

The Evidence of Health Promotion Effectiveness

*Shaping Public Health
in a New Europe*

*A Report for
the European
Commission
by the International
Union for Health
Promotion
and Education*

**PART TWO
EVIDENCE BOOK**

Assessing 20 years
Evidence of the
Health, Social,
Economic and
Political Impacts of
Health Promotion.

PART TWO of this report can be read in conjunction with Part One, which provides a summary of the main evidence, and puts forward a case for ensuring that Health Promotion is properly resourced. This will enable Health Promotion to play its full part in the public health policy framework which is currently being shaped by the European Commission to meet the health, social, economic and political challenges of a developing European Union.

The Main Players

In order to contribute to the debate on Europe's developing public health policy, the International Union for Health Promotion and Education (IUHPE) decided to undertake an ambitious and innovative project which would assess and collect the evidence of 20 years of health promotion effectiveness.

As an integral part of the project, which received financial assistance from the European Commission, the IUHPE created forums which allowed wide consultation beyond the health promotion community, entering into dialogue with representatives from political groupings, non-government organisations, the private sector and academia.

Two international meetings were held in Brussels and Paris with an invited audience – a 'Witness Group' – who engaged in dialogue with health promoters on the health, social, economic and political impacts of 20 years of health promotion activity.

Under the guidance of Director of Programmes, Anne Bunde-Birouste, who first conceived the project, the IUHPE invited a group of experts from around the world, and from a variety of disciplines, to join an Advisory Group to oversee the work. This included health promoters from Europe, Canada, the United States and Australia. The IUHPE also invited leading European health lobbyist, David Boddy, to participate as Project Editor, and in addition, as part of the bridge-building process between the political and health promotion communities, to draft Part One of this report.

The IUHPE President, Professor Spencer Hagar, acted as Chairman of the Project Advisory Group. Professor Maurice Mittelmark (Norway) and Professor Don Nutbeam (Australia) provided special technical assistance to Mr Boddy.

This project has also benefited greatly from the contribution and collaboration of the US Centers for Disease Control and Prevention, Atlanta, Georgia, USA, and from the Department of Health Promotion, Social Change and Mental Health Cluster, WHO Headquarters, Geneva.

This project has received financial support from the European Commission.

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Designed and produced by ML Design, London, UK 44 (0)20 7721 7254

Printed by Jouve Composition & Impression, Paris, France 33 (0)1 44 76 54 40

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Symbol Key

The symbols used throughout the text are designed to help the reader follow and understand faster and with greater ease, the main points being made in each section. They have been identified and positioned solely at the discretion of the Project Editor, and do not represent any comment on the text by any other party. The main symbols represent:



Action Point. Ideas identified with such a symbol could form a positive basis for action by either a political, health or social grouping.



Consider Carefully. Paragraphs or sections marked with this symbol are particularly thought-provoking, and require special or particularly careful consideration.



More Research. Parts of the text marked with this symbol show that further research is necessary to gain clarity or fulfil the understanding of health promotion effectiveness.



Open Debate. These are points for political, social, or economic debate. They either serve to stimulate new debate, or are worthy of contributing to existing debate.



Concerted Action. Sections marked with this symbol show the effectiveness of more than one strand of health promotion activity uniting for better results.



Health Added Value. Parts of the report showing this symbol indicate where health promotion moves have added new dimensions of social, economic or political value.

Chapter 1

Health Promotion Effectiveness – The Questions to be Answered

The Subject: Measuring the Effectiveness of Health Promotion.

The Author: Don Nutbeam, Professor of Public Health, and Head of Department, Department of Public Health and Community Medicine, University of Sydney. He is a vice president of the IUHPE.

The Purpose: This first chapter provides an introduction to understanding the measures of health promotion effectiveness. Don Nutbeam outlines what is meant by 'effectiveness', explains the commonly used measures of assessment, and opens a debate on the challenges of developing assessment criteria and understanding.

Professor Nutbeam is widely regarded as an international authority on health promotion effectiveness. Before taking up his current position he was a co-founder and Research Director of the Heartbeat Wales programme (1985-90), and the Director of Research and Policy Development for the Health Promotion Authority for Wales (1988-90). He is Chair of the Board of Directors of the Australian Centre for Health Promotion, and in the early 1990s led a two-year review of Australia's health goals and targets.

A Sound Base of Evidence

This century has seen greater gains in health for the populations of the world than at any other time in history. These gains have been made partly as a result of improvements in income and education, with accompanying improvements in nutrition, hygiene, housing, water supply and sanitation. They are also the result of new knowledge about the causes, prevention and treatment of disease and the introduction of policies that have made intervention programmes more accessible. The greatest advances in health have been made through a combination of structural change and the actions of individuals.

The disease profiles of many countries have changed remarkably in the past decade – shifting from a communicable disease to a chronic, non-communicable disease burden. In many countries in Europe, efforts to reduce the prevalence and burden of non communicable disease have been remarkably successful, most notably in relation to reductions in the prevalence of coronary heart disease. In general, progress has been achieved through a combination of effective health promotion programmes and improved treatment of disease. The North Karelia Programme in

Finland, ▶ *See Health Challenges 1, p55*, provides a powerful case study to illustrate this success. As in the control of infectious disease, the most effective disease prevention and health promotion strategies are still based on a combination of actions to address both individual and structural determinants of health.

Progress has not been equal in Europe both between and within countries. Indeed in Eastern Europe premature death from non-communicable disease has risen in the past decade. New issues have also emerged. These include the impact on health and social services associated with the increase in the number and proportion of elderly in the population, and the impact of improved understanding and recognition of mental illness in the population. These are priority issues for most countries in Europe, and issues for which effective health promotion can provide positive solutions.

In combination, the different chapters in this Evidence Book show how steady progress has been made in building a sound base of evidence on the effectiveness of health promotion in the past twenty years. These advances in knowledge have demonstrated the relationship between people's lifestyles, their social and economic status, their living conditions, and their health status. From these advances in knowledge has come a better understanding of ways of changing these personal and structural determinants of health. Although there are still important gaps in knowledge, a major task is to improve the communication of available evidence on effectiveness to decision-makers and health practitioners, and promote its application.

This introductory chapter examines four key questions that need to be addressed to improve both the quality and application of this evidence of effectiveness in health promotion. In doing so the chapter provides an introduction to the issues that emerge in the examination of evidence of effectiveness in the following chapters. The four key questions are:

- ▶ What do we mean by effectiveness in health promotion?
- ▶ What measures should be used to assess effectiveness?
- ▶ What research methods should be used to evaluate effectiveness?
- ▶ What programmes are worth evaluating?



These key questions provide the structure for the following sections.

What do we mean by Effectiveness?

The Ottawa Charter defines health promotion as:

- the process of enabling people to exert control over the determinants of health and thereby improve their health

Health promotion is described as a *process*, the purpose of which is to strengthen the skills and capabilities of individuals to take action, and the capacity of groups or

communities to act collectively *to exert control over the determinants of health*.

Correspondingly, effective health promotion leads to changes in the determinants of health.


These *determinants of health* include those within the control of individuals, such as individual health behaviours and the use of health services. Others are outside the control of individuals, and include social, economic and environmental conditions, and the provision of health services. Thus, actions which support people to adopt and maintain healthy lifestyles, and which create supportive living conditions (environments) for health are key elements of effective health promotion.

There are important differences in perspective and in emphasis on what represents ‘success’ for a health promotion programme. Among these perspectives are those of:

- ▶ **policy makers and budget managers**, who need to be able to judge the success (or likely success) of programmes in order to make decisions about how to allocate resources, and be accountable for those decisions to the community and elected representatives. Success is often defined in terms of the *relationship between investment and the achievement of health outcomes in the short-term*. **Elements of this aspect of success are explored in the following chapters in the sections on Economic Impact.**
- ▶ **health promotion practitioners**, who need to be able to judge with reasonable confidence the likely success of a programme in achieving its defined objectives in ‘real-life’ circumstances. Success may be defined in terms of the *practicality of implementation of a programme, and the possibilities of engaging people and organisations in action for health*. **This has not been the primary focus of this book, but is of fundamental importance in ensuring that the lessons gained from the information in the book are applied in Europe.**
- ▶ **the population who are to benefit from health promotion action**, who may place great value on the processes through which a programme is conducted, particularly whether or not the programme is participatory, and addresses priorities which the community itself has identified. Success may be defined in terms of *relevance to perceived needs, and opportunities for community participation*. **Elements of this aspect of success are explored in the sections on Social and Political Impact.**
- ▶ **academic researchers**, who need to be able to judge success in order to improve knowledge and understanding of the relationship between interventions and observed effects by applying scientific ‘rules of evidence’. Success may be defined in terms of *methodological rigour, maintenance of programme integrity, and the achievement of pre-determined outcomes*. **Much of the evidence presented in the following chapters addresses the quality of the evidence available on success.**

These perspectives are distinct but not mutually exclusive. Each is concerned with achieving change to the determinants of health, and achieving improved health, but




they differ markedly in the emphasis given to the process by which outcomes are achieved, and by the importance attached to cost and practicality of implementation.

Correspondingly, in establishing ‘evidence of effectiveness’ there is currently a wide spectrum of methods and measures used in evaluation. This variation not only reflects the different perspectives to the question referred to above, but also reflects important differences in the structure and starting point for interventions. 

For example, assessing the effectiveness of advice given by a doctor to an arthritic patient requires different methods and measures than those required for assessing the effects of a mass media campaign to promote immunisation. The intervention methods and measures would be different again to conduct an evaluation of a multi-dimensional programme to promote health in a particular setting, such as a school or work site; and different again in the evaluation of a programme directed at improving the health of an ethnic minority group in a population.

These examples also indicate the different ‘entry points’ for health promotion that have been used to structure the different elements of this book. In some chapters a specific health issue, such as oral health or nutrition, is the ‘entry point’. In others it is a specific population group such as older people, or people on low income. Others focus on opportunities for health promotion through a specific setting such as schools, health care settings and workplaces.

Although each approach is directed towards the achievement of improved health and changes in determinants of health, each ‘entry point’ delineates the nature of the task in different ways – emphasising respectively the issue, the population or the setting as a starting point. Again these are not mutually exclusive:

- ▶ Settings offer opportunities for comprehensive interventions which can be directed both at health behaviour change and environmental change to achieve improved health outcomes. Settings also offer opportunities to reach specific target populations (eg. teenagers through schools, pregnant women through health clinics, etc.). Successful health promotion through different settings will be characterised by comprehensive interventions achieving change in both behavioural and environmental determinants of health. 
- ▶ A focus on individual population groups allows for better targeting of health problems which are more common among different groups, and may facilitate greater participation in interventions. Addressing health problems among disadvantaged populations may also encourage interventions which address underlying social, economic and political determinants of health such as poverty and employment status. Success will be defined in terms of opportunities for community participation, alongside the achievement of change in behavioural and structural determinants of health. 
- ▶ Focusing on a specific health issue ensures that an intervention is more overtly outcome directed, but inevitably will rely on identification of the specific population group and 

setting that will be the targets of an intervention. Success in this case is generally more simply defined in relation to impact and outcome on the identified problem.

Correspondingly, the relative importance given to the different types of research method (qualitative, quantitative, economic, participative) and measures (behavioural, structural) which are used to establish evidence of effectiveness will vary according to the recipient audience, and the different entry points used. Some of the tensions which arise in reconciling these different entry points, and differences in interpretation of the meaning of 'effectiveness' are always apparent.

What measures should be used to assess effectiveness?

Different forms of health and medical intervention produce different outcomes as a measure of effectiveness. In the short-term, a successful outcome from coronary bypass surgery is different to the outcome that would be expected following an educational programme to help a person improve knowledge and skills to adopt a healthy diet. In the long term, both are directed towards reducing the impact of coronary heart disease.

It is therefore essential to provide a framework which helps define the outcomes associated with health promotion activity. Table 1.1 on page 6 presents a widely understood hierarchy of 'outcomes' and their linkages to health promotion activity.¹

In this model, **Health and Social Outcomes** represent the end-point of health and medical interventions. These are usually expressed as personal or social outcomes, such as quality of life, functional independence and equity, or more often, in terms of health outcomes, expressed as mortality, morbidity, disability, or dysfunction.

Intermediate Health Outcomes represent the determinants of these health and social outcomes. Changing these health determinants is a fundamental goal in health promotion. Personal behaviours, such as smoking or physical activity may increase or decrease the risk of ill health, and are summarised as *Healthy lifestyles*. *Healthy environments* consist of the physical, economic, and social conditions that can both impact directly on health, as well as support healthy lifestyles – for example by making it more or less easy for an individual to smoke, or adopt a healthy diet. Access to appropriate provision and appropriate use of health services are acknowledged as important determinants of health status, and are represented as *Effective health services* in this model.

Health Promotion Outcomes represent those personal, social, and structural factors that can be modified in order to *change* the determinants of health. These outcomes also represent the most immediate impact of planned health promotion activities. *Health literacy* refers to the personal cognitive and social skills which determine the ability of individuals to gain access to, understand, and use information to promote and maintain good health – typically the outcome of health education activities. *Social action and influence* describes the results of efforts to enhance the actions and control of social groups over the determinants of health – for example, efforts to mobilise older people towards the achievement of common health goals.

Table 1.1 An outcome model for health promotion

Health & Social Outcomes	Social outcomes measures include: quality of life, functional independence, equity		
	Health outcomes measures include: reduced morbidity, disability, avoidable mortality		
Intermediate Health Outcomes <i>(modifiable determinants of health)</i>	Healthy lifestyles measures include: tobacco use, food choices, physical activity, alcohol and illicit drug use	Effective health services measures include: provision of preventive services, access to and appropriateness of health services	Healthy environments measures include: safe physical environment, supportive economic and social conditions, good food supply, restricted access to tobacco, alcohol
Health Promotion Outcomes <i>(intervention impact measures)</i>	Health literacy measures include: health-related knowledge, attitudes, motivation, behavioural intentions, personal skills, self-efficacy	Social action and influence measures include: community participation, community empowerment, social norms, public opinion	Healthy public policy and organisational practice measures include: policy statements, legislation, regulation, resource allocation, organisational practices
Health Promotion Actions	Education examples include: patient education, school education, broadcast media and print media communication	Social mobilisation examples include: community development, group facilitation, technical advice	Advocacy examples include: lobbying, political organisation and activism, overcoming bureaucratic inertia

Healthy public policy and organisational practices are the result of efforts to overcome structural barriers to health – typically the outcome of internal government policy development processes, and/or external advocacy and lobbying which may lead to legislative change. Tobacco control legislation in Europe is a good example of the combined effects of internal and external advocacy for policy change.

There is a dynamic relationship between these different outcomes and the three *Health Promotion Actions*. There is no static, linear relationship. Health promotion action can be directed to achieve different health promotion outcomes by shifting the focus or emphasis to an intervention. Deciding on what represents the best starting point and how to combine the different actions to achieve desired health promotion outcomes is essential to effective practice in health promotion.

A typical health promotion programme might consist of interventions targeted at all three of the factors identified as health promotion outcomes above. For example a programme to reduce teenage smoking might consist of efforts to educate young people concerning the negative consequences of smoking, efforts to influence parents and other social role models to make smoking less socially attractive/acceptable to young people, and legislative action to reduce access to tobacco and exposure to tobacco advertising.



Implicit is the notion that change in the different levels of outcome will occur according to different timescales, depending on the nature of the intervention and the type of social or health problem being addressed. It is also why the link between health promotion action and eventual health outcomes is complex and difficult to trace. This is especially the case where there are multiple actions, and where health outcomes are separated from these actions by a long time period (e.g. the multiple actions to reduce teenage smoking may produce health outcomes many years later).

A current challenge is to develop ever more reliable and valid measures of the indicators of health promotion success. The definition and measurement of intermediate health outcomes such as health behaviours and healthy environments, and the health promotion outcomes which may influence them, has taxed the skills of researchers for decades.



The solution has often rested in the construction of questionnaires, tests, scales, and interview protocols. Such research tools are not only used to obtain information from individuals on personal knowledge, attitudes and behaviours, but can also be used to obtain information from relevant respondents on organisational policy and practice, and on community capacity and competence. Although there are no comprehensive ‘tool kits’ for outcome measurement in health promotion, much has been learned through careful experimentation in the past decades. Currently, greater attention is being given to the development of indicators and instruments which measure changes in the health promotion outcomes listed above.^{2,3,4,5,6,7}

Assessing effectiveness of an individual programme over a longer term, on the determinants of health (intermediate outcomes in the model), and on health outcomes, is a far more complex task. It is mediated by a range of factors, including the size, comprehensiveness and duration of the intervention, as well as a wide range of factors not overtly related to the intervention, including secular changes in society.⁸ These issues are referred to below.

Correspondingly, the following chapters report on a range of impact and outcome measures to defining ‘effectiveness’ in health promotion. Some refer to impact measures such as changes in knowledge and change in policy or organisational practices. Most refer to changes in the determinants of health as important measures of effect. These include measures of healthy lifestyles and living conditions, as well as the use of health services. Some identify longer-term outcomes including changes in health status such as reduced mortality and morbidity. All authors have reviewed literature generated over 20 years of experimentation and discovery of health promoting effectiveness. No new, or advanced, research has been undertaken.

Research Methods – The challenge to develop

Establishing evidence not only requires that measures of effectiveness are relevant to the intervention, but that the evaluation research method is also appropriate. The systematic review process utilised in evidence-based medicine has placed randomised controlled trials (RCTs) as the ‘gold standard’ in intervention evaluation.^{9,10}

Important and valued advances in knowledge have come from some tightly defined and controlled health promotion interventions that have been evaluated through the application of an RCT design. However, in most cases these have been possible only for narrowly defined programmes and programme objectives, based on simple and direct relationships between input and outcome. These have included smoking prevention programmes in schools, and patient education programmes for chronic disease.^{11,12} However, most social phenomena are more complex, and thus the relationships between elements of a model are rarely so simple and direct. The research methods adopted must reflect this complexity, and evidence of success in health promotion will often need to be built on a much wider range of sources than the results of meta-analyses and systematic reviews of RCTs.¹³

Ultimately, decisions concerning evaluation methodology should be dictated by the nature of the intervention, and not the reverse. For community-based and community-wide programmes utilising multiple intervention strategies, RCTs may be too restrictive. Attempting to squeeze such health promotion programmes into RCT evaluations may ultimately be self-defeating by reducing the effectiveness of the programmes or rendering them impossible to reproduce.¹⁴

Available evidence from international case studies on tobacco control, HIV/AIDS prevention and injury prevention indicate that the more effective forms of health promotion action are those that are comprehensive in scope, responsive to the needs of the targeted population, and sustained over the long-term. Such interventions are much less easily predicted, controlled and evaluated by conventional experimental designs such as controlled trials. This is not to say that such programmes cannot be subjected to evaluation or be based on evidence.

For example, the *health promoting schools* projects around the world encourage schools to develop programmes which meet individual needs and circumstances, and supports multiple forms of health promotion intervention directed at improving the curriculum, the school environment, school health services, and partnerships between schools, and the wider community. This approach has been systematically examined by the Australian National Health and Medical Research Council.¹⁵ In this report

research evidence from Australia and overseas was utilised to inform recommendations on (evidence-based) effective practice. The report used evidence from a mix of different study designs, and a range of measures of success corresponding to the different forms of intervention.

Assessing outcome and understanding process

It is not only important to establish evidence of what works in health promotion (i.e. outcome evaluation), but also to understand how and why these things have worked (i.e. process evaluation) so that success can be replicated.¹⁶ In this context, the evidence base in health promotion may best be built on data that are derived from several different sources and can be combined and compared. This will include experimental studies, but will often draw upon observational studies, making use of qualitative as well as quantitative information. Applying both quantitative and qualitative research methodologies to the study of interventions can lead to a more complete understanding, often transcending mere complementarity, and eliciting data which would not be revealed by either method alone.^{17,18,19} Evidence derived in this way is also more likely to have practical significance offering guidance on how to create the conditions for successful intervention.



Qualitative research can be particularly useful in the evaluation of health promotion programmes. Such research may provide insight into people's experiences, and the environmental and organisational circumstances that strengthen, support, or diminish the chances of successful intervention. This knowledge and insight are important in explaining observed success or failure in any given programme and essential for the successful replication and dissemination of new ideas. Various qualitative methods are used in health research, but all share a commitment to understanding 'reality' from different perspectives, understanding health behaviour in its everyday context, investigating how people interpret health information and advice, and how individuals and health practitioners interact.

Qualitative research can be planned and executed with rigour at least equal to that of quantitative research.²⁰ Identification of aims, selection and sampling of subjects, method of investigation, and analysis of data should be as well defined and described in qualitative research as in quantitative research.²¹ Attention is now being directed towards the development of criteria for appraisal of qualitative research methods so that this form of research evidence can also be systematically reviewed.

▶ Correspondingly, the chapters which follow report evidence on the basis of a range of research methods. These include many controlled trials, but also draw upon information and evidence derived from other research methods.

What programmes are worth evaluating?

Ultimately, evidence of effectiveness can only be built from interventions which have a reasonable chance of success.

To establish more convincing evidence of the effect of health promotion actions over time, health promotion programmes have to be *planned on the basis of a thorough assessment of the evidence from epidemiological, behavioural and social research* which indicate reasonable linkages between the short-term impact of interventions (health promotion outcomes), and subsequent changes in the determinants of health, and in health outcomes.²²



Programmes should be *informed by established theory* which is relevant to the type of intervention planned. There are several theories and models which are commonly used to guide programme development and implementation and these can be adapted to fit most interventions.²³

Attention has to be given to *creating the necessary conditions for successful implementation* of a programme. This could include ensuring that there is sufficient public and political awareness of the issue and the need for action; developing capacity for programme delivery for example through training of health personnel; and securing the resources required to implement and sustain a programme.



Finally, the intervention programme has to be of *sufficient size, duration and sophistication to be detectable above the 'background noise' of more general changes* in society. Proper attention to these issues will do much to avoid circumstances where programmes are implemented before being sufficiently developed, or are too small against a background of activity to produce any detectable difference (like testing the effectiveness of a drug in homeopathic doses).



The various chapters in this book indicate some of the practical and scientific challenges to achieving the goal. A systematic approach to programme planning will greatly improve the chances of a successful outcome being detected, and of the possibility of linking observed outcomes to the programme interventions which are described. There now exist several guidelines and models which can assist in the development of sophisticated and successful health promotion programmes (eg ²⁴).

Given these complexities, there can be no single 'right' method or measure which can be used to evaluate the effectiveness of programmes, and no 'absolute' form of evidence. Evidence of effectiveness is inextricably linked to the entry point (issue, population or setting), method of health promotion intervention, and recipient audience (policy-maker, practitioner, academic researcher etc).

Health promotion is coming of age. The last 20 years has seen evidence collected and evaluated which gives strength to the case for increasing resources behind the discipline, and for it to become more central in producing a healthy society. *As in all the health and medical sciences, the health promotion community is conscious that there is further to go in improving the quality and range of the evidence available to guide decision making.*

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Chapter Two

Political Challenges 1

The Subject: The Ageing Issue: Effective Health Promotion for Elderly People.

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The Purpose: Coping with the ageing issue is one of the greatest policy challenges facing Europe over the next 25 years. The authors argue that:

- 1 There is considerable scope to improve quality of life among older people
- 2 Priority should be given to adequate pension provision, health and social services
- 3 Action is required to overcome barriers to healthy eating
- 4 Physical exercise programmes are a good investment
- 5 Breast cancer screening is cost effective among the young elderly

Astrid Fletcher's own research programme focuses on elderly people. Her work includes studies of screening, nutritional epidemiology, the epidemiology and treatment of hypertension, and ophthalmic work with an emphasis on prevention of common eye disorders of old age. Elizabeth Breeze has carried out social research for the British Government, including the 1992 Health Survey for England. Recently she has specialised in research on health inequalities among older people. Rhiannon Walters has worked on health promotion for older people in Europe with Eurolink Age, and was on the team evaluating England's 'Health of the Nation' strategy.

Coping with the New Age

The health of older people in the European community

Life expectancy at older ages varies considerably between EC countries and, in general, is not as favourable as in other developed regions, such as North America, Australia and Japan. Improving the health of elderly people requires attention to the quality as well as quantity of the remaining years of life. Disability rates are higher in women than in men suggesting that, although women live longer, they have similar or poorer 'disability free' life expectancy compared to men. Disability in elderly people is a major determinant of health care costs accounting for



around 50% of health care budgets in EC countries and projected to rise with the increase in the elderly population.¹

Many diseases and conditions leading to disability in old age are the result of behaviours and experiences earlier in life. Thus healthy lifestyles and environments at earlier ages are likely to be associated with the greatest gains in good health in old age. Nonetheless, there is a strong case for continuing health promotion in old age. First, accumulating evidence now shows that maintaining healthy lifestyles in old age is associated with health gain. Secondly, and most importantly, there is considerable scope for ameliorating the experience of poor health and disability in old age, i.e. improving quality of life, by appropriate health and social policies. This is both achievable and directly within the remit of governments.

Priority needs to be given to ensuring that elderly people have adequate pension provision to enable healthy living environments, lifestyle choices and access to health and social care.

Community health and social services improve the quality of life of elderly people, alleviate handicap and reduce the need for institutional living. A minimum core set of services should be specified. Their uptake and access should be monitored to ensure equitable distribution.

Action is required to implement recommendations for healthy eating by elderly people. Low income, the very old, chronically ill and male elderly people are at particular risk of nutritional deficiencies and are a priority for intervention. Partnerships should be built at a local and national level with the food industry, relevant agencies for elderly people and with elderly people themselves.

Physical exercise programmes for elderly people represent a good investment because of the considerable potential for health gain. Low cost, high access schemes are required.

Breast cancer screening is cost effective in younger elderly women. There is no evidence of the cost effectiveness of screening for prostate cancer. (Evidence for colo-rectal cancer screening and for packages of disability screening will be available in the near future.)

Targets for dietary habits, activity levels and disability levels of elderly people should be set by governments and monitored through lifestyle surveys.



Health and social care provision

Health impact

Among elderly people, especially the oldest age groups, health and social services play an important role in improving quality of life and alleviating the handicaps produced by disabilities in old age. Studies in EU countries have shown that the most common disabilities are: hearing, poor vision, mobility, problems with carrying out basic daily tasks (such as washing, dressing), foot disorders, and incontinence.² Most disabilities are higher in women than in men. For example, data from the UK show that 14% of women aged over 65 years require daily help to maintain independent

living compared to only 7% of men.³ By the age of 85 years these figures are 40% for women and 21% for men. Crucial services for elderly people include: (1) those which reduce impairment (low vision aids including spectacles, hearing aids, walking and bathing aids); (2) those which enable elderly people to live independently in the community such as home cleaning, shopping, bathing and provision of meals; (3) those which provide medical or nursing care to elderly people such as community nursing services, incontinence services, chiropody. Provision of community services is associated with positive social and health outcomes. Studies have shown a range of benefits from reduced institutional admissions and mortality, improved well-being and increased functional independence and less carer burden.⁴ The effective delivery services to elderly people requires fully integrated welfare and health services working in partnership with other agencies and NGOs.

Although providing support to enable elderly people to live at home is the main goal of service provision for elderly people in the community, there will remain a proportion of elderly people with serious disabilities who require long term residential or nursing care.

A major impact could be made by ensuring adequate dental services. The effects of poor dental health are detailed by Honkala. ▶ *See A Case Study in Oral Health, Ch 13.* The dental health of older people varies considerably across European countries with surveys showing the proportion aged 65 to 74 years without natural teeth ranging from 13% in Italy to 65% in the Netherlands.⁵ Elderly people in poor general health, the housebound, and those who are economically and socially disadvantaged are more likely to experience tooth loss, caries and periodontal disease,^{6,7} but health promotion can ameliorate this.^{8,9} Dental utilisation rates are lower for older than for younger adults. Barriers include costs, lack of perceived need, transportation difficulties and fear of treatment. As more elderly people are retaining their teeth there will be a greater need for oral health services in later life.

Economic impact

Demographic forecasts of the growth in the elderly population have raised alarms about the consequent increases in health and social expenditure. Reducing the level or quality of services would have substantial negative impacts on the health and well-being of elderly people. Provision of services in the community decreases the need for admission to institutional care, is a much cheaper option and hence more cost effective.¹⁰ Although the provision of community services may entail a mixture of public and private spending, it is essential that financial barriers are not a bar to their utilization. Where user charges exist, low income elderly will be disadvantaged. For example, in the UK the introduction of fees for optometry for the over 65 year age group resulted in a 20% drop in the detection rate of glaucoma.¹¹

Social and Political impact

Enabling elderly people to remain in the community by providing health and

social services has considerable social benefits. Families benefit by reduction of carer burden and fuller participation by an elderly person in family roles, such as care of grandchildren. Society benefits by ensuring that elderly people remain an integral part of community life and that carers are able to remain in the work force.

People of retirement age will comprise about 15% of the population in Europe in 2000 and so are a major voting and consuming power. Improving their health, especially their quality of life, increases their value to society by enabling a higher percentage of them to continue undertaking active roles.



