to restrict underage purchasing.	SIPS scheme: Server Intervention Scotland. Alcohol Focus Scotland, The SIPS Project Manager, SIPS, 62 Dee Street, Aberdeen AB11 6DS. Tel: 01224 573397; fax: 01224 213479.

WORKPLACE POLICIES INCLUDING EMPLOYEE ASSISTANCE PROGRAMMES (EAP)

Evidence	Outcomes	Who could be involved?	Skills and resources	Points to consider	Further information
Good evidence of effectiveness is lacking – lack of rigorous research into effectiveness of outcomes (Allsop et al., 2001). Debates regarding the balance between positive and negative effects of implementing workplace policies (WHO, 1995).	EAPs have demonstrated high levels of acceptance of the programme across the workforce (Delaney et al., 1998, cited in Raistrick et al., 1999: 54), although recent reviews indicate less positive outcomes (Allsop et al., 2001).	Managers, union representatives, workforce, specialist consultants, occupational nurses, personnel.	Ability to develop, implement and evaluate a workplace policy; resources to offer assistance with drinking problem; liaison with statutory and voluntary services.	More likely to be successful if there is a policy including drinking in the workplace/during working hours; recognition and help for problem drinking; clear disciplinary measures, implementation through consultation process.	Alcohol Concern, Workplace Consultancy Service. contact@alcoholconcern.org.uk (also section on the Alcohol Concern website – www.alcoholconcern.org.uk). Health and Safety Executive (HSE). www.hse.uk TUC. *Drunk and Disordered 2001 – guide to tackling alcohol and drugs in the workplace.* www.tuc.org.uk

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Chapter 6 – Skin cancer prevention

Introduction

Overview

The incidence of skin cancer has increased steadily over recent years, with exposure to sunlight being the main cause. This has been acknowledged in *The NHS Cancer Plan* as a risk that needs to be addressed (DH, 2000). This section sets out the importance of skin cancer prevention, and the types of interventions which will reduce health inequalities in skin cancer.

Incidence and mortality

There are two main types of skin cancer – malignant melanoma (the less common but the cause of most skin cancer deaths) and non-melanoma (basal cell carcinoma, squamous cell carcinoma and rarer cancers). With around 6,000 new cases of melanoma skin cancer diagnosed each year in the UK (most recent figures for incidence are 5,767 new cases in 1997), melanoma accounts for 2% of all new cases of cancer (Office for National Statistics, 2000).

However, the published national cancer statistics exclude non-melanoma skin cancers. It is estimated that there are well over 40,000 new cases of non-melanoma skin cancer each year (Cancer Research Campaign, www.cancerresearchuk.org). This makes skin cancer among the most prevalent cancers in the country.

The number of deaths from malignant melanoma is relatively small (1,640 deaths in 1999 in the UK – Office for National Statistics, 2000). They occur at a relatively young age so the number of potential years of life lost is proportionately greater (Albert et al., 1990). Non-melanoma cancers are not usually fatal, but need to be surgically removed and the resulting scars can be disfiguring. This means they have significant personal as well as cost implications.

Risk factors

The risk factors for skin cancer are summarised in the box below. The main risk factor is overexposure to sunlight in people with sensitive skin types (English et al., 1997). Excessive sun exposure in childhood has been consistently identified as a critical factor (MacKie et al., 1987; Weinstock et al., 1989; Urist et al., 1995). People with fair or freckled skin who burn easily and tan with difficulty are most at risk. Dark-skinned people have a lower risk and can withstand higher levels of sun exposure, although they should still take care in intense sunlight.

People with a personal history of skin cancer are at increased risk from new skin cancers. It has been estimated, for example, that 50% of patients treated for basal or squamous cell carcinoma will have another skin cancer within five years (Marghoob, 1997).

The effects of the amount and pattern of sunlight exposure in causing melanoma and non-melanoma skin cancer are complex (English et al., 1997). Current evidence is that malignant melanoma is usually linked with intense exposure to sunlight (which usually occurs on holiday, either at home or abroad), especially in childhood (see Melia et al., 1994 for summary of relevant studies). It is the third most common cancer for 15 to 39 year olds (Office for National Statistics, 2000). Some non-melanoma cancers (squamous cell carcinomas) are thought to be linked to cumulative exposure to the sun and are more common in outdoor workers (English et al., 1997).

Risk factors for skin cancer

- Fair skin which burns easily and tans poorly
- Personal or family history of skin cancer
- History of intense or prolonged sun exposure
- Higher than average number of pigmented skin naevi (moles)

The relevance of skin cancer to health inequalities

In considering the target groups for skin cancer prevention activities, it is important to note that skin cancer has a long incubation period. For example, there can be a lead time of over 30 years between exposure to intense burning sunlight and onset of malignant melanoma.

While it is always useful to look at patterns of incidence and mortality, changing social and economic conditions over such a long time period mean that current attitudes and behaviour can be as important as, if not more important than, epidemiological information for informing public health interventions in relation to skin cancer.

For example, rates of incidence and mortality link malignant melanoma with higher socio-economic groups, and it has been argued that affluent women are at the greatest risk of developing melanoma (MacKie and Hole, 1996). The general conclusion from this unusual class association is that greater affluence and leisure, combined with fashion for sun tans and desire for more exotic holidays, have increased the chances for intense, intermittent bouts of sunbathing. This in turn may well have contributed to the increase in melanoma incidence. The time period over which the greatest increases in melanoma rates have been recorded can plausibly be linked with the wider availability of air travel and package holidays to sunny beaches which began in the late 1950s. Some studies have shown that, on average, melanoma patients have had longer or more holidays at Mediterranean or similar resorts (Skinner, 1994).

However, holidays abroad are no longer limited to high income groups and current attitudes and behaviour suggest that patterns of incidence and mortality from melanoma are likely to change. People from lower socio-economic groups tend to be less knowledgeable than people from higher socio-economic groups about the ways of reducing the risk of skin cancer (Rainford et al., 2000), less likely to check their skin (Rainford et al., 2000), and more likely to be diagnosed with advanced stage tumours (Geller et al., 1996; MacKie and Hole, 1996). With regard to non-melanoma cancers, people from lower socio-economic groups are more likely to work outdoors – increasing their risk of developing squamous cell carcinomas.

Changes in social and economic conditions and current attitudes and behaviour suggest skin cancer should not be dismissed, on the basis of the epidemiological information, as a problem for the more affluent social classes. There is growing evidence of the need to target low income groups. In terms of reducing inequalities in health, the risks of sun exposure cannot be ignored.

Objectives of sun safe policies

Skin cancer is a largely preventable disease. Relatively small changes to the way people behave in the sun, taking simple measures to protect the skin, can lead to a considerable decrease in personal risk. Furthermore, skin cancers are visible and so can be detected early and removed before they pose a threat to life.

There are three main components to skin cancer prevention:

- Promotion of sun safe behaviour
- Environmental measures
- Early detection.

Promotion of sun safe behaviour

Educational strategies that increase knowledge of the dangers of the sun and suggest ways to reduce exposure to sunlight currently form the backbone of most interventions to change sun exposure knowledge, attitudes and behaviour.

The most important aspects of sun safe behaviour are to:

- Take care not to burn
- Cover up with loose, cool clothing, a broad-brimmed hat and sunglasses
- Seek shade around the hottest part of the day in summer – from 11am to 3pm
- Take special care to protect children and babies
- Generously apply a high factor sunscreen (SPF15 or above) to any parts of the body exposed to the sun.

These messages have been captured in the Sun Know How Sun Safety Code – a pictorial scheme developed for use on educational materials and sunscreen products (Grey, 1998). The code is displayed on the Health Development Agency's Wired for Health website at www.wiredforhealth.gov.uk

Sunsafe (www.doh.gov.uk/sunsafe), the Department of Health's skin cancer prevention website, provides simple, practical messages on sun safety, targeted at young children, their parents and teachers.

The role of sunscreens

It is important to note that the role of sunscreen in preventing skin cancer is uncertain. Sunscreens do prevent sunburn but there are no data to support the logical hypothesis that they also protect against skin cancer. Regular use of broad spectrum (UVA and UVB protective) sunscreens can prevent sunburn and should help prevent skin cancer if they are used to reduce the amount of sunlight reaching the skin's surface (McGregor and Young, 1996). However, sunscreen may be used to prolong the amount of time a person spends in the sun, potentially increasing skin cancer risk (McGregor and Young, 1996; Autier et al., 1998; Autier et al., 1999).

The sunscreen message gets a great deal of media coverage, not least through sunscreen industry advertising. It is also the message that people are most ready to take up (Grey, 1998). While people are becoming increasingly aware of the dangers of skin cancer and the steps they can take to protect themselves from the sun, they still like to have a tan (Howard, 1997).

In a recent survey carried out by the Imperial Cancer Research Fund, 58% of people aged 15 years and over said they wanted a tan in 2001, with 75% saying they liked the sun-bronzed look. Only 18% of people said that they did not like having a tan (Imperial Cancer Research Fund, 2001). In the 1998 Health Education Monitoring Survey, one in four adults aged 16 years and over reported that they had been sunburnt in the last 12 months (Rainford et al., 2000).

It is important that health promotion efforts encourage people to recognise that sunscreens per se do not make the sun safe and to regard them as just one part of a broader strategy for keeping safe in the sun. Sunscreen is expensive, particularly if used at the recommended amount and frequency of application. Interventions targeting low income groups should always target lower cost and more effective behaviour changes as a priority (hat, shirt, shade and middle of the day summer sun avoidance) before promoting sunscreen use.

Environmental measures

Shade

It is always easier to practise sun protection in an environment that supports it, and enhancing access to shade is an important aspect of many sun safe policies. Shade provision may take the form of natural shade (for example, trees and hedges) or permanent or temporary shade structures (for example, pergolas or marquees). The type, size and positioning of shade is an important consideration in the design of any outdoor leisure facility, particularly those used by children. These designs need to take into account costs, attractiveness in the local environment, and practical considerations such as local weather conditions, vandalism and safety.

As the costs of such schemes can be considerable, they may be easier to include in new-build schemes, or have to be postponed until a particular facility is due for a major upgrade. For existing schemes, simple measures may be taken to maximise the use of existing shade provision, by, for example, relocating picnic tables under trees instead of out in the open.

In addition to providing natural sources of shade, the planting of trees offers potential ecological benefits and the opportunity to link skin cancer activity to wider initiatives such as Local Agenda 21 strategies. More information on tree planting can be obtained from The Tree Council (www.treecouncil.org.uk) and The Tree Advice Trust (www.treeadviceservice.org.uk). A national voluntary organisation, Learning through Landscapes, helps schools to bring lasting improvements to the environmental quality of their grounds (www.ltl.org.uk).

Sunbeds

The use of sunbeds leads to damage from ultraviolet radiation in the same way as sunlight exposure (Hawk, 2000). Health and Safety Executive guidance is that it is best not to exceed 20 sunbed sessions a year. People who are under 16, have a lot of freckles or moles, burn easily, have a family history of skin cancer or are taking certain photosensitising medications are advised not to use a sunbed (see Health and Safety Executive leaflet, *UV tanning equipment, customer information*, available online at www.hse.gov.uk).