Alleviating Poverty and Reducing Health Inequalities

Health impact

The economic position of many elderly people is unfavourable, and there is considerable variation both across and within European member states in measures of wealth and living standards. These differences are expected to widen even further in future elderly cohorts, reflecting current trends in employment, early retirement, pension scheme coverage and welfare provision. The gradients of socio-economic status and health outcomes persist in old age; elderly people with unfavourable socio-economic indicators are at greater risk of death, entering institutional care, and suffering disability.^{12,13,14}

There is an urgent need for governments to enhance public or personal retirement schemes and to provide a decent minimum level of state funding for those, usually women, who require this. Priority needs to be given to ensuring that current and future elderly people have adequate incomes to enable healthy living environments, food and leisure choices. The minimum income level will depend critically on the amount of medical, nursing and domestic care an old person will need to buy. Elderly women, as a result of lower participation in the work force, are less likely to be in receipt of occupational pensions. Divorced women too may suffer particular financial hardship.



In many countries, pension levels now are not adequate to meet additional health care costs. Uprating of pensions and benefits was a key recommendation from the recent 'Inquiry into Inequalities in Health' commissioned by the UK Department of Health.¹²

Providers of health and social services should ensure that disadvantaged elderly people have equitable provision according to need, and equitable access. For example, in some settings, services are rationed (such as chiropody) or there are long waiting lists (cataract, hip replacement) which are likely to disadvantage most those elderly who cannot afford to pay for these services privately.

Many elderly people are unaware or unwilling to claim entitlements to health and social services. For example one in four elderly people in the UK receiving state pensions do not claim additional income support. Measures to increase benefit uptakes should be implemented.¹²



Maintaining older people in their own homes

Older people consistently express a preference for living in the community rather than in residential care, whether with their adult children, on their own or with a spouse or other older person. This involves provision of purpose built housing, improvement to existing housing, aids and adaptations, provision of help with household tasks, care and repairs. In the longer term there is potential in gerontechnology – technology which takes account of the changing ability and adaptability of older people.¹⁵ There is also the ‘universal design’ which takes account of accessibility in buildings to a range of levels of disability. Examples include building standards in the UK (Lifetime Homes) and the Netherlands (Senioren Label). The outdoor environment also helps older people live in the neighbourhood of their choice. Lighting, pavements, road crossings, the availability of public transport and its accessibility to people with impairments, the perception of personal safety, and the proximity of shops and social facilities all contribute to sustaining an active and involved environment for the elderly.

Health impact

Older people living independently tend to have a higher quality of life, in that they are less likely to experience functional decline than those living with adults other than a spouse,¹⁶ and more likely to be engaged in activities outside the home than people with the same level of dependency who live with a similar level of support in residential care.¹⁷ Even the appearance of a home can affect well-being and social participation.¹⁸ Social engagement has been shown to have an independent impact on mortality. *See below.*


To remain healthy in their own homes, however, attention must be given to the quality of housing. Sub-standard housing is more likely to be occupied by poorer people and by older single people.¹⁹ Damp, cold houses which are difficult to heat may lead to excess winter mortality in older people.²⁰ Features of the home environment, such as poor lighting, increase the risk of accidental falls. In the UK around a third of the over 65’s suffer a fall at least once every year, and one in a thousand people aged over 85 die as a result of a fall. There is evidence that home assessment and modification leads to reduced falls.²¹



Social impact

Housing and facilities have an impact on reducing social isolation, which has an independent impact on sustaining good function. For example, telephones which can be used by someone with impaired vision, hearing or fine movement are vital to engagement in the community. Cultural traditions create different priorities for the household tasks which are critical to older people’s sense of self respect, and with which they might like support.


Economic and political impact

There is a public expenditure benefit to maintaining most older people in the housing of their choice. Support from welfare services for people with mild or moderate disability living at home is cheaper than providing the same level of care for people in residential or nursing homes.²² 

In some cases, costly rehabilitation is essential, but often relatively cheap interventions can be successful in forestalling greater expenditure. In the UK a relatively inexpensive ‘care and repair’ scheme for older people was found to avert the need to move from home for 7% of clients, and reduce difficulties in a further 57%.²³

Help with minor or occasional tasks can make continuing life at home sustainable. This kind of ‘low level’ support such as with cooking or cleaning is particularly under threat as welfare services prioritise the needs of growing numbers of older people with a higher level of dependency. Without political commitment, the relatively modest sums involved in providing support can be lost within the much larger budget for health and social care.

In Germany and Italy, the welfare system supports a tradition of older people living with their families by paying welfare benefits to families who care for them. In much of Northern Europe, apart from Germany, older people are likely to live away from their families, and to receive benefits directly. In some countries there is a large stock of purpose built sheltered housing for older people.

Maintaining people in their own homes is an objective which depends on the collaboration of many sectors - planning, building, health and welfare - and calls for coherent policy, preferably with joint planning. 

Enhanced Social Environments

Health and social impact

Social isolation and loneliness have been shown to have an impact both on life expectancy²⁴ and on the admission to nursing homes.²⁵ Interventions to reduce social isolation among older people are common at local level in many areas, initiated by churches and voluntary organisations, groups of older people themselves and health and welfare services.

Effective interventions:

- ▶ are long term
- ▶ are group rather than one-to-one activities
- ▶ are aimed at specified groups, such as women or the bereaved
- ▶ allow participants some control
- ▶ use a multifaceted approach

Many interventions offer a challenge to formal evaluation because of their focus on complex processes rather than on clearly defined outcomes. However, studies

show that a combination of interventions which take into account needs identified by older people themselves, will reduce social isolation in older people with beneficial health consequences.²⁶

Political impact

Older people can make a positive contribution to communities through volunteering and participation in community activities. The Ageing Well programme in Europe, for example, links projects where older people give advice and support on health projects to their peers.²⁷ Both societies and older people themselves will lose out if their contribution is ignored.

Healthy Lifestyles

Healthy eating

Factors associated with old age increase the risk of poor nutrition; eating behaviour may alter as a result of reduced income, social isolation, depression and dementia, while diseases and drugs may interfere with appetite and absorption. Eating and chewing problems are also common.⁷ Several studies in European countries have suggested that significant proportions of elderly people have undesirable nutritional intakes, either nutritional deficiencies of certain vitamins or unfavourable intakes, such as high dietary fat and low intakes of fruit and vegetables (observed mainly in Northern European communities).^{28,29} Poor nutrition is more prevalent in older people in lower socio-economic groups.³⁰ In many countries over 50% of elderly people are obese while in the very senior groups, underweight and low dietary intakes are of concern.

Health impact

Healthy eating guidelines for elderly people include maintenance of adequate nutrition and prevention of nutritional deficiencies as well as a diet to reduce disease risk, primarily heart disease and stroke, through reduced fat intake and salt, along with increased consumption of fresh fruit and vegetables, calcium and vitamin D, and whole-grain cereals.^{31,32,33} The guidelines are based mostly on studies in middle aged populations. However, there is evidence also for 'younger' elderly people (65 to 74 years) showing similar associations with diet and Cardiovascular diseases (CVD),³⁴ and with other diseases of old age, including cataract and macular degeneration.³⁵ These studies emphasize the importance of maintenance of a good diet in old age.

Direct evidence on the benefit of healthy diets in old age is currently being evaluated by trials of supplementation with specific vitamins or multivitamins. Other conditions in old age are associated with dietary factors. Reduced immunity is associated with a range of vitamin and mineral deficiencies.³⁶ Adequate intakes of dietary calcium and vitamin D will slow bone loss, and supplementation with vitamin

D and calcium reduces osteoporotic fractures.³⁷ Low folate levels, common in elderly people, are associated with high homocysteine levels and an increased risk of CVD. Trials to test the effects of folic acid supplementation on CHD risk are ongoing.

There is some limited evidence that healthy eating interventions targeted at elderly people can lead to changes in dietary behaviour.³⁸ Studies of multifactorial health promotion, using a strategy of individual feedback and goal setting, have shown the most promising results.



Social impact

Healthy eating interventions which also include a social component provide opportunities for increasing social networks. Community cafes may act as a source of low cost healthy foods, nutrition education and skills and social contact. Healthy eating programmes tend to under-represent men who generally have poorer networks than women, and who are at greater risk of nutritional deficiencies, especially when living alone.³⁹ Opportunities to involve and integrate elderly men in health promotion activities are a priority for action.



Economic impact

Cost effectiveness data are mainly non-existent for healthy eating interventions alone. When delivered with other health promotion strategies, including preventive care, there is some evidence from US programmes of cost effectiveness and even cost savings.

Political impact

National nutrition policies exist in some European countries and have achieved varying success in improving dietary intakes, especially in those countries with high fat intakes and low consumption of fruit and vegetables. Nonetheless, dietary patterns in many countries remain undesirable. Nutrition policies specifically for elderly people are scarce. New developments such as Nutrition Screening Initiatives in the US⁴⁰ and Australia are currently being evaluated and may provide a more effective and suitable health promotion instrument for elderly people.

Barriers to healthy eating for elderly people include inadequate knowledge of appropriate diets, poor labeling of foods, affordability and availability of healthy foods, physical problems limiting access to and consumption of foods, lack of appetite and interest in food, and dental problems.

Enabling older people to eat healthier diets requires particular attention to removing barriers and enhancing opportunities. Governments should work with the food industry towards improving the diet of elderly people, for example from better labeling and pack



reduction of salt content (especially of convenience foods), provision of small food pack development and promotion of low fat products.

Of particular relevance to food choice is the EU Common Agricultural Policy, which influences both the supply and pricing. Recent reforms should lead to a more consumer oriented approach, but the impact on food purchasing, especially by elderly people, needs monitoring. Food retailers, transport providers, and the voluntary sector can assist in access to shops and carrying and delivery of purchases. Meals provided for elderly people in residential or community settings should be assessed for adequate nutritional content and acceptability to elderly people.

Exercise for Elderly People

Disability and infirmity may be largely the result of disuse of muscle rather than the inevitable process of ageing.⁴¹ A high proportion of elderly people live sedentary lifestyles or take exercise at very minimum levels^{42,43,44} and there is wide variation between areas in the prevalence of different kinds of activity.⁴⁵ A detailed analysis of the effects of health promotion involving physical activity for older people is provided in table 2.1.

Health Impact

In epidemiological studies, aerobic exercise has been associated with improving the risk factor profile for cardiovascular disease, greater mobility and ability to carry out daily functions, lower fracture rates and greater bone density, better cognitive skills and less depression.^{41,42} Exercise clearly improves fitness.^{4,6,47} There is consistent evidence that 30 minutes of endurance exercise three times a week increases oxygen uptake sufficiently to make the difference between independent daily living and reliance on daily assistance.⁴⁸




Exercise alone does not establish protection against falling, but in combination with individual targeting of other risk factors can achieve around a quarter reduction in the risk of falling. There is less benefit for serious falls.⁴⁹ Tai Chi is one of the most promising methods of improving balance and flexibility among older people.^{50,51}

Participation rates in trials of exercise tend to be low^{52,53} and raise concerns about the feasibility of mass exercise schemes among the older population. Most health promotion initiatives include exercise as an integral component; only a few have reported whether the health promotion activity was successful in increasing physical activity levels. A commitment to health promotion via physical activity has to be long-term as benefits do not last once activity stops.

Social impact

Health promotion involving physical activity both depends on, and can lead to, improvements in interaction between older people and those around them. Involvement of family, peers and staff can all reinforce participation and achievement of goals. Some schemes made use of leadership skills among the older generations.⁵⁴

Part of the appeal of exercise classes can be their social component and this may in turn contribute to improvement in mood and even cognitive skills. Group identity can foster feelings of self-efficacy and well-being.⁵⁵ At a community level, policies which could both increase participation in physical exercise and social integration include: involving local groups in providing facilities (clubs, professionals, organisers of recreational facilities, interest groups such as environmentalists), making roads safer to walk along and using educational techniques to change expectations of the level of activity which is ‘appropriate’ for an elderly person. 

Economic impact

Physical exercise programmes appear cost effective with estimates of costs per life-year saved of £330 and £1100 per health event avoided (1993 prices).⁵⁶

Political impact

There are implications for transport policy, town planning, and training of health professionals. Transport policies impact on health in a variety of ways - by reducing or improving the opportunities for exercise, and access to social facilities, shops and health care. High traffic volume reduces walking activities and leads to polluted environments while lack of cheap public transport disadvantages those without access to a car – mainly elderly women, those in poor health and those living in rural areas.¹² Training a wide range of health professionals will increase their effectiveness in educating older people and minimising hazards from inappropriate exercise.

Smoking

In many European countries, elderly people, especially elderly men (between a quarter and a third) are still smoking, although a substantial proportion have given up.

Health impact

Elderly people who continue to smoke are at greatly increased risk of death, stroke, heart attacks and cataracts and are more likely to be disabled by respiratory and mobility problems. Giving up smoking after the age of 65 years reduces the risk of cardiovascular disease and improves breathlessness.⁵⁷

Economic impact

Advice from a medical practitioner is associated with smoking cessation rates of around 15% in the general population, and is considered to be one of the most cost effective health promotion activities. A few studies have found similar results for

elderly people, mainly for the age group 65 to 74 years.⁵⁸ The impact of tobacco pricing appears to be less important at older ages for men; women of all ages appear to be more responsive to price. Response to health publicity declines with age, possibly because most anti-smoking campaigns have targeted younger people. Strategies to increase smoking cessation among elderly people are called for, and are particularly urgent in view of the increased prevalence of smoking in the cohorts of women now entering old age.



Screening and Preventive Health Care for Elderly People

Health impact

The potential benefit of cancer screening for elderly people has been demonstrated for breast cancer (up to the age of 74 years),⁵⁹ and is currently being evaluated for colo-rectal cancer. Prostate cancer screening is unlikely in the near future until better tests are developed. The upper age limit for cervical cancer screening in elderly women remains debatable.⁶⁰ Screening programmes for breast cancer have been introduced into some European countries but not all programmes (e.g. the UK programme) include women over the age of 65 years. Uptake of breast cancer screening by older women is lower than at younger ages. There is evidence for many cancers that elderly people present themselves late for screening, either because of ignorance of symptoms, or fears about treatment and prognosis. This is an important area requiring more attention.



Other screening activities have focused on the identification of disability, including assessment of a wide range of physical, mental and social problems. Multidimensional assessment has been introduced as policy in the UK, with general practitioners being obliged contractually to offer a health check to people aged 75 years and over. Studies of multidimensional screening have been conducted in both Europe and the US, but the results are equivocal.⁶¹ Although there appear to be possible benefits in mortality, reduced hospital bed days, and measures of disability and quality of life, the trials have not been consistent in their findings, nor have they been large enough to produce results of sufficient certainty to inform policy decisions.

Some programmes of health promotion in the US have found improved uptake of influenza vaccination.^{62,63,64} Influenza vaccine policy for elderly people is variable in European countries, but uptake is lower than 50% amongst those eligible.^{65,66} In view of the cost-effectiveness of influenza vaccine and hence the potential for benefit in the elderly population, strategies to improve uptake need development and evaluation.



Social impact

A few of the multidimensional screening trials included strategies to enhance social support with mixed results.⁶¹ Studies which enhanced opportunities for improved socialization (for example college courses, visitor schemes and community transport) were more successful than those promoting mainly medical or welfare services.

Economic impact

The cost-effectiveness of screening for breast cancer in older women is likely to be similar to younger ages for the 65 to 69 group, but possibly less favourable for the 70 to 74 group where the relative benefit is less. There is inadequate information on the cost-effectiveness of multidimensional screening. Comprehensive evaluation of the resource implications, as well as of the benefits of multidimensional screening, are currently being undertaken.

Table 2.1: Effects of health promotion involving physical activity for older people

Author	R C T	Subjects	Number in each group	Intervention I refers to intervention group(s) C refers to control group(s)	Duration	Outcome
1 Physical Function King et al. 1991 ⁵²	Y	Age 50-65 Healthy	357 in total	Aerobic activity for three intervention groups I1: high-intensity class I2: high intensity home; I3: low-intensity home. C: nothing (kept a log of activity)	12m	On average a 5% increase in aerobic capacity in 12 months and 14% increase in time able to spend on treadmill in the intervention groups. No significant difference between intervention groups; all better than control
Hill et al. 1993 ⁴⁶	?	Older sedentary people through advertisement	I: 87 C: 34 at end of study	I: Individual prescription for exercise + classes. Aerobic exercise C: Nothing	9-12m	23% improvement in aerobic capacity in the intervention group compared with none in the control group
Butterworth et al. 1993 ⁶⁷	Y	Women 67-85 Sedentary, white Healthy Not smokers or heavy drinkers	I: 14 C: 16	I: Aerobic classes and walking C: Calisthenics	12w	12.6% increase in aerobic capacity in the intervention group compared with none in the control group
Buchner et al. 1992 ⁶⁸	mix	Older adults		Overview of many studies		Assessment from 22 papers that exercise leads to 5-20% increase in aerobic capacity in 3-12 months
Blumenthal et al. 1991 ⁴⁷	Y	Age 60+ Healthy Members of Duke program	I: 33 C1: 34 C2: 34	I: aerobic classes C1: yoga classes C2: waiting list (nothing) All had exercise after 4 months	4m + 4m	11.6% increase in aerobic capacity for the intervention group during the first four months and none in the control groups. During the second period when all were exercising the control groups experienced an increase in aerobic capacity similar to that of the intervention group in the first period. The intervention group increased the duration of exercise and improved their lower submaximal heart rate advantage in the first period and sustained these improvements through the second period, especially among those who continued exercise
Ades et al. 1996 ⁶⁹	Y	65+ Healthy Sedentary	I: 12 C: 12	I: Resistance training with gradual build-up in difficulty. C: Assessment only	12w	Walking endurance increased from 25 mins to 34mins in the intervention group but no change in the control group.
McMurdo and Johnstone 1995 ⁷⁰	Y	75+ in sheltered housing and with limited mobility	86 in total	I: Strength and flexibility exercises at home for 15 minutes per day C1: Flexibility exercises only C2: Health chats All visited monthly at home	6m	No significant results but trend to improved mobility in the intervention group. Poor compliance suspected

Author	R C T	Subjects	Number in each group	Intervention I refers to intervention group(s) C refers to control group(s)	Duration	Outcome
Williams and Lord 1997 ⁷¹	Y	Women 60+ No significant cardiovascular or musculo-skeletal disease.	I: 97 C: 93	I: Aerobic and strengthening classes C: Assessment only	12m	Improvement in muscle strength and reaction time due to exercise
Emery and Gatz 1990 ⁷²	Y	Inner metropolitan city residents	I: 15 C1: 15 C2: 18	I: Aerobic and strengthening classes C1: Social group C2: Nothing All had exercise after 12 weeks	12w +12w	No benefit from exercise for flexibility
Perrig-Chiello et al. 1998 ⁷³	Y	Age 65-95 Interested in resistance training	I: 23 C: 23	I: resistance training classes C: nothing resistance training	8W	Increase in muscular strength from the exercise
Rooks et al 1997 ⁷⁴	Y	Age 65+ Active Could obtain transport to the suburban community centre for the classes	I1: 40 I2: 40 C: 51	I1: classes to strengthen muscles improve balance, eg stair climbs, knee exercises I2: group walks C: seen weekly but no exercise	10m	The class exercise group improved on 7 out of 11 measures of strength, balance and gait relative to the controls. The walking group improved on two measures, the main advantage being in strength of lower limbs
Green and Crouse 1995 ⁴⁸		Older adults		A meta-analysis of 29 studies		Mean improvement in oxygen uptake of 22.8% due to exercise; improvement in capacity was greater if younger, training sessions were longer, and length of training regimen was greater. Improvement was greater if initial oxygen uptake was higher.
2. Physiological Effects Emery and Gatz 1990 ⁷²		see above				No significant benefit for blood pressure and heart rate
King et al 1991 ⁵²		see above				No significant benefit for blood pressure, weight or lipids
Ebrahim and Williams 1992 ⁷⁵	N	Attendees at day classes	I1: 13 I2: 18	I1 & I2: 'Look after your heart' relaxation and low-intensity exercises classes. No control group.		No improvements in blood pressure or weight
Hill et al 1993 ⁴⁶		see above				Small decrease in blood pressure for the intervention
Butterworth et al ⁶⁷ 1993		see above				No change in weight
Mayer et al 1994 ⁷⁶	Y	Members of health maintenance organisation	I: 900 C: 900 approx	I: each participant given one individually-tailored goal depending on their health problem. 42% were set physical activity goals. Four group sessions on mental health and independence, four group sessions on physical health. Participants were given two manuals and were twice contacted by supervisors. C: nothing additional to usual facilities of the organisation	Results from first year	After one year those in the intervention group had increased exercise but there was no benefit for blood pressure or bodymass index
Fagard 1995 metaanalysis ⁷⁷	mix	all ages 16-72	48 programmes 36 articles	Various exercise regimes	4-68w, media n=1	Over all programmes, mean reduction in systolic blood pressure (sbp)= 5.3mmHg and in diastolic blood pressure 4.7mmHg. Among randomised controlled trials with frequent contact changes in blood pressure for normotensives [10 studies] were not significantly different from zero. The mean decrease for hypertensives [7 studies] were 7.2 mmHg for systolic blood pressure and 4.8 mmHg for diastolic blood pressure

Author	R C T	Subjects	Number in each group	Intervention I refers to intervention group(s) C refers to control group(s)	Duration	Outcome
3. Cognitive Function Williams and Lord 1997 ⁷¹		see above				Memory span improved only in the intervention group. There was no advantage from exercise for problem solving
Emery and Gatz 1990 ⁷²		see above				No benefit from exercise in measures of flexible problem solving or ability to integrate new information or in writing speed
Blumenthal et al 1991 ⁴⁷		see above				No benefits attributable to exercise for memory span or problem solving or dexterity
Hill et al 1993 ⁴⁶		see above				Controls deteriorated in short-term memory recall, intervention did not. No differences between groups in working memory and attention or in perceptual orientation and psychomotor speed
Perrig-Chiello et al 1998 ⁷³		see above				No between-group difference in memory or in recall or problem-solving
Stevenson and Topp 1990 ⁷⁸	Y	Age 60+ no cardiovascular disease or hypertension	I1: 39 I2: 33 at end of study	I1: aerobic exercise at moderate intensity I2: aerobic exercise at low intensity	9m	Both groups improved attention span and short-term memory but greater exercise intensity did not lead to greater improvement than low intensity exercise
4. Well-being; psychological effects Williams and Lord 1997 ⁷¹		see above				Exercise improved self-reported well-being
Emery and Gatz 1990 ⁷²		see above				No benefits for depression, anxiety. Informal feedback included exercisers feeling better and feeling they were functioning better
Hill et al 1993 ⁴⁶		see above				Morale improved in intervention group relative to control
Blumenthal et al 1991 ⁴⁷						Informal reporting that felt better for exercise
Emery & Blumenthal 1990 ⁵⁵		as Blumenthal et al 1991				Intervention group had greater improvement in self-perceived mood, self-confidence and life satisfaction after 16 week trial period. When the controls also exercised during the second 16 weeks, the differences between groups disappeared as the controls also improved
Stevenson and Topp 1990 ⁷⁸		see above				No significant increase in life satisfaction in either group but this was high at baseline

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Chapter Three

Political Challenges 2

The Subject: Mental Health: The work of health promotion in meeting a growing crisis – ‘an epidemic’ – of mental illness.

The Authors: Clemens Hosman, Professor, Department of Clinical Psychology & Personality, University of Nijmegen, Netherlands; Eva Jané Lópis, Researcher, University of Nijmegen.

The Purpose: Mental illness is one of the greatest problems facing societies throughout Europe. The authors argue that:

- 1 The mental health ‘epidemic’ calls for a major investment in mental health promotion
- 2 Mental health promotion has shown to be effective and cost-effective
- 3 Interventions early in childhood and adolescence need priority
- 4 Dissemination and implementation of evidence-based interventions should be enhanced
- 5 Guidelines for effective management should be identified in order to improve both health and social impacts

Clemens Hosman has worked in prevention for 30 years and is Professor of Mental Health Promotion and Mental Disorder Prevention at the Universities of Maastricht and Nijmegen. Eva Jané Lópis is a Ph.D student working closely with Professor Hosman. Having graduated in Psychology and Health Sciences from Barcelona, she has worked in mental health promotion, focusing on researching strategies to prevent depression. She has also worked to develop an international classification for preventive trials and to set guidelines for effective management.

Removing the shadows of mental health

Five of the ten leading causes of disability world-wide are psychiatric conditions, such as depression, alcohol abuse, schizophrenia and compulsive disorder. The expected increase in the contribution of psychiatric disorders to the global disease burden in 2020 is larger than that for cardiovascular disease.

Recent studies show that between 15% and 20% of adults suffer some form of mental disorder. Moreover, the lifetime prevalence is between 30% and 50%.³⁵ Prevalence studies on youngsters show an alarming picture as well. Between 17% and 22% of teenagers under 18 suffer from developmental, emotional



or behavioural problems.^{12,18} One in eight of them have a mental disorder, and among disadvantaged children the rate is one in five.⁸ It is estimated that fewer than 20% of these young people receive appropriate treatment.⁵⁷

The costs of mental illness to society are high.⁴¹ In the USA, the annual total cost of mental illnesses, like depression, schizophrenia, or anxiety disorders, stands between \$40bn and \$65bn,⁴¹ or over \$1000 per citizen per year. General costs related to all kind of mental disorders have been reported to reach \$147 billion, with an additional \$98 billion for alcohol abuse and \$66 billion for drug abuse.³⁸ This is more than the costs attributed to cancer (\$104 billion, in 1987), respiratory disease (\$99 billion in 1987), AIDS (\$66 billion in 1991) or coronary disease (\$43 billion in 1987).²⁹

No similar European-wide survey has been done, but there is evidence to show the results would be of similar proportion. Sweden calculated a total cost of mental disorders at 3.6% of the total GNP in 1975; Finland was at 2% of GNP in 1994. In the UK, direct care costs for mental disorders in 1989 accounted for 23% of total NHS expenditures.³⁵

Moreover, in many European countries the disability pensions due to poor mental health are increasing. Over 167,000 spells of certified absence from work in 1994-95 in England were reported due to mental health problems, and there were over 306,000 claimants for invalidity benefits. It is estimated that 80 million working days are lost per year in the UK due to anxiety and depression, at a cost of £5.3 bn, with stress related absences accounting for half of all sicknesses and costing a further £4bn.⁹ Even more striking data on costs for invalidity benefits due to mental illness have been reported in the Netherlands as well. Since 1968 the annual percentage of new people with invalidity benefits due to mental illness has been increased from 11% to around 34% in the period 1992 – 1995.³⁷

The costs of mental illnesses are not only related to economic expenditure. Mental disorders are also associated with increased mortality, specifically in the younger age groups (20-29 year olds) and it is estimated that up to 15% of people suffering from major depression or schizophrenia commit suicide.³⁵ For example, in 1995, there were 3,579 suicides recorded in England and Wales, almost 10 deaths a day.²⁵ Mortality rates of anorexia nervosa have decreased during the last years due to the acknowledgement and recognition of its relevance, but unfortunately still stand at high levels, around 6-7% after ten years crises, and 15-18% after 20-30 years of the crises.²⁴ High mortality rates in the elderly are also related to mental diseases like Alzheimer or other dementias.

The cost to governments and society of mental disorders is high – loss of productivity in schools and the workplace, plus a high cost of care. And the problems are intensifying. The high prevalence and incidence of mental disorders, the associated mortality ratio and the social and economic costs for society, make a strong case for the development of national and international mental health promotion policies.

Key factors addressed in Mental Health Promotion

There is ample evidence that mental health promotion programmes work and

influence positively mental well being and quality of life while reducing the risk of mental disorders.

Over the last twenty years significant progress has been made in the development of successful evidence-based mental health promotion programmes.^{4,13,26,38,39,50} Mental health promotion activities imply the creation of individual, social and environmental conditions that enable optimal psychological and psycho-physiological development. Therefore such initiatives involve individuals in the process of achieving positive mental health and enhancing quality of life. It is an enabling process, done by, with and for the people. These interventions have foci at both the psychological and the social levels as basic indicators of quality of life:

Psychological factors		
Emotional affective factors	Skills	Behaviour
self-esteem	problem-solving	autonomy
self-awareness	ability to cope with stress	pro-social behaviour
positive early bonding	ability to face adversity	early pregnancies
feelings of security	adaptability	good parenting
socio-emotional growth	social skills	excessive substance use
	skills for life	aggression & delinquency
Social factors		
positive interpersonal interactions	empowerment (neighbourhood, elderly)	
social support and networking	violence & delinquency	
social participation	ethnic minorities integration	
social responsibility and tolerance		

An important range of research findings gives support to the significant effectiveness of mental health promotion and prevention interventions when addressing these factors.

Most of these psychological and social factors could be considered as generic risk factors or protective factors. They play a role in the development of diverse mental problems and disorders. By strengthening positive mental health, such as life skills, a broad range of health and social effects could be established. Such factors are also addressed in programmes focused at HIV/AIDS, alcohol and drug abuse and the reduction of delinquency. The common factors addressed need to be taken into consideration when forming a comprehensive approach in health promotion and preventive activities, as well as when defining new health policies.

To conclude, mental health promotion programmes work and there are a number of evidence-based programmes available to implement mental health promotion practice. Table 3.1 on page 38 shows some examples.

The Health Impact

The evidence on the health impact of mental health promotion interventions shows that a significant preventive answer could be given to the mental health epidemic. Based on a review of the studies listed in Table 3.1 on page 38 or discussed in earlier reviews,^{26,27,38} health effects of mental health promotion are:

Health impact : psychological domain		
Increases in:		Reductions in:
Mental health	Self esteem	Child abuse & neglect
Quality of life	Mastery	Learning problems
Life satisfaction	Positive environments	Behavioural problems
Competence		Psychological adjustment
		Aggression
Health impact: physical domain		
Increases in:		Reductions in:
Maternal health		Low birth weight
Healthy physical development in children		Pre-term delivery
		Brain injuries
		Teenage pregnancies
		AIDS
Health impact: psychiatric symptomatology		
Increases in:		Reductions in:
Mentally healthy functioning		Internalising symptoms
Periods free of psychiatric complaints		Depression
		Somatisation
		Suicide
		Anxiety
		Serious behaviour problems
		Relapses of psychiatric episodes


Research has recently been focused on identifying effective strategies to achieve the expected health impact and increased quality of life.

Evidence indicates that those interventions focusing on enhancing mental well-being of parents have shown increased positive attitudes towards children, better knowledge about child behaviours, a more stimulating and safer environment for children and a more healthy




psychosocial and physical development. As children are a risk group, both home based interventions and school interventions should be considered by policy makers when applying mental health promotion strategies

Some *home-based interventions* have shown significant increases in subjective positive mental health and in quality of life in general, such as more satisfaction in life, feelings of well-being, sexual satisfaction, and optimal functioning in the psychological domain. For example, the USA-STEOP Programme (Steps Towards Effective Enjoyable Parenting) reported on by Erickson (1989), was aimed at first-time mothers, and others with parenting problems, particularly in families with a low educational base. Research showed evidence of reductions in anxiety and depression, better organised family life and the creation of more stimulating environments for children.

Importantly, the effects of such home-based interventions were reflected as well in social health domains, such as decreases in teenage pregnancies, fewer negative divorce-related events, and a large decrease in child abuse and neglect. American and European programmes like the Child Development Programme, the Prenatal Infancy Programme and the STEOP Programme, offer such evidence. 

Interventions in school mental health promotion have shown effects including better psychological adjustment, reductions in learning problems, behavioural problems, aggression and more general mental well being. For example, the USA-based Perry Preschool Project (Weikart & Schweinhart, 1987, 1984), aimed at 3-4 year old children from poor African-American backgrounds, showed less mental retardation, better social adjustment, and when tracked through to later life, showed an increase in social competence in adolescence and early adulthood. Effects of the early stimulation of psychosocial competence and parent education have been found 15 years after delivery. Other school oriented interventions have resulted in competence enhancement and improvements in self-esteem, self-confidence, self-knowledge, sense of mastery, along with increases in social support and general perceptions of control. Such interventions, have also shown decreases in feelings of self-blame, feelings of loneliness, a lessened sense of incompetence and better ability to solve personal problems.

For example, the STAR Programme (Emshof, 1990) addressed to children¹¹⁻¹⁴ with substance abusing parents, showed significant changes in perception of internal control and self concept, and decreases in depression, loneliness, and substance abuse.

Social aspects associated with mental health effects in school-based interventions include improvement in peer sociability, adaptive social skills, tolerance and compliance with rules, and adaptive assertiveness. School-based interventions have also shown decreases in smoking, alcohol abuse, and substance abuse, as well as decreases in risk behaviours such as unsafe sex and associated life danger (AIDS). The STAR programme also showed, amongst other positive benefits, lower levels of substance abuse. Other school projects such as the Good Behaviour Game, (Kellam et al., 1994, 1991), and the Olweus programme on bullying prevention (1994) have had similar positive health impacts, especially in reducing aggressive behaviour, and have been implemented in Europe with success. 

In the *work* related area, promotion/prevention programmes have increased job

satisfaction, motivation, confidence in coping abilities, and have shown a decrease in psychological distress. For example, the USA-JOBS Programme, an intervention of 5 sessions, reported on by Price et al in 1992, was aimed at people who suffered involuntary job loss, economic hardship and depressive symptomatology. The programme targeted job searching skills, self-efficacy and social support – among others. It resulted in lifted self-esteem and job-seeking confidence, more job satisfaction and motivation, as well as reductions of one third in the likelihood of experiencing a severe episode of depression. This programme is being implemented world-wide with success and is considered a model programme.



In the *physical domain*, mental health promotion programmes have shown reductions in physical risk factors for psychiatric disorders such as low birth weight, pre-term delivery, and brain injuries. For example, the British Child Development Programme (Baker, Anderson & Chalmers 1992), aimed at first time parents and those with parenting problems, showed a 50% reduction in child abuse rates and a 41% reduction in the child protection register. The Prenatal Infancy Project that aimed to prevent problems associated with poverty (Olds 1986, 1988), showed a reduction of 79% in child abuse (in the high risk group), and resulted in fewer teenage pregnancies, a 56% reduction in the use of the emergency room, along with a 75% reduction in pre-term deliveries.


In general, many preventive programmes have also shown their efficacy in reducing *psychiatric symptomatology*. Although the evidence for successful prevention of the major psychiatric disorders is still scarce, recent studies have shown evidence for the successful reduction of depressive disorders, suicide and serious behaviour problems. The possibility of primary prevention of mental disorders is illustrated by the ‘Coping with Depression’ course (Clarke et al., 1995). This course, offered to adolescents at high risk, showed a reduction in first major depressive episodes from 25.7% to 14.5%. The Swedish Educational Programme (Rutz et al, 1992, 1989), which aimed at providing education on depression, saw suicide rates decrease from 19.7 per 100,000 inhabitants to 7.1 after three years. Importantly, for health system costs, the programme reported a reduction of in-patient days of 70%. The economic impact was also significant. In addition, many programmes in relapse prevention have proven to be successful, like a British social intervention for families of schizophrenic patients (Leff, et al., 1992). This is an important outcome given the high rate of relapses in psychiatry.



The Social Impact

The breakdown of many of society's stabilising factors, which cause major social and political problems, has increased the need for mental health promotion in the home, family and work environments. The efficacy of such types of activities has been reflected on social effects such as:

Social impact	
Increases in:	Reductions in:
Attitudes towards children	Unemployment
Knowledge	Divorce events
Peer sociability	Child abuse & neglect
Social skills	Bullying
Social support	Substance abuse
Tolerance & rule compliance	Smoking
Assertiveness	Unsafe sex
Academic achievement	Absenteeism
Getting jobs	School dropout
	Years of special education
	Delinquency
	Police contacts
	Personal and family burden

There is evidence to indicate that mental health promotion and preventive *home based* interventions can enhance family functioning. Evaluation studies have demonstrated that such interventions induce positive attitudes toward children, provide increases in social support and contact with friends, prevent child abuse, and reduce chaotic parenting. British initiatives like  HomeStart and NewPin are some examples.⁴³

School initiatives showed impacts in fewer years of special education classes, higher academic performance, and decreases in bullying of up to 50%.⁴⁶

Related *work interventions*, such as the JOBS Programme, have resulted in less unemployment among participants and in getting better jobs in terms of pay, stability and possibilities of finding a job more quickly. Importantly for employers, there is also evidence of decreases in the frequency of sick leave due to mental disorders (e.g. depression).

Community intervention studies have shown better understanding, acceptance and adaptation of the mentally ill, both from their family and their social environment. Evidence shows decreases in stigmatisation of mental diseases (e.g. schizophrenia), along with decreases in in-patient days and related mental health benefits, plus more accurate diagnosis and treatment by general practitioners (The Swedish Educational Programme). Such interventions can also result in decreased rates of suicide in the community.

The challenges that urbanisation brings to low income citizens, particularly those

from ethnic minorities, have been directly related to mental problems. Limited opportunities for social and economic mobility contribute to feelings of hopelessness, helplessness and despair. These negative attitudes undermine the social fabric of the community and challenge basic values such as personal commitment, interpersonal respect and family relationships. It is no surprise that the impoverished areas of our cities are overcome by high rates of single parenthood, substance abuse and violence.⁵

Some community effects of mental health promotion interventions are showing positive effects on issues like decreases in teenage pregnancies, better functioning of school systems, decreases in dropout rates and absenteeism, and higher rates of literacy. There are also decreases in drinking and drug abuse and related accidents, as well as less delinquency, arrests and police contacts (Perry Preschool Project). Some programmes report better adjustment and integration of isolated ethnic minorities such as in the British Granby Community Mental Health Programme.⁴³



Governments tackling both the social and economic cost of these problems should recognise positive outcomes from these types of health promotion activities.

The Economic Impact

Mental health promotion results in widespread economic benefits and shows cost-effective outcomes. In addition, there is almost no evidence of negative side-effects. Therefore, mental health promotion is a low-risk and cost-effective investment.



So far no global or European-wide cost benefit analysis has been attempted to quantify the economic benefits of mental health promotion programmes. Yet even the programme specific evidence begins to build a strong case, economically, for additional investment in mental health promotion.

The cases so far mentioned in this paper start to tell the story. The Swedish Educational Programme providing education to general practitioners on depression cost US\$62,000 to implement, but produced savings estimated at US\$26 million over three years. The JOBS programme, aimed at the unemployed and low economic-based families, brought a three-fold return on the investment after 2.5 years, and more than a ten fold return after five years. The Perry Preschool Programme aimed at poor children from Afro-American families, cost US\$1000, but the cost-benefit produced is estimated at US\$9000, due to decreased schooling costs, increased taxes paid on higher earnings, reduced welfare costs, decreased justice system costs, and decreased crime victim costs.²

Moreover, not all the related costs or benefits for society can be estimated in economic terms. Other intervention outcomes that are not expressed as costs savings, also have an indirect economic impact. Such factors include loss of productivity, prevalence and incidence of disorders, related accidents and mortality, as well as individual suffering and the burden of families.

Economic impact	
Increases in:	Reductions in:
Economic benefits	Mortality rates
Productivity	In-patient days
Direct government benefits	Out patient treatment
	Justice system costs
	Spending on public welfare
	Sick leave

The Political Impact

Mental health promotion appears not only to improve mental health and to lower the risk for mental disorder, but also to contribute to the reduction of other problems in the public domain, such as aggression and youth delinquency, child abuse, school dropout, social inequity and lost days of work.



Several next steps need to be taken and supported by policy makers, and these require international collaboration:

- ▶ Effective model programmes need to be disseminated across Europe and the world, and analysis undertaken as to the likely outcomes following their large scale implementation. Current initiatives to develop an accessible International Registry and Classification of evidence-based programmes need to be supported strongly, as well as dissemination systems
- ▶ Guidelines for effect management and quality indicators must be established, developed from identified principles in effective mental health promotion programmes

Mental health promotion and disease prevention can progress strongly, and there is an urgent need for it to do so. Already, up to one in five adults suffer a mental disorder, of one kind or another. The proportion of psychiatric disorders in the global disease burden is growing. Any other disease with that number of sufferers across the community – and with the strong likelihood that the number would grow – would bring sharp and decisive political responses. A government which did not react would pay a heavy political price.



We would urge governments to consider the creation of a strong and supportive mental well-being infrastructure, to collaborate internationally on enhanced prevention research, to disseminate the available knowledge of effective prevention and mental health promotion programmes widely, and to create a properly resourced policy platform on mental health. This is the effective political response to a mental health 'epidemic' in our society.

Table 3.1 Examples of Effective Mental Health Promotion and Mental Disorder Prevention Programmes

SETTING	PROGRAMME	TARGET GROUP	RISK & PROTECTIVE FACTORS
Home	Child Development Programme (Barker, Anderson & Chalmers, 1992)	First time parents, Parenting problems	Parenting, Self-esteem, Self control, Social Support
	Prenatal Infancy Project (Olds, 1988, 1986)	First time mothers, Low SES, Early pregnancy	Birth conditions, Child rearing, Health habits, Social support, Shild abuse, Sommunity services
	STEEP: Steps toward effective enjoyable parenting (Erickson, 1989)	First time mothers, Parenting problems, Low education	Parenting, Intimate positive relationship
School	Perry Pre-school Project (Schweinhart, 1992)	Three-four year old African-American children, Extreme poverty backgrounds	Academic failure, Early behaviour problems, Economic deprivation, Low commitment to school, Parent education
	STAR: Students together & Resourceful (Emshof, 1990)	Children (11-14) with substance abusing parents	Addictions, antisocial behaviour, school performance, relationship skills
	STEP: School transition environmental programme (Felner & Adan, 1988)	Entering ninth grade students, Low SES, Minority background	Maintain levels of functioning, Academic and emotional difficulties, Peer support system
Workplace	CSP: Caregiver Support Programme (Heaney et al, 1995)	Care staff & home managers who provide residential care to mentally ill	Individual skills, Organisational process, Social support, Problem solving, Influence in decisions
Community	Jobs Programme (Price et al., 1992)	Involuntary job loss, Low assertiveness, Economic hardship, Unemployed, Depressive symptomatology	Helplessness, Job searching skills, Positive attitudes, Self-efficacy, Coping skills, Social support
	Coping with stress course (Clarke et al, 1995)	Adolescents at high risk for depression, Depressive symptomatology	Negative irrational thoughts Social & coping skills
	The Swedish Educational Programme (Rutz et al., 1992, 1989)	General practitioners	Education on global topics of depression

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TYPE OF RESEARCH	HEALTH IMPACT	SOCIAL & ECONOMIC IMPACT
Quasi experimental design: experimental matched community fig.	50% lower child abuse rates	41% lower rate in the Child Protection Register
Experimental design (RCT): experimental comparison & group	Decrease in low birth weight 75% smoking reduction in mothers and improved diet, Decrease in child abuse and neglect (19% to 4%)	56% less use of the emergency room, fewer pregnancies, Fewer pre term deliveries (75%)
Experimental design (RCT): experimental/control group	Less anxious and depressed, More organised, More stimulating environments child	Positive attitudes towards children
Experimental design (RCT): experimental/control group	Less mentally retarded, Better social adjustment, Better academic performance, Greater social competence in adolescence and early adulthood	Fewer years special education, Less school dropout, Less delinquency, arrests and police contacts, Fewer teenage pregnancies, Less unemployment & better jobs, Every \$1000 invested produced \$9000 benefit
Experimental design (RCT): experimental/control group	Changes in perception of internal control, Self-concept, Decrease in depression and loneliness, Lower levels of substance abuse	Social relationships, Increases in friends, Peer involvement, Perceived social support, Positive connection with school life
Experimental design: matched control sample	Fewer increases in emotional & behavioural dysfunction (depression, substance abuse, delinquent acts)	Lower school dropout, Higher academic performance
Experimental design (RCT): experimental/control group	Confidence in coping abilities, Less depressive symptoms & somatisation in high risk participants	Improvement work team climate, Increased resources of social support
Experimental design (RTC): experimental/control group	More job satisfaction and motivation, Higher self and job seeking confidence, decreases in depression (39-25%)	Finding jobs more quickly, Better jobs: stability & income, Cost: \$286 per person, Benefits: \$720 per person after 32 months, \$10,377 after 5 years, \$1,649 for the government per person
Experimental design (RCT): experimental/control group	Decreases in incidence rates for depression: 25.7% to 14.5%	Cost analysis in current investigation
Quasi experimental design: Baseline measures	Reduction of in-patient days 70%, Decrease prescriptions of tranquilisers, Increase of anti-depressives	Suicide decreases 19.7 pro 100.000 inhabitants to 7.1 after 3 years, Decrease of frequency of sick leave for depressive disorders, Accurate diagnosis and treatment, Costs \$62,000 Savings \$26 milion (over three years)

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Chapter Four

Political Challenges 3

The Subject: Out-of-School Youth: health promotion effectiveness in reaching disenfranchised youth.

The Author: Mitchell Warren, Director for International Affairs, the Female Health Company, with practical experience of designing and implementing reproductive health programmes.

The Purpose: The issues of out-of-school youth are politically uncomfortable, and they are frequently a neglected audience. They are difficult to reach with health promotion messages. But it is possible. Here, the author argues that:

- 1 Out-of-school youth are a heterogeneous audience
- 2 Young adults need to be involved in all aspects of the interventions
- 3 Effective interventions address not only the health issue, but also environmental factors and social norms that greatly influence behaviour
- 4 It is critical to involve 'gatekeepers' and stakeholders at the outset
- 5 Relevant support networks and training activities need to be carried through the life of each project

Before taking up his present position, Mitchell Warren spent six years at Population Services International designing and implementing social marketing, communications and health promotion activities. He has worked throughout Africa, Europe, Russia and Asia. He collaborates in his work with Ministries of Health, international donors, UN agencies and NGOs.

Offside – but reachable

Out-of-school youth present a tremendous challenge to policy makers and public health professionals. Out-of-school youth are heterogeneous; there is no such thing as a 'typical' out-of-school youth population.

But they are often vulnerable to disease and high-risk behaviours; are notoriously hard to reach through conventional educational media; and are often tuned-out to traditional health messages, especially when presented by authority figures. Smoking, alcohol and drug abuse, unintended pregnancy, sexually transmitted diseases (including HIV/AIDS), suicide, sexual and economic exploitation, eating disorders and violence are among the many risk factors affecting the well-being and futures of youth out of school.^{1,2,3,4,5,6,7,8,9,10,11}

A range of health promotion, communication and social marketing projects have

attempted to address vulnerable youth by developing campaigns for and, more importantly, with these young people. The most successful adolescent health initiatives strive to address both the specific health issues as well as the enormous social and economic conditions which creates the environment that exposes out-of-school youth to a disproportionate burden of disease and high-risk behaviour in the first place.

The development of peer education training programmes, targeted mass media campaigns and targeted distribution of information, products and services have all assisted in providing adolescents with improved choices and access to viable options. Reviewing successful and well-designed adolescent reproductive health programmes from around the world, Israel et al. highlight seven key points that are critical to successful interventions:^{12,13}

- ▶ Effective interventions address not only the behavioural issue of young adults themselves, but also environmental factors and social norms that greatly influence behaviour
- ▶ Involving gatekeepers and stakeholders at the outset of projects is a critical success factor. Successful programmes include interventions aimed at youth themselves as well as at service providers, media planners, peer educators, public policy makers, business and civic leaders, religious leaders, parents and others
- ▶ Young adults need to be involved in all aspects of the interventions. The participation of the target audience enables the needs and wants of the audience to be better understood, more effective messages and materials to be designed and greater insights to be gained into the contexts within which these young people practice behaviours
- ▶ Media advocacy activities are an important complement to the targeted interventions. Media can play a vital role in creating an environment in which sensitive subjects can be discussed, providing legitimacy for discussion and unfamiliar protective behaviours, and modelling terms and tactics that can make discussion more probable and comfortable
- ▶ Pre-testing all messages is essential so that messages address a specific objective, are culturally relevant, believable and ‘do-able’ by the target audience.
- ▶ Relevant support networks and training activities need to be carried throughout the life of each project
- ▶ All projects should include a well-designed evaluation to enable full documentation about what worked and what didn’t for use in future planning and replication

Successful projects have been distinguished by the fact that they provide both the motivation for behaviour change – through peer education, communication strategies and other dialogical approaches – and the



accessibility to the necessary products and services to practice the behaviour change – male and female condoms, counselling services, clean needles and methadone maintenance, for example.^{14,15,16,17,18}

Moreover, by engaging members of the out-of-school youth audience in actually developing components of the projects, these projects have been able to produce materials and interpersonal interventions that are well suited to the audience; provide members of the target audience with ownership of the projects; and generate a sense of the urgency and importance of the issues.¹⁹

In addition, these projects have helped to open up cultural, religious and societal dialogue about the key adolescent health issues, shaping public policy, shifting community norms and providing opportunities for traditionally marginalised youth to consider, and in some cases implement, behaviour change options.



The Health Impact

Key impact:

Various targeted programmes produced the following health impact:

- ▶ Increase in condom use
- ▶ Decrease in high-risk sexual activity
- ▶ Increase in perception of risk-taking behaviour
- ▶ General risk reduction
- ▶ Decrease in drug use

Health promotion works most effectively when communication and learning lead to behaviour change. Researchers Aggleton and Rivers explain, ‘Young people need to be persuaded that a health issue is relevant to them, and certain enabling interventions at the level of public policy need to take place to ensure that young people are able to behave in ways which will protect their health.’¹⁹ Persuading youth to take protective steps and changing social norms to make prevention possible are the key aims of successful health promotion campaigns.

The Teens Tell Teens peer survey in Newark, New Jersey, USA, produced an assessment of adolescent health from the perspective of at-risk adolescents themselves²⁰. The commitment to involving young people throughout the process has meant that successful projects:



- ▶ produce materials written in the vernacular and visual language of the audience – vitally important for out-of-school youth, often with limited formal academic training;^{21,24}
- ▶ deliver communications through very specific media channels so that they actually reach the target;^{22,23}



- ▶ make necessary products and services available to young people where and when they want them.²⁴

Given the enormous complexities of reaching out-of-school youth, successful interventions are often multi-faceted. In Portland, Oregon, USA, Project ACTION operated on four integrated levels that led to significant health outcomes as presented in the table below:¹⁷

Integrated Campaign Components	Significant Health Impact
<ul style="list-style-type: none"> ▶ Community mobilisation ▶ Mass media and media advocacy ▶ Condom accessibility ▶ Peer counselling and outreach 	<ul style="list-style-type: none"> ▶ Increase condom use with new partners ▶ Increase in consistent condom use ▶ Decrease in reported sexual activity

Comprehensive programmes providing a range of options to young people in a non-judgemental way are more likely to motivate healthy behaviours.

Several studies suggest that programmes combining safer sex and abstinence are more likely to delay sexual debut, decrease sexual activity and increase contraceptive use.¹⁹ For example, ‘The Fleet of Hope’ campaign in Tanzania uses materials that present safer sex practices in three different boats to keep people from sinking – the commitments to abstinence, fidelity and condom use. ‘If a person does not feel at home on a certain boat, they should not jump back into the water but switch to another boat.’ The young people reached report a higher degree of perception of risk of sexually transmitted diseases and unwanted pregnancy. The programme also helped young people examine the positive aspects of sexual health that several studies suggest is central to re-focusing young people’s attitudes and practices.^{19, 30} Because it stresses individual responsibility, choice and change, the project also addresses self-efficacy.



To make a positive impact on health, health promotion programmes negotiate carefully with their target audience. A participatory media intervention in South Africa began as an AIDS prevention activity but quickly changed into one focusing on pregnancy prevention because members of the target audience were more concerned about this health benefit. By shifting the focus, the project was responsive to the audience’s concerns and showed health impact in this regard; at the same time, the project failed in addressing certain key HIV/AIDS issues.²⁶

There is a trade-off that must be carefully negotiated. Programmes must be responsive to the target audience, and at the same time, should aim to ensure that a broad spectrum of health issues is addressed.

That balance was struck effectively by the 1992 AIDS-prevention project for street children in Belo Horizonte, Brazil, where researchers found that ‘street children valued good health only to the extent it enabled them to survive everyday on the

streets’. So the theme developed for the project was ‘Street-smart youth can stay strong without AIDS’. A video and comic book were launched, and a follow-up survey showed that drug use decreased, while condom use and needle cleaning increased.¹⁹

The Social Impact


Key impact:

Various targeted programmes produced the following social impact:

- ▶ Intergenerational dialogue
- ▶ ‘Youth friendly’ gatekeepers and service centres
- ▶ Changed cultural norms
- ▶ Youth empowerment

Social environments exert enormous influence on the lives and behaviours of young people, particularly out-of-school youth. ‘Young people in general, but especially those at the margins of society, are unlikely to be able to reduce risk-taking unless their basic and more immediate needs are met. Risk-reduction strategies should not be isolated from the broader contexts of health promotion, understandings about health, and the social and material circumstances of young people’s lives.’²⁸

The reality for many young people is an environment that feeds alienation rather than support. Changes in family structure and increased drug availability and use, unsafe sexual practices, violence and crime have all led to settings in which health, healthy behaviours and long-term prospects for a ‘bright future’ are compromised. Addressing the health status of young people, therefore, requires a broader commitment to addressing these underlying causes.

Numerous reviews and evaluations of adolescent health promotion have concluded that training in coping skills, interpersonal negotiation, communication skills and other general life skills strengthen protective behavioural outcomes.^{17,26,27,28,29,30,31} 

One such successful project targeting runaway adolescents in New York City found that providing training in general coping/life skills and access to health care and other resources led to significant increases in healthy behaviour.²⁹

Youth-oriented and accessible programmes are essential to connect hard-to-reach young people with the health care and social support they need, deserve and are too often denied.³⁶

Effective, state-of-the-art health promotion projects have illustrated the need to move beyond behavioural messages, to consider the broader socio-cultural environment conditioning young adults and their health-seeking or health-endangering actions.¹⁷ A healthy public policy must contribute to a social environment and political infrastructure where the following needs can be met:³²

- ▶ For the personal skills young people find important in safeguarding their own health and the health of others
- ▶ For environments and settings that young people themselves find supportive
- ▶ For modes of community action that best bring about health-protecting or-enhancing change
- ▶ For targeted services shaped by real need



Health promotion continually operates on multiple levels, addressing multiple audiences including the actual target audience and all other audiences acting as stakeholders in or gatekeepers of the target population.

Intergenerational dialogue

Youth cannot be abstracted from the cultures and communities in which they have been raised. Family and social contexts have been associated with health and risky behaviours in adolescents; parents, adult professionals and community leaders all play a role in enhancing or compromising youth health.³³

In many cultures, health issues including sex, drugs and violence are taboo topics of conversation within families and communities. Such taboos are challenged by media campaigns promoting health responsibility and fostering communication among young people and their parents.^{17,34} Parents need to accept an active role in shaping young people's protective behaviours.^{35,38}

Gatekeepers to service

Health promotion addressing youth as part of family networks can change not only youth behaviour but also the attitudes and perceptions of the adults around them. Gatekeepers are the key professionals in a community who shape opinions and access to the information, products and services that ensure health. Addressing the preconceptions of gatekeepers is an important health promotion strategy.

Equipping youth service providers with a holistic understanding of youth health and health risks has been important to providing better services to young people.^{36,37,38,39} The Bridgeport TOPS Project moved a marginal population to the centre of a community's agenda, successfully raising community awareness of adolescent health issues while focusing on its primary audience: out-of-school, under-served youth.³⁵



Integrated Campaign Components	Significant Social Impact
<ul style="list-style-type: none"> ▶ Access and referral to health care and other services ▶ Counselling and outreach ▶ Peer education ▶ Services partnering with traditional providers ▶ Cultural training for service providers 	<ul style="list-style-type: none"> ▶ Assisted adolescents to access health and support services ▶ Helped adolescents stay connected to services to ensure care and continuity ▶ Enabled improvement in existing services and the development of new ones ▶ Changed the way service providers and planning bodies look at youth

An extensive review of adolescent health initiatives concluded that successful clinics, centres and services for young people have the following common characteristics:⁴⁰

- ▶ confidentiality
- ▶ reception staff trained to deal with young people
- ▶ convenient opening hours
- ▶ accessible to main transport routes
- ▶ widely advertised
- ▶ young people have input into making the service more user friendly
- ▶ young people are referred on a friend's recommendation
- ▶ access to information on welfare benefits, jobs, training and housing
- ▶ expert advice on specialised problems is accessible
- ▶ continuity of service
- ▶ the service is alert to warning signals such as suicide intent

Changing Cultural Norms

By using radio, television, cinema, billboards and other forms of mass media, interventions are creating new terms of reference for the discussion within families and communities around health and adolescence. These projects begin by confronting social norms resisting open discussion about sensitive topics, in order to facilitate more open and responsible exchanges and the formation of new, protective norms.¹⁷

Key opinion-formers include religious leaders. The Fleet of Hope project in



Tanzania has generated a growing acceptance among religious and community leaders that condom use should be supported, or not condemned.³⁰ Similarly, Islamic leaders have been enrolled by the Family Planning Association of Pakistan to provide information on birth spacing to newly wedded couples.⁴¹ In South Africa, a televised public service announcement featuring Archbishop Desmond Tutu promoting condom use put the safer sex issue high on the agenda and created an openness for discussion within the community.⁴²

Mass media has an important role to play in promoting youth health for hard-to-reach adolescents. However, mass media can also have a very negative impact on health. Tobacco advertising has been causally related to the onset of smoking;⁴³ alcohol television advertising has been linked to ‘a climate of opinion that was hostile to health promotion activities’.⁴⁴ The ubiquity and repetitiveness of recognisable images portraying health-compromising activities poses a constant threat to young people.^{9,45}



Youth Empowerment

Given the complexities and diversities of the lives of out-of school youth, effective health promotion efforts tend to shift from specific didactic messages to ‘broader, more multidimensional and human rights-oriented conceptions of health.’¹⁹ This approach recognises the importance of empowering youth to make decisions and act in responsible, appropriate ways.