The British Association of Dermatology (BAD) and the National Radiological Protection Board (NRPB) recommend that the use of sunbeds and sunlamps for cosmetic tanning should be discouraged (NRPB, 2002).

These risks have led to moves to phase sunbeds out of local authority premises and to improve ways in which sunbeds in the private sector are regulated and run – by, for example, conducting regular inspections of

commercial sunbed premises to ensure they comply with relevant Health and Safety legislation (Longfield, 1998).

Ozone depletion

An issue of increasing concern is the possibility that ultraviolet radiation will become more damaging as a result of the depletion of the stratospheric ozone layer. This layer of ozone – a condensed form of oxygen – covers the Earth's atmosphere and screens out most of the high energy UVB and all of the UVC radiation that would otherwise reach the Earth's surface.

There is some debate about the role of ozone depletion in the observed increase in skin cancer incidence, but most physicians agree that it is unlikely to have played a significant role to date. There are two main reasons for this. First, although ozone levels have intermittently declined, especially over the Antarctic in spring, ground level ultraviolet radiation levels have, so far, not increased very much, if at all. This is certainly the case in America and Europe (Harvey, 1995). Second, since melanoma takes 10 to 30 years to develop, there has not been enough time for ozone depletion to play a significant role (Skolnick, 1991).

Nonetheless, any continuing decline in stratospheric ozone would be likely to have an impact in the future, estimated as a 2-4% increase in incidence of skin cancer for every 1% fall in ozone (Harvey, 1995). The risks of skin cancer provide an additional reason and impetus for phasing out the use of ozone-depleting substances such as chlorofluorocarbons and halogen gases (used in refrigeration and air conditioning) and methyl bromide (an agricultural chemical).

Early detection

Detection of skin cancer in its early stages increases a person's likelihood of survival. It also reduces medical costs (Koh et al., 1996).

Ways of encouraging early detection include:

- Information on self-detection of possible melanomas
- Education of health (and other) professionals to recognise and refer/treat cases
- Provision of screening opportunities either as a component of primary care, or carried out in the community as part of a primary prevention campaign.

Information on self-detection

Self-examination for skin cancers may be effective at reducing the risk of advanced disease. Using a checklist, one study has documented that most melanomas would be found by the patient (Healsmith et al., 1994). This checklist uses three major and four minor features of malignant melanoma, outlined in detail in the National Radiological Protection Board (NRPB) leaflet *Sunsense: protecting yourself from ultraviolet radiation* (www.nrpb.org/press/information_sheets/sunsense_poster.htm). This leaflet advises that a doctor should be consulted if one of the following major signs or a number of the following minor signs of malignant melanoma develop:

- Major signs of malignant melanoma:
  - A mole with three or more shades of brown or black
  - An existing mole getting bigger or developing an irregular outline
  - A new mole growing quickly (months) in an adult.
- Minor signs of malignant melanoma:
  - A mole that is larger than the blunt end of a pencil
  - A mole becoming inflamed or developing a reddish edge
  - A mole that develops bleeding, oozing or crusting
  - A mole starting to feel different (eg itching or painful).

This 'seven-point checklist' has been criticised because it lacks specificity and fails to screen out enough benign lesions (Higgins et al., 1991). However, Healsmith et al. (1994) argue that this in no way diminishes the value of the list since its primary aim is to have a high sensitivity for melanoma.

Education of health (and other) professionals

Screening, early detection and minor skin surgery in a general practice require appropriately trained and experienced doctors and nurses to provide a practice-wide range of education and diagnostic work (Jackson, 1995). Studies – mainly from America – suggest that professional education of medical staff is lacking (Wolfe, 1999). The evidence for this is reviewed in the primary care section, p135.

Other professionals who could be considered for educational programmes regarding the signs of

melanoma include sunbed assistants, masseurs, and beauticians. However, the effectiveness of such interventions has yet to be assessed.

Provision of screening opportunities

The role and effectiveness of skin cancer screening is uncertain. There have been several studies but results could be subject to bias such as length bias (detecting less aggressive tumours), overdiagnosis (detecting lesions which may not have progressed to invasive cancer if left alone) and selection bias (selecting out individuals who are more health conscious) (Wolfe, 1999; Freedberg et al., 1999). Large, well-designed randomised controlled trials following a great number of patients for protracted time periods are expensive and may not be practicable (Wolfe, 1999).

Despite this uncertainty, the evidence does point to possible benefits of screening. Descriptive studies suggest that free screening opportunities in community settings combined with skin cancer educational campaigns may be successful. They typically lead to diagnosis of melanoma at an earlier stage, an increased percentage of thin tumours detected and an increase in survival rates (with bias) (Herd et al., 1995; Koh et al., 1996).

Studies of mass screening of the general public have also shown encouraging results. However, the multiple biases within these programmes mean that they do not provide adequate evidence to support mass screening of the general population (Wolfe, 1999; Harvey, 1995; Melia et al., 1994).

The most efficient screening programmes target those at high risk of disease (see box, p127). Such programmes are typically effective at reducing the thickness and size of diagnosed cancers (Wolfe, 1999). A recent cost-effectiveness analysis in the US concluded that screening high risk patients once was generally comparable in cost effectiveness to other cancer screening programmes (Freedberg et al., 1999).

Geller et al. (1996) have recommended using socio-economic factors to help target high risk groups, given that those of lower economic status tend to be diagnosed with more advanced stage tumours.

National skin cancer prevention programmes

Sun Know How was the programme for the prevention of skin cancer from 1994 run by the then Health Education Authority (HEA) until the HEA's dissolution in March 2000. The Sun Know How programme was replaced with the Department of Health's Sunsafe website – www.doh.gov.uk/sunsafe. Sun Know How aimed to give positive practical advice to reduce people's risk of skin cancer. Under the HEA, the campaign promoted sun safe messages through the media and by supporting local coordinators carrying out work at a local level. The campaign was successful at raising public awareness of the sun safe message and influencing print and media stories (Grey, 1996).

However, the long incubation period for skin cancer means that assessing effectiveness in terms of longer-term health outcomes is much more difficult. It is necessary to look at other countries where skin cancer control programmes have been running for considerably longer and where the results of their efforts have brought significant changes in terms of attitudes, behaviours and reduced melanoma mortality and morbidity.

Much of the evidence on the effectiveness of skin cancer interventions comes from Australia – not surprising, since this is the country with the highest incidence and mortality rates for skin cancer in the world. Due to its climatic conditions, Australia has now recorded, for the first time in any population in the western world, a downturn in the melanoma mortality rates in women (Giles et al., 1996) and, more recently, men (see Australian Institute of Health and Welfare website at www.aihw.gov.au). This has been attributed to both early detection and prevention campaigns.

The model for a mass media campaign comes from the SunSmart Campaign, which has been running in the State of Victoria since 1987. It is the most comprehensive population-based primary prevention programme for skin cancer reported in any country in the world.

It comprises three elements:

- A comprehensive education strategy including mass media, teaching resources and professional training for employers and teachers

- Structural changes, including assisting in the development of shady public environments and influencing public policy related to tax free sunscreens and outdoor workers tax rebates for sun protective equipment
- A variety of sport sponsorships. This programme has been able to demonstrate substantial changes in attitudes and behaviour followed by a downturn in skin cancer rates – see Sinclair et al. (2000) for a summary of the research.

A recent economic study in Australia concluded that a national skin cancer primary prevention campaign based on this model would be excellent 'value for money' in respect of cost per life saved (Carter et al., 1999). However, it acknowledged that further work needed to be done to explore in more detail the value of the relative components of these campaigns as a way of ensuring that they continued to be cost effective in the long term.

Features of effective interventions

The role of mass media

A number of studies have looked at the role of mass media in skin cancer prevention. A questionnaire-based survey of parents demonstrated that a nationwide multimedia health intervention in the UK (Sun Awareness Week 1995) positively affected behaviour and attitudes towards sun safety (Fleming et al., 1997). However, the authors acknowledge that further studies would be required to show continued long-term benefits from this type of intervention.

Another study in Australia suggested that increasing awareness of skin cancer issues through a one-off television documentary programme could positively affect sun safety behaviour and increase self-screening for skin cancer (Theobald, 1991).

The provision of cues to use sun protection or avoid exposure is an intervention approach that is becoming increasingly popular. The NRPB measures UV radiation and the Met Office displays it daily on its website (www.met-office.gov.uk/weather/gsuvi.html), and in summer, offers UV forecasts as additional information for weather reports.

In a study in America, UV measurements were used to inform the population of the daily sun risk via radio, newspapers and television. This resulted in an increase in self-reported sun protection behaviours and a high familiarity with the intervention (Boutwell, 1995).

Community based interventions

Widespread community interventions provide a framework for social and structural change (for example, the acceptance of wearing hats, sun safe environments, altering the desire for a tan) that support interventions in specific settings (for example, in a school).

Community wide programmes deliver consistent prevention messages simultaneously through several credible channels (Buller and Borland, 1999; Lowe et al., 1999; Melia et al., 1994).

Factors that have been identified as important to the success of community wide programmes include:

- Setting up an appropriate network of all stakeholder organisations (Graffunder et al., 1999)
- Needs analysis – through consultation of the intended target group and accurate recording of baseline data (Keesling and Friedman, 1995)
- Establishment of clear objectives (Keesling and Friedman, 1995)
- Secure funding over several years (Dietrich et al., 2000)
- Interventions in multiple settings using many different components within each setting (Dietrich et al., 2000; Marks, 1999; Buller and Borland, 1999).

The evidence suggests that one-off interventions in a single setting generally achieve limited long-term behaviour change. Health promotion workers may be better to direct limited resources into other anti-cancer initiatives that are supported more widely in the community and nationally.

Commercial partnerships

In comparison with other health issues such as alcohol and tobacco where major vested interests exist, the sun safety message is less controversial (Delaney and Adams, 1997). Unlike the anti-smoking campaign and its relationship with the tobacco industry, the advantage for a skin cancer campaign is that many messages are mutually beneficial for manufacturers and health promotion alike. There are opportunities to work with clothing, cosmetic and sunscreen industries to provide people with the means of behavioural change.

The Sun Know How Sun Safety Code, for example, was developed to be used by commercial organisations as well as health educators. The HEA also aimed to demonstrate the appeal and marketability of sun protective clothing by producing its own range of clothing and swimwear (Grey, 1998). However, the level of take-up by the clothing and sunscreen industries and the effect of this take-up has not been evaluated.

Components of a local strategy

The individual settings which need to be considered in any community based intervention include schools, workplaces, outdoor leisure facilities and primary care. Policy recommendations and the evidence base for intervention in these individual settings are reviewed below.