The involvement of youth in all aspects of programme design and implementation clearly facilitates this process, improving self-esteem, ownership and urgency – all aspects of youth empowerment.²⁴

Participatory projects throughout the world have helped to harness the creativity, energy and resourcefulness of out-of-school youth to develop activities that are more than just one-off products. The development processes produce an array of essential tools, skills, attitudes and perceptions that are fundamental for young people preparing themselves for the future.^{18,19,46}

The Economic Impact

Key impact:

Various targeted programmes produced the following economic impact:

- ▶ Individual income generation
- ▶ Cost-effective community interventions
- ▶ Overall budget savings

From an economic perspective, it is important to recognise the cost of not intervening. Economic exploitation of vulnerable groups, policies that restrict youth wages, high unemployment rates among untrained young people, all result in a very high economic burden on families and



society. An economically disadvantaged web is woven that reinforces the very conditions creating the problems.

The economic impact of health promotion amongst young people is the least well documented, researched and understood.

Individual Impact

Some projects engage out-of-school youth not only as members of a target audience but also as peer educators and condom distributors. In social marketing projects, because the social marketed products are sold and not given away free, vendors are able to earn some money through their efforts. This income, however small, serves as motivation for young people to develop basic entrepreneurial business skills that are transferable. The Tanzanian project has trained over 2,000 community 'sales agents' who might otherwise be without work.

In Pakistan, the peer education model has been linked to a more profound economic enfranchisement. There, small business loans and management training have been provided to eligible unemployed youth. As a condition of the loans, the young entrepreneurs are required to provide contraception distribution and counselling as one function of their emerging enterprises. Sales of contraception would comprise about 20% of their monthly earnings. An external evaluation determined that 'this programme will not only be instrumental in reducing unemployment among youth, but will also be helpful in their education in adopting small family norms as advocated by the FPAP.⁴⁷ The beneficiaries of such a programme include the entrepreneurs themselves, their customers, those who access contraception and/or counselling on-site, and the suppliers who service the enterprises.

Community Impact

At the community level, costs and benefits must be considered in multidimensional terms. Peer education in Cameroon among commercial sex workers proved cost-effective, even when its monetary costs of US\$104,000 were calculated as comprising only 48% of the real resources used by the intervention.⁴⁸ STD screening has been shown to be cost-effective in Sweden, even when applied to asymptomatic adolescent males because it prevented costly complications and sequelae infection in the young women they partnered.⁴⁹ A needle exchange programme to prevent HIV transmission among intravenous drug users in Canada has been shown to be an efficient use of financial resources, based on the savings from AIDS cases averted.⁵⁰

The data on costs of mass media campaigns supports the view that it is a cost-effective means to promoting relevant health objectives. The Kenya Youth Initiative Project has reported 'that the cost of reaching one young person with reproductive health information using mass media is .03 US cents, and the cost of prompting them to change behaviour is only US\$11.63.¹⁷ The cost of a four-year anti-smoking mass media campaign in the US per young smoker averted was US\$754 and the cost per life gained when a young adult smoker stopped was US\$696. Had the campaign been broadcast in all 209 American media markets, those costs would have dropped to US\$162 and US\$138 respectively.⁵¹

The social exclusion of out-of-school youth makes school-based and even some clinic-centred interventions inaccessible, since these young people are already disengaged from such gathering points. The comparatively high budgets for media campaigns must be measured against the costs incurred for not changing risky behaviour – unemployment because of pregnancy, lung disease because of smoking, liver disease because of drinking.

Global budgets

In modelling the costs and benefits of an anti-smoking promotion in the North West of England, Haycox found significant health care benefits and resource savings. The National Health Service will spend less, according to his analysis, caring for an elderly non-smoking population than for a younger population with high levels of smoking.⁵² The value of health promotion activities is that they can be ‘an economically efficient way of reducing premature death and improving the quality of life.’⁵³

Global budgets will manifest the negative consequences if the health needs of out-of-school youth are not addressed robustly. They will register the expense of the morbidity, mortality, unemployment, crime and violence that may blight youth in an unresponsive social context.

The economics of out-of-school youth health promotion defend investment in under-served and disenfranchised groups. ‘To enable the uptake of health promotion measures equally by all societal groups’ – as is their right – ‘it may be necessary to allocate resources unequally, targeting those most in need.’⁵⁴

The Political Impact

Key impact:

Various targeted programmes produced the following political impact:

- ▶ Effective community alliances
- ▶ Getting youth on the agenda as an audience, not as a problem
- ▶ Broad public policy can impact on health status

Adolescent health is increasingly central to the public health debate. The potential burden of disease from entirely preventable causes is enormous. Both the youth population and long-term health budgets will suffer if targeted interventions are not well planned, well executed and well researched and evaluated. Yet too often out-of-school youth enter the political agenda as a problem to be solved, rather than as partners empowered to pursue secure futures.

Pragmatic recognition of out-of-school youth needs, from training and education, housing and welfare, to sexual health products and services, safe injecting equipment or abusive-substance alternatives like methadone, is essential if the rights of these young people are to be



addressed responsibly.

The most effective projects working with out-of-school youth are born out of important community alliances. The projects described here all grew out of projects involving some combination of non-governmental organisations, ministries or departments of health and education, the media, youth organisations, individual youth, local clubs, sports organisations and other cultural groups. Any one sector or group could not possibly have reached a group of young people as dynamic and complex as those who are out-of-school. Only cross-sector collaborations ensure that access is gained and impact can be achieved.^{55,56,57}

Broad public policy decisions can and do make an impact on the lives of young people. A more open approach to sexuality, and policies flowing from this openness, have had significant impact in the Netherlands where there was a considerably higher rate of teenage conceptions in the 1960s. 'Through a co-ordinated and unwavering strategy of improving sex education, access to confidential help and a positive attitude to teenage sexuality, the rate steadily declined to the lowest of all developed countries.'⁵⁸

To address out-of-school youth is to engage with their marginalisation, social and economic exclusion, and frustration with cultures whose structures and resources cannot or will not directly and honestly address the needs and aspirations of the young.

The projects described here highlight the importance of working with youth and motivating them to become interested in health issues. At the same time, effective health promotion activities with out-of-school youth highlight the importance of creating structural, environmental and policy frameworks that enable and support young people to act on their concerns.

Successful, targeted, effective health promotion interventions attempt to present realistic options from which adolescents can choose; to empower young people with the resources and skills to make effective decisions; and to create an enabling and supportive environment in which these decisions can be made and practised. Only in a health-enhancing environment can the right of each young person to self-determination be realised.

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Chapter Five

Health Challenges 1

The Subject: Heart Disease: The Lifestyle Killer.

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The Purpose: With Europe's available working population already reducing through demographic factors, it is a shocking waste to eliminate still more people, who die or are made disabled by heart disease, the risk factors for which are well known, and largely preventable through health promotion. The authors argue:

- 1 Heart health is a major determinant of contemporary public health in Europe
- 2 The medical knowledge for effective prevention is there. Heart health programmes have a huge public health potential
- 3 Successful heart health programmes call more for determined intersectoral policy than extra resources
- 4 Effective heart health programmes will lead to increased productivity among the working age population; to improved functional capacity among the elderly; to diminishing health inequalities; to a reduced need for health and social services; to an increased quality of life for everybody
- 5 Heart health is associated with fashionable positive lifestyles, and raises increasing commercial attention

Professor Puska, a former Finnish MP, is the Director of the world-renowned North Karelia Project, pioneering successful reductions in cardiovascular mortality.

The Number One Killer

Cardiovascular disease is the greatest public health epidemic globally.

It is the number one killer and a major cause of disability, ill health and human suffering. Social and economic costs are high.

It is by no means only a killer of men or old people. Much of the burden concerns middle-aged people, women, and often lower socio-economic groups. Thus it is a major contributor to inequality in health.

The medical knowledge for effective prevention of cardiovascular disease and for

promotion of heart health is available. A number of major causal risk factors have been clearly established. Active heart health interventions are further justified by the fact that the same risk factors are usually related also to other non-communicable diseases. Health in general benefits.



Effective heart health promotion calls for changes in certain lifestyles related to the established risk factors. The problem is how, not what, to do. The challenge is to deliver interventions which promote behavioural changes in the population, and to disseminate such change nationally.

This paper reviews the extensive experience with heart health community programmes and also makes reference to specific youth and worksite interventions. Comprehensive heart health interventions, involving a variety of strategies in the community, are needed. It is an issue of promoting change for social and environmental support for heart healthy lifestyles. Practical programmes which mobilise people need to support and link with intersectoral policy decisions which promote environments supportive of heart health.

The resources needed for heart health promotion are modest in relation to the huge health service costs to society caused by cardiovascular diseases. Sound strategies combined with reasonable efforts and linked with national action, have produced encouraging results. The great potential for heart health promotion is demonstrated in the 25 year experience in North Karelia, Finland, where cardiovascular mortality has fallen by 73%, and all cause mortality by 50% in the working age population as lifestyle and risk factor changes took place in the population.



Preventive heart health programmes have huge potential for improving health and at much lower costs than expensive clinical medicine. Because cardiovascular disease is the greatest public health problem of today, it is obvious that heart health should be very much in the mainstream of contemporary public health policy.




The Health Impact

Cardiovascular diseases are the greatest public health problem – not only in the industrialised countries, but nowadays also globally. Coronary heart disease is now number one killer in the world. Up to 29% of all deaths in the world are caused by CVD: about half of the deaths in the developed world and 25% of the deaths in the developing world (WHO 1997).

Mortality through CVD is one issue, but it also causes a huge amount of disability, ill health, human suffering, and social and economic cost. About 40% of the myocardial infarction and cardiovascular stroke attacks are fatal. Around 60% of sufferers survive – often with severe morbidity.

About half of the deaths for CVD occur among people below 70 years of age, including many who are relatively young. This fact, together with the associated disability, is the reason why coronary heart disease is estimated to be the greatest cause of disability adjusted life years (DALYs) in the developed world, and soon globally (Murray et al. 1996).

A common misunderstanding is that CVD is the disease of the elderly, of men and of the affluent. In the European Union, it is the most common second killer of middle aged people. It is also number one killer among women. Furthermore, the disease and its determinants are usually more prevalent among lower socio-economic and other disadvantaged groups.


Extensive international research has, during the last 40 years, identified a number of factors that are related to the occurrence of atherosclerotic cardiovascular diseases in a consistent way. The early classical prospective studies established the important role of elevated serum (LDL) cholesterol, elevated blood pressure and smoking. Later on the contribution of other factors such as other lipids, physical activity, haemostatic factors, alcohol consumption, obesity and psychosocial factors have been much studied. Further support from other studies, like animal studies and clinical trials, have proven the causal role of the main risk factors beyond  any reasonable doubt.

An important feature of the CVD risk factors, different from those of old infectious disease public health problems, is that they relate closely to behaviours and lifestyles: smoking, dietary habits and physical activity. The lifestyle changes needed for prevention of CVD are also beneficial for prevention of other non-communicable diseases (NCD), and for promotion of health in general. This is one of the main arguments supporting the approach for integrated prevention of NCD, and the promotion of health, adapted, for example in the WHO 'CINDI' programme.

But can these risk factors be changed? Here the answer is an unconditional 'YES'. People can stop smoking and change diets. And they do. Elevated serum cholesterol levels and high blood pressure values can be reduced both by pharmacological and non-pharmacological measures. And they are.

The key question for CVD prevention is not whether established risk factors can be changed or whether it reduces CVD risk but how the risk factors can be changed in the population. What kind of interventions can promote general heart healthy behavioural changes in the population, and how can such interventions be disseminated nationally?

Smoking and Diet

Globally, smoking is increasing in the developing world and diets are becoming less healthy. In developed countries, smoking is declining, especially among men, and heart healthy dietary changes are taking place. Such changes can take place through policy decisions and other major environmental changes. This has been convincingly shown eg. concerning changes in price policy or major political changes (eg. Zatonski 1998). 


Since the early 1970's, a number of planned community-based heart health intervention projects have aimed at promoting risk reducing lifestyle changes in different populations. These projects started from the premise that merely providing risk reduction measures for clinically high risk people in the health service settings would have only a limited impact for CVD prevention in the nation, while general risk factor and heart healthy lifestyle changes would have a potentially huge public health impact.

Furthermore, it was realised that, although identification of the target risk factors


is in the framework of medicine and epidemiology, changing people's behaviours calls for behavioural and social science frameworks. The basic idea was that the commonly used intervention, i.e. providing only information and knowledge, was not enough to lead to behavioural change. Lifestyles are deeply rooted in the community and in the society. Change has multiple determinants and therefore, comprehensive behavioural strategies were needed.

Some of classical strategies used are reviewed eg. by Puska et al. (1985).

The North Karelia Experience

The first such community-based heart health intervention was the Finnish North Karelia Project, started in 1972. Finland's very high CVD mortality in the early 70's provided a particular historical background for the project, together with the previous epidemiological research carried out in Eastern Finland in connection with the Seven Countries Study (Karvonen 1995). 

The North Karelia Project was started as a pilot area. After the early success, and with significant net reductions in both risk factors and CHD mortality, intensive and comprehensive national work was started in which the project actively contributed.

After 25 years, a remarkable decline has taken place in smoking among men, major dietary changes have occurred and serum cholesterol and blood pressure levels have markedly reduced. During the same time in North Karelia (among the male population of 35-64 years), CVD mortality has declined 68%, coronary heart disease mortality 73%, cancer mortality 44%, lung cancer mortality 71%, and all cause mortality 49% (Puska et al. 1998). The respective changes in all Finland have been nearly as great: eg. for CHD mortality 65%. Separate analyses have shown that most of this decline in CHD mortality is explained by the population level changes of the main risk factors (Vartiainen et al. 1994). The general dietary changes seem to have been the most important determinant. 

Expanding the Experience

After the North Karelia Project a number of somewhat similar projects were launched in the 70's in Europe. This experience was summarised in a WHO report (Puska 1988). Later on, projects with various study designs were launched, eg. the German Cardiovascular Prevention Study (GCP Study Group 1988), the Norsjö Study in Sweden (Brännström et al. 1993), North Coast Cholesterol Check Campaign (van Beurden 1991) and the US COMMIT Study for smoking cessation (COMMIT 1995). A number of the projects were carried out as demonstration projects of related WHO programmes: CINDI (WHO/EURO), CARMEN (WHO/AMRO) and INTERHEALTH (WHO/HQ).

During the last few years a number of publications have tried to summarize the results of the major community-based preventive projects. At the same time methodological aspects of the projects have been discussed from several perspectives (Flay et al. 1982; Puska 1985; Altman 1986; Sellers et al. 1977). One of the most thorough summaries of the preventive cardiovascular community projects was made by the Swedish Council on Technology Assessment in Health Care (SBU 1997).

The task to summarize the experience of preventive heart health interventions has

not been easy. Excluding ‘pure clinical risk factor trials’, the remaining projects vary in intervention settings, methods, intensity, risk factor targets and in evaluation measurements, periods and designs. Most of the major projects deal with the ‘classical’ risk factors, emphasising diets and smoking. They use quasi-experimental design and a ‘comprehensive community-based approach’.

In these projects a set of different strategies have been used involving the whole community. Some argue that lifestyles and their changes are ultimately community factors and intervention in sub-settings only (like home, school or work site) is not enough.



Notwithstanding the limitations, worksites can form a good setting for heart health interventions. Large groups of people can be reached through worksites where they spend much of their day. Social support by workmates can be promoted and some environmental changes can be organised in co-operation with employers.

Experts and agencies promoting CVD prevention have often used worksites as primary settings (eg. WHO 1989). On the other hand employers and agencies that focus on occupational health have increasingly seen the importance and possibilities of heart health promotion as a major component in increasing health and reducing illness, job absences, disability and costs. (eg. Fielding 1990, Gebhardt et al. 1990).

Many of the previously discussed general community-based heart health programmes have had worksite related components. The North Karelia Project has reported on a study with eight worksites and eight matched controls with one year effects on the CVD risk factors (Puska et al. 1988).

In the 70’s G. Rose started a WHO collaborative worksite-bond project for CVD prevention in England and Belgium. Later on Poland and Italy joined. The overall results were some modest risk factor changes, associated with a 10% reduction in CHD rates (WHO 1989). The results were most favourable in Belgium: a 26% reduction in CHD mortality, 25% reduction in all CVD mortality and an 18% reduction in total mortality (Kornitzer et al. 1983).



Wilson (1991) reviewed seven worksite-based interventions to reduce serum cholesterol. The conclusion was that through worksite screening and counselling it is possible to reduce the cholesterol level of the workforce.

Smoking has been the target of numerous worksite interventions. Brenner and Mielck (1992) reviewed 14 studies and concluded that smoking restrictions are likely to play an important role in smoking reduction. In Finland, a couple of months after major legislative restrictions in worksite smoking, 2.4% of smokers reported in a national sample that they had stopped smoking, 2.6% reported stopping worktime smoking, and 14.3% reported reducing their smoking (Helakorpi et al. 1995).



Target Groupings – including young people

Heart-health programmes aimed at the young and very young also work.

Atherosclerotic cardiovascular disease starts to develop very early in life. This was noticed for the first time during the Korean War when soldiers killed in combat were observed to have severe lesions in their coronary arteries (Enos et al. 1955). This observation has been confirmed in latter studies (McNamara et al. 1971, Strong et al. 1969). In the Bogalusa Heart Study aortic fatty streaks in young people dying before

the age of 25 years were shown to be strongly correlated with ante-mortem levels of total LDL-cholesterol (Newman et al.). Based on these findings it has been recommended that the prevention of cardiovascular risk factors should be started early in childhood and adolescence.

Research studies have clearly demonstrated that the usual fat intake of children after the breast feeding period is 28-30% of energy intake (Lapinleimu et al. 1995). This was earlier believed to be over 40% of energy. It has been shown that children aged between 7 months and 13 months, consuming diets with less than 30% of energy gained from fats, and with a polyunsaturated/monounsaturated/saturated ratio 1/1/1, will avoid an increase in serum cholesterol after the breast feeding period, without any negative effects on growth or mental development (Simell 1998). This particular study further indicated that the diet recommended to adults can also be recommended to children immediately after the breast feeding period, at the age of 6-7 months.

The main strategy for heart health promotion in early childhood should be education of young families to promote heart healthy diets in order to avoid the increase in blood cholesterol and blood pressure levels among their children. Several studies indicate that serum cholesterol can be reduced, or the increase can be prevented, by dietary changes in childhood and adolescence (Heyden et al. 1991; Ford et al. 1972; Vartiainen et al. 1982). The main strategies in these interventions have been counselling in the doctors' office, family based programmes and school based programmes (Kelder et al. 1995; Tell et al. 1987; Coates et al. 1981; Process...1994; Puska et al. 1987). In completed dietary trials the average reduction in serum cholesterol level has been about 15%. This magnitude of change would have huge public health implications. In large studies the intervention effects have been smaller due to less intensive intervention.

In the late 1970's, information-oriented prevention programmes in schools aimed at prevention of smoking. However they had no apparent effect on smoking behaviour (Thomson 1978). Thereafter prevention programmes based on broader theories of behavioural change followed (McAlister et al. 1980). Most of them used psychological inoculation techniques and behavioural rehearsal, often conducted by peer leaders, to strengthen attitudes and skills to resist pressures toward tobacco use during adolescence.

Immediate short-term results generally indicated 30% to 50% fewer smokers in the programme groups compared with controls (Flay 1985; Bruvold 1993; Vartiainen et al. 1994; Glynn 1989). Long-term follow-up results, however, are inconsistent. The immediate positive short-term effect on smoking disappeared soon after the intervention in four studies (Flay 1989; Murray et al. 1989; Klepp et al. 1994; Ellickson et al. 1993) but lasted at least a few years in four others (Perry et al. 1995; Botvin et al. 1995; Flynn et al. 1994; Puska et al. 1982; Vartiainen et al. 1983; Vartiainen et al. 1986; and Vartiainen et al. 1990).

In summary, heart health promotion in childhood and adolescence is important for prevention of early disease changes and for adoption of heart healthy behaviours as natural lifestyles from childhood on. For dietary habits, diets served at home are important. For smoking prevention, school based programmes involving peers and based on relevant psychological interventions seem

to be key. Ideally, interventions should be supported by broader community programmes and, nationally, by supportive heart healthy policies on issues such as tobacco legislation and school meal programmes.

A recent US synthesis of community-based heart health interventions concluded that ‘the community approach to CVD prevention has a high degree of generalisability, cost effectiveness due to the use of mass communication methods, ability to diffuse information successfully through use of community networks, and potential for influencing environmental, regulatory and institutional policies that shape health’ (Schooler et al. 1997).

Effective heart health interventions contribute to a favourable national change process that ultimately is needed for a sustained long term improvement in heart health. The major components of successful comprehensive national heart health policy are at least the following:



- ▶ research: different kinds of local research on risk factors, heart health promotion methods and change processes
- ▶ national demonstration programme(s): like North Karelia Project in Finland
- ▶ national leadership & intersectoral collaboration
- ▶ national focal point(s): for expertise and monitoring
- ▶ active involvement of health services: primary health care & specialised health services (cardiology)
- ▶ involvement of schools & education system
- ▶ promotion of NGO activities
- ▶ collaboration with industry: food industry, for example
- ▶ sustained public health policy & appropriate legislation

The Social Impact


It is likely that many of the major intervention projects have an ‘agenda settings’ function in their respective countries. The previously cited conclusion of the synthesis of the CVD community trials by Schooler et al. (1997) is that these projects have ‘... the ability to diffuse information successfully through use of community networks, and the potential for influencing environmental, regulatory and institutional policies and shape health’. There is however, very little research on these aspects. In a large project in Kansas, USA (Midwestern Prevention Project), attempts are being made to study in a more systematic manner the impact of policy measures and of diffusion (Pentz et al. 1997).



In Europe, many of the large community-based heart health projects report general social impact in promoting heart health activities (Puska 1988). It is generally concluded, for example, that the North Karelia Project has had a considerable social

impact in promoting heart health activities in Finland, and that it even contributed to related health policy measures (Puska et al. 1995).


The North Karelia Project also assessed during its original five year period any possible harmful side-effects, from a number of points of view. The assessment found generally very little evidence of these and – in addition to the marked health benefits – recorded a number of unspecific beneficial consequences and a general level of satisfaction by the people (Puska et al. 1981).

The 20 year evaluation of the North Karelia Project concluded, based on the data, that ‘on the whole, subjective health improved during the period when CVD rates were decreasing, and by some indicators the development was more favourable in North Karelia than in Kuopio’ (the reference area) (Heistaro et al. 1995). In 1992 in a random sample population survey in that province, 20% of the people said that the project had benefited the health of the province’s population ‘enormously’, 34% ‘substantially’, 39% ‘somewhat’, 5% ‘only a little’ and 1% ‘not at all’ (Korhonen et al. 1995). 


A major aim in public health work is to diminish the inequity in health, ie. the large differences in health between population groups, for instance concerning socio-economic indicators. Of obvious concern is that, in industrialized countries, CVD rates and risk factor levels are usually greater in lower socio-economic (SES) groups. However, the experience with practical community programmes is that the effect of the intervention has been at least as big in lower than in higher SES groups (Puska et al. 1981, Fortman 1997). Thus it is obvious that practical heart health interventions in the community can reach the disadvantaged groups, and if appropriately planned, even contribute to equity in health.

The Economic Impact

The economic burden of CVD in Western countries is enormous. By reducing the known risk factors, and unhealthy lifestyles in the population, the situation can change markedly (Puska et al. 1998).

Even the large heart health promotion projects have used resources that have been very small compared with the huge costs of health services for CVD. Many of the previously reported community projects have reported their costs data to support this conclusion. 

An important question in preventive heart health interventions is the cost effectiveness of different approaches.

Targeting specific groups with specific problems, eg. older men with raised blood pressure, can be cost effective (Field et al. 1995). Likewise a cost effective population approach calls for inexpensive measures that can be implemented in mass scale. Examples of such have been doctors’ routine advice to quit smoking, mass smoking cessation campaigns (QUIT & WIN) and specific dietary campaigns. For instance the cost effectiveness of QUIT & WIN type of smoking cessation campaigns have been recently demonstrated (Tillgren et al. 1993). Obviously, some legislative changes (tobacco legislation, changes in food subsidies etc.) or involvement of private industry can be effective without many direct costs to government. 

There are several possibilities for actual saving in heart health interventions: eg. the great costs of cholesterol and hypertension medication could be substantially reduced, if heart health programmes could promote serum cholesterol and blood pressure lowering dietary changes. However, it should be noted that the primary purpose of CVD prevention is not to save money, but to increase health. This is the same task that clinical medicine has. A key argument is that preventive heart health programmes have a potential for improving population health at much lower costs than expensive clinical medicine.



The best illustration of the overall economic consequences of successful heart health interventions comes again from the North Karelia Project. The Project assessed the overall CVD related costs in the North Karelia area and in all Finland in 1972 (at the outset) and in 1992, i.e. 20 years later when the age adjusted CVD rates had remarkably reduced. The conclusions were as follows: ‘The social cost generated by CVD are likely to have declined since 1972, especially in terms of cost per capita. The decreases in annual costs in all Finland have been about US\$100 million and US\$600 million for all persons over and (only) 35-64 years of age respectively ... The estimated proportional reduction was greater in North Karelia than in all Finland. This could translate as a US\$35 million saving in 1992 alone..’ (Kiiskinen et al. 1995).

The Political Impact

Chronic diseases and especially CVD are the major contemporary public health problems. They are the greatest contributors to life years lost, quality adjusted life years lost and also to differences in life expectancy between population groups. It is obvious that heart health should be in the mainstream of contemporary public health policy.


The large WHO/CINDI programme specifically states that national demonstration programmes should be major tools for national activities, including health policy reforms (WHO 1993).

Several WHO documents, including the major health promotion charters of Ottawa, Adelaide, Sundswall and Jakarta, emphasised the need for intersectoral activities. It is clear that heart health i.e. control of major CVD related risk factors in countries, is linked with policies such as tobacco, nutrition, agriculture, taxation, education, and social reforms etc. Many spontaneous changes in cardiovascular rates demonstrate the effect of major political changes. An example is the removal of butter subsidies in post communist Poland, which led to a dramatic switch to vegetable oil, margarines and a reduction in coronary heart disease mortality (Zatonski et al. 1998).




Many heart health projects have involved local decision makers who have been happy to associate themselves with popular health activities. At the same time the projects have sought support from political decision making for sustained activity and dissemination. This is linked with such strategies as community organisation, community ownership and community empowerment (Bracht et al. 1994; Green et al. 1991).

Several commentators, including Syme (1997) have said that heart health projects, in spite of their efforts, have probably still been too heavily based on educational and

individual approaches, and have used too few environmental and policy based measures. A British review concluded that health protection through fiscal and legislative measures may be more effective than health education-based efforts (Ebrahim et al. 1997). It should be kept in mind that political support usually means mobilising community support by educational and other practical intervention activities. 

Ideally, the relationship between heart health programmes and political decision making should be two ways: Political will should launch and support major heart health programmes ('demonstration programmes') that in turn should influence and support national dissemination and policy reforms. Thus health promotion programmes to mobilise people and health policy changes for supportive environments should proceed hand in hand. The experiences in this respect in Finland – where annual age adjusted heart disease mortality in working age population has in 25 years reduced as much as 65% – is worthy of important note.

In the Western world, heart health is a central consideration for public health, for use of health services, for lost productivity, for human suffering, for inequity in health, and for economic reasons. The medical knowledge for prevention is there. The health promotion experience is there. Thus the potential for successful heart health is enormous. 

Furthermore, heart health is associated with positive lifestyles that are fashionable and popular. People want support from their politicians for this. Because of the increasing public interest in heart health, the media pays a lot of attention and commercial enterprise finds increasing interest. Heart health is already a major marketing argument eg. in the food industry or in physical activity, recreation services, and developments in agriculture.

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Chapter Six

Health Challenges 2

The Subject: Tobacco, alcohol and illicit drugs.

The Author: Dr Peter Anderson, Regional Adviser for WHO's Tobacco or Health Programme, and acting director, Department of Health Promotion & Disease Prevention, WHO Europe.

The Purpose: Tobacco and alcohol policy is fraught with political and economic vested interests. The trade in and use of illicit drugs is killing its victims. Here, the author argues:

- 1 Fifty percent of all people who smoke regularly will die from cigarettes, half in middle age, the most economically active period of life. Apart from the health trauma, this is an economic and social waste
- 2 There is a direct relationship between the volume of alcohol consumed and certain diseases; so too, with illicit drug use. There is clear evidence that health promotion strategies are effective in reducing the health harm done by substance use
- 3 A key strategy is market regulation, through fiscal policy, restrictions on availability, marketing and product control
- 4 Interventions in the workplace, in schools, in homes and by primary health care providers are effective. To quit smoking, for example, at any age is beneficial; but cessation before middle age reduces almost all the excess risks
- 5 The World Bank estimates that tobacco products alone create a global economic burden of at least US\$200 billion a year. The costs of alcohol amount to between 2% and 5% of GNP. A comprehensive policy response is needed to tackle this waste

Having had responsibility for the organisation's alcohol policy, Dr Anderson is now developing and implementing WHO's Action Plan for a Tobacco Free Europe. A former general practitioner, he has published over 120 articles and books covering health promotion and disease prevention.

The 'Smoking Gun'

Policy Actions for Health

The harm done by tobacco, alcohol and illicit drugs contributes up to 24% of the total disease burden facing Europe (Murray and Lopez 1996).

The use of tobacco, alcohol and illicit drugs is closely associated with social disadvantage and poverty. Evidence is available to demonstrate cost-effective strategies that prevent disease and promote health. However, policies that regulate the availability of, and demand for, tobacco, alcohol and illicit drugs will not succeed in the long term if the social factors that determine their use are left unchanged. The broad framework of social and economic policy must therefore support effective policies.



Tobacco and alcohol products are a significant economic burden to individuals, families and society. The World Bank estimates that tobacco products create a global economic burden of at least US\$200 billion a year. The cost of the harm done by alcohol to society, including lost productivity, is estimated for different countries to be between 2% and 5% GNP.

The use of progressive taxation policies not only brings in Government revenue, but also reduces the harm done by tobacco and alcohol products. Brief interventions in primary health care for smoking cessation and reduction in hazardous and harmful alcohol consumption are amongst the most cost-effective of all health care interventions.

The implementation of effective tobacco and alcohol policy is fraught with political and economic vested interests, particularly from the tobacco and alcohol industries. Historically, these industries have denied that their products are harmful to health and an economic burden to societies. These industries have not been held accountable for such costs and no attempt has been made to recover the economic deficit, or to exercise political leverage to direct companies to invest in safer product design and development. There is evidence to show that such policies could be beneficial, both in terms of delivering better health, and in generating funding for health promotion activities.



Consumer demand for freedom from exposure to environmental tobacco smoke, or drink driving accidents, has led to reduced tobacco and alcohol consumption. Such demand is likely to continue to grow.

The Health Impact

There is a direct relationship between the number of cigarettes smoked, the duration of smoking and the risk of cardiovascular diseases, cancers and respiratory illness (Wald and Hackshaw 1996). Fifty per cent of all people who smoke regularly will die from cigarettes, half in middle age (the most economically active period of life) and half in old age (Doll, Peto et al. 1994). In Europe, death from tobacco smoking creates an average loss of 20 years of life expectancy. Furthermore, exposure to environmental tobacco smoke increases the risk of lung cancer, coronary heart disease, low birth weight and sudden infant death (HMSO 1998).



There is a direct relationship between the volume of alcohol consumed and the risk of liver cirrhosis, certain cancers (including female breast cancer), raised blood pressure and haemorrhagic stroke (Anderson 1995). Although alcohol consumption reduces the risk of coronary heart disease, most of the reduction in risk is achieved at consumption levels of less than 10g a day and is only relevant for people aged over

50 (Anderson 1998). At high levels of consumption, alcohol increases the risk of sudden coronary death (Kupari and Koskinen 1998).

There is a relationship between the volume of alcohol consumed and the intensity of alcohol consumption and the risk of family, work and social problems such as alcohol dependence, accidents (including fires), assaults, criminal behaviour, unintentional injury, violence, homicide, suicide and road traffic accidents (Edwards, Anderson et al. 1994). Between 40% and 60% of all injury-related deaths, either intentional or unintentional, can be attributable to alcohol consumption (English, Holman et al. 1995).



Illicit drugs include a wide range of substances, which, because of their potential for harm have been placed under the control of international conventions. Illicit drugs increase the risk of poisoning, dependence, psychosis, suicide, overall mortality and crime and, through contaminated injection, the spread of HIV and hepatitis (English, Holman et al. 1995).

Several health promotion and disease prevention strategies are proven to be effective, in reducing the harm done by substance use.

1 Market Regulation

A key strategy to reduce harm is regulation of the market, through fiscal policy, restrictions on availability and marketing and product control.



Through fiscal policy, a 10% increase in the price of cigarettes can lead to a decrease in the quantity smoked by European populations of about 5%, and by young people of 10–15% (Townsend 1996). Increasing taxes on alcohol products reduces alcohol-related harm, particularly among younger people and heavier drinkers (Osterberg 1995). Approximately a 20% decrease in male alcohol-related mortality and a 5% decrease in fatal accidents, suicides and homicides in European populations, will match a 10% decrease in per capita consumption (Norstrom 1995).

There is some evidence that restricting access to tobacco products for young people can reduce the number of adolescents and young people who become daily smokers (Reid 1996; Forster and Wolfson 1998). A standard means to implement restrictions on sale is to ensure that tobacco products are sold only in a direct face-to-face exchange between a licensed retailer and the consumer (Food and Drug Administration 1995). In the United States, an increase in the minimum legal drinking age led to a reduction in alcohol-related road traffic accidents, as well as reducing alcohol consumption and alcohol-related deaths (Edwards, Anderson et al. 1994).



In many European countries, restrictions on the hours or days of sale, and regulation of the number, type or location of sales outlets, all decrease alcohol consumption (Edwards, Anderson et al. 1994). Responsible beverage service, beverage server training programmes, and greater legal liability for servers of alcohol have been shown, at least in the United States, to reduce the number of accidents where alcohol is involved (Edwards, Anderson et al. 1994).



Advertising controls can also help to regulate the market. There is a causal relationship between advertising and youth smoking behaviour (Food and Drug Administration 1995; HMSO 1998), and a positive health benefit of stringent advertising controls on reductions in smoking rates and youth smoking in European countries (Reid 1996). Tobacco industry campaigns are targeted at women and their changing roles in society and are considered to be particularly effective in recruiting young women smokers (HMSO 1998). An effective policy intervention is to ban all forms of direct and indirect tobacco-related advertising and sponsorship, an action supported by Directive 98/43/EC of the European Parliament and of the EC Council of July 6, 1998.



Similarly, advertising has a considerable impact on the use of alcohol products. There is some evidence to suggest that similar market restrictions on advertising of alcohol products would lead to reduced alcohol-related harm (Montonen 1996).

Health gains can be achieved through regulations that control the alcohol content of beverages, control the packaging in which alcohol products are sold and ensure that such packaging carries essential information, such as the ethanol content of the alcoholic beverage concerned (Greenfield 1998, Stockwell and Single 1998). Alcoholic drinks, which are marketed and masquerading as soft drinks, designed to appeal to adolescents, have been shown to increase the risk of intoxication among young people. There is a strong case for such beverages to be banned and for incentives to be given to manufacturers to develop competitively priced, high quality, alcoholic beverages with a low, and therefore less harmful, alcohol content.



Potentially effective is the use of litigation and product liability. Litigation can not only recover costs, but can also expose the actions of the tobacco and alcohol industries to the public. This leads to changes in public opinion which enable the introduction of additional regulatory measures (Howard 1996). As a tool of public policy, litigation can force the industry to accept accountability for the health deficits caused by its products. Action to restore these deficits through transfers of funds, action to minimise any future deficit, alternative product design and acceptance of fiscal and legal measures for product regulation (Annas 1997), would be the result.

From the late 1980s onwards, legislation to control smoking in public places has been introduced in many European countries (Harkin, Anderson and Goos 1997). Where it has been implemented, there is evidence to show that it minimises and eventually eliminates the risks of involuntary exposure to tobacco smoke, thereby protecting the right of nonsmokers to a smoke-free environment (Roemer 1993). Controls on smoking at the workplace have also been shown to provide an important support to the large numbers of smokers who want to quit (Puska, Korhonen et al. 1997).



2 Interventions by Primary Health Care Providers

To quit smoking at any age is beneficial, but cessation before middle age reduces almost all the excess risks (Doll, Peto et al. 1994).

Unselective brief interventions for treatment of tobacco dependence by primary health care providers, such as physicians and nurses, have been shown to be very effective with one-year quit rates of 3% over that of controls (Silagy and Ketteridge 1998). Quit rates, whatever their level of effectiveness, are doubled when using treatment products, including nicotine replacement therapy (Silagy, Mant et al. 1998). Not only are brief interventions effective, but also they are one of the most cost effective of all known health care interventions. The cost per life year gained in US currency terms is below \$3000 in Western European countries for counselling for smoking cessation, with or without nicotine replacement therapy. In contrast, it is \$30,000, ten times as high, as the median cost of over 300 standard medical interventions (Tengs, Adams, Pliskin et al. 1995; Cromwell, Bartosch, Fiore et al. 1997; Parrott, Godfrey, Raw et al. 1998).



Such interventions in primary health care settings are also efficient, and cost effective, in reducing alcohol consumption by over 25% in people with hazardous or harmful alcohol consumption (Nuffield Institute for Health 1993).

Specific harms associated with the use of illicit drugs, such as blood-borne infections, health problems, poverty, crime, violence and reduced productivity, can be lessened through risk containment strategies (Swiss Federal Office of Public Health 1998). The spread of HIV infection can be contained by targeting injecting drug users, organising needle and syringe distribution and exchange, making condoms easily available, offering prescribed maintenance therapy, and expanding outreach services to less accessible populations (WHO 1998a). Such programmes call for some aspects of illicit drug management to be shifted from the criminal justice to the health care sector.



3 Education & Public Information Interventions

It has been assumed that providing people with information about tobacco, alcohol and illicit drugs and related risks through education, or through the mass media, would contribute to a change in attitude and behaviour. However, the general conclusion is that although information can increase knowledge, such activity alone rarely influences behaviour (Montonen 1995; Reid 1996).

One reason is that such information competes against a barrage of 'real life' experiences that promote a different message. The influence of personal experience on people's perceptions of health-related issues tends to be more powerful than that of any general information provided. Thus, the effects of short-term efforts to provide information are likely to be small, unless accompanied by regulatory and environmental changes which themselves enter into peoples' experiences.

4 Interventions in the Home

People who live in households with smokers suffer particle pollution two to three times higher than those who live in smoke-free households (WHO 1995). Environmental tobacco smoke is a cause of ill health and sudden infant death in

the home (HMSO 1998).

Alcohol use can increase the risk of family violence (Eurocare 1998). Children in families with alcohol problems suffer a far higher level of neglect and lack of care, security and money (Eurocare 1998). Such children often suffer difficulties in concentrating on schoolwork and they are often subject to violence and psychological abuse.

Without the support of public policies on issues such as smoke-free households or other health and social policy initiatives that create a supportive environment for families and parents, evidence of the effectiveness of health promotion interventions based in the home will remain limited.

5 School-based Interventions

Considerable investment has been placed in school-based education programmes. While reviews of school-based education show that its influence on attitudes and behaviour is uncertain, some elements (particularly peer-led sessions and skill-based learning) have been demonstrated to have an impact on tobacco and alcohol consumption (Anderson 1995). School based education on tobacco, alcohol and illicit drugs should be integrated into the concept of the health promoting school. This concept offers opportunities for, and requirements of, commitment to the provision of a safe and health enhancing social and physical environment, both for those working and learning in the school along with effective links to families and communities. An integrated holistic approach to health promotion should be adopted, prioritising it within the curriculum.



School based policy on substances should be aimed at supporting long term education policy objectives. Increased minimal drinking ages have been shown in the United States to lead to higher educational achievement (Holder 1998). Children who have completed pre-university education or higher technical training or above, have much better chances in health as well as in occupation and income (Wadsworth 1996). Further, education is a very strong predictor of making healthy choices in relation to the use of tobacco and alcohol products (Marmot 1996).



6 Work Place Interventions

Health problems at the workplace include accidents, exposure to environmental tobacco smoke and stress. Alcohol may be implicated in up to 25% of industrial accidents (Henderson, Hutcheson and Davies 1995).

Legislation to control smoking at the workplace eliminates the risks of involuntary exposure to tobacco smoke, reduces the risk of fires and provides support to the large numbers of smokers who want to quit (Roemer 1993, Puska, Korhonen et al. 1997). Workplace alcohol policies that invest in employees and reduce rates of dismissal, yield significant benefits to enterprises, leading to decreases in health care costs, reductions in sickness disabilities and substantial decreases in accidents, both on and off the workplace premises (Henderson, Hutcheson and Davies 1995).



Workplace tobacco and alcohol policy needs to be integrated with labour market policy that recognises that investment in secure employment may yield benefits to adult health and thus long-term productivity (Marmot and Feeney 1996). Inclusion in economic analysis of the stress of workloads and job insecurity, which in turn can promote the use of tobacco and alcohol products would yield a better picture of the true outputs of economic activity.

7 The Community Approach

It has been increasingly recognised in public health that the preventive approaches that hold the greatest promise are community-based and community-wide, and focus on both individual behaviour and environmental influences (Bracht 1990). The increasing focus on the community is due, in part, to the recognition that behaviour is greatly influenced by the environment in which people live. The emphasis of community action should be on mobilisation and organisation rather than intervention (Holder 1998).

Comprehensive community programmes have been shown to have a positive effect on health choices, including the use of tobacco and alcohol leading to favourable changes in the health of European and North American populations (Puska, Toumillehto, Nissinen et al. 1995; Holder 1998). More directed community interventions can be effective in reducing alcohol involved traffic crashes, under age sales, increased implementation of responsible beverage service and increased adoption of local laws (Holder 1998).

The Social Impact

The use of tobacco, alcohol and illicit drugs is closely associated with social and economic disadvantage. Social deprivation, as measured by indicators such as poor housing, low income, lone parenthood, unemployment or homelessness, is associated with high rates of smoking and very low rates of quitting (Wilkinson and Marmot 1998).



Policies that regulate the availability of and demand for tobacco and alcohol products will not succeed in the long term if the social factors that determine their use are left unchanged. The use of alcohol, illicit drugs and tobacco is both a response to social breakdown and an important factor in worsening the resulting inequalities in health. The broad framework of social and economic policy must therefore support effective substance-use policy.

Reducing injury from violence and accidents requires public policies to give higher priority to issues related to social cohesion and safety in the living and working environments, and to address the major determinants of violence and accidents, with particular attention to the use of alcohol.

Further, policy to reduce the harm done by tobacco, alcohol and illicit drugs must be assessed in terms of its impact on equity (Marmot 1997). One obstacle to taxes on tobacco and alcohol products is that they can be regressive leading to increased inequity. However, regressive taxes can be balanced by other progressive taxes in the overall tax system. Taxes on tobacco



and alcohol products can be used for earmarking for specific health purposes. Targeted interventions based in primary health care can be effective in reducing inequities in health (Townsend and Davidson 1988). Interventions in primary health care should be available, accessible and affordable to all.

Maternal smoking and heavy alcohol use, which are also strongly determined by social class, increase the risk of low birth weight (English, Holman et al. 1995). The fact that in many European countries young women are now the group most likely to begin smoking will lead to a deficit in the health capital of their offspring that may extend to the next generation. Policies that focus on creating a prenatal and natal environment, which minimises or eliminates exposure to tobacco and alcohol, will thus increase health capital. Taxes on alcohol and tobacco products not only reduce consumption but the revenue generated can be used to provide income supplement in early life. Increased income, through negative income taxes, given to low income populations that are starting families has been demonstrated to result in higher birth weight babies (Kehrer and Wolin 1979).

The Economic Impact

Tobacco and alcohol products are a significant economic burden to individuals, families and societies through medical costs, lost productivity from increased morbidity, costs from fire and damage to property, and lost income due to early mortality. The World Bank estimates that tobacco products alone create a global economic burden of at least US \$200 billion a year, through health care costs and loss of productivity (Barnum 1994). The cost of alcohol to society due to direct costs and lost productivity costs is estimated in different countries to be between 2% and 5% of GNP (Godfrey 1997). The economic burden created by illicit drug use is difficult to quantify. It must, however, be considerable.

There are large losses in government revenues through failure to collect taxes on smuggled tobacco and alcohol products. The market for smuggled cigarettes in the European Union alone is 60 billion cigarettes per year, at a tax loss of \$6 billion (Joosens 1997).

A reduction in the harm done by tobacco and alcohol use through effective public policy will lead to economic gain, through increased government revenue, reductions in the costs of health care provision, reductions in lost productivity, and importantly, reductions in health inequalities.

The rate of taxes on tobacco and alcohol should be sufficiently high to ensure the achievement of health goals. A proportion of tobacco and alcohol taxes can be used to fund all tobacco and alcohol control activities, including health education, policy research and support for health services.



The Political Impact

Good health is fundamental to sustainable economic growth (WHO 1999). One measure of the success of public policies is their impact on the health of all the people.

Like environmental issues, health is rapidly becoming a powerful political platform.

The main obstacles to implementation of effective tobacco and alcohol policy are the economic and political interests of the tobacco and alcohol industries. Historically, these industries have denied the harm from their products and have not been accountable for the costs of the health and economic deficits they have produced. Through litigation, the denials of the tobacco industry have been exposed and the industry has publicly admitted the addictive nature of, and the harm done by, its products (Glantz, Slade et al. 1996). Exposure should lead to acceptance of recovering the costs from the tobacco industry and greater effort towards the development of safer product design.



The proposed International Framework Convention on Tobacco Control aims to extend international market controls to tobacco products (WHO 1998b). To be effective this will require international political support. Further, countries should be encouraged to examine their socio-economic, trade and foreign policies to ensure that they are not detrimental to health in other countries, and that they contribute as much as possible to the development of disadvantaged countries (WHO 1999).



In Europe, consumer pressure has brought some positive political response. The pressure is unlikely to go away, especially for freedom from exposure to environmental tobacco smoke, and reductions in drink driving accidents. This pressure has already led to reduced tobacco and alcohol consumption (Puska, Korhonen et al. 1996; Gual and Colom 1997). There needs to be further public support of health promotion and disease prevention strategies that benefit all societies, and their citizens.

8 Priorities for Action

Comprehensive policy involving different sectors and at different levels of society is required to reduce the harm done by tobacco, alcohol and illicit drugs. The market needs to be regulated, particularly through fiscal policy that corrects for externalities and increases government revenue. The rate of taxes on tobacco and alcohol should be sufficiently high to ensure the achievement of health goals. Taxes can be used for earmarking for specific health purposes, compensation for possible regressive distributional implications of the taxes and reducing other existing distortionary taxes.

Recognizing the effectiveness and cost effectiveness of interventions by primary health care providers, purchasers of health care should consider intensive investments in training of primary health care providers and reorientation of clinical practice to support treatments for tobacco dependence and interventions to reduce hazardous and harmful alcohol consumption.



Although education and public information interventions are frequently utilized, it should be remembered that, on their own, they are unlikely to have a major impact. They should be supported by environmental interventions and focus on skills for decision making and support for public policy.

Interventions at the workplace are cost effective strategies that improve the health of employees and are likely to lead to long term improvements in

productivity. Comprehensive community interventions hold great promise, particularly when focused on community mobilization and organization.

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Chapter Seven

Social Challenges 1

The Subject. Feeding our Families – Health Promotion through Nutrition.

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The Purpose: Throughout this century we have been witnessing great changes in lifestyles, in the age patterns of our communities, and the average nutritional requirements. There is evidence that these dietary changes are associated with increased coronary heart disease, type 2 diabetes and some types of cancer. Here, the authors argue:

- 1 There is an increasing body of evidence indicating that health promotion in nutrition leads to health gains at a much lower cost than medical treatment of either high risk groups or patients
- 2 Most intervention programmes directed at nutrition result in positive effects on morbidity and mortality through reductions in cardiovascular risk factors
- 3 The public health approach to disease prevention should not focus solely on risk behaviour education and behavioural skill development; it should incorporate understanding of the barriers preventing dietary change
- 4 Health promotion interventions targeting socially and economically disadvantaged groups have great potential impact in reducing socio-economic differences in health
- 5 Community interventions are more effective when education is accompanied by structural measures that facilitate and reinforce sustainable changes in dietary behaviour

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It matters what you eat

Optimal diets for health provide a balanced supply of nutrients in sufficient amounts to promote optimal growth and development. They not only prevent nutritional deficiencies, but optimise the prevention of chronic diseases. Excessive intakes of nutrients should be avoided in the context of prevention of typical 'lifestyle' diseases, such as cardiovascular disease, specific types of cancer, type 2 diabetes and obesity.

This century, major changes in the level of physical activity and changes in the age-distribution of populations have changed average nutritional requirements. The agricultural and industrial revolution, as well as globalisation of the economy (including the food industry), has changed the availability of foods. Socio-economic changes have resulted in altered dietary patterns, increased dependence on food eaten outside the home, and convenience foods. In general, diets in most European countries have become richer in animal protein and saturated fat, whereas the consumption of vegetable protein, complex carbohydrates and dietary fibre has decreased. Such dietary changes are associated with an increased incidence of coronary heart disease (CHD), type 2 diabetes mellitus and some types of cancer, which are still the major causes of mortality and morbidity in European countries. 

Undernutrition and overnutrition

In most European countries there is a constant and abundant food supply. Diseases resulting from nutritional deficiencies have been largely eliminated as a public health problem. However, deficiencies still arise, particularly in vulnerable groups such as infants, children, pregnant women and the elderly. This is a particular concern in economically disadvantaged groups. Such nutritional deficiencies usually concern micronutrients (e.g. vitamins) and can be present even when macronutrients are well in excess of demand. Excess intakes of energy and saturated fat are considered to be responsible for the major part of the burden of disease related to diet, with major implications in terms of disability, impaired quality of life and social and economic costs. Table 7.1 gives an overview of examples of some of the major issues in diet-related conditions and diseases.

Table 7.1 Examples of diet-related health problems in Europe

nutritional factors	related health problems
Insufficient energy intake	impaired cognitive and physical development and performance ¹ suppressed immune function ¹
Excess energy intake	obesity type 2 diabetes mellitus
High sugar intake	dental caries ² obesity

High saturated fat intake	increased risk of cardiovascular disease ^{3,6,7,9} type 2 diabetes mellitus
Low fruit and vegetable intake	increased risk of cardiovascular disease increased risk of certain types of cancers ¹⁰
Iron deficiency	anaemia
Vitamin D and calcium deficiency	impaired bone development and structure ⁴
Iodine deficiency	hypothyroidism and goitre
Low fatty fish intake	sudden cardiac death ⁵ myocardial reinfarction ⁶

The relations between diet and cardiovascular risk factors are quite consistent. A reduced saturated fat intake and an increased fruit and vegetables intake favourably affect CVD risk factors, incidence of CHD and cerebro-vascular accidents. Early evidence for this has been derived from cross-cultural studies (Seven Countries Study³) and from studies in which the CHD disease patterns in immigrants changed to those of their new home countries.⁷



Strongest evidence for the relation between diet and cardiovascular health is derived from intervention studies. Most of the evidence shows a beneficial effect of diets rich in plant-based foods and relatively poor in foods from animal origin. In a review of cholesterol lowering trials (including diet intervention), a 6% reduction in total mortality and 13% reduction in coronary heart disease was reported.⁸ Favourable effects on CHD and total mortality mainly occurred in secondary prevention trials in which diets low in saturated fats are supplemented with polyunsaturated fats.⁹ In addition, an expert panel of the World Cancer Research Fund¹⁰ concluded that eating the recommended five servings of fruits and vegetables each day could reduce cancer rates by more than 20%. Adherence to dietary recommendations and physical activity, and maintaining a healthy body weight, could reduce cancer risk by 30% to 40%.




Interventions for nutrition

Recognising the body of evidence on the relation between diet and health, a growing acceptance of the need for prevention-oriented health policies arose in many European countries in order to minimise diseases associated with under- and over-nutrition. Over the past 25 years several community intervention trials in the field of nutrition have been conducted. Some of the intervention programmes were directed at the community as a whole, while others were directed at specific populations (elderly, high-risk groups), or towards targeted sites (work, schools).

Community intervention programmes

In the 1970's, community health promotion interventions directed at nutrition were part of multi-targeted programmes aimed at reducing cardiovascular disease. These programmes focused on simultaneously lowering levels of multiple determinants (such as smoking, blood cholesterol and blood pressure), and were primarily educational with a focus on behavioural change in high risk populations or individuals. The first four major community intervention projects in CVD prevention, were the North Karelia Project¹¹ ▶ *Health Challenges 1, Ch.5*, the Stanford Heart Disease Prevention Programme,¹² the high-risk-group interventions Multiple Risk Factor Intervention Trial(MRFIT),¹³ and the Oslo Study.¹⁴ In most cases, positive results through reductions in cardiovascular disease (risk factors) have been observed in intervention populations (Table 7.2). However, also in comparison populations, positive changes have occurred, only smaller. Most effective were interventions among high-risk groups (MRFIT and the Oslo study). Since these studies had a multifactorial approach, it is not possible to distinguish the contribution of dietary change from effects of changes in smoking behaviour and pharmacological treatment of high risk factors.

From the first experiences it was recognised that the public health approach to disease prevention should not focus solely on risk behaviour education and behavioural skill development, but should also incorporate environmental and policy measures, plus an understanding of the barriers preventing dietary change. Health promotion in the 1980's and 1990's became more integrated, meaning that more actors or sites were involved, such as restaurants, supermarkets, work sites, schools, local governments and the food industry (e.g. low fat food products). 

The Minnesota Heart Health Programme is an example of an integrated health promotion programme, conducted between 1980 and 1993. Evaluation of this programme showed modest behavioural effects and small changes in risk factors for CHD. Programmes such as the Pawtucket Heart Health Programme,¹⁵ the Stanford Five-City Project^{3,16,17,18} and others^{19,20,21} observed similar effects. The German Cardiovascular Prevention Study was most successful in effectively changing cardiovascular risk factors (Table 7.2).²² In general, effects were most pronounced among those groups with the highest exposure to the intervention.

Results of intervention programmes in the general population were less positive than those observed in small scale controlled intervention studies. The small differences between intervention and control populations, may be explained by:

- 1 adoption of the proposed life-style changes in the control populations ('contamination')
- 2 insufficient dose or 'tuning in' of the intervention to the community

In general, people are more likely to change their behaviour if it leads to short-term effects (e.g. better taste), than if it leads to either intermediate-term effects (overweight) or long-term effects (risk of coronary heart disease).²³ Intervention programmes should therefore also focus on the short term benefits of dietary changes.

School-based programmes

Young people's food choices are often influenced by advertising, especially television, for low nutritive foods, which are high in fat and sugar.²⁴ Very little promotion is made for healthy food. Stimulating healthy eating patterns should begin in childhood, firstly because it may prevent immediate and long term health problems, secondly because it is more difficult to change eating habits at older age. School health programmes can help children attain good health by providing them with the skills, social support and environmental reinforcement they need to adopt long term healthy eating behaviours. Schools are the ideal setting for promotion, since they (1) can reach almost all children and adolescents, (2) provide opportunities to practice healthy eating (canteens), (3) can address peer pressure that discourage healthy eating, and (4) have skilled personnel available.



The effectiveness of several school programmes, including healthy diet, has been evaluated. Most successful were those with an integrated approach, entailing improved school catering, education of teaching and catering staffs, along with those involving parents, and representatives from education and industry. These school intervention programmes achieved considerable behavioural changes and often show small but significant improvement in risk factors status.^{25,26,27,28,29} The effective implementation of health education depends to a large extent on the training and motivation of teachers, parents, administrators and food service staff. The effectiveness of school programmes is limited when the cultural environment has a strong influence on food-related beliefs, values and practices.³⁰



Worksite-based programmes

Worksite initiatives promoting healthy nutrition have concentrated on promoting skills, environmental and social support, food service and risk factor screening. Several worksite interventions have been evaluated in the literature. One of the first trials was the WHO European Collaborative Trial in the Multifactorial Prevention of CHD (1970), conducted in 80 factories across Europe. The programme combined both a population approach (health education for all) and a high-risk approach (screening). In the total population, a significant reduction was observed for smoking (2%), total cholesterol (0.5%) and systolic blood pressure (1.5%). The high risk approach resulted in much larger risk factor changes than the general education programme. In addition, the intervention was associated with a reduction in fatal CHD (7%) and non-fatal MI (15%), total CHD (10%) and total mortality (5%).³¹

Other programmes that have been reported include the Treatwell Programme, Next Step Trial, Healthy Worker and the Wellworks Staff Healthy Heart Project. In general, these studies show modest improvement in nutritional behaviour,³² but only limited improvement in health risk factors status.^{33,34,35} Extended programmes, including e.g. individual behavioural counselling and screening programmes, are more successful than simple programmes.^{36,37} However, any change in healthy eating behaviour seemed to last as long as the intervention was sustained. This indicates that there is a strong need for workplace health policy. This would encourage change in

social norms, and increase the chance of sustainability of healthy dietary patterns.

Home-based programmes

Home-based nutrition programmes can comprise of direct education such as evening classes and cooking lessons, plus prevention programmes involving nuclear families, supermarket programmes and intervention programmes carried out by general practitioners.

The Tromsø study is an example of a controlled family intervention study, which provided health education (nutrition, smoking and physical activity) in families of men with elevated cholesterol levels. After 6 years of follow up, beneficial effects were observed in dietary patterns and significant changes were observed in serum total cholesterol and body mass index. The San Diego Family Health Project is a family based one year CVD risk reduction programme designed to decrease intake of high salt, high fat foods and to increase physical activity. Experimental families reported improved eating habits, such as a lower total fat intake and had beneficial changes in LDL-cholesterol and blood pressure.³⁸

An example of a supermarket programme is the ‘Fat-watch’ campaign in the Netherlands. This campaign was designed to reduce fat intake of consumers and used supermarkets as the main conveyers of the message. The Fat-Watch intervention resulted in limited, but significant, effects in attitude and intention to buy low fat food.³⁹

Finally, lifestyle intervention by a general practitioner can be considered as a home-based or family oriented intervention. In a meta-analysis it was shown that the general practice-based lifestyle interventions show small changes in behaviours.⁴⁰

Social Impact

People from lower socio-economic groups face relatively higher mortality rates and more disability than those from a higher socio-economic status. Apart from material conditions, such as housing, deprivation and employment status, differences in behaviour seem to underlie a substantial part of inequality in health.