Schools

Relevance of setting/target group

The significance of childhood sunburn in the development of malignant melanoma and the attitudes and awareness of young people towards tanning make schools a particularly important setting for skin cancer intervention. Tanning starts to appeal from the teenage years onwards when people realise the sun's potential to enhance their appearance and particularly their perceived sex appeal (Howard, 1997). Young people are more likely than older people to get sunburnt and are the heaviest users of sunbeds (Rainford et al., 2000).

Evidence base

Schools play an important role in influencing the present and future health behaviours and lifestyles of young people (Lynagh et al., 1997). Children as young as four are capable of learning sun safety messages, but most programmes for behaviour change have focused on children over eight years old (Buller and Borland, 1999). Programmes promoting sun protection have been successfully implemented in childcare settings (Grant-Petersson et al., 1999). Programmes targeted at children less than 12 have been found to be more effective than those aimed at older children (Peters and Paulussen, 1997).

Intensive curriculum-based interventions that use lesson material, in-class activities and homework over several weeks have been shown to significantly increase sun safe knowledge, negative attitudes about tanning, sunscreen use, and the use of protective clothing over long periods. Short, one-off information sessions have increased knowledge, but have been far less effective at changing behaviour (Buller et al., 1994; Girgis et al., 1993; Lister-Sharp et al., 1999; Buller and Borland, 1999). The incorporation of sun protection messages into different subject areas using pre-set lesson plans aids flexibility in the use of a programme. Organising materials by age of class is simple to use, but flexibility to allow teachers to use materials across age of class is also required (Grant-Petersson et al., 1999).

Policy recommendations

On its Wired for Health site (www.wiredforhealth.gov.uk), the Health Development Agency (HDA) advises that schools:

- Provide shady areas for children to use, especially at lunchtime
- Do not hold PE lessons and other sporting activities outdoors in the middle of the day during summer
- Encourage children to wear clothing that protects the skin, including broad-brimmed hats – particularly for outdoor activities and on school trips
- Encourage children to use sunscreen (SPF 15 or above).

Programmes need to be designed and developed with parents, teachers and administrators to ensure acceptance and ease of use in the school setting. The design should also be based on a needs assessment (see box below) of the school/community (Lowe et al., 1999).

Example of *needs assessment* to inform the development of a local skin cancer prevention initiative

1 Establish the context. What is happening at a community level and what implications does this activity (or lack of it) have for an initiative planned at a local level?

2 Identify the issues that need to be addressed by, for example:
- Surveying the knowledge, attitudes and behaviour of the target group
- Reviewing shade provision
- Reviewing the scheduling of outdoor activities.

3 Consult the key players. What do the people who will be involved in running the programme perceive to be the important issues?

Further information

Further information on sun safety for teachers, parents and pupils can be found on the HDA's Wired for Health website (www.wiredforhealth.gov.uk). This website also gives suggestions for educational activities for different age groups. The Department of Health's website, www.doh.gov.uk/sunsafe, is specifically designed with young children, their parents and teachers in mind. The World Health Organization's INTERSUN programme is working towards the development of a framework for children's sun protection education that comprises an education package as well as recommendations on best practice (www.who.int). A number of examples of skin cancer prevention activities in schools are included in the Our Healthier Nation in Practice database (www.ohn.gov.uk).

Workplace

Relevance of setting/target group

Squamous cell carcinomas are very closely associated with cumulative exposure to sunlight and are most often found in white-skinned individuals who have lived in very sunny climates or who have worked out of doors (Skinner 1994; English et al., 1997).

Outdoor workers tend to be male and from lower socio-economic groups. Research on attitudes and behaviour shows that men are more likely than women to get sunburnt, less likely to use a sunscreen, less likely to use a sunscreen with a higher factor level and less likely to check their skin (Rainford et al., 2000; Rosenman, 1995). Furthermore, a study by MacKie and Hole (1996) demonstrated that the prognosis for working class men presenting with skin cancer was worse than for other malignant melanoma patients. This suggests that this group may not be seeking help early enough.

Evidence base

Studies in Australia have found that workplace safety campaigns can affect the behaviour of staff (for example, Borland et al., 1991; Girgis et al., 1994). However, it is important to note that the interventions looked at in these studies took place against the background of large community based campaigns and that the evaluations were of short-term rather than long-term effectiveness.

Policy recommendations

Employers are required to provide a safe working environment. In its leaflet for employers of outdoor workers (see below), the Health and Safety Executive (HSE) advises that employers:

- Include sun protection advice in routine health and safety training
- Encourage workers to keep covered up during the summer months
- Encourage workers to use a sunscreen of at least SPF 15
- Encourage workers to take their breaks in the shade
- Consider scheduling work to minimise middle of the day summer exposure
- Site water points and rest areas in the shade
- Encourage workers to check their skin regularly.

Further information

Further information and advice for employers of outdoor workers is available from the HSE, which produces an information leaflet *Sun protection advice for employers of outdoor workers*. This (together with a companion leaflet for employees – *Keep your top on*) is available online (see www.hse.gov.uk for more information) or from HSE Books, PO Box 1999, Sudbury, Suffolk CO10 2WA. Tel: 01787 881165.

An example of a local skin cancer prevention programme for outdoor workers conducted by a local authority (Arun District Council) can be found on the Our Healthier Nation database (www.ohn.gov.uk).

Outdoor leisure facilities

Relevance of setting

Outdoor leisure facilities such as parks, beaches and outdoor swimming pools are settings which are particularly 'high risk' because people tend to visit them when it is sunny (often with the specific aim of acquiring a tan) and because there is often a lack of shade provision. Such sites, therefore, provide ideal settings for sun safe health promotion activities, and are important targets for any measures to improve shade provision.

Evidence base

There is evidence to suggest that multi-component interventions in high risk settings can be effective. In a study of interventions in an outdoor swimming pool (including peer models, information posters, fliers, risk protection feedback and distribution of free sunscreen), protective behaviours increased among children and adults (Lombard et al., 1991). However, by the end of

the one-month intervention, the frequency of these behaviours had started to decline, calling into question the long-term effectiveness of such interventions.

Single component interventions may be less effective. In a randomised controlled trial, placing health education leaflets about the dangers of sunburn in seat pockets of aeroplanes did not reduce the incidence of sunburn among holidaymakers (Dey et al., 1995).

Further information

Suggestions for how to identify the need for shade and procedures for how to introduce it are given in: *Skin cancer prevention: policy guidelines for local authorities* (Longfield, 1998).

Primary care

Relevance of setting

Primary care workers can play a major role in the prevention and early detection of skin cancer, particularly since they are the first port of call for many people with skin complaints.

Evidence base

Nurses have a particularly important role to play as health educators and there is evidence to suggest that there may be some gaps in their knowledge with regard to skin cancer. A study of nurses in the UK revealed that while nurses had a good understanding of the risks of sunburn and the need for adequate sun protection when abroad, they did not fully appreciate the dangers of sun exposure in the UK (Morrison, 1996).

GPs have a critical role to play in the detection of cancerous skin lesions. A study of primary care physicians in America found that although many were not able to diagnose skin cancer adequately, a simple and brief training was all it took to correct this deficiency. The study found that after just three to four hours of training, primary care workers' skin cancer diagnostic abilities improved to the level of a dermatologist (Gerbert et al., 1998).

Another American study of skin cancer screening in the primary care setting found that while the majority of primary care physicians rated skin cancer screening as extremely important, they rated it as significantly less important than other cancer examinations. As a result, the frequency of skin cancer examination was significantly less than for other cancer examinations. The authors concluded that these findings were likely to represent a multitude of factors, including logistic constraints and lack of consensus on the efficacy of skin cancer screening (Altman et al., 2000).

Pharmacists are playing an increasingly important role in public health and published evidence demonstrates that they can make a positive contribution to health promotion (Anderson et al., 2001). Pharmacists potentially have a particularly important role to play in the prevention and early detection of skin cancer because they sell sunscreens and aftersun products and because they may be approached for advice about visible skin problems.

A recent review of the literature on community pharmacy involvement in health promotion found that pharmacy based information on skin cancer prevention appeared to be effective in raising awareness of 'sun risks', and trained pharmacists were more likely to be proactive in counselling patients. However, there was no evidence of the effects of this advice on behaviour. The review concluded that, in the area of skin cancer prevention, better quality research is needed to test the effectiveness of pharmacy based interventions on clients' subsequent attitudes and behaviour (Anderson et al., 2001).

Policy recommendations

The findings of these studies underline the need to ensure ongoing professional education for primary care workers on all aspects of the prevention of skin cancer, the signs of malignant melanoma and the value of self-examination.

Skin cancer prevention – suggested activities to support local action

A NATIONWIDE MULTIMEDIA HEALTH INTERVENTION, EG SUN AWARENESS WEEK					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
A questionnaire survey of parents demonstrated that Sun Awareness Week 1995 positively affected behaviour and attitudes towards sun safety (Fleming et al., 1997).	Positive effect on behaviour and attitudes towards sun safety (Fleming et al., 1997).	National and local media.			For future information about nationwide interventions see the Sunsafe website: www.doh.gov.uk/sunsafe
DAILY DISPLAY OF UV RADIATION					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
A local population informed of the daily sun risk via radio, newspapers and television showed an increase in self-reported sun protection behaviours (Boutwell, 1995).	Increase in self-reported sun protection behaviours (Boutwell, 1995).	National and local media.	UV radiation measures.		NRPB measures UV radiation and the Met Office displays it daily on its website: www.met-office.gov.uk/weather/gsuvi.html
TELEVISION DOCUMENTARY					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
A one-off television documentary can increase awareness of skin cancer issues (Theobald et al., 1991).	Positive effect on sun safe behaviour and increase in self-screening (Theobald et al., 1991).	National or local television.			
WORKING WITH COMMERCIAL PARTNERS					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Research needed.	Provision of the means of behavioural change.	Clothing, cosmetic and sunscreen industries.		Role of sunscreen in preventing skin cancer uncertain.	

Skin cancer prevention – suggested activities to support local action (cont.)

PROVISION OF PERMANENT SHADE STRUCTURES					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Easier to practise sun protection in an environment that supports it.	Enhances access to shade.	Site managers of schools, outdoor leisure facilities, workplaces, restaurants, cafes. Planners, architects.	Trees, hedges, pergolas.	The planting of trees offers potential ecological benefits and the opportunity to link skin cancer activity to wider initiatives such as Local Agenda 21 strategies. Can be costly.	The Tree Council (www.treecouncil.org.uk); the Tree Advice Trust (www.treeadviceservice.org.uk). For schools, Learning through Landscapes (www.ltl.org.uk).
PROVISION OF TEMPORARY SHADE STRUCTURES					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
As above.	Enhances access to shade.	Site managers of schools, outdoor leisure facilities, workplaces, restaurants, cafés. Organisers of outdoor events.	Beach umbrellas, shade canopies, marquees.		
RELOCATION OF REST AREAS (EG PICNIC TABLES, WATER POINTS) TO SHADY AREAS					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
As above.	Maximises use of existing shade provision.	Site managers of schools, outdoor leisure facilities, workplaces. Organisers of outdoor events.		A more immediate and less costly solution than the provision of new shade structures.	
RESCHEDULING OF TIMETABLES IN SCHOOLS AND WORKPLACES TO MINIMISE MIDDAY SUMMER SUN EXPOSURE					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Risks of sun exposure greatest during the middle of the day in summer – from 11am to 3pm.	Reduces/avoids midday summer sun exposure of children and employees.	Headteachers, employers.			

Skin cancer prevention – suggested activities to support local action (cont.)

HEALTH EDUCATION IN SCHOOLS					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Children as young as four capable of learning sun safety messages (Buller and Borland, 1999). Intensive curriculum-based interventions more effective than short one-off sessions (Buller et al., 1994; Girgis et al., 1993; Lister-Sharp et al., 1999; Buller and Borland, 1999).	Impact on knowledge, attitudes and behaviour of children with regard to sun safety.	School teachers, governors, heads, parents, pupils.	Teaching materials. Teacher training.	More effective if conducted against the background of large community based campaigns.	Further information on sun safety and suggestions for educational activity: www.wiredforhealth.gov.uk WHO developing education package and recommendations on best practice. www.who.int Examples of good practice on OHNiP database: www.ohn.gov.uk
HEALTH EDUCATION IN THE WORKPLACE					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Workplace safety campaigns can affect the behaviour of staff (Borland et al., 1991; Girgis et al., 1994).	Increase in sun safe behaviour of staff (Borland et al., 1991; Girgis et al., 1994).	Employers in the public and private sectors, unions, HSE.	HSE leaflets.	As above.	Further information and resources: www.hse.gov.uk Example of good practice on OHNiP database: www.ohn.gov.uk
HEALTH PROMOTION ACTIVITIES IN HIGH RISK SETTINGS (OUTDOOR LEISURE FACILITIES)					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Multicomponent interventions in high risk settings – parks, beaches and outdoor swimming pools – can affect behaviour in the short term (eg Lombard et al., 1991). The long-term effectiveness of such interventions is questionable.	Increase in sun safe behaviour among children and adults (Lombard et al., 1991).	Health promotion officers, travel companies, managers of outdoor leisure facilities, organisers of outdoor events.	Health promotion materials.	As above.	Sun Safe website: www.doh.gov.uk/sunsafe

Skin cancer prevention – suggested activities to support local action (cont.)

PHASING SUNBEDS OUT OF LOCAL AUTHORITY PREMISES					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
The use of sunbeds leads to skin damage from ultraviolet radiation (Hawk, 2000).	Fewer sunbeds in local authority premises.	Local authority. HSE.	HSE guidelines.	Consider alternative services/sources of revenue, eg massage, beauty treatment, aromatherapy and other alternative therapies.	HSE guidelines for sunbed use: www.hse.gov.uk *Skin Cancer Prevention: policy guidelines for local authorities* (Longfield, 1998).
REGULAR INSPECTION OF COMMERCIAL SUNBED PREMISES TO ENSURE THEY COMPLY WITH HSE GUIDELINES					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
As above.	Safer use of sunbeds in the private sector.	Local authority, private sector, HSE.	HSE guidelines.		As above.
PHASING OUT USE OF OZONE DEPLETING SUBSTANCES					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Although ozone depletion has had a minimal role in skin cancer incidence rise, it is likely to play a more significant role in the future (Harvey, 1995).	Reducing the decline of the stratospheric ozone layer.	Environmental health officers.		Links to environmental initiatives.	*Skin Cancer Prevention: policy guidelines for local authorities* (Longfield, 1998).
INFORMATION ON SELF-DETECTION					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Using a checklist, most melanomas will be found by the patient (Healsmith et al., 1994).	Earlier detection of melanoma leading to increased chances of survival.	Primary care.	Seven point checklist (three major signs and four minor signs of melanoma).	Checklist has been criticised because it lacks specificity and fails to screen out enough benign lesions (Higgins et al., 1991). However, Healsmith et al. (1994) argue that this in no way diminishes the value of the checklist since its primary aim is to have a high sensitivity for melanoma.	Checklist in NRPB leaflet *Sunsense: protecting yourself from ultraviolet radiation* www.nrpb.org/press/information_sheets/sunscreen_poster.htm For an interactive tool to check skin sensitivity see www.doh.gov.uk/sunsafe Healsmith et al. (1994). *An evaluation of the revised seven point checklist for the early diagnosis of cutaneous malignant melanoma.*

Skin cancer prevention – suggested activities to support local action (cont.)

SCREENING OF HIGH RISK GROUPS (PARTICULARLY AMONG LOWER SOCIAL CLASSES)					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Insufficient evidence to support mass screenings of general public. However, evidence does suggest that programmes targeting those at high risk of skin cancer can be effective (Wolfe, 1999; Freedberg et al., 1999).	Targeted screening programmes effective at reducing thickness and size of diagnosed cancers (Wolfe, 1999); comparable in cost.	Effectiveness to other cancer screening programmes (Freedberg et al., 1999).	Primary care workers, sunbed assistants, masseurs, beauticians.	Requires appropriate training. American studies suggest that professional education of medical providers is lacking (Wolfe, 1999).	Targeted screening programmes particularly important for lower social classes: less likely to check their skin (Rainford et al., 2000); more likely to be diagnosed with advanced stage tumours (Geller et al., 1996; Mackie and Hole, 1996).
EDUCATION OF PRIMARY CARE WORKERS					
Evidence	**Outcomes**	**Who could be involved?**	**Skills and resources**	**Points to consider**	**Further information**
Three to four hours of training can significantly improve the abilities of primary care workers to diagnose skin cancer (Gerbert et al., 1998). Trained pharmacists are more likely to be proactive in counselling patients (Anderson et al., 2001).	Increase in proactive counselling of patients; increase in frequency of skin examination and identification of skin cancer during routine appointments; earlier detection.	GPs, practice nurses, pharmacists.	Appropriate training.		

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Chapter 7 – Radon

Introduction

Radon is a radioactive gas that occurs naturally. It has no taste, smell or colour and requires special devices to detect it. It is found everywhere but usually in insignificant quantities. Radon rises from the soil into the air. Outdoors, radon is diluted and the risk it poses is negligible. It is when radon stays in enclosed spaces that concentrations can build up. Radon levels are higher in some parts of the country than others because of the geology of the area. The National Radiological Protection Board (NRPB) has been able to identify those areas of the country where radon levels are higher than normal and has produced an atlas outlining radon-affected areas (see map on p147).

When radon concentration is high, over time it poses a serious risk to health. Health studies from around the world have linked radon and lung cancer (Darby et al., 1998, 2001; Lubin and Boice, 1997; Wichmann et al., 1998; Lubin et al., 1995). Radon is believed to be the second most important cause of lung cancer after smoking (active smoking accounts for 30 per 1,000 deaths, radon and passive smoking 3 and 0.3 respectively). The NRPB estimates that 5% of lung cancer deaths in the UK are attributable to radon (NRPB, 2000) although the lung cancer caused by radon cannot be distinguished from the lung cancer caused by smoking.

Radon in the home

A recent study carried out by the former Imperial Cancer Research Fund has confirmed that exposure to radon in the home can lead to an increase in the risk of lung cancer (Darby et al., 1998; see also Parliamentary Office of Science and Technology, 2001). Radon levels in buildings depend on the way they are constructed and used. When air containing radon rises from the soil and rocks beneath buildings it can find ways in, mainly through cracks in floors and walls, and gaps around service pipes. The NRPB measures radon levels in becquerels per cubic metre (Bq/m^3) of air, and has advised the government that the level of 200 Bq/m^3 in homes should be considered the level at which action should be taken to reduce radon concentration. This is known as the Action Level.

Testing for radon

The NRPB has devised a simple and confidential test to measure radon levels in the home. The detector is a piece of spectacle lens plastic in a protective shell and is about the size and shape of a small doorknob. Two test detectors are sent through the post by the NRPB and one is placed in the living room and the other in an occupied bedroom. After three months the detectors are returned and analysed by experts in accredited laboratories. Measurements should not be made in properties that are unoccupied or undergoing building works. A small charge is made for the detectors and covers supply, processing and provision of information and advice; as of April 2002 the charge was £30.80 + VAT for two detectors.

Remedial measures

Homes that have been identified as having particularly high radon levels can undertake simple, inexpensive and effective measures to reduce radon to acceptable levels. The work can usually be carried out by the homeowner or by a builder and would normally entail minor construction work and possibly the installation of a fan system to keep radon from entering the property. Types of remedial action are listed in the table overleaf.

Objectives of radon interventions

Householders whose homes are at or above the radon Action Level should undertake remedial work and thus reduce the risk of lung cancer. The government radon

Remedial measures for homes affected by radon

Remedial measure	Average cost (£)	Typical radon reduction (%)
Underfloor extraction (sump)	750	90
Positive whole house ventilation	450	60
Increased underfloor ventilation	350	50-60

programme aims to increase the number of householders who know that their radon levels exceed the Action Level and also the proportion who remediate. To achieve this, it will be necessary to raise awareness of the dangers of radon in the home.

National versus local radon programmes

The Department of the Environment, Transport and the Regions (DETR) (now the Department for Environment, Food and Rural Affairs, DEFRA) has been running a national radon measurement programme for over a decade aimed at addressing the lifetime risk posed to people's health by radon gas in the home (DETR, 2000a). To date, the NRPB has carried out some 400,000 tests for radon and results indicate that some 40,000 homes are above the radon Action Level. However, only 10-20% of these households have taken any action to reduce radon levels in their homes.

To increase the levels of remediation the then DETR initiated a pilot programme involving three local authorities in radon-affected areas (DETR, 2000a). This was to test the assumption that householders would be more likely to respond positively to an approach by their local authority than to an approach by central government or a national agency. Activities undertaken by the three pilot programmes included: awareness raising, working with local builders, targeting and approaching householders and delivering advice and support to those who responded. As a consequence of these activities, response rates were generally high and remediation was speeded up and increased in all three areas, with the total of remediated properties increasing by up to 100% on previously achieved numbers.

A number of key factors contributed to the success of the pilot studies and included local and proactive delivery, effective targeting, appropriate timing of publicity, optimum use of technical expertise and sustained support and follow-up. The results from the evaluation of the three local authority pilot studies confirmed the expectation (stemming in part from previous qualitative research) that generating responses to awareness raising and motivating people to undertake remedial action is best undertaken at the local, rather than the national level (DETR, 2000a).

Components of a local strategy

An important first step towards a local action plan for increasing radon remediation will be a thorough review of what has happened in the past, what the consequences have been, and what the lessons are for any new initiative. Of particular significance will be the means of making contact between the local authority, radon support services and the householders who need to carry out remediation. A major finding from the pilots has been that the more direct, immediate and proactive the approach to householders, the better the results obtained.

The second stage of a review process is the need to evaluate previous activity in the light of whatever information is available about outcomes and achievements – particularly in terms of levels of remediation. The outcomes of previous activity should give an indication of where major 'sticking points' exist and what the most significant barriers to local action are likely to be.