Important behavioural risk factors, clustered in lower socio-economic groups include lack of breast feeding, smoking, physical inactivity, excess alcohol consumption, obesity, hypertension, hypercholesterolaemia and poor diet.^{41,42} The diet of the lower socio-economic groups provide cheap energy from foods such as meat products, full cream milk, fats, sugars, preserves, potatoes, and cereals. There is, however, little intake of vegetables, fruit, and whole-wheat bread.⁴³ This type of diet is lower in essential micronutrients, such as calcium, iron, magnesium folate, and vitamin C than that of the higher socio-economic group.³⁷

Health promotion interventions, targeted at social groups with the highest prevalence of risk factors, and national policies for increasing the level of education, have a great potential impact in reducing socio-economic differences in health. To prevent the general concern that economically disadvantaged groups may benefit less from health promotion than advantaged groups (e.g. resulting from lower levels of literacy) individual interventions should be accompanied by structural measures and

well planned provision of interventions within the health care system.^{38,44}

Diet interventions should be aimed in the first place at increasing the knowledge of the short term and long term effects of a healthy diet, and acquiring the skills for changing them. Secondly, but equally important, interventions should include improved accessibility to healthy foods and should incorporate involvement of the social environment. Differences in behaviour are often generated by elements of the social position itself (e.g. housing and working conditions), or by characteristics that are closely related to this social position.⁴⁵



Economic Impact

The economic impact of nutritional intervention programmes has not been widely researched. Although quantitative data are scarce, it can be argued that health promotion in nutrition has the potential for improving public health at much lower costs than medical treatment of either high risk groups (e.g. persons with high cholesterol levels) or patients.

In Norway the cost-effectiveness of a population based promotion campaign of healthier eating habits was compared with dietary and medical treatment of individuals. The cost per life year gained over 20 years of a population based strategy was projected to be £12 and of dietary treatment £12,400. However if drugs were added for 50% of the subjects with a high cholesterol concentration, costs per life year gained were nearly tenfold the costs of the dietary treatment.⁴⁶ A Swedish study reported that, taking only health care costs and savings into account, the costs per life year saved by dietary intervention ranged from £1100 to £4050.⁴⁷ Dietary treatment is particularly cost-effective in specific groups, such as persons with elevated cholesterol levels.⁴⁸

Prevention of chronic diseases through health promotion has a favourable cost-benefit ratio in comparison with treatment of these diseases. For example, if saturated fat and vegetables and fruit were consumed in the Netherlands according to the nutrition guidelines, the number of cases of cancer would fall by about 13,000 and there would be over 2,200 fewer events of fatal coronary heart disease. Similarly, a reduction of 1% in serum cholesterol, which can be achieved through health promotion, is related to a 2-3% reduction in CHD.⁴⁹

When indirect costs and benefits (productivity, quality of life) are also included in the cost-effectiveness, the economic benefits will outweigh the direct and indirect costs even more. Moreover, good health is fundamental for sustainable economic growth. However, further quantification of the cost-effectiveness of dietary intervention programmes is needed for optimal planning.



Political Impact

Governments have the responsibility to develop sound nutrition policies as the necessary background for all activities related to health promotion through dietary changes.⁵⁰ Emphasis should be given to health promotion with socially and

economically disadvantaged groups and children.

Opportunities need to be created for alliances between various ministries (health, economy, agriculture, and social affairs), local governments, food producers (agriculture), food manufacturers (the food industry), food distributors, retailers (e.g. catering, supermarkets, restaurants) and consumers. Government policies regarding agriculture, prices and subsidies are essential in this process. Such intersectoral collaboration requires strong political backing. The activity of the steering committee, 'Healthy Nutrition', in the Netherlands is an example of an intersectoral alliance. Apart from a large 'Fat Watch Campaign', the committee also stimulated manufacturers and retailers to bring new and healthier products to the market, and to devote attention to the importance of healthy nutrition. Favourable changes in the consumption of saturated fats, which were registered in the Dutch Food Consumption Survey (from 16.4% to 14.1% of energy intake between 1987 and 1992), were a result of changes in product range, composition and consumers' preferences. Mainly due to the changes in fat intake, the prevalence of hypercholesterolaemia dropped in the period 1987-1995 by about 6%.



The effect of pricing and taxation on food choice and dietary intake is of obvious great importance and well researched by the food industry. The influence of food product prices in the context of health promotion is much less well studied. French et al. have shown that reduction of prices of low-fat snacks in a vending machine for a period of three weeks doubled the purchase of these products.⁵¹ Similarly, it has been shown that a 50% reduction of the price of fruit and vegetables in a cafeteria increased their consumption threefold compared to the non-intervention period.⁵² More anecdotal is the switch from animal fat (estimated availability down 23%) to vegetable fats (up 48%) in Poland from 1986-1990 and 1994 following the removal of price subsidies on these products.⁵³



Making a difference

The potential impact of dietary change on the incidence of chronic diseases is considerable. Randomised clinical trials in high risk individuals show impressive changes in cardiovascular disease risk factors.

Multicomponent nutrition interventions in community, schools, work sites and homes have had positive effects on nutritional behaviour, but they produce smaller effects on risk factors or the incidence of disease. There are opposing forces in the daily lives of targeted individuals, such as time pressures, economic constraints, food advertisements, misconception of dietary intake of fats, fruits and vegetables, the limited focus on short term benefits of a healthy diet, and in some cases, the limited access, either economically or socially, to healthy foods.⁵⁰

The major lesson learned from these studies therefore, is that educational intervention should be complemented with structural measures, such as pricing policies and regulation, along with health promotion aimed at achieving environmental and social changes that will facilitate and reinforce sustainable changes in behaviour of individuals throughout life.



Involvement of the food industry is essential to produce changes in the composition of food products (healthy affordable products), labelling of food

products, and economic incentives to eat a healthier diet.

Factors that are of general importance for increasing effectiveness of prevention are:

- ▶ understanding how nutrition can be influenced (additional focus on short term effects)
- ▶ ascertaining the correct target group (attention to specific high risk groups)
- ▶ establishing the most suitable intervention strategy (dose)
- ▶ making clear responsibilities in carrying out interventions
- ▶ choosing proper and realistic outcomes (apart from morbidity, also e.g. quality of life)

The formation of a community coalition may be an effective means for sharing resources, increasing awareness on the part of the public as well as decision makers, and building momentum for community change.

Table 7.2 Controlled community intervention programmes investigating the effect of diet intervention on health

Study	Year	Programme	Behavioural effects	Risk factor effects	Morbidity/mortality
North Karelia Project	1972	Education, community organisation, mass media	After 10 yrs follow-up reduction in smoking in men (28%, s) and women (14%, ns)	After 10 yrs follow-up reduction in TC (m:3%, s w:1%, ns) SBP (m: 4%, s w:5%, s) and DBP (m:1%, ns, w:2%, ns)	reduction CHD mortality After 5 yr follow up: m: 4%, w: 2%, After 25 yr follow up: m: 73%
MRFIT	1973	Education high risk groups, hypertension medication	After 7 yrs follow up reduction in smoking of 14%	After 7 yrs follow up reduction of TC of 2% and DBP of 4% (s)	decline MI mortality (s)
Martignacco	1977	Education, targeting high risk groups, strategy for secondary prevention	Not measured	After 6 years of follow-up net reduction in TC (3%, ns) SBP (11%, s) and DBP (4%, s), no effect on BMI	not measured
Stanford Five-City	1979	Multifactorial comprehensive programme, community organising, social marketing	After 5 yrs of follow up net reduction in smoking (13%, ns) and fat intake (ns)	After 7 yrs of follow up reduction in TC (2%, ns) BP (4%, ns) and RHR (3%, ns)	not measured
Minnesota Heart Health Programme	1980	Mass media, community organising, direct education	Downward trend in smoking prevalence (m: -1.5% per year in both groups (ns), w: -1.4% treatment group)	Downward trend in serum total cholesterol similar in treatment and comparison (-1.12 mg/dl per year)	no significant effect on mortality or morbidity CHD and stroke
Pawtucket Heart Health Programme	1980	Multi-level education, screening, counselling programmes	After 10 yrs of follow up downward trend in smoking greater in comparison (7%) than intervention area (5%)	After 10 yrs of follow up net reduction TC (0.3%, ns) and SBP (1.4%, ns)	decline CVD 16% during programme and 8% after programme
German Cardiovascular Prevention Study	1984	Multifactorial education integrated programme	After 6 yrs of follow up net reduction in smoking (7%, s)	After 6 yrs of follow up net reduction in TC (2%, s), SBP (2%, s) and DBP (2%, s), no effect on HDL and BMI	not measured

m: men, w: women, TC: total serum cholesterol, SBP: systolic blood pressure, DBP: diastolic blood pressure, BMI: body mass index, HDL: high density lipoprotein, RHR: resting heart rate, CHD: coronary heart disease, MI: myocardial infarction, ns: not significant (p>0.05), s: significant (p<0.05)

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Chapter Eight

Social Challenges 2

The Subject: Keeping Safe. Effective Injury Prevention & Safety Promotion

The Author: Dr Leif Svanström, Professor of Social Medicine, Karolinska Institute, Stockholm, Sweden, and Head of Department of Public Health Sciences.

The Purpose: Health promotion is very effective in this area. And it needs to be. The author argues:


- 1 About one in seven of premature deaths and disabilities are related to injuries in society – through accidents, violence, or by self-infliction. This will rise to one in five by 2020
- 2 Educational programmes by themselves have little effect, but community programmes and legislative developments have impact
- 3 In the home, safety devices (like smoke detectors, fireguards, harnesses) reduce risks significantly; on the roads, legislation on the wearing of cyclists' safety helmets has led to massive decreases in injuries
- 4 Visiting older people and preventing falls through exercise and balance training is effective
- 5 Local 'Safe Community Programmes' have reported injury reductions of up to 30%

Dr Svanström has spent more than 30 years in social medicine, and health and safety promotion. A member of the WHO Expert Advisory Panel on Accident Prevention, he has concentrated research on developing evaluation models on process and outcomes, such as through the 'Safe Community' programmes.

Injury – an increasing but preventable threat

About one in seven of premature deaths and disabilities are related to injuries in our societies, i.e. due to accidents, violence or self-inflicted injuries. And it is on the rise, expecting to reach one in five by 2020. On the other hand structural changes and investments in safety on roads and at work show that these events are possible to prevent and safety can be promoted. An overview of about 500 published evaluated interventions form the current evidence-base for societal action – but all are not fully considered by planners and others. Cost calculations on interventions are rare.

At Home – Installation of *safety devices* like smoke detectors, fireguards, stair-

gates, safety catches for cupboards, coiled kettle flexes, safety harnesses, safety film for interior glazing, child resistant container closures and thermostat control of tap water have been shown to reduce risks. The best effect has been when *legislation* has been launched, while information and education alone have limited, if any, effects. 


Visiting older people at home, with an assessment of safety of the home environment, and interventions such as safety checks, safety modifications, referral to care, and recommendations for exercise have proven to be effective in reducing the rate of falls, scalds and burns. Preventing falls through exercise, balance training and Tai Chi is effective.

On the roads – There is good evidence that use of cycle helmets and child car seat restraints, provision of road crossing guards and measures to re-distribute traffic can reduce the rate and severity of childhood accidents. *Educational programmes* by themselves appear to have little effect. However, a number of *community programmes* which involve local participation and use a broad range of interventions have been successful. The introduction of legislation on helmets in Victoria, Australia, increased the wearing rate from 5% before to 83% after, corresponding to a decrease of head injuries by 70%.

In the Community – There are now a number of evaluations on local ‘comprehensive’ safe community programmes. Already after a couple of years up to 30% decrease in the number of injuries has been reported from the Nordic countries and Australia.

The Health Impact

The Home

Installations of *safety devices* like smoke detectors, fireguards, stair-gates, safety catches for cupboards, coiled kettle flexes, safety harnesses, safety film for interior glazing, child resistant container closures and thermostat control of tap water have been shown to reduce the risks of home injuries (Department of Trade and Industry 1991). Erdmann et al. (1991) point to the importance of legislation on tap water heat. After a 1983 Washington State law was enacted, hospital admissions for tap water burns decreased by more than 50%. Clarke et al. (1979) stress the effectiveness of child-resistant closures, required under the *Poison Prevention Packaging Act* of 1970, in reducing the incidence of accidental ingestion of aspirin and aspirin-containing products by 45% to 55%. 

Thirty-six trials were identified which evaluated interventions to prevent falls (Sackett D L et al. 1991). People assigned to an exercise group had an estimated 10% lower risk of falling than controls. Balance training reduced falls by 25%, and Tai Chi by 37%, compared to the non-intervention group (Wolf S L et al. 1993).

Visiting older people at home, with an assessment of the safety of the home environment, and interventions such as safety checks, safety modifications, referral to care, and recommendations for exercise, also showed effect. A trial with visits to people in poorer areas with specific advice on hazards, combined with health

education and media campaigns, resulted in around 50% more households making changes to the home environment (Colver et al. 1982). Svanström et al. (1996) have shown similar results for a whole community in a quasi-experimental study, with almost 30% decrease of femoral fractures over a five-year period. Ray et al. (1997) give support through a randomised controlled trial with randomisation of nursing homes. The mean proportion of recurrent fallers in intervention facilities was 19.1% lower than that in controls. Plautz et al. (1996) describe an intervention where falls were reduced by 60%, scalds were reduced from 9 to 0 and burns from 7 to 0 during the six month periods before and after the intervention.

On the Roads

There is good evidence that the use of cycle helmets and child car seat restraints, provision of road crossing guards, and measures to re-distribute traffic can reduce the rate and severity of childhood accidents. *Educational programmes* by themselves appear to have little effect. However, a number of *community programmes* which involve local participation and use of a broad range of interventions have been effective at reducing childhood injuries from a wide variety of causes. These need to be based on accurate data derived from surveillance systems. (Effective Health Care 1996).



This also applies to work with improving bicycle helmet wearing (Graitcer et al. 1995). Helmet promotion programmes that are organised by *community-wide coalitions* and use a variety of educational and publicity strategies have been shown to be effective. The most successful of these programmes – the Seattle Children’s Bicycle Helmet Campaign organised by Harborview Injury Prevention and Research Center – used multiple strategies and increased helmet wearing rates among children to more than 40% (Rivara F P et al. 1994). These strategies included classroom education, discount purchase programmes, bike rodeos, distribution of printed material through a variety of venues, and intensive promotional efforts by sports leaders, bicycle clubs, and the media to increase children’s helmet use (Bergman A B et al. 1990).

Studies from the introduction of *legislation* on helmets in Victoria, Australia, showed that 5% of all Victorian bicyclists wore helmets before, and 83% two years after, when the mandatory helmet law was passed, and head injuries decreased by 70%. (Cameron et al. 1994). A Study by Ekman R et al. (1997) using *community-approaches* shows for some intervention areas of Sweden, for children under 15, a 48% decrease in injuries during 1978-93 (head injuries, 59%). Sweden as a whole, starting a programme in 1987, showed a reduction of 32% in bicycle-related injuries (head injuries, 43%).



There is considerable evidence that *child car seat restraints* (for young children) when properly used, reduce car occupant injuries (Agran P et al. 1989). Use of child safety seats in the United States reduced the likelihood of fatal injury over the period 1983-1990 by an estimated 69% for infants and 47% for toddlers.



Finally, if a radical change of transport systems would be most efficient, the reduction of traffic speed is most important in the short term. Many countries have introduced traffic calming measures, and before and after studies confirm their

success. Traffic calming is intended to reduce speed to about 20 miles per hour and this would reduce the number and severity of casualties to children crossing the road. In Sweden all traffic is banned in some neighbourhoods (Thulin H 1986). ‘There is no reason to think that low death rates for children in the Netherlands and Sweden is due to some difference in national character rather than physical safety measures.’ (Preston 1995)



The Community

Community interventions may be distinguished by their shift away from the focus on individual responsibility and towards multi-faceted community wide interventions which ensure that everyone in a community is aware or involved.

Of 20 articles reviewed, 18 showed positive effects of injury prevention counselling in *primary health care* (Bass et al. 1993). Positive outcomes are measured by increased knowledge, improved behaviour, or decreased injury rates.

The Falköping Accident Prevention Program (FAPP), in Sweden, has evaluated comprehensive programmes aiming at promoting safety and preventing injuries at the local community level, addressing all kinds of safety issues and aimed at preventing injuries in all areas, all ages, all environments and situations, and involving non-governmental as well as governmental community sectors. An injury register was started in 1978 and intervention began in 1979. Three years later the total rate of injuries had fallen by 23% (home 27%, work 28%, traffic 28% and other injuries 1%) (Schelp L & Svanström L 1986; Schelp L 1987).



Another comprehensive community-based injury prevention programme has been carried out in Harstad, Norway (Ytterstad B 1995). A 27% overall reduction of traffic injury rates was found; for bicyclists 37% and pedestrians 54%; the burn injury rate decreased 53% (Ytterstad B & Sögaard A J 1995). In the reference city, located 1,000 km away, the rates increased.

Other community intervention trials have been carried out in Sweden (Svanström et al. 1995, Timpka T et al. 1998), Denmark (Frimodt-Möller B 1994 & 1996), Australia (Jeffs et al. 1993; Day L M et al. 1997) and the USA (Hingson R et al. 1996; Guyer B et al. 1989), with similar positive results.

The Social Impact

It is not only a well-known fact that injury is the major morbidity and mortality threat to the world’s population under the age of 40-45, but it is also an *increasing threat*, accounting today for about one in seven of all premature deaths and disability, rising to one in five by the year 2020. Lack of safety is also a major obstacle to reach equity in health. In a recently published review it was concluded that the contribution of injuries to the social-mortality & morbidity differential, particularly in childhood but also in youth, is considerable in many countries (Laflamme L 1998). It is particularly pronounced in the cases of traffic accidents, fires, homicides, and suicides.



Preston (1995) has considered social group issues. Most pedestrian accidents occur in built up areas, and the very young are most likely to be injured on minor

roads, very near home, especially in inner-city areas. Semi-skilled and unskilled manual workers suffer higher death rates from most causes than professional people, but one of the highest social class gradients is seen in death due to pedestrian accidents (Office of Population Censuses and Surveys 1978).

'If the responsibility for implementing strategies for child pedestrian safety rests solely with parents these gradients are likely to persist, at least in part, because the ability to advocate for child safety varies inversely with the need for it.' (Woodroffe C et al. 1993).



When conceiving interventions aimed at reducing social differentials, injury risks should receive much greater attention, both at the national and local level.

The Economic Impact

It has been calculated that injuries cause increasing economic costs to society – in Sweden in 1990 for example, it is estimated to have reached 63 billion SEK, equivalent to over 4% of GNP (Jansson B 1994).

In a review of lifesaving interventions in Sweden (Ramsberg A L & Sjöberg L 1997) the cost/life-year saved was calculated with the most cost-effective being environmental changes in traffic areas.

In an urban safety project the effect of measures to redistribute traffic and improve the safety of individual roads was assessed in five English towns compared to matched control areas (Lynam D et al. 1988). There was an overall accident reduction rate of 13%. Each scheme cost about £250,000 and first year rates of return indicated considerable accident costs savings.



The role of the paediatrician has been evaluated by Miller et al. (1995). The authors have estimated the savings achievable with comprehensive childhood injury prevention counselling organised around the three Framingham Safety Surveys used in The Injury Prevention Program (TIPP) developed by the American Academy of Paediatrics. TIPP paediatrician injury counselling sessions between the ages of 0-4 years can achieve estimated savings of US\$880 per child or US\$80 per visit. If all 19.2 million U.S. children aged 0-4 years completed TIPP, they estimated that US\$230 million would be saved annually in medical spending, and injury costs would decline US\$3.4 billion. Each dollar spent on TIPP childhood injury prevention, targeting children aged 0-4 years, returns nearly US\$13. TIPP encompasses up to 11 visits and topics covered before age five, including child safety seat and smoke detector use, crib safety, water safety, firearm safety, pedestrian safety, play equipment safety, fall prevention, burn prevention, choking and suffocation prevention and poisoning prevention.



The Political Impact

Safety promotion and injury prevention have drawn a lot of attention on all levels of society. There is however a tendency of drifting away from the national level and its responsibility for central agreements, towards increasing responsibility for local communities and voluntary organisations. Even if there is evidence for success in such

programmes they take time and are not necessarily the same in all communities. For some well defined issues, like bicycle helmets, legislation is by far the most efficient move to take.

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Chapter Nine

Settings 1

The Subject: Effective Health Promotion in the Workplace.

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The Purpose: The health of Europe's workforce is a crucial political, social and economic consideration in the years ahead. Workplace health promotion (WHP) has been highly successful. Here, the authors argue that:

- 1 WHP reduces the burden of work-related diseases and supports health-related practices of the workforce
- 2 WHP is a crucial element of health-promoting job and organisational design
- 3 WHP contributes to building social capital by strengthening individual and organisational resources conducive to health
- 4 WHP reduces illness-related absenteeism and increases productivity and competitiveness
- 5 WHP has an impact on various fields of policy. In particular, WHP is a component of modern economic and industrial policy

Dr Breucker and Dr Schröer have worked to disseminate models of good practice in workplace health promotion throughout EU Member States. They have also worked to develop quality management health promotion concepts in the workplace, and in occupational health and safety. Dr Schröer has also undertaken research at Düsseldorf University.

Positive for Health and Production

Workplace health promotion (WHP) comprises all joint measures of employees, employers and society to improve the health and well-being of people at work.¹

On the basis of the scientific knowledge available and practical experience, the following factors can be identified to be essential for effective WHP activities:

- ▶ Interdisciplinary effort involving many different players in the company (occupational health and safety, human resources management, quality management, training etc.)

- ▶ Participation and co-operation of all players
- ▶ A comprehensive approach, combining activities that focus on the individual with those that address the design of the working and organisational conditions

Although this concept is increasingly being adopted in the practice of occupational health and safety protection – promoted in the European Community in particular through the framework legislation on occupational health and safety² – the empirical status of research on the effectiveness of WHP is still dominated by evaluation studies on behaviour prevention.

Positive effects are described for the classical behaviour-related risk factors (exercise, high blood pressure, nutrition, stress and smoking). In the interpretation of these results, the majority of the studies stress the role of a supportive environment and organisational policies.

Correspondingly, evidence for the effectiveness of structural approaches is found in various disciplines, including occupational health and safety, occupational medicine, ergonomics, organisational development and management approaches. In particular this evidence includes activities focusing on ergonomic workplace design and various work organisation practices.

In summary, there is strong evidence of the health effectiveness of comprehensive WHP. This is confirmed and reflected by the growing acceptance and attraction of WHP in a number of EU Member States.

Regarding the economic impact of WHP the results show that comprehensive WHP and occupational health and safety practices improve productivity, and product and process quality, by enlarging undisturbed production. Furthermore, personnel costs and ancillary labour costs can be reduced. Thus WHP is a competitive factor by supporting integrated efficiency management.



The Concept of Workplace Health Promotion (WHP)

The following points characterise the current status of WHP in Europe:^{3,4}

- ▶ The implementation of WHP in companies and public organisations is relatively new
- ▶ There are substantial national and regional differences as regards the degree of dissemination and the concepts used; the same applies to different company sizes, branches of industry and sectors of the economy
- ▶ WHP is at present used by the various players both inside and outside the companies in different ways and it therefore tends to be a collective term for different strategies

The following approaches can be distinguished in practice:

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- ▶ Behaviour change and health education at the workplace
 - ▶ Public health approaches to influence health determinants at the workplace
 - ▶ WHP as an integral part of modern occupational health and safety
 - ▶ Strategy to reduce illness-related absenteeism
 - ▶ WHP as an integral part of organisational change

This typology also corresponds roughly to the historical development of WHP. Most of the approaches in practice still focus on behaviour change.^{3,5}

Due to a lack of conceptual clarity in the past, important company functions such as work organisation and personnel management are not assigned to the WHP concept although they undoubtedly have a significant impact on ill health and well-being.^{6,7,8}

Evaluation of Workplace Health Promotion

For the purposes of this report, the following understanding of WHP is assumed: in applying the Ottawa Charter to the workplace setting, WHP embraces all activities which enable the employees and the company as a whole to reduce ill health and promote well-being.

WHP is a process and is aimed at both the level of individual behaviour and the level of organisational conditions.

To analyse the health effects, we have followed a general model of health promotion outcomes in which several levels of effects are differentiated.^{9,10}

WHP activities can be classified into three categories (cf. Table 9.1):

- ▶ workplace behaviour change
- ▶ health-promoting job and organisational design
- ▶ internal communication and marketing for WHP (policy development).

As regards the outcomes, three levels can be differentiated:

- ▶ direct effects (short-term results)
- ▶ intermediate effects (which generally arise in the medium or long term owing to the interaction with other workplace factors)
- ▶ long-term health effects and social effects (some of which lie outside the setting and are subject to numerous complex interactions with different in-house and outside factors).

Table 9.1: Outcome Model for the Evaluation of Workplace Health Promotion (WHP)

Health and social outcomes	<ul style="list-style-type: none"> • Quality of life • Company absenteeism rate • Accident figures • Occup. Diseases • Work-related illnesses • Early retirements 	<ul style="list-style-type: none"> • Staff turnover • Productivity • Reduction in environmentally harmful emissions 	<ul style="list-style-type: none"> • Image with customers and the public • Efficient workplaces • Sustainable regional economic and social development
Intermediate WHP outcomes	<p><i>Health-promoting employee behaviour</i></p> <ul style="list-style-type: none"> • Healthy diet • Exercise etc. 	<p><i>Healthy working and org. conditions</i></p> <ul style="list-style-type: none"> • Ergonomic workplaces • Job design enhancing personal growth • Reduction in physical constraints • Employee-oriented leadership style 	<p><i>Integration of health matters into company decisions</i></p> <ul style="list-style-type: none"> • Active support of top management • Integral part of personnel, quality and occ. health and safety policies • Integration into supplier management • Working conditions agreements
WHP outcomes	<p><i>Health awareness</i></p> <ul style="list-style-type: none"> • Information level (working cond., health-promoting behaviour etc.) • Participation rates • Suggestions for improvement • Reduction in risk factors 	<p><i>Health-promoting working conditions and working environment</i></p> <ul style="list-style-type: none"> • Number of suggestions for improvement • Reduction in stressful working conditions • Work satisfaction/motivation 	<p><i>Awareness of health matters & set-up of infrastructures</i></p> <ul style="list-style-type: none"> • WHP steering groups • Releasing staff from work
WHP activities	<p><i>Health education at the workplace</i></p> <ul style="list-style-type: none"> • Personnel development • Courses/Screening • Education/Campaigns 	<p><i>Health-promoting job and organisational design</i></p> <p>(Occupational health and safety/ Org. development/Work organisation)</p> <ul style="list-style-type: none"> • Occ. Health and safety/ health circles • Management training courses • Company health reporting system 	<p><i>Internal communication and marketing (policy development)</i></p> <ul style="list-style-type: none"> • Presentations • Public relations work
	Individual behaviour	Supportive environment	Organisational culture & policies

Health Impact

To assess the health impact of WHP interventions a literature review was carried out. Based on an expert survey (members of the European Network for WHP and selected experts in several countries) and reference search, 10 major reviews were identified.^{11,12,13,14,15,16,17,18,19,20}

Four reviews out of these were selected for further analysis (criteria: use of clearly defined assessment criteria; quality of review design):

- 1 Wilson et al., 1996
- 2 Warner et al., 1988
- 3 Health Canada, 1996
- 4 University of London Institute of Education, 1994

Reviews 1 and 2 assign the individual studies to the intervention areas of WHP programmes (e.g. weight control or smoking cessation) and assess the methodological strength of the studies on the respective intervention area as a whole. Reviews 1 and 2 include a total number of 605 studies which were divided in review 1 into 11

intervention areas and in review 2 into 10 areas.

Reviews 3 and 4 represent 46 individual studies whose results are shown individually.

All studies were carried out between 1968 and 1995 in the United Kingdom, the USA and Canada.

Classification of interventions

The majority of studies reviewed evaluated behavioural interventions designed to affect employees' knowledge, attitudes, skills and behaviour.

[See p.107 for a summary of the intervention areas (table 9.2) and types of intervention (table 9.3) for all four reviews used.]

Findings

Criteria used to define programme success range from short-term behavioural outcomes, such as change in attitude or health behaviour, to medium- and longer-term health outcomes, and a variety of economic indicators such as absenteeism, turnover, productivity and health care costs.

Review 1⁶ evaluates the overall results in the individual intervention areas using a 5-stage rating scale ranging from 'conclusive' evidence for effectiveness to 'poor' evidence (criteria: number of confirming studies/randomised control group design/extent of the expert consensus). With the exception of poor results in the areas of 'HIV/AIDS' and 'health risk appraisal' all intervention areas were rated as follows: 'conclusive' for hypertension; 'acceptable/indicative' for multicomponent programmes; 'indicative' for weight control and stress management; 'indicative/suggestive' for nutrition/cholesterol; and 'suggestive' for exercise, alcohol.