Working with other influential professionals

The DETR's *Good Practice Guide* (2000b) recommends that local authorities do not work in isolation and identifies a number of key agencies including health organisations, estate agents, Care and Repair agencies, housing associations etc as important partners in developing a local strategy. The inclusion of key agencies in the planning and delivery of a remediation programme is important, and in particular the role of health professionals (health promotion units, primary care trusts etc) is vital in conveying a direct message regarding the serious risk of lung cancer due to radon exposure. The inclusion of a remediation programme alongside any health-related environmental

campaign such as healthy living centres and health action zones can contribute to the success of key aspects of programme delivery.

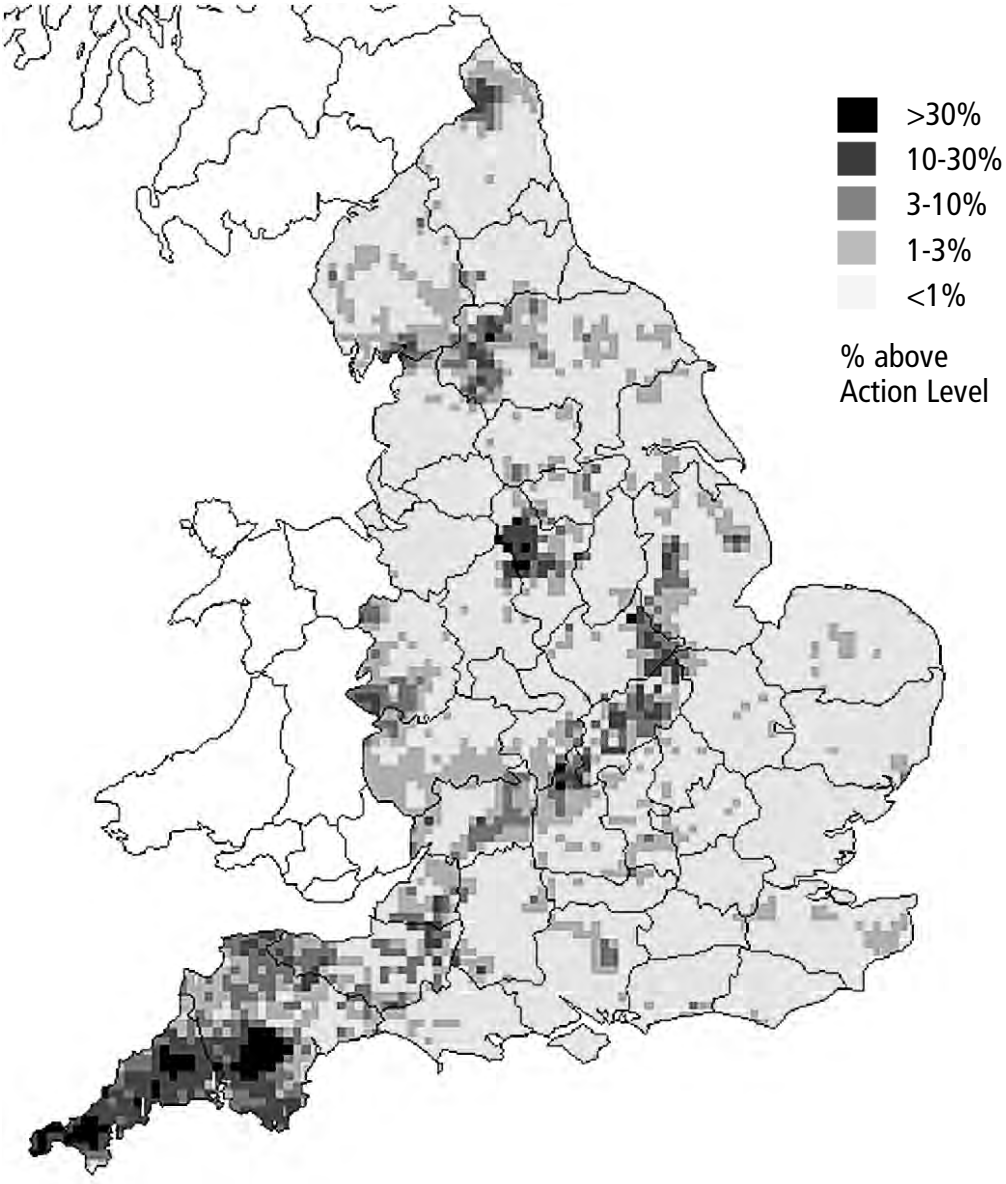
The results from the three pilot programmes have highlighted the need for effective partnership working, although each varied in the way it developed its approach. The lessons learnt from the pilot programmes resulted in the following good practice guidelines that are now being applied to the radon remediation programme:

- Develop partnership working within local authorities, with relevant officers from across a variety of departments and responsibilities
- Establish joint working through the setting up of a steering group to drive and manage the programme
- Secure specialist input from national agencies such as NRPB, the Building Research Establishment, DEFRA and the Department of Health
- Determine the types of external agencies to be involved locally that can contribute to the programme.

Awareness raising and publicity activities

There is evidence that publicity campaigns in general help boost response rates. One of the roles of the pilot programmes was to test the efficacy of different messages and the different ways of conveying them. Overall there were mixed results, and the messages did not work with the same effectiveness with house-

Estimated percentage of homes above the UK Action Level (200Bq/m^3) (source: NRPB, 1996)



holders at different stages of the testing/remediating process. The DETR's *Good Practice Guide* (2000b) recommends incorporating tried and tested messages to different target groups at different stages of the process. There was also anecdotal evidence from the pilots that such campaigns do impinge on the consciousness of those subsequently targeted with letters.

Contacting householders

The DETR's *Good Practice Guide* (2000b) recommends clear targeting of householders as more effective than a blanket approach. Local householders successfully targeted in the three pilot programmes (and now by local authorities participating in the radon remediation programme) included:

- Those who had received radon results at or above the Action Level but were not known to have acted on advice to remediate ('high testers' – previously referred to as 'action level testers')
- Those in high risk areas who had failed to respond to previous invitations to undertake a radon test in their home ('first-time-testers' – previously referred to as 'non-testers')
- Those known to have already remediated – to seek information about what was done, who by, at what cost, and how effectively ('remediators').

Letters to householders

The approach adopted in the pilot programme and the radon remediation programme meant that the initial contact with householders had to be via a mail-out from the NRPB. This is because the organisation's database containing radon test results on householders is strictly protected by guarantees of confidentiality. However, local authorities were able to influence the content and appearance, both of the NRPB's letter and any enclosures coming from the council itself. The offer to householders of a free radon measurement was conditional upon them sharing the results with the local authority.

Face-to-face advice

A variety of arrangements for face-to-face contact can be considered. The factors differentiating them are the degree to which the service is taken to the householder, and the degree to which contact is by appointment as opposed to available on a drop-in basis. Face-to-face advice can range from personal home visits made by council officers to drop-in sessions using a mobile unit or in local venues.

Follow-up

The DETR's *Good Practice Guide* (2000b) recommends following up householders who have been contacted as part of the radon programme for a number of reasons:

- To continue to persuade householders towards remediation
- To collect information about remediation processes under the programme
- To monitor remediation rates and outcomes
- To capitalise on previous efforts.

The most effective method of follow-up will often be by telephone, although this may not always be possible.

Assisting the remediation process

Evidence shows that remedial works are generally split equally between those undertaken by specialist companies, local builders and the householders themselves (DETR, 2000b). Householders should be presented with a range of options. A local programme should consider activity in the following areas:

- Direct 'handholding' help to households in the process of arranging remediation works
- Developing alternative means of carrying out remediation works and putting householders in touch with relevant bodies
- Linking older residents with radon in their homes to the services of Care and Repair agencies and ensuring appropriate measures are taken
- Providing grants for radon remediation work
- Advertising DIY solutions and ensuring support and materials are available through local DIY stores and builders merchants
- Arranging special rates with equipment manufacturers and suppliers
- Working with private sector builders on appropriate solutions, quality issues, price regulation and good practice.

Reducing inequity

Socio-economic groups differ in their response to the radon programme. Local data on radon testing and remediation can usefully be 'overlaid' with socio-economic data to test assumptions about the nature of barriers to be overcome to ensuring remediation. Data from within the local authority relating to such items as tenure, demographic profile and rates of unemployment can all be used to design a programme of action. So, too, can information on

Useful sources of information about local action	
Publication of a *Good Practice Guide Toolkit* is one output from the evaluation of three local authority pilot studies supported by the Radioactive Substances Division (RAS) of the Department of the Environment, Transport and the Regions (now DEFRA) Information packs for professionals and advice on radon is available from NRPB (tel: 01235 822622, email radon@nrpb.org) Individual householders can obtain a free information pack on radon from the NRPB by leaving their name, address and postcode on a free 24h answerphone (0800 614529) or by writing to Radon Survey, NRPB, Chilton, Didcot, Oxon OX11 0RQ.	The guide is not on DEFRA's website at the time of writing. In the meantime email this address for copies: liam.davey@defra.gsi.gov.uk Website addresses: www.defra.gov.uk/environment/index.htm www.nrpb.org.uk www.bre.co.uk/radon (Building Research Establishment)

the location of ethnic minority populations who may have difficulty with communications in English, or other communities in the area with different orientations and perceptions from the rest of the district, perhaps by virtue of greater proximity to a large town or city.

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Chapter 8 – Underpinning the delivery of health improvement

Introduction

To deliver effectively the cancer prevention initiatives detailed within the previous sections of this report, consideration should be given to the key principles which underpin successful health improvement interventions. These are effective partnerships, community consultation and profiling, monitoring and evaluation. These areas are outlined here with pointers to key documents and further sources of information provided on p159 in this chapter.

Making partnerships effective

The importance of partnership working and integrated planning as key to improving health and tackling inequalities has been highlighted in various policy documents (DETR, 2001; DH, 2001a, 2001b, 2002). Effective partnership working should include (Geddes, 1998; Plamping et al., 2000; Watson et al., 2000):

- Leadership and vision – the management and development of a shared realistic vision for the partnership's work through the creation of common goals
- Involvement and commitment – the commitment of local players and particularly the involvement of communities as equal partners. Senior level commitment and involvement from NHS, local authorities and other partner organisations
- Resources – the contribution and shared utilisation of information, financial, human and technical resources.

Primary care trusts (PCTs) are now the key focus for partnership working between the NHS and other local stakeholders, including local strategic partnerships (LSPs) and communities. NHS objectives which are shared with other stakeholders should also link to and be reflected within partners' plans, such as community strategies and local neighbourhood renewal strategies. PCTs have a pivotal role in coordinating the partnership with local authorities, NHS trusts, other statutory organisations, the community and voluntary sector. By 2004 PCTs will be responsible for 75% of NHS resources.

Cancer Networks have been established throughout England to help improve cancer care and services by working across organisations and institutional boundaries. Cancer Networks are responsible for developing strategic service delivery plans to deliver *The NHS Cancer Plan*. As highlighted in *Shifting the Balance of Power: the Next Steps* (DH, 2002), these service delivery plans are to be used by the PCT to commission services in collaboration with the network.