Review 2⁷ evaluates interventions in the areas of smoking cessation, blood pressure/hypertension and fitness/exercise as effective. The effectiveness in the other areas (EAP, nutrition and weight control, stress, health risk appraisal and back injury prevention) is not sufficiently substantiated.

Review 3⁸ identified eight individual studies on the basis of various criteria (existence of a comparison group, random sample size as well as a follow-up period of at least 2 years).

Two of these studies show no positive outcomes, two more only positive outcomes for one area. In four studies the companies were assigned at random. Overall, more positive than negative outcomes were confirmed; in particular, interventions for giving up smoking proved effective.

Review 4⁹ established two categories of individual studies (gold standard and sound studies) on the basis of several criteria. One of the total of four studies in the 'gold standard category' verifies the effectiveness of interventions in the areas of weight control, cholesterol, smoking, blood pressure and fitness.

The overall results reflect a remarkable weight of evidence indicating a positive effect of WHP programmes on individual health awareness and behaviour as well as long-term health and social outcomes.



Health-promoting Job and Organisational Design

Health-promoting job and organisational design include:

- ▶ ergonomic design
- ▶ the working environment (e.g. lighting, noise, hazardous substances)
- ▶ regulations on working hours
- ▶ job design (e.g. semi-autonomous group work, job enrichment, job enlargement)
- ▶ social relations (management culture, information policy of management, career development and incentives)

Various disciplines have contributed to our current knowledge on the impact of working conditions on ill health and well-being: ergonomics, industrial and organisational sociology and psychology, occupational health and safety, environmental psychology and social epidemiology.^{6,21,22,23,24,25,26,27,28}

Social epidemiological research results show that working conditions can explain socio-economic differences in health and illness and influence sick-leave figures.²⁹

Occupational health and safety practices are now based on well substantiated ergonomic knowledge of workplace design including the work environment. Much of it has been included in national and European standards and directives.²⁷ These design specifications are based on a 'prevention concept' to limit psycho-physical stress.

For example, the impact of ergonomic interventions in the area of musculo-skeletal disorders, is empirically well substantiated.³⁰ Most studies report positive intervention outcomes on an order of magnitude of 20% to 50% reduction in disorders.

Owing to the increasing psychomental multiple stresses due to the widespread introduction of new technologies and the increasing intensification of work, the psycho-social working environment is becoming ever more important.^{31,32}

This includes structural (occupational status, labour market), organisational (e.g. wage structure, organisation of working time, employment conditions), interpersonal (working climate, leadership style) and task parameters.²⁵

Organisational interventions can influence mental (as well as physical) stress, in particular through task design. This is based on substantiated knowledge of how to design work conducive to personal growth (e.g. degree of completeness of the task, decision latitude, co-operation, communication and qualification requirements).^{7,8,26,33,34,35}


The research results based on the demand/control model developed by the research group of Karasek⁶ verified numerous examples of relationships between the task parameters 'decision latitude' and 'job demands' and health outcomes.^{25,36} This model was expanded by including the variables 'social support' and thus permits a better prediction of cardiovascular disease mortality.³⁷

Many interventions are performed without any direct link to health and thus have

an unspecified effect on ill health and well-being. Health circles which systematically identify suggestions for the improvement of stressful working conditions are one example of specific health promotion interventions at the workplace targeting the working environment.³⁸

Social Impact


At company level well integrated and comprehensive WHP interventions support important management functions (human resources and quality management as well as occupational health and safety).

In addition, comprehensive and participative WHP approaches strengthen a corporate policy which recognises both the economic importance of human resources and the social responsibility of the company and thus facilitate personal initiative. 

WHP practices contribute to social capital at the level of organisations. The participative design of their interventions promotes the dissemination and anchoring of health-promoting organisational standards (solidarity, mutual support) and at the same time increases the ability of the organisation and its management to balance the needs and requirements of the employees with the corporate objectives.^{39,40}

These effects are always subject to the regulation and settlement of conflicts of interest between the social partners.

Economic Impact

According to a survey of the EU in 1993 around one third of all employees in the EU Members States, i.e. about 42 million employees, think that their health and safety at the workplace is at risk. Risks stem from heavy physical work (25%), but increasingly from the pressure of time (20%), small decision latitude (35%) and monotony (60%). These constraints lead to work-related illnesses, occupational diseases and accidents at work. 

The companies, the social security insurance funds and the national economy have to bear the costs of this. For 1994 the German Federal Institute for Occupational Safety and Health (BAuA) calculated costs of DM89 billion solely due to people's inability to work.

On the basis of data from Denmark and Norway, the Northern Council estimated the work-related proportion of widespread common illnesses.⁴¹ For example, it is roughly 33% for musculo-skeletal disorders which are widespread in all EU states, 20% for cardiovascular diseases, and 45% for skin diseases. The resulting volume of costs becomes at least partially clear when the national expenditure on health services is examined. Beatson and Coleman estimate the economic cost of accidents at work and work-related ill health at between 1.4% (UK) and 8.3% (Sweden) of the GNP.⁴²

According to Fielding, expenditure on WHP represents a potential investment in the human capital of a national economy or a company.¹² In contrast to the normal business investment analysis which partly uses the cost-benefit analysis (CBA) or the cost-effectiveness analysis (CEA), methods have to be employed here which suit the

often delayed effect of the intervention and the multiple outcomes and their sometimes different evaluations.^{11,12,43} Zangemeister therefore proposes the cost utility analysis (CUA) and the utility analysis as adequate methods.⁴⁴



The vast majority of the reviews on the economic outcomes of WHP are based on lifestyle-related studies from the United States.

Pelletier found positive results as regards absenteeism and health care costs.¹³ This is confirmed by reviews of Wanzel, Shephardt and Gebhard and Crump.^{11,45,46}

According to Kaman, health care costs can be influenced by health promotion programmes even though the current research status cannot accurately differentiate between the outcomes of these programmes and other influencing factors.⁴⁷ Positive economic outcomes are observed in particular in the reduction of accidents and absenteeism and a possible overall improvement in productivity.

Chapman analyses a total of 30 publications from peer-reviewed journals.⁴⁸ A reduction in costs is achieved particularly when multi-component, comprehensive programmes are involved. He also determines very strong economic effects of programmes focusing on medical self care and high-risk intervention. He reports major cost savings for hypertension control programmes, back injury prevention, prenatal care programmes and programmes containing a high proportion of physical activity. However, programmes focusing on smoking cessation and stress management show only modest economic outcomes. Weak economic results are achieved through nutrition education and weight management as well as cholesterol reduction programmes.



A review carried out on behalf of Health Canada shows a positive effect on absenteeism and health care costs.¹⁸ This evaluation is also confirmed by the analysis of the University of Michigan.⁴⁹

The study of Lenhardt et al. included ergonomic, organisational and lifestyle-oriented interventions on the prevention of back complaints.³⁰ Positive effects on absenteeism are observed in particular when the working conditions themselves are improved and the workers are involved in the intervention process.




In contrast to economic evaluations of behavioural interventions, only a few studies examined the impact of statutory health and safety regulations.^{42,50,51,52}

An international comparative study by Prins et al. analysed the economic impact of occupational health and safety regulations on the basis of time series analyses of occupational injury rates, outcomes of studies on working conditions and an assessment of 110 key informants in eight countries.⁵² As was to be expected, sound evidence on the impact of employers' OHS policies is generally poor or absent.

This can be confirmed by time series analyses from individual countries. According to Coenen the frequency of all degrees of occupational accidents and, in particular, severe accidents has declined by 63-65% in Germany over the past 35 years.⁵³ Fatal accidents fell by around 77% in the same period. Dorman establishes similar trends for the USA, Canada, Japan and Germany.⁵⁴ Lehman and Thiehoff also confirm this for France.⁵⁵

However, a study conducted by the Netherlands Economic Institute on the cost-benefit relationship of a change in the regulations on manual lifting clearly illustrates

that in this case the costs can outweigh the economic benefit and the methodology used exhibits weaknesses in terms of validity and reliability.^{56,57}

All experts in the study by Prins et al. agreed on positive effects regarding the impact on safety, reductions in occupational injuries and diseases (strong effect) and on positive effects regarding complaints about work load and stress, motivation and job satisfaction and sickness absence (moderate effect).⁵² Considerable agreement exists among national experts on the fact that OHS regulations also stimulate innovation, contribute to lower costs of health care and facilitate the recruitment of personnel for arduous jobs. In general, all experts disagreed with the statement that OHS regulations imply higher costs for enterprises and reduce the number of jobs or the demand for labour. On the contrary, they see that OHS investments also have a reducing effect on social and private insurance contributions. 

Political Impact

Due to the incorporation of the EU framework directive on occupational health and safety into national legislation, the concept of WHP is becoming an integral part of modern occupational health and safety in Europe.² The framework directive basically lays down the responsibility of the employer for the safety and health of the employees and extends the understanding of risk which was previously governed by technology.

Comprehensive WHP concepts can be linked at national level with various fields of policy:

- ▶ Pay rate policy of the social partners
- ▶ Occupational health and safety policy
- ▶ Economic and industrial policy
- ▶ Labour market policy
- ▶ Social policy
- ▶ Health policy



At European level WHP can be assigned to the initiative of the European Commission with regard to the creation of a modern work organisation.⁵⁸

The currently strong attraction of WHP is based on the following arguments:

- ▶ Illness-related absenteeism owing to inadequate working conditions increases the ancillary labour costs and thus limit increases in productivity which are technologically feasible
- ▶ Traditional occupational health and safety practices are limited regarding their impact on ill health and well-being at work

- ▶ Those branches of industry which depend on motivated and highly qualified employees (such as the expanding services sector) must ensure health-promoting working conditions
- ▶ As part of general social modernisation processes on the basis of economic changes, greater significance is attached to the human resources
- ▶ The health care systems in all industrialised countries have had to endure substantial cost increases over the last 20 years without this being offset by corresponding rises in efficiency

Table 9.2: Intervention Areas

individual level	organisational level	economic level
<ul style="list-style-type: none"> ▶ smoking cessation ▶ weight control ▶ nutrition/cholesterol ▶ stress ▶ fitness/exercise ▶ blood pressure/hypertension ▶ CHD ▶ alcohol ▶ back disorders ▶ injuries ▶ depressive disorders ▶ cancer detection ▶ HIV/AIDS ▶ motor vehicle safety belts 	<ul style="list-style-type: none"> ▶ smoking restriction policy ▶ health and safety regulations 	<ul style="list-style-type: none"> ▶ medical claims per worker ▶ medical care use ▶ medical care costs ▶ absenteeism ▶ productivity ▶ employee turnover ▶ life insurance claims

Table 9.3: Type of Intervention

screening/measuring	material/ information	classes/social support	supportive environments
<ul style="list-style-type: none"> ▶ HRA ▶ screening 	<ul style="list-style-type: none"> ▶ medical self-care books ▶ newsletters ▶ videotapes ▶ monthly mailings ▶ self help manuals ▶ TV series 	<ul style="list-style-type: none"> ▶ training ▶ counselling ▶ employee assistance programmes ▶ buddy system ▶ health education classes ▶ group clinics 	<ul style="list-style-type: none"> ▶ ergonomic improvements ▶ fitness facilities ▶ smoking policy ▶ cafeteria ▶ incentives

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Chapter Ten

Settings 2

The Subject: Effective Health Promotion in Schools.

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The Purpose: Traditionally, schools have been settings which have gathered political, social and economic support for health promotion. Here, however, the authors argue:

- 1 Schools are cost effective sites for health promotion interventions directed towards improving the health of children and adolescents. But schools cannot be looked upon to solve health and social problems in isolation from other forms of public health action
- 2 The effectiveness and sustainability of school health interventions are dependent on the extent to which health promotion interventions are linked to the primary business of schools in developing the educational skills and knowledge base of young people
- 3 Effective school health promotion will be comprehensive in concept and content, adequately resourced, and will usually involve development of school policies and practices which strengthen health teaching in the curriculum. Strong connections with parents and health services are necessary, along with creation of a supportive physical and psycho-social environment
- 4 Schools provide a potential setting through which effective action can be taken to reduce inequities in health
- 5 The European Network of Health Promoting Schools could form a useful vehicle for effective, sustainable school health programmes for the future

Professor St Leger has an extensive background in health promotion and education, particularly relating to child and adolescent health. With Professor Nutbeam, who provided the first chapter to this Evidence Book, he produced a report for the Australian government analysing school health promotion and education interventions. He is chair of a government task force on youth mental health.

The Context for Health Promotion in Schools:

Schools as Sites for Health Promotion

Schools are settings where the health of children and adolescents can be enhanced and where specific health issues can be addressed. In most European countries young people attend school for 10 years or more. The school, in conjunction with the family, is one of the key sites where individual and social development occurs.

Schools play a significant role in shaping a young person's behaviour and social values. The core business of schools is to build the educational skills and knowledge base of young people to equip them to live their lives creatively in a changing world, and to provide a competency base for meaningful employment.

However, whilst the primary business of schools is in achieving educational outcomes, the capacity of each student to learn effectively is influenced significantly by his/her health status. There is a substantial body of evidence which shows poor health inhibits learning.^{1,2,3} In addition, a meta-analysis of findings from studies of the relationship between health behaviour and educational outcomes indicated a strong relationship between poor health, and student educational outcomes (e.g. grades and classroom performance), education behaviours (e.g. school attendance, participation in school activities, disciplinary issues), and student attitudes (e.g. self esteem, locus of control).⁴

The achievement of positive educational outcomes is closely linked to the achievement of good health in school students. Correspondingly, schools have an obligation to address health as a foundation for achieving educational goals.



Limits on the effectiveness of School Health Interventions

Whilst schools are the major vehicle for building the competencies of their students in literacy, numeracy and technology, student's health status is influenced far more substantially by factors external to the school, including family, media and peer pressures, and biological determinants. Interventions in the school health area need to be developed in this context. Such interventions can best make a contribution to health improvement in young people in the context of the educational framework and priorities of schools, and by seeking close partnerships and alliances with the other powerful agencies and settings which shape child and adolescent health.

The content of School Health Interventions

Available evidence from many studies in the last two decades suggests that school health promotion interventions can be effective in transmitting knowledge, developing skills, and supporting positive health behaviour choices. This evidence suggests that interventions are most effective if:

- ▶ the focus is on cognitive and social outcomes as a joint priority with behaviour change
- ▶ programmes are comprehensive and ‘holistic’, linking the school with agencies and sectors dealing with health⁵
- ▶ the intervention is substantial, over several school years, and relevant to changes in young peoples’ social and cognitive development⁶
- ▶ adequate attention is given to capacity building through teacher training, and provision of resources⁷

Furthermore, published study findings suggest that quality school health programmes address all or a combination of:



- ▶ the curriculum (the formally taught classroom based programme)
- ▶ the environment (the geographical, psychosocial, physical and organisational elements of the school and its local community)
- ▶ health services (the medical, dental, counselling and guidance services within the school)
- ▶ partnerships (the formal and informal partnerships which exist between the school, the parents, health sector and local community)
- ▶ school policies (the rules, regulations, accepted practices which contribute to maximising the health of students)

The *health promoting school* concept has emerged in the last decade in Europe and throughout the world as a mechanism to combine these different elements to achieve maximum success in pursuing educational and health outcomes.⁸⁻¹³ Maximising the potential effect of each of these elements to a health promoting school is critical in achieving successful outcomes.

Evidence concerning the effects of the different elements of the health promoting school

Curriculum

Analyses of health promotion interventions with a curriculum focus indicate that a number of factors are important in their success.¹⁴⁻¹⁹ They are:

- ▶ content related factors
 - effective programmes are well designed, grounded in relevant learning theories, planned and trialed thoroughly;
 - effective curriculum based programmes address the attainment and enrichment of skills in negotiating, problem solving, creative thinking,

decision-making, coping, interpersonal relationships, communication, in conjunction with relevant health knowledge

▶ learning and teaching factors

- adequate class time allocation appears to be reached after about 40-50 hours per year of dedicated health teaching
- issue-based and problem-solving approaches engage and foster effective action to address the health issue(s)
- learning approaches cater for the different learning needs of the many students, and extend the students' learning competencies
- health issues need to be placed in the context of the community in which the student lives

▶ resources and staff development

- the most effective and engaging resources are those which are based on learning theories accepted and understood by teachers, and which have educational outcomes rather than a biological or health behavioural change as the primary focus
- well-designed and relevant curriculum programmes only work if there is an integrated and comprehensive professional development programme for teachers

Environment

There is a considerable body of evidence which indicates that the school environment is a major factor in school health promotion. There are three main components of the environment:

▶ the physical environment

- The furniture; lighting; building; design; special facilities, e.g. recreation and sporting areas, food and eating services. All make a major contribution to the health of students.²⁰

▶ the psychosocial environment

- The evidence suggests that the relationships between teachers and students and between the students themselves are vital in school health promotion.^{21, 22} Also, the 'ethos' of the school and the underpinning values and traditions provide an influencing and important background to school health promotion programmes.^{20, 22, 23, 24, 25, 26}

▶ the organisational structure

- School infrastructure, administration, planning and implementation processes, budgets and timetabling approaches all affect school health promotion activities.^{10, 27, 28, 29}

Health services

There are a number of health services which are linked to schools. Services often have a screening or diagnostic function and in many countries the services extend to simple treatment regimes (e.g. dental caries). Most schools are involved in immunisation programmes. The evidence of the effectiveness in this area is varied. Immunisation programmes which are focused on schools and for which evidence is available strongly support the intervention of health services in schools.³⁰ The literature suggests that the involvement of health services in other areas (e.g. visits of health care practitioners to schools) is only successful in school health promotion programmes, if the service is linked with the total school programme, and where the work of the health care practitioner is subordinate and complementary to the work of the teacher.^{18, 23}



Partnerships

There are a number of examples in the literature of successful school health promotion programmes which are based primarily on partnerships between all or some of the following groups (parents, students, local health care practitioners, local health related organisations, local government).^{10, 31} However, the findings suggest that school health promotion programmes with a major partnerships component are difficult to conduct because of the lack of understanding by the partners of how other sectors work and function, and are very intensive in using the time of the key people in the partner organisations.^{18, 32} The literature also shows that successful school health promotion interventions with a major partnership component are nearly always resource intensive.^{23, 33, 34}

School health policies

Many school health promotion programmes have a significant emphasis on policy development and implementation, e.g. smoke free areas; discipline and welfare policies; equity policies and practices; policies and regulations related to safety. Policies are often used as part of a comprehensive school health programme and appear to work effectively in providing the conditions for health enhancing behaviours. This is especially true if the policy is based on national or local government priorities, and/or is developed through consultative mechanisms involving the key school community stakeholders.^{2, 10, 18}



The *health promoting school* concept provides an organising framework for the integration of these five different elements into a comprehensive school health programme. The World Health Organization and other international and national organisations are promoting this integrated approach to school health promotion as a major goal for schools.

What does not work

As well as providing evidence of potentially effective forms of intervention, studies over the past decade have also identified approaches to health promotion in schools which are ineffective and should be discouraged. Failed programmes are characterised by the following:

- ▶ programmes which are developed in response to a perceived crisis (especially if accompanied by scare tactics and preaching)
- ▶ broader school involvement which was spasmodic and uncoordinated
- ▶ programmes based largely on external speakers and resources with little involvement of school staff
- ▶ little or no investment in teacher training, and provision of support resources ^{5, 7, 9, 14, 15, 16, 17, 18, 20, 22}

Health impact of school interventions

Although integrated, comprehensive school health promotion programmes are likely to be sustainable and most effective in achieving a range of positive health outcomes, much of the reported research on school health programmes has concentrated on achieving specific behavioural outcomes. The following section summarises evidence from school health promotion interventions that have addressed specific health issues.

Nutrition

School students consume most of their daily food intake away from the school. Families and the media are a greater influence on a student's food choices than the school. Traditionally school nutrition programmes have focused largely on the curriculum where the emphasis has been on nutrition (food groups) education rather than specific eating behaviours. Programmes which have a nutrition focus can usually show increased knowledge about food and its composition. However, in the last decade health promotion interventions have focused more on the social and eating aspects of food. Many schools now have school health promotion programmes in nutrition, which are directed at developing competencies in food purchase and preparation. In addition, schools are being more interventionist in ensuring that the food they supply to students through the canteen provides healthy food choices at competitive prices. Some schools have reduced or eliminated the supply of foods high in sugar, fat and salt. Available evidence on the effectiveness of health promotion interventions which are multifaceted (skill development, policy supported) and which focus on the dynamics of food and eating can produce improved nutritional practices in young people. ³⁵⁻⁴¹



Physical activity

There is considerable evidence that shows a positive association between regular physical activity to academic performance.^{2,4} Generally, children and adolescents in developed countries have too little physical activity. This becomes especially apparent at secondary school level where spontaneous physical activity declines by about 50%.⁴² Gender and/or religious influences which inhibit the participation of girls in school may also compound low participation in physical activity and community based physical activities.



Good evidence exists to indicate that school based health promotion interventions directed at physical activity will achieve positive cognitive, social, behavioural, and in some cases biological (e.g. reduced weight) outcomes if:

- ▶ the intervention is comprehensive and integrated, including curriculum time for physical activity, policies encouraging participation, and partnerships with local sports and recreation providers
- ▶ properly trained personnel lead the programme
- ▶ adequate time is allocated (approximately 60-80 minutes per week), and quality facilities/resources are available
- ▶ The intervention occurs regularly during the week^{2, 7, 28, 43-48}



Sexuality

Biological changes and the attitudes, values and beliefs of the family, culture and society in which a young person lives, influence a student's sexual development. Schools can best make a contribution to this process by working within this wider context. Because sexual development is not often discussed in families and communities in many countries, the school provides a setting where a student may learn about the biological and social aspects of sexuality at appropriate life stages, in a safe and supportive environment, and in conjunction with his/her peers.

School based health promotion interventions in sexuality are varied in their focus and intensity. They will generally be constrained by the prevailing attitudes and values of the society, and the political systems which govern it. For these reasons, defining 'success' in sexual education is problematic. For some it is knowledge at certain ages of biological and sexual functions, whilst for others the focus is on the social interactions between the sexes and what is appropriate behaviour. It is quite unrealistic to expect schools to be largely responsible for the reduction of the rate of unwanted pregnancies, or to reduce the spread of sexually transmitted diseases.

However, schools do have a major role to play in sexuality health promotion. Some evidence exists that it is possible to achieve certain health-related outcomes, e.g. reduction in unwanted pregnancies and STD's.^{45,49} These programmes are exceptional in that they have significant resources, are conducted over a number of years and involve substantial professional development of teachers. They are probably not easily reproduced in most schools.



Young people have a right to know about their sexual development and how

society develops and expresses its sexual norms. Health promotion interventions with a strong educational focus (cognitive and social objectives in relation to sexuality) are effective in meeting their goals if:

- ▶ the programmes are conducted by well trained and sensitive personnel
- ▶ students have the opportunity to talk and discuss their feelings and opinions within the school community and at home
- ▶ content and issues are raised at appropriate ages and levels of maturity
- ▶ where the direction for the programme is on the positive aspects of sexuality^{10, 50}

Drugs

The greatest volume of research on school-based interventions is for programmes which address drugs, both licit and illicit. There is good evidence to suggest that first experimentation with drugs varies with the particular drug used and that early initiation into drug use is closely linked with later problem usage. Thus the focus of many health promotion interventions at schools have been to prevent or delay drug experimentation and initiation.⁴⁷ Most studies focus on adolescents, and alcohol and tobacco in particular, and usually report on four factors – knowledge, attitudes, intentions and usage.⁵¹



Effective health promotion programmes in this area are characterised by four key factors, namely:

- ▶ sound and rigorous design grounded in appropriate theory,
- ▶ a focus on skill development, (generic, e.g. communication skills and specific, e.g. refusal skills)
- ▶ follow up sessions
- ▶ considerable curriculum time

Other strategies which are very effective in an integrated school health promotion drug programme are:

- ▶ community interactions and partnerships
- ▶ close adherence to the programme design by those responsible for its implementation
- ▶ support and reinforcing policies and practices in the school setting

Well designed and implemented health promotion drug interventions in schools will achieve educational goals, e.g. knowledge, awareness, skill acquisition but

generally only a modest effect on behavioural goals, most often by delaying the onset of substance use by non-users and short term reduction in some current users.⁵²⁻⁵⁵

Social Impact

Children and adolescents have been accorded the right to knowledge and skills about health in the *Universal Declaration of Children's Rights*.⁵⁶ The social development of young people is influenced by their educational opportunities, health status, family environment and the community in which they live.⁵⁴ All these aspects are interlinked and, as such, form an effective fundamental alliance to equip young people with the skills and opportunities to live productive and fulfilling lives.

Countries have responsibilities to establish services which facilitate the attainment of high educational outcomes. The level of schooling attained and the sophistication of the teaching and learning environments in schools which shape the acquisition of knowledge and skills are crucial indicators of a young person's present and future health status.^{55, 57-60}



If these conditions are not met then there will be considerable social consequences. These manifest themselves in young people not achieving their physical and mental potential in life, with associated difficulties in adjustment, health problems, social responsibilities, economic productivity and employment.² Society is often expected to care for individuals and establish sophisticated welfare systems where many of the outcomes could at worst have been reduced and at best, prevented.

Taken as a whole, the evidence referred to in this chapter indicates that well planned and implemented school health promotion activities will make a substantial contribution to reducing unnecessary social problems now and in the future.^{7, 10, 61} This is especially the case if such programmes support and uphold the core education business of schools, and are well connected to parents and the local community.



Economic impact

It is self evident that preventing health problems will produce social and economic benefits. School interventions directed at reducing patterns of behaviours which increase risk of disease offer an obvious vehicle for cost-effective interventions.^{56, 61, 62, 63}

However, there is a paucity of studies which have attempted to evaluate the cost effectiveness of school health promotion interventions. One of the few studies to do this is reported by Rothman, et al. This work analysed exemplary programmes in school health promotion in three categorical areas – tobacco use; substance abuse; and sexuality education.⁶²




The study examined costs and effectiveness rates from exemplary studies (i.e. where a positive change had been demonstrated; where there were longitudinal measures; a controlled study occurred; and where behavioural outcomes were presented as prevalence rates), and calculated direct and indirect benefits (avoided morbidity and mortality). This unique work found that the ratio of benefits relative to cost of a quality comprehensive school health promotion programme was 26.5 for

tobacco use, 5.7 for substance abuse, and 5.1 for sexual behaviour respectively. They further argued that the cost of comprehensive and exemplary school health promotion interventions (essentially health promoting schools) to be 13.8. This was compared to other health promotion interventions in the community, schools and other settings. Here the ratio of cost to benefit was 14.0 for measles, mumps and rubella vaccination; 11.1 for whooping cough vaccination; 2.7 for blood pressure control in work sites; and 3.4 for comprehensive work site health promotion programmes.⁶²

Currently, most school health promotion interventions are not assessed in cost-effective terms, and this remains an inexact science.

Political Impact

Although there is frequent political support for school based interventions, this support is not always directed towards the most effective forms of school intervention. Indeed, it is often used as a means to avoid making more difficult political decisions (for example investing more resources in school smoking education rather than banning advertising). 

Too often, the school is seen as an appropriate (often the only) place to address (and fix) health problems. Consequently, it is not surprising to find political decision-makers supporting and resourcing (albeit minimally) school based health promotion interventions of a short-term which have little chance of achieving their goals.

Political stakeholders in both the education and health systems need to be reminded of the educational purposes of school health programmes. They also need to be provided with evidence which enables their departments to plan more strategically and over a longer time frame so that school health promotion interventions are integrated into school programmes, and supported with appropriate resources and professional development initiatives. This will be achieved more effectively if the health and education sectors collaborated closely, and viewed health as a resource for life rather than a problem to be fixed. There is evidence from some European countries that this collaboration is increasing, especially around the WHO Health Promoting School Program which is exemplified by the European Network for Health Promoting Schools (ENHPS) and the 38 countries involved.⁶⁴

Concluding remarks

Schools are cost-effective sites for health promotion interventions. The effectiveness and sustainability of school health interventions is governed by how closely the health promotion interventions are linked to the primary business of schools in developing the educational skills and knowledge base of young people. In this context programmes should focus primarily on cognitive and social outcomes, rather than solely on the achievement of specific behavioural outcomes. Schools cannot be looked upon to solve health and social problems in isolation from other forms of public health action.

The European Network of Health Promoting Schools is operational in 38

countries in Europe. This network has great potential as a vehicle for the promotion of a comprehensive model of health promotion through schools that is most likely to achieve and sustain the health, social and political benefits described above.

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Chapter Eleven

Settings 3

The Subject: Health Promotion in the Health Care Sector.