It is not clear exactly how the relationships and arrangements will operate within the new NHS organisations; however, links should be made to and from the new public health teams within PCTs. Each PCT will have on its board a director of public health. The public health networks will provide the specialist expertise needed to underpin public health action. They are to provide a pool of expertise and skills in specialist public health areas which can be shared across all PCTs.

The Health Development Agency (HDA) is currently taking forward the development of a tool to enable partnerships to assess their progress against evidence-based criteria and to share good practice in partnership working – *The Working Partnership* (expected publication autumn 2002). It will have two main elements: a simple, easy to use assessment tool and an in-depth resource that is flexible to support development, build capacity and enable partnerships to demonstrate their achievements as part of performance management. Also available will be a 'guide to partnerships', which reviews available guidance, toolkits and processes for partnership working *(A Guide to Resources for Partnership*, expected publication

December 2002) and a literature review drawing from theoretical sources *(A Review of Effective Practice and Partnership*, expected publication December 2002). Practical examples, challenges and the issues for local government and NHS partnership in joining up community planning and health improvement are provided in *Community Strategies and Health Improvement* (HDA, 2002), which draws on strategy documents for over 40 local authorities as well as learning from the Beacon schemes and health action zones (HAZs).

Involving local communities

Consulting and involving communities is a key part of government policy which service providers are required to implement, and is a key part of many local initiatives (eg NHSE, 1998, 1999; DETR, 2000; DTLR, 2001). Cancer Networks are developing patient partnership groups consisting of patients, carers and professionals from across the network in the development and evaluation of strategies, action plans and programmes. Involving local communities in developing strategies and action plans has been shown to improve the quality and effectiveness of programmes (Nichols, 1999).

Local communities should be actively involved in cancer partnerships at every stage to include strategy development, action planning, delivery and review and evaluation. Local people are able to provide insights into the nature of health and social issues and the appropriateness and acceptability of policies and strategies (Rogers et al., 1997). Actively involving local communities in needs assessment research processes, ensuring their representation within planning and management arrangements and providing training and resources for volunteers and local networks are key factors for success in initiatives to improve health and wellbeing (Gillies, 1998).

Consulting local communities

The Audit Commission (1999) has identified principles of good practice in this area. Consultation should:

- Be related to a decision the organisations intend to take
- Have clear objectives
- Be competently carried out
- Be inclusive
- Be used in practice.

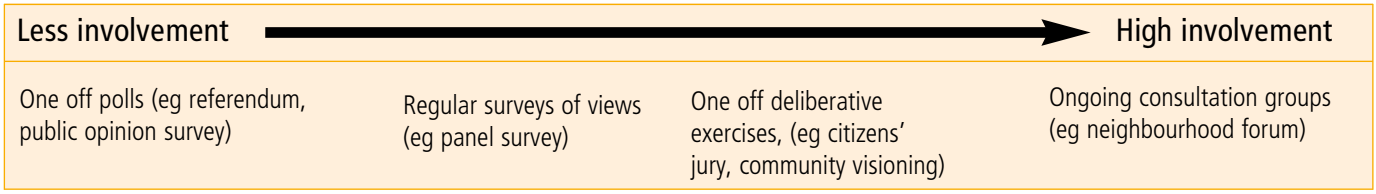
Effective consultation needs to be carefully planned, effectively carried out and thoughtfully used. Communities contain many different interests and interest groups and it is important to try to establish whom a representative is representing, and to whom in the community the representative is accountable. Findings from community consultations have to be balanced with other factors such as other stakeholder priorities, available resources and statutory requirements.

When planning community consultation it is important to:

- Identify information from consultation that has already taken place through existing initiatives such as community strategy documents
- Work with other partners to agree a joint approach to consultation and to agree the most appropriate methods (this will avoid consultation overload, and make the best use of available resources)
- Present the exercise realistically to avoid raising unrealistic expectations
- Plan feedback to the participants.

There are many different consultation methods, each with their own advantages and disadvantages. These include meetings, surveys, focus groups, user groups, citizens' juries, citizens' panels, neighbourhood fora, youth councils, community visioning/mapping exercises, and participatory appraisal and participatory action research. A broad spectrum of approaches should be used: selection of those which are relevant to the purpose of the consultation, and suitable for those who are being consulted, is recommended. Public participation and consultation occurs at different levels, and the degree of control local people experience relates to the level of involvement (see below).

Local communities: level of involvement



Source: Audit Commission (1999)

Once the consultation is completed, consider who else would find the results useful in planning and delivering their services, and disseminate the findings accordingly.

Developing capacity

To support effective community development and involvement, consideration needs to be given to capacity building on three levels (Russell and Killoran, 1999):

- Individual development
- Capacity building within local groups (eg through training, support workers, skills development, administrative resources)
- Developing the local community infrastructure.

Capacity building enables individuals in communities to develop knowledge, skills and self-efficacy that may help them to continue to be involved with prevention initiatives and to sustain programmes and activities within the community.

Engaging 'excluded' groups

As a first step it is vital that there is a clear picture of those who take part. A participation profile may include:

- Demographic analysis (age, ethnicity, gender, disability)
- Geographical breakdown (town, ward, enumeration district)
- Economic background (employment status, occupation).

Comparing these with the profile for the whole of the local population will enable the identification of those who are not yet involved, and allow efforts to be targeted to include them.

A first step is to ascertain whether there are any specific reasons preventing participation, and to address them. Reasons may include:

- Language barriers
- Time
- Lack of awareness of the consultation or project
- A feeling that 'it isn't for us'.

Teams need to know the composition of their communities and have targets and strategies to ensure they are included in the process. Capacity building will be particularly important with groups who are less likely to be involved.

Health needs assessment

Assessing local need, and profiling the local community is the first step towards developing a local plan. Different areas will be at different stages. As part of the HIMP and director of public health's annual report, many areas will have well developed local needs assessment for cancer, and community profiles that will already have been undertaken. In other areas more work will need to be done. The PCT-based public health teams and local health promotion unit experts provide an important resource for local professionals.

Needs assessment is intended to inform local plans: to look at unmet need for services and to provide information that will allow services to be tailored to local populations.

Assessing the health needs of the local population involves:

- Defining the different 'segments' or target groups within the local population
- Describing these different groups according to their needs and preferences using a variety of data.

Target groups can be distinguished in two ways:

- Geographical groups bound together by locality
- Social groups bound together by some other attribute, such as age, gender, ethnic origin, health status or socio-economic status (and combinations of these).

It enables health planners to (DH, 2001b):

- Learn about the resources, needs and priorities of the local population
- Identify inequalities among areas and groups
- Prioritise those in greatest need
- Allocate resources efficiently to improve the health of the population
- Apply principles of equity and social justice
- Work in collaboration with the community and develop local partnerships
- Measure impact
- Influence policy
- Demonstrate the reasons for doing something.

Successful local strategies to address cancer risk will take a broad approach to needs assessment, involving a wide range of partners and ensuring community involvement.

This will involve recognising and collecting data on the wider determinants of health, such as employment and housing (Bull and Hamer, 2001), which will be part of the community analysis underpinning the LSP.

Community profiling

A community profile describes the local area in terms of:

- Local populations (eg ethnicity, age, gender)
- Characteristics of the local environment (eg employers and employment, parks and open spaces, housing and estates)
- Importance in planning local cancer prevention strategies.

Consultation with local communities will identify factors that local people consider are important, which should be included in the profile. A well-developed community profile would include local data (qualitative and quantitative) on the burden of cancer disease, and on risk factors (smoking prevalence, physical activity, diet and nutrition, alcohol, sunlight, radon, and overweight and obesity); perceptions of health, service and facility provision and use, and socio-economic information.

Examples of data items to include are presented in the box below on local indicators. Where local data do not exist, risk profiles may be derived from national data sets (by applying risk profiles based on the total population to a locality).

Consideration should be given to collecting missing local data relevant to the local action plan. Sources of local data can be found below. As part of the development plan, identify gaps in current data which need to be filled to enable better targeting and monitoring of local implementation.

Local sources of data

- The annual reports of the director of public health
- HIMPs and other local plans and profiles (eg poverty profile)
- LA data sets
- Socio-economic data derived from the census
- Neighbourhood statistics
- Regional data sets (eg health and lifestyle surveys)
- Public health observatories
- Local surveys (eg by LAs, HAs and local colleges or universities)

Equity profiling

The incidence of cancer and mortality from cancer is not uniformly distributed among the population. Cancer risk is stratified by sex, age, social class, ethnic origin, and region of residence.

The equity profile is intended to identify inequalities in health and in access to preventive and treatment services. It will concentrate on the needs of individuals and groups, especially those for whom special consideration is warranted (poorer people, children, pregnant women, women of childbearing age, minority ethnic groups, other vulnerable groups). The equity profile should identify the inequalities which exist locally in terms of cancer mortality and morbidity.

The equity targets are local targets to reduce these inequalities. As part of the prevention strategy equity profiling should cover smoking, nutrition, alcohol, radon, sunlight, physical activity and weight management, with associated targets.

Audit of current provision

Local needs assessment requires a comprehensive audit of activity relevant to the seven areas for prevention (smoking, physical activity, nutrition, alcohol, radon, sunlight, and overweight and obesity). An example for physical activity is presented in the box opposite. This type of audit will allow the identification of gaps and, in conjunction with the equity profile, will identify unmet need for interventions.

Personal and professional development audit

An audit of local skills is an important aspect of needs assessment. There will be a need for appropriate personal and professional development for a wide range of people. This will include not just health professionals, but other professional groups involved in planning and delivering services (eg LA officers, teachers, social workers, youth leaders, voluntary sector staff) and members of the public involved in needs assessment and in delivering community based programmes.

Calderdale and Kirklees Health Authority with Kirklees Metropolitan Council have produced a *Health Needs Assessment Workbook* which provides practical steps and guidance in undertaking a health needs assessment. An interactive electronic version will be available from autumn 2002 (Hooper and Longworth, 2002).

Audit of local provision of services and facilities for physical activity

Group/locality	How many?	Where?	How accessible to group?
Facilities			
Swimming pools			
Sports facilities			
Health clubs			
School facilities			
Community facilities			
Conducive environments			
Cycle routes/tracks			
Walks			
Parks/playing fields			
Other open spaces			
Active local groups			
Sports clubs			
Sports promotion units			
Primary care			
Health promotion			
Local resources			
Workplace facilities			
NHS			
LA			
Local business			

(Source: HEA, 1995)

Monitoring progress

Monitoring is a review of progress towards goals. To do this it is important to set targets and related indicators. Targets are an expression of the goals of the programme and indicators track movement towards or away from them.

Developing local targets

A target is usually expressed numerically (quantitative). Targets should be feasible in the timeframe and be revised according to changes in the policy environment. They should be measurable – that is, it must be possible to measure them and to collect the required data items.

There is a national target for reducing the death rate from cancer in people under 75 years by at least a fifth by 2010 (DH,1999). *The NHS Cancer Plan* emphasises the need for intervention with sections of the population such as children and young people that will have long-term health benefits and an impact on cancer long after the 2010 deadline.

Local targets can be based on national targets for cancer risk factors, modified to take into account the population profile. They can be set in terms of long-term disease risk, risk factors or be focused on areas or groups at particular risk. Local targets need to take into account past trends and performance. Baseline measures for the target in question need to be collected (although initially, national data can be adapted while local data are collected).

Targets need to be meaningful and realistic. Involving key players in target setting ensures the targets are meaningful and acceptable to all those responsible for the delivery of the targets; consulting and involving local communities ensures the targets reflect the concerns and experiences of those whose needs the targets have been set up to address (Bull and Hamer, 2001). An example focusing on physical activity is provided overleaf.

Equity targets

The government has announced national targets for reducing inequalities in health (DH, 2001a). However, as

Example of local targets for physical activity

Local targets for physical activity	Description	Example
Long-term disease or health status	Mortality and morbidity	A reduction in the death rate from cancer in people under 75 years by at least a fifth by 2010
Risk factor	Relating to physical activity	An increase in the proportion of the population taking the recommended amount of physical activity* to 45% by 2003 (from 37% of men and 25% of women)
Process/Intermediate		An increase in the number of employers with more than 100 employees with a workplace physical activity policy by 20% by 2003
Groups or areas at particular risk		A decrease in the proportion of Bangladeshi people who are sedentary (from 52% of men and 56% of women to 30% by 2005)
Access and delivery		An increase in young women from X locality accessing leisure services from 10% to 20% by 2004

*The recommendation is that adults build into daily routine half an hour of moderate intensity physical activity.

Note: For each target baseline values should be established. If data exist the trend over time should be looked at to help set achievable targets. Sources of data for measuring progress should be identified, and plans made to collect missing data items.

discussed above, local plans should include an equity profile and equity targets. Those setting equity targets should be aware that differential targets may be required to take account of differential causes and effects in different population groups. Improving the potential for health among the most vulnerable could mean a reduction in services for other sections of the population. Equity targets need to specify a levelling up of the health of the worst off rather than a levelling down of the rest of the population (Bull and Hamer, 2001).

Objectives

Objectives are the methods used to achieve the targets and are usually expressed in the form of desired changes. For example, if the aim were to increase access to leisure provision, objectives could include: to set up a special bus service to take people to facilities; to make facilities available more cheaply to certain groups; and to increase opening hours.

Indicators

Indicators measure the movement towards or away from objectives. They are used to assess progress against baselines and for comparative purposes. Indicators can be based on the input, process, output and outcome (Ziglio, 1996):

- **Input** – measures of resources and action
- **Process** – also known as *formative* or *intermediate* indicators. These relate to the implementation of the actions defined in the delivery plan
- **Output** – also known as impact indicators. These measure the immediate impact of the work on its target group
- **Outcome** – also known as *summative* indicators. These focus on the end product and look at the extent to which the objectives have been achieved. It is a measure of the long-term goal, such as the improvement in health status.

Most local indicators will relate to inputs and processes where it will be important to assess the level of progress, and where data can be analysed at a local level. Output indicators can also be defined and assessed locally. Outcome measures, on the whole, can be assessed only regionally and nationally or where the numbers will be large enough to show trends over time (DH, 2000a: 77).

Indicators can be *quantitative* or *qualitative* or a combination of the two.

Quantitative indicators can use standardised measuring instruments to collect data systematically over time. The size of the effect can be measured and compared over time with baselines (Hawe et al., 1990). A list of local sources of data is presented on p154.

Qualitative indicators assess non-quantifiable aspects of the intervention that contributed to its impact. These indicators are generally assessed through questionnaires, observational studies, interview studies, focus groups and

other forms of community consultation. Qualitative indicators can be a series of criteria that need to be fulfilled in order for the intervention or programme to be deemed a success or failure. See boxes below: Checklist for setting local indicators; Examples of indicators used in public health.

Challenges in setting indicators in public health:

- Limited data and resources (can lead to availability driving the indicator rather than the other way around)
- Setting robust indicators for non-quantifiable outputs
- Need to define short-, medium- and long-term goals (health promotion is usually evaluated in the short term but the objectives are often long term)
- Attributing cause and effect – interventions are often multi-agency and multi-intervention
- Changes over time may occur for reasons independent of the intervention, or there may be a long chain of events between intervention and effect.

Checklist for setting local indicators

- Define target/problem/standard or criteria
- Establish aim – defined by clients or institution concerned with needs/rights
- Define who is responsible for the achievement of the move towards the target
- Define whose interventions you are measuring
- Set a timeframe – devise framework in which the indicator is to be targeted
- Assess availability and quality of data
- Formulate a monitoring system to collect data
- Decide on form (eg a rate of change expressed as a proportion or the setting of a standard as a way of assessing the quality of a service or interaction)
- Set baseline or reference data to standardise indicator
- Test indicator, if possible, or set date for review

Examples of indicators used in public health

- Shifts in policies or practices such as policy statements
- Awareness among the public, NHS and LA employees
- Access to services, equity
- Participation or drop-out rate
- Levels of client satisfaction
- Changes in individual knowledge, awareness and self-efficacy
- Changes in behaviour
- Health status, quality of life (QOL) and quality adjusted life years (QALYs)
- Community changes (eg decrease in fear of local crime, reduced levels of racial or sectarian violence)
- Environmental changes (eg increase in the number of cycling routes)
- Partnership working (eg evidence of partnerships with the community and evidence of increased involvement over time, equitable involvement of different community groups)
- Advocacy (eg unpaid media coverage, policy setting and implementation)
- Quality of services (eg interaction between health professional and client)
- Quality of life and sustainability indicators (community strategy indicators)

Evaluating prevention initiatives

An evaluation of a prevention programme or intervention will allow judgements to be made concerning its value and enable changes to make it more effective. Evaluation comprises three main components, which ideally should all be undertaken in assessing an intervention to provide a picture of how and why an intervention has been successful (HDA, 2001).

- Process evaluation – gives evidence on the effectiveness of the planning and implementation of the intervention, its acceptability and accessibility
- Impact evaluation – looks at the immediate benefits of the intervention
- Outcome evaluation – describes longer-term effects and attempts to examine the sustainability of the intervention.

Incorporating evaluation into planning, implementation, monitoring and review processes ensures a cycle of reflection and action.

As highlighted within this report, few evaluations assess inequalities; data where possible should be analysed by key variables, ie age, gender, socio-economic status, ethnicity, disability and income level, in order to measure differential impact and address inequalities targets.

Results should be disseminated and fed back to participants, management and funders in an appropriate way, reflecting the differing needs and audience priorities. PCTs need to develop a mechanism whereby information derived from prevention activities is incorporated into decision making. Where feasible, learning from an evaluation should be shared through the publication of reports and papers in peer-reviewed journals. For DH and NHS funded research, findings can be made available online via the National Research Register (www.doh.gov.uk/research/nrr.htm).

Sources of funding

The following, while not exhaustive, provides details of national sources of funding for health improvement projects. Further funding opportunities are frequently listed on topic-specific websites – for example, Alcohol Concern.

Funding source	Contact details
NHS R&D programme	www.doh.gov.uk/research/index.htm
National Community Fund	www.community-fund.org.uk
New Opportunities Fund	www.nof.org.uk
Joseph Rowntree Foundation	www.jrf.org.uk
Neighbourhood Renewal Fund	www.neighbourhood.gov.uk/nrfund.asp
European Regional Development Fund	www.urban.odpm.gov.uk/programmes/erdf/index
Cancer Research UK (formerly the Imperial Cancer Research Fund and The Cancer Research Campaign)	http://science.cancerresearchuk.org

Further sources of information

Partnerships

Advice and information is available from the Health and Social Care Joint Unit in the Department of Health and information is available at **www.doh.gov.uk/jointunit/partnership.htm**

Audit Commission (1998). *A fruitful partnership: effective partnership working*. London: Audit Commission (can be ordered on tel: 0800 502030).

Geddes, M. (1998). *Achieving best value through partnership*. London: DETR.

Health Development Agency (2001). *Health improvement programmes: research into practice – a briefing for local partnerships involved in health improvement programmes*. Provides a reference listing of research projects concerned with effective local planning for health improvement. London: HDA.

Health Development Agency (2002). *The Working Partnership*; *A Guide to Resources for Partnership*; *A Review of Effective Partnership* (all forthcoming).

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Watson, J., Speller, V., Markwell, S. and Platt, S. (2000). The Verona Benchmark: applying evidence to improve the quality of partnership working. *International Journal of Health Promotion and Education* 7: 17–23.

Best value

The Audit Commission publishes a number of reports on best value. Some of these can be directly accessed through its website: **www.audit-commission.gov.uk**

Local Government Improvement and Development Agency (IDeA) has placed many resources relating to best value online: **www.idea.gov.uk**

Community and public involvement

Audit Commission (1999). *Listen up! Effective community consultation.* London: Audit Commission (may be ordered on tel: 0800 502030). Summary and management paper available through the Audit Commission website at **www.audit-commission.gov.uk/publications**

Cohen, J. and Emanuel, J. (2000). *Positive participation: consulting and involving young people in health-related work: a planning and training resource*. London: HEA.

Department of Health (1999). *Patient and public involvement in the new NHS*. London: DH. **www.doh.gov.uk/involve.htm**

Department of Health (2001). *Involving patients and the public in healthcare: a discussion document*. London: DH.

Department of Health (2001). *Response to the Listening Exercise*. London: DH.

Department of the Environment, Transport and the Regions (2000). *Preparing community strategies: draft guidance to local authorities from the DETR*. London: DETR.

Health Development Agency (2002). *Community Strategies and Health Improvement: a review of policy and practice.* London: HDA.

Local Government Improvement and Development Agency (IDeA) has placed many resources relating to best value online. This includes a document dealing with consultation: **www.idea.gov.uk/bestvalue/consult/main.htm**

National Consumer Council, Consumer Congress and Service First Unit (1999). *Involving users: improving the delivery of healthcare*. London: Cabinet Office.

National Consumer Council, Consumer Congress and Service First Unit (1999). *Involving users: improving the delivery of local public services*. London: Cabinet Office.

Northern and Yorkshire Region NHS Executive (1999). *NHS primary care group's public engagement toolkit*. Durham: Northern and Yorkshire Region NHS Executive. **www.doh.gov.uk/pub/docs/doh/toolkit1.pdf**

Rifkin, S., Lewando-Hundt, G. and Draper, A. (2000). *Participatory approaches in health promotion and health planning*. London: HDA.

Service First Unit. (1999). *An introductory guide: how to consult your users*. London: Cabinet Office.

Service First publications can be found through the Cabinet Office website: **www.cabinet-office.gov.uk/servicefirst/index/perform.htm**

Health needs assessment

Harris, A. (1997). *Needs to know: a guide to needs assessment for primary care.* Edinburgh: Churchill Livingstone

Health Education Authority (1999). *Indicators of good practice: an organisational self-assessment tool*. London: HEA.

Hooper, J. and Longworth, P. (2002). *Health Needs Assessment Workbook*. London: HDA.

Sustain (2000). *Reaching the parts. Community mapping: working together to tackle social exclusion and food poverty.* London: Sustain, in association with Oxfam UK Poverty Programme.

Indicators and monitoring

Bowling, A. (1991). *Measuring health: a review of quality of life measurement.* Milton Keynes: Open University Press.

Bull, J. and Hamer, L. (2001). *Closing the gap: setting local targets to reduce health inequalities*. London: HDA.

Buck, D., Godfrey, C. and Morgan, A. (1997). The contribution of health promotion to meeting health targets: questions of measurement, attribution and responsibility. *Health Promotion International* 12 (3): 239–250.

Funnell, R., Oldfield, K. and Speller, V. (1995). *Towards healthier alliances: a tool for planning, evaluating and developing healthy alliances*. London: HEA.

Hawe, P., Degeling, D. and Hall, J. (1990). *Evaluating health promotion*. Sydney: Maclennan and Petty.

Kendall, L. (1998). *Local inequalities targets*. London: King's Fund.

Macleod Clark, J., Latter, S., Maben, J. and Franks, H. (1997). *Promoting health through primary health care nursing*. London: HEA.

Morgan, A., Buck, D. and Godfrey, C. (1996). *Performance indicators and health promotion targets*. York: Centre for Health Economics, University of York.

Health Development Agency (2001). *Assessing people's perceptions of their neighbourhood and community involvement (Part 1).* The HDA has commissioned the Office for National Statistics to develop and validate a module of questions to measure a range of components of social capital based on the General Household Survey. *Part 1* provides a guide to questions to use in measuring social capital. The questions investigate areas such as the strength of voluntary organisations, norms of neighbourliness, reciprocity and trust and infrastructure resources, community networks and attitudes to community involvement. *Part 2*, to be published spring 2003, will look at ways of grouping and analysing the data. Further information on this project can be obtained from Antony Morgan **(antony.morgan@hda-online.org.uk)** or Caroline Mulvihill **(caroline.mulvihill@hda-online.org.uk)** at the HDA.

The National Centre for Health Outcomes Development **(http://nww.nchod.nhs.uk)** provides relevant data and information on measurement tools for public health. It is a key source of information on assessment of health and outcomes of health interventions at individual, HA, hospital and community trust, PCG/PCT and LA levels for the English NHS and the government. The website contains information on a range of indicators relevant to cancer, for example fat consumption, mean adult BMI and smoking statistics.

The Our Healthier Nation website, at **www.ohn.gov.uk**, is regularly updated and supplemented with additional material.

Public Health Observatories, **www.pho.org.uk** The eight PHOs provide a range of data, information, analysis and support services to agencies and groups working to improve health and reduce inequalities.

StatBase® **www.statistics.gov.uk/statbase/mainmenu.asp** StatBase® is an online database which holds a large selection of government statistics. It also provides descriptions of all the UK Government Statistical Service's data sources, derived analyses, all its statistical products and services and all the relevant contact points.

Social Exclusion Unit (2000). *Measuring deprivation: a review of indices in common use*. **www.cabinet-office.gov.uk/seu**

Social Exclusion Unit (2000). *Report of PAT 18: Better information*. London: The Stationery Office.

Social Exclusion Unit (2001). *A new commitment to neighbourhood renewal: National Strategy Action Plan.* London: The Stationery Office.

OHN indicators
Data to measure progress towards OHN indicators are collected by local directors of public health. Many of these are also applicable to the NSF CHD indicators. The OHNiP database **(www.ohn.gov.uk/database/database.htm)** holds information on a wide range of projects and initiatives that in different ways contribute to the aims of the OHN health strategy. The database can be searched by health keyword, target audience, government initiative or zone and setting.

Health Education Monitoring Survey (HEMS)
The 1998 HEMS includes a measurement of social capital. The survey contains six questions whereby a neighbourhood social capital score can be calculated (Rainford, L., Mason, V., Hickman, M. and Morgan, A. (2000). *Health in England: investigating the links between social inequalities and health*. London: The Stationery Office.

HAZnet: **www.haznet.org.uk**
Evidence is a key feature in the work of HAZs and HAZnet works towards creating and disseminating an evidence base for new ways of working. HAZnet has a database of area-based initiatives, local evaluation projects and other research specific to HAZs, which may also be of relevance as case studies for the prevention of cancer.

LA 21 and community strategies. *Local indicators of sustainable development*. **www.sustainable-development.gov.uk/indicators/local/index.htm**

The DETR has published a handbook, *Local quality of life counts*, which offers ideas for measuring sustainable development and quality of life in local communities. The handbook gives a menu of 29 indicators from which local authorities may wish to consider using a selection for reporting in their LA 21 and community strategies. These include 15 headline indicators that are intended to make up a 'quality of life barometer', which will be used to measure overall progress, including success in tackling poverty and social exclusion and expected years of healthy life. The handbook also provides advice on indicator development for:

- Access to key services (ie medical services and shops)
- Mode and average distance of travel to work
- Percentage of schoolchildren travelling to and from school by different modes
- Recorded crime per 1,000 population, fear of crime, social participation, community wellbeing and social and community enterprises (social capital).

Evaluation

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Health Development Agency (2001). *Health at work in the NHS: Framework for action. Supplement: guidance on evaluation*. London: HDA.

Thorogood, M. and Coombes, Y. (2000). *Evaluating health promotion: practice and methods*. Oxford: Oxford University Press.

Electronic library sources

The following websites provide free access to nationally held electronic resources for public health and allow journals and other publications to be comprehensively searched.

HealthProm*is* The Health Promotion database for England	http://healthpromis.hda-online.org.uk
National Electronic Library for Health	www.nelh.nhs.uk
Public Health Electronic Library (Pilot site from May 2002)	www.phel.gov.uk
World Health Authority Library Database (WHOLIS)	http://saturn.who.ch (provides a direct link to the searching facility) www.who.int/library (links to the library home page)

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Department of Health (1999). *Saving Lives: Our Healthier Nation*. London: The Stationery Office.

Department of Health (2000a). *The NHS Plan. A plan for investment, a plan for reform.* London: The Stationery Office.

Department of Health (2000b). *Implementation of Health Act partnership arrangements*. HSC 2000/10; LAC 2000/09. London: DH.

Department of Health (2001a). *Tackling health inequalities: consultation on a plan for delivery.* London: DH.

Department of Health (2001b). *Health Improvement and Modernisation Plans (HIMPS): requirements for 2002.* London: DH.

Department of Health (2001c). *The Health Visitor and School Nurse Development Programme: health visitor practice development resource pack*. London: DH.

Department of Health (2002). *Shifting the Balance of Power*. London: DH.

Department of Transport, Local Government and the Regions (2001). *Community Empowerment Fund*. London: DTLR.

Geddes, M. (1998). *Achieving best value through partnership.* London: DETR.

Gillies, P. (1998). Effectiveness of alliances and partnerships for health promotion. *Health Promotion International* 13 (2): 99–121.

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Ziglio, E. (1996). Indicators of health promotion policy: directions for research. In: Bandura, B. and Kickbush, I. (eds). *Health promotion research: towards a new social epidemiology*. Copenhagen: WHO Regional Office for Europe.

Glossary

ACoP Approved Code of Practice
AGPNM Association of General Practitioners of Natural Medicine
ASH Action on Smoking and Health
BDA British Dietetic Association
BHA British Hypnotherapy Association
BHF British Heart Foundation
BMEG Black and minority ethnic groups
BMI Body mass index
BSH British Society of Hypnotherapists
CA Consumers' Association
CDC Centers for Disease Control and Prevention
Cfit Commission for Integrated Transport
CHD Coronary heart disease
COMA Committee on the Medical Aspects of Food and Nutrition Policy
DETR Department of Environment, Transport and the Regions
DfEE Department for Education and Employment
DH Department of Health
DTLR Department of Transport, Local Government and the Regions
EAZ Education action zone
EH Environmental health
EHO Environmental health officer
EPIC European Prospective Investigation into Cancer and Nutrition
EU European Union
FLI Food and low income (database)
FPHM Faculty of Public Health Medicine
GP General practitioner
GSL General sales list
GTP 'Green' transport plan
HA Health authority
HAZ Health action zone
HDA Health Development Agency
HDL High density lipoprotein
HEA Health Education Authority
HEMS Health education monitoring survey
HEPA Health-enhancing physical activity
HLC Healthy Living Centre
HIMP Health Improvement and Modernisation Plan
HSC Health Services Circular
HSE Health and Safety Executive
HTE Health technology assessment
ICM Institute of Complementary Medicine
IDeA Improvement and Development Agency
IOTF International Obesity Task Force
LA Local authority
LAC Local authority circular
LACA Local Authority Caterers' Association
LA 21 Local Agenda 21
LDL Low density lipoprotein
LEA Local education authority
LGA Local Government Association
LSP Local strategic partnership
LTP Local transport plan
MAFF Ministry of Agriculture, Fisheries and Food
NGO Non-governmental organisation
NAO National Audit Office
NHF National Heart Forum
NHLBI National Heart, Lung and Blood Institute
NHS National Health Service
NHSE National Health Service Executive
NHSS National Healthy Schools Standard
NICE National Institute for Clinical Excellence
NOF National Obesity Forum
NOF New Opportunities Fund
NRPB National Radiological Protection Board
NRT Nicotine replacement therapy
NSF National Service Framework
NSF CHD *National Service Framework for Coronary Heart Disease*
OBI Opportunistic brief intervention
OFSTED Office for Standards in Education
OHN *Our Healthier Nation*

OHNiP Our Healthier Nation in Practice (database)
ONS Office for National Statistics
OTC Over the counter
PAF Performance Assessment Framework
PAR Population attributable risk
PAT Policy action team
PCG Primary care group
PCT Primary care trust
PE Physical education
PHC Primary healthcare
PR Public relations
PSHE Personal, social and health education
PTA Parent–teacher association
QALY Quality adjusted life year
QOL Quality of life
RCT Randomised controlled trial
RDA Regional Development Agency
RPHNutr Registered Public Health Nutritionist
RSA Retail Services Association
SACN Scientific Advisory Committee on Nutrition
SBT Simple behavioural therapy
SCOTH Scientific Committee on Tobacco and Health
SIGN Scottish Intercollegiate Guidelines Network
SMAP School Meals Assessment Pack
SNAG Schools Nutrition Action Group
SPF Sun protection factor
SRTS Safer routes to school
STAG School travel advisory group
VIRSA Village Retail Services Association
WCRF World Cancer Research Fund
WHO World Health Organization

Appendix – Contributors

This resource has been developed in consultation with a range of professionals and through a critical review. The HDA would like to thank them for their cooperation and valuable input. Thanks also go to Karen Ford (ex-HDA) who produced content and structure for the CHD guidance on which this document is based, and to Catherine Alexander at the Department of Health for her support in producing this document.

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