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The Purpose: In the debate on delivering better health systems, some advocates put a heavy onus on the health care sector to deliver health promotion messages. Here, however, the author argues:

- 1 With a few exceptions, evidence of effectiveness of health promotion in the health care sector is still limited
- 2 The health sector alone cannot deliver major changes in health behaviours, and depends on co-ordinated action across a range of sectors
- 3 Nevertheless, those working in the health care sector can play an important role in promoting health, either through providing examples of what can be done to achieve a healthy environment, using their authority to act as an advocate for healthy public policies, or as a source of advice on healthy behaviours to individuals
- 4 Brief advice by individual practitioners is a cost effective way of helping people stop smoking and reduce problem drinking
- 5 A greater focus on evidence based health care is likely to lead to an increased emphasis on health promotion as a means of reducing the burden of avoidable disease

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Health Promotion – A new core element in the Health Care Sector

This chapter examines the potential impact of health promotion activities in the health care setting. There is considerable evidence that brief interventions to promote smoking cessation and to tackle problem drinking are effective. However, for most other interventions, the evidence is either lacking or inconclusive.

Advice on smoking cessation has been shown to be much more cost-effective than

therapeutic interventions to tackle major risk factors.

Health care settings can become healthy environments and this fosters an ethos of health promotion. Health care professionals can contribute to community development or play a role in media advocacy. The health care sector can also promote health by virtue of its role as a major employer.



Health promotion interventions in the health care sector should form a part of broader strategies as, on their own, they have a potential to increase health inequalities, being preferentially taken up by people who are already advantaged.

The major political impact of this approach is that, for maximum effectiveness, structures and processes need to be in place which support communication between professionals and others practising health promotion, and those practising health care. While this brings other benefits, such as the means to promote evidence-based health care, it also involves challenging the traditional autonomy of the medical profession.

This chapter covers the activities undertaken by physicians, nurses, and other health professionals to promote healthy lifestyles and prevent disease. It looks at both primary and secondary prevention. Primary prevention includes interventions directed at healthy people to reduce the risk of developing disease. Secondary prevention is aimed at those who already have evidence of disease, such as high blood pressure or early cancer, with the intention of preventing death or more serious disease. It also examines, briefly, evidence that the health care sector and health care professionals can play a wider role in community action to address the determinants of health.

Although not addressed here, it is also important to recognise that there is now increasing evidence that, at least since the 1970s in industrialised countries, treatment interventions are now playing an important role in promoting health and reducing premature death. This evidence is reviewed in detail elsewhere¹ but it is sufficient to note that it is contrary to the widely held view that treatment makes only a small contribution to the overall pattern of mortality in a population, a view based on evidence dating largely from the period from the mid 19th century until the 1960s.²

The evidence cited is almost entirely limited to research findings that have been brought together systematically and critically. A key source is the US Preventive Services Task Force Guide to Clinical Preventive Services.³ This was supplemented by searches of widely used databases such as Medline,⁴ the Cochrane Library,⁵ and the UK National Health Service Centre for Reviews and Dissemination⁶ databases.


Health Impact

Primary prevention

Smoking

Health professionals can play an important role in promoting smoking cessation. A major review of research undertaken in primary care found that for every 37 patients given brief advice by a physician to stop smoking, one more would quit than


would be the case if advice was not given.⁷ It was even more successful among those at greatest risk of smoking related diseases and the effect was enhanced further when a follow-up appointment was offered to monitor progress.

From what is known about the many benefits of smoking cessation, this can be expected to have important beneficial effects on health, although the many other intervening factors make it difficult to measure any such effect. The one study that has examined this question found that, over a 20 year period, those offered advice were 7% less likely to die from any cause, 13% less likely to die from coronary heart disease, and 11% less likely to die from lung cancer.⁸ These differences were not, however, statistically significant, reflecting the relatively small numbers of subjects involved. 

Another review has specifically examined the effectiveness of smoking cessation programmes aimed at pregnant women.⁹ Eleven trials were included, eight of which involved personal counselling. All included supporting material and two included follow-up visits. Those receiving advice were almost twice as likely to stop smoking than those not. Four of the studies also examined the effect on birth outcome, finding, as expected, that the increased rates of smoking cessation obtained were associated with lower risk of low birth weight. This can be expected to reduce the risk of adverse obstetric outcomes.

Alcohol

As well as smoking, researchers have examined the effectiveness of brief interventions to promote sensible drinking. A major review included eleven trials of brief interventions directed at problem drinkers by a range of health professionals.¹⁰ Brief interventions included patient assessment and education, counselling, goal setting, and monitoring of liver enzyme levels.

Five of ten studies that included men showed significantly greater declines in alcohol consumption with intervention compared with controls. Of four trials that included women, only one showed a significant reduction, in both drinking and enzyme levels. The authors concluded that the evidence supported the use of brief interventions in patients with drinking problems but they noted the need for further research to identify who is most likely to benefit the optimal intensity of interventions, and the effectiveness of interventions with women. 

Foxcroft et al. reviewed a range of interventions designed either to prevent the onset of alcohol use or to minimise harm among young people but concluded that the methodological quality of most studies was poor and they could not conclude that any of the interventions were effective.¹¹


Exercise

The US Preventive Task Force recommends that health professionals encourage patients to take exercise but this is on the basis of evidence of benefits of exercise.³ They note that the effectiveness of physician counselling to promote exercise is not established.

Nutrition

Although there is extensive evidence that changing diet to limit consumption of fats and to increase intake of fibre, fruit and vegetables, the US Preventive Task Force has concluded that there is insufficient evidence to recommend nutritional counselling by physicians as opposed to by dieticians or community interventions. They propose that clinicians who lack time or skills to take a complete dietary history, to address barriers to change and to give specific guidance on meal planning, food selection, and preparation should refer patients to someone who can do this.³

Accidental injury

A review brought together eighteen studies of interventions to reduce the incidence of falling among the elderly.¹² Nine involved an assessment visit followed by an intervention targeting a range of risk factors and five yielded data that enabled pooling. The emphasis placed on different risk factors, whether personal or environmental, varied considerably. One study found that this type of intervention actually increased falls, possibly by encouraging elderly people to take more exercise and place themselves in situations of greater risk.¹³ However, all studies combined suggest that assessment of elderly people by health professionals trained to identify intrinsic and environmental risk factors is associated with approximately a 20% reduction in the risk of falls. 

The US Preventive Task Force note that there is evidence sufficient to recommend advising wearing seat belts, using child safety seats, and advising parents about measures to reduce the risk of unintentional home injuries.³ ▶ *Social Challenges 2, Ch.8*

Dentistry

Kay and Locker reviewed evidence for the effectiveness of a range of health education interventions in dentistry.¹⁴ All fourteen studies of dental health education showed a positive effect on knowledge and attitudes. Fifteen studies of interventions designed to reduce plaque and improve gingival health indicated an effect that was frequently beneficial but usually short-lasting. Interventions to reduce dental decay showed no effect and those designed to change diet were inconclusive.

Secondary prevention

Screening

Screening people to detect risk factors or early disease is only justified if certain criteria are met. These include the existence of an appropriate screening test that is acceptable to those at whom the programme is directed, a latent or early symptomatic stage of the condition, and availability of an effective treatment.¹⁵

Examples of conditions for which screening has been shown to be effective include breast cancer using mammography among those aged over 50,¹⁶ cervical cancer using cervical smears,¹⁷ and colorectal cancer using faecal occult blood testing.¹⁸ The case

for screening women under 50 using mammography remains contentious.¹⁹

However it is not sufficient simply to make screening available. Maximum effectiveness will only be achieved if it is undertaken as a managed programme, ensuring that a high uptake is achieved, the quality of the screening process can be continuously monitored, and those detected are offered effective interventions.²⁰



Asthma

Gibson et al. in a review of 22 trials, found that an enhanced model of self-management, which included self-monitoring in association with a written plan and self-adjustment of medication was effective with a 40-50% reduction in hospitalisation, unscheduled physician visits, days off work or school and nocturnal asthma.²¹

Multiple risk factor interventions

Ebrahim and Davey Smith have reviewed evidence from nine trials, including 903,000 individuals, that sought to reduce the risk of coronary heart disease by tackling more than one of six interventions.²² These were stopping smoking, exercise, dietary advice, weight control, anti-hypertensive drugs, and cholesterol lowering drugs. When the results of the studies were pooled, the impact on total and coronary heart disease mortality was not significant. The authors concluded that such interventions implemented through standard health education methods have limited effectiveness and health promotion is likely to be better served by fiscal and legislative measures.

Creating healthy environments

The creation of healthy environments in the health care sector is the basis of the World Health Organization's Health Promoting Hospitals project. This is a way of increasing participation in health promoting activities by patients, staff, and others outside the hospital, improving communication, and generally reorienting hospitals towards health promotion, with an emphasis on learning from experience.²³ Although there is little empirical evidence of a measurable health impact of such policies, the message that they transmit is likely to reinforce the ethos of health promotion and to make it easier to introduce specific interventions.



Many people come into contact with health care facilities, either as patients or staff, and this provides an important opportunity to demonstrate support by the health care sector for health promoting policies. These include bans on smoking, which indicates clearly the importance of reducing the health impact of environmental tobacco smoke,²⁴ provision of cycle parks, gyms and showers, demonstrating support for exercise, and ensuring that catering facilities provide healthy dietary choices.²⁵

In contrast, the implicit message given where there is a failure to ban smoking or to promote healthy eating choices is that health promotion is not taken seriously. In such settings, the obvious conflict between advice given to patients and the culture of the organisation is likely to make behavioural change more difficult.

Community action

Health care professionals can play a role in mobilising communities to promote health, drawing upon their knowledge of the determinants of health and their power as opinion formers. They have two roles: the first is mobilisation of local communities to create healthy environments. The WHO Healthy Cities projects provide many examples.²⁶

The second role is media advocacy, where health care professionals provide expert input by monitoring and responding to misleading messages by vested interests, such as the tobacco industry. Further, they support the dissemination of healthy messages. In some countries the medical profession has played a major role in drawing attention to the health effects of tobacco.²⁷ Chapman and Lupton show how health professionals achieved success on a wide range of topics by co-ordinated, informed action.²⁸

Health inequalities

The interventions discussed earlier are likely to have an important impact on health inequalities. Ironically this is because those interventions delivered through the health care sector may be taken up most by people already relatively advantaged. For example, a review of initiatives designed to reduce accidents among children found that they were less successful among those in lower social classes.²⁹ The effectiveness of interventions based on written material is influenced by differential levels of literacy.³⁰

In particular, there is concern in some countries that those from minority ethnic populations, who may have specific risk factors, will be further disadvantaged.³¹ This is accentuated in those countries where migrant workers and illegal immigrants are excluded from the mainstream health system. It is not yet clear whether this disadvantage can be overcome by use of health care workers from the communities concerned.^{32,33}

For these reasons, interventions in the health care sector should normally be part of a larger package. Several reviews have concluded that strategies based on societal and structural change are more effective than those based on individual interventions.³⁴

The health care sector as an employer

Although early research was conflicting and subject to methodological controversy, the adverse health effects of unemployment have now been well documented.³⁵ Importantly, the greatest impact on health arises from fear of or

anticipation of unemployment, with the financial insecurity that it brings.³⁶

The health care sector is a major employer in industrialised countries and, in some countries, cost containment strategies pursued in the health care sector during the 1980s and 1990s have had a significant impact on overall employment levels. The contribution of investment in health care to employment is now being recognised by some governments. This has been expressed in the Amsterdam Special Action Programme, developed by the European Investment Bank, which will invest 10 billion Ecu in job creating projects, including health care, between 1997 and 2000.³⁷

Economic Impact

Few studies report the information needed to estimate cost-effectiveness of interventions to promote health.³⁸ Information is usually specific for the population, country and time concerned, and should only be extrapolated to other situations with caution.³⁹ Factors that should be taken into account include the incidence of the disease being prevented in the population concerned, the cost of inputs, such as salaries of professions, the effects of inflation, and the choice of exchange rates.

It is possible, however, with caution, to compare the cost of different strategies to achieve a particular objective. In 1997 the American Agency for Health Care Policy and Research examined 15 separate types of intervention designed to promote smoking cessation.⁴⁰ Across all interventions, the average cost per quitter was \$3779 (1995 dollars), with \$2587 per life-year saved. However costs varied considerably. More intensive interventions, such as those using nicotine patches, were more cost-effective and the most cost-effective intervention was intensive cessation counselling in groups. However, only 5% of smokers were willing to undertake this type of intervention.


Broadly similar results have been obtained from a Spanish study, published in 1998. There is a comparison of a range of interventions designed to reduce cardiovascular disease which showed that smoking cessation was by far the most cost-effective⁴¹ (Table 11.1).

Table 11.1 Cost per life year gained from interventions to reduce cardiovascular disease: Spain 1998

Intervention	Men	Women
Smoking cessation	\$2,608-3,738	\$4,482-5,756
Treatment of moderate and severe hypertension	\$8,564-38,678	\$9,585-57,983
Treatment of mild hypertension	\$11,906-59,840	\$15,248-86,075
Dietary treatment	\$16,143-20,158	\$57,175-62,154
Drug treatment of hypercholesterolemia	\$33,850-81,010	\$104,100-259,150

Source: Plans-Rubrio, 1998

A trial of a hospital-based intervention undertaken in the USA, published in 1998, produced comparable figures for smoking cessation.⁴² The intervention was a 20-minute bedside counselling session, a short video, self-help materials, and one or two


follow-up visits. The cost per discounted life-year saved ranged from \$1,691 to \$7,444, which the authors noted was much less than for most routine medical procedures. Furthermore, they argued that, with realistic implementation assumptions, total intervention costs would decline significantly with the cost per discounted life-year saved falling by up to 90%, to approximately \$380. 

Although comparative data on cost-effectiveness may indicate a clear superiority of one type of intervention over another, this should be interpreted in the context of the target populations. For example, a Dutch study found that interventions based on self-help appeared much more cost-effective than those using groups, but the populations attracted to the two types of interventions differed considerably. Reliance on a single approach would have missed many individuals who would have benefited.⁴³


There is much less evidence about the cost-effectiveness of other interventions. Nicholl et al. have examined the costs and benefits of exercise, from the perspective of costs falling upon the health care sector.⁴⁴ They found that the impact of treating injuries and other adverse effects of exercise meant that the costs outweighed benefits for those under 45, but the converse was true for those over 45.

Wonderling et al. have reviewed the evidence for cost-effectiveness of multiple risk factor interventions to prevent coronary heart disease.⁴⁵ Published economic evaluations have given widely varying estimates of cost per life gained, with a very wide range of benefits demonstrating that cost-effectiveness is critically dependent on knowledge of the duration of effect, which is often incomplete.

Political Impact

There are three political implications of these findings. First, the extent to which health promotion in the health care sector, on its own, can deliver major improvements in health is limited. Consequently, a health promotion policy that depends on reform of the health care sector to achieve its goals will not work. Health promotion strategy must combine involvement of the health sector with a range of fiscal and legislative measures. 


Second, there are certain interventions such as smoking cessation, within the health care sector, which can be highly cost-effective if part of a broader strategy to promote health.

Third, if health care professionals can be reorientated to become advocates for health rather than simply part of a repair service they can become powerful allies for those seeking to promote health. 


Interventions to promote smoking cessation offer an example of the challenges faced. In many countries such advice is given relatively rarely⁴⁶ and, in some countries, is made more difficult by the high frequency of smoking by doctors⁴⁷. Consequently, it is essential to understand how this can be changed.

A systematic review⁴⁸ of nine studies found that, while trained staff were more likely to be successful getting people to quit, the additional benefit was relatively small. The creation of a system whereby patients were offered a separate appointment to set a quit date, and a sequence of follow-up appointments linked to payment of the physician, was most effective.⁴⁹ Training alone produces a relatively small return on


investment and efforts should instead be directed at organisational changes that facilitate sustained efforts.

A similar issue arises from research on secondary prevention. Countries with managed programmes for cervical screening have been much more successful in reducing death rates than those without them.¹⁷ This implies the need for close co-ordination between those responsible for the health of the population and those providing the screening services. 

It is the need to address these organisational changes that creates the political impact. It will require politicians to communicate with health practitioners and those responsible for public health. In countries such as the United Kingdom and Scandinavia, such links already exist, based on local health authorities. In other countries, especially those with funding based on social insurance and a strong tradition of independent practitioners, this is more difficult.

Such a system would bring a wide range of benefits. One is the scope for supporting leadership for health, whereby those in the health care sector can play a role in proactively identifying challenges to health, mobilising involvement by a wide range of sectors. Another, is that the creation of new structures and processes will act as a vehicle to promote the greater use of evidence-based care which will promote population health whether the interventions concerned are preventive or curative. 

This process has started. In France, the ‘schéma régional d’organisation sanitaire’ is developing mechanisms to co-ordinate regional priorities with plans of health care providers.⁵⁰ In Germany, the research institutes of the sick funds are beginning to examine ways of taking a more proactive role in health promotion.⁵¹ But in other countries much less is happening.⁵²

Other issues must also be tackled. These include reassessing the roles of the health care team.⁵³ In particular, it is necessary to strengthen the role of nursing in those countries where it is still relatively underdeveloped. There is also a need, in many countries, to reorientate medical and nurse training to produce a greater emphasis on prevention. It must, however, be recognised that such changes may challenge the traditional autonomy of the medical profession in some countries. 

The evidence presented here calls for structures that address the relationship between those involved in health promotion and those providing health care, to establish how best health promotion can become a core element of the health care consultation, and how health care professionals can help to address the broader determinants of health.

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Chapter Twelve

Lessons from Canada

The Subject: A Case Study in Infrastructure Development.

Canada has rightly established itself as one of the leading proponents of health promotion practice in the world. In 1997, in the run up to WHO's Fourth International Conference on Health Promotion, a Case Study outlining the development of health promotion in Canada was produced. The approaches, and lessons, are of importance to European policy makers.



This synopsis of that Case Study focuses mainly on the development of relevant infrastructures, enabling concepts to transform into effective policy and health promotion programmes.

The IUHPE would like to thank all those who participated in developing the original Case Study from which these extracts have been drawn, in particular Dr Trevor Hancock and Dr Ron Labonte, who led the initial research and developed the background documentation.

Getting Started

Canada's international leadership in modern health promotion began in 1974 with the publication of *A New Perspective on the Health of Canadians*, under the leadership of Marc Lalonde, the Minister of Health and Welfare Canada at the time. This report signified the first time that a major government publicly acknowledged that medicine and the health care system play only a small role in determining health status. It was also the first document to suggest 'health promotion' as a key strategy for improving health. The report proposed that health was determined by the interplay of human biology, health care organisation, environment and lifestyle.

Establishing New Infrastructures

Three outcomes of *A New Perspective on the Health of Canadians* were:

- ▶ The creation of the federal Health Promotion Directorate housed within the Department of National Health and Welfare in 1978
- ▶ Rapid growth in programmes aimed at lifestyle featuring social marketing and health education campaigns

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- ▶ A refinement of health promotion practice in communities and grassroots endeavours across the country

The Health Promotion Directorate was formed through the merger of several independent units working in the areas of alcohol, tobacco, drugs, nutrition and child health issues. The work undertaken fell into the broad categories of:

- ▶ Social marketing (public education and information)
- ▶ Supports to community action (funding programmes)
- ▶ Policy and programme development
- ▶ Knowledge development

Through its conceptual leadership and funding programmes, the Health Promotion Directorate helped to firmly establish the concept of health promotion within Canada, to support its practice nationally and internationally, and to advance the development of new practice models.

Provincial/territorial initiatives were also under way, and with the advent of *A New Perspective on the Health of Canadians* many provinces/territories broadened their perspectives and established areas within their structures for expanded health promotion efforts. There was also growing activity at the municipal level. By the late 1970s, the Toronto Department of Health, as well as other Canadian public health departments, began to develop more socially critical approaches to health promotion that emphasised structural determinants, community development and advocacy strategies.

In 1984 the Toronto Board of Health, the Canadian Public Health Association and Health and Welfare Canada jointly sponsored an international conference, *Beyond Health Care*. At this conference, two key ideas in health promotion were born: the concept of ‘healthy public policy’ and the idea of a ‘Healthy City’.

Moving Ahead

The Ottawa Charter and Achieving Health for All

The first International Conference on Health Promotion was held in Ottawa in 1986, co-hosted by Health and Welfare Canada, the Canadian Public Health Association and the World Health Organization. A key result of this conference was adoption of the *Ottawa Charter for Health Promotion*, a document that has since been translated into 50 languages and which has become a guidepost for health promotion around the world. The Charter identified five key strategies for health promotion practice and the ‘new public health’ as follows:

- ▶ Building healthy public policy
- ▶ Creating supportive environments

- ▶ Strengthening community action
- ▶ Developing personal skills
- ▶ Reorienting health services

At the same conference, the federal government released *Achieving Health for All: A Framework for Health Promotion*. This set out a matrix of health promotion challenges, mechanisms and strategies, and gave more prominence to the broader determinants of health. It was instrumental in developing health promotion knowledge and establishing a research agenda.

The impact of both documents was to position health promotion as a conceptual centrepiece in accelerating federal and provincial/territorial efforts to reform and restructure increasingly costly health care systems. More important, both documents, and particularly the Charter, are considered to have spearheaded a key shift in health promotion practice wherein living and working conditions, or prerequisites for health, were given additional prominence. The five years following the release of these documents were marked by significant health promotion advancements including:



- ▶ The establishment of large-scale federal strategies targeted to specific health issues or groups
- ▶ The strengthening of provincial/territorial health promotion programmes
- ▶ The establishment of provincial/territorial health councils to guide health care reform
- ▶ The creation of national and provincial/territorial ‘Healthy Communities’ and ‘Strengthening Community Health’ projects
- ▶ The development of knowledge and research in health promotion

Federal Government Programmes

By the mid-1980s there was growing concern about a health promotion orientation based largely on lifestyle. It was argued that the health of people living in relatively disadvantaged circumstances was also determined by structural conditions, such as poverty, unemployment, social discrimination, powerlessness, poor housing and pollution, just to name a few. It was the contention that personal lifestyles were not freely determined by individual choice, but rather existed within social and cultural structures that conditioned and constrained behaviour.



In 1987 the budget of the Health Promotion Directorate nearly tripled as new federal initiatives came on stream with national strategies in the areas of drugs, tobacco, impaired driving and AIDS. Efforts were made to develop intersectoral action, qualitative research and evaluation methods. Social marketing campaigns

emphasised more positive messages and funding programmes allowed for greater autonomy in defining local health issues. Significant support was provided to community-based initiatives through the regional offices of the Health Promotion Directorate.

The settings approach was adopted as an important health promotion strategy. This approach brings together all of the elements of health promotion and integrates them in settings that have meaning to people – home, school, workplace, hospital and community. Research, knowledge development and related infrastructures were also actively supported.

Provincial/Territorial Programmes

By the early 1980s most provincial and territorial governments had established branches, offices, or departments of health promotion. Many of these areas grew significantly in size and budget during the 1980s. However, these activities retained a strong orientation toward communication, social marketing and community action, with some involvement in public policy development. In British Columbia, for example, development of the Healthy Communities Network was supported and grants were provided to undertake health community planning. In Ontario, a Premier's Council on Health Strategy (an intersectoral committee chaired by the Premier) was established. Elsewhere, regional health promotion officers acted as consultants in policy development and planning.

Providing Impetus for Infrastructure Development

In the years that followed the *Charter* and *Achieving Health for All* documents, most of the provinces/territories established commissions and/or health councils to recommend health reform strategies. These intersectoral bodies were influenced by health promotion thinking and most incorporated research and policy development on the broader determinants of health (e.g. income redistribution, housing, environmental protection, labour market adjustments and retraining, equity, etc). In most cases, health promotion was viewed as a means of acting on the broader determinants of health, reducing health care expenditures and advancing health care reform.

The widely recognised 'Healthy Cities/Communities' movement originated in Canada and was implemented in 1986 by WHO Europe, in consultation with Health and Welfare Canada. From 1988-1991 the Canadian Healthy Communities project published several newsletters and a guidebook, provided consultation and workshops in numerous communities and organised a national conference.

Simultaneously, several provincial 'Healthy Communities' projects were initiated, and networks were established in several territories. In Quebec, by late 1991 the network had grown to more than 600 members representing more than 300 different organisations, including more than 150 municipalities. In British Columbia, participating local governments passed resolutions endorsing the adoption of 'Healthy Community' principles, and grants were made available to municipalities for project development. In 1991, the majority of the 38 funded projects had established

multisectoral approaches to health, involving more than three sectors on their steering committees and more than 45,000 people in their activities. In Ontario, 15 provincial associations from the health, social, environmental and urban planning sectors actively pursued funding.

The ‘Strengthening Community Health Project’ was also established in 1988, by the Canadian Public Health Association (CPHA), with funding from the Health Promotion Directorate. This became a catalyst in bringing together many different agencies and organisations to create new partnerships for health. The emphasis was on collaborative action, the development of a community agenda for health and strengthening the capacity of community members on health issues.

The Health Promotion Directorate also carried out two major national health promotion surveys in 1985 and 1990. These surveys have left an important legacy. Today, the National Population Health Survey, which is carried out every two years by Statistics Canada, incorporates some of the work of the health promotion surveys.



The Directorate undertook a series of knowledge symposia across Canada in conjunction with the National Health Research and Development Programme whose health promotion committee undertook a special competition in 1990 related to health promotion research. Health promotion gained considerable acceptance within the academic community in the late 1980s and early 1990s. The first National Health Promotion Research Conference was held in Toronto in 1990.

A further important infrastructure development was the creation in the early 1990s of more than 12 Health Promotion Research Centres, located across the country. All of the centres deal with health promotion knowledge development and evaluation, and most centres have developed strong working relationships within the practice community and sponsor successful summer schools. In 1996, 13 of the Centres formalised their associations with the creation of a Consortium with support from Health Canada.



The 1980s and 1990s also saw numerous universities and colleges initiating certificate, degree and postgraduate courses in health promotion. Employment in health promotion-related positions increased significantly in public health departments, community health centres, hospitals, local governments and social service agencies.

The voluntary health sector has also played an important part, providing programmes and services to Canadians in a unique and effective manner, performing an important advocacy function and raising significant amounts of money to support programme and research activities.

How External Factors Shaped Health Promotion

Beginning in the early 1990s, the influence of health promotion declined somewhat at all levels of government because of a variety of factors including the commitment to deficit reduction, the erosion of the social ‘safety net’, and attempts to carve out new roles and responsibilities among government and other sectors. Also, a new construct – population health – began to find favour with policy makers.

At federal level, the Health Promotion Directorate of Health Canada continued to

be active in policy and programme development and implementation, especially knowledge development, social marketing, public education and information, as well as support for community action. A significant proportion of the funding was allocated to major strategies, while more than 350 community projects were being supported through the Health Promotion Contribution Programme.

Government-wide efforts to address the deficit had an impact on resources for programming, as they had on programmes across the government. Secondly, restructuring of the new Health Promotion and Programmes Branch resulted in a shift in responsibility for the administration of the health promotion programmes. And importantly, the Population Health paradigm was adopted by the federal government as a way of thinking about and acting on health. This paradigm reinforces the importance of health promotion and builds on its legacy by emphasising the significance of healthy public policy, intersectoral action and the development of tools and mechanisms to assess health impacts of federal programmes and policies across the entire range of its activities.

Health promotion and population health have much in common. Nevertheless they operate from somewhat different theoretical bases and research assumptions. In 1996, in an effort to build on the complementarity of these two approaches, Health Canada produced a synthesis ‘population health promotion’ model, which combined the strategies of the *Ottawa Charter* with a list of major health determinants and population groups. The model has been well received by health promoters across Canada and much of the initial discomfort with the population health approaches has dissipated. The phrase ‘population health promotion’ is becoming more commonly used and may become the new unifying concept.

Health Care Reform

By the mid-1980s it was apparent that Canada’s health care system had reached a crossroads. The system was financially strained and in need of reform. Generally, provincial/territorial governments arrived at the conclusions that there was a need to:

- ▶ Focus on health promotion, disease prevention and population health status
- ▶ Place greater emphasis on community-based rather than institutional care
- ▶ Decentralise and regionalise the health care system
- ▶ Emphasise primary care and move away from fee-for-service structures
- ▶ Place greater emphasis on self-care and personal responsibility for health maintenance

Proposals for health reform within the provinces/territories generally included a focus on health and its determinants, the development of health goals and objectives, a commitment to health promotion principles, the creation of new infrastructures to


plan healthy public policy and a redefinition of the role of provincial/territorial health ministries.


By 1996, most provinces/territories had established some form of regional health system responsible for managing hospital care, home care, public health and other services, although none of them were given the mandate to manage physicians' services. The net impact of these initiatives remains unclear.

Assessing the Health Promotion Impacts

A short case history of this kind allows only a brief analysis of the impacts of health promotion in Canada.

By most measures, health status in Canada has generally improved over the past two decades during the coming of age of health promotion. For many health status indicators such as life expectancy and infant mortality rates, Canada ranks among the best in the world. The Report on the Health of Canadians (1996) prepared by the Federal/Provincial/Territorial Advisory Committee on Population Health presents the following data:

- ▶ Male life expectancy at birth increased from 70 years in 1971 to 74.3 years in 1991, while female life expectancy increased from 77 years to 80.8 years. 
- ▶ The infant mortality rate declined from 15 per thousand births in 1974 to 6.3 per thousand births in 1993.


In 1990, nearly 10 million Canadians reported improvements in their personal health practices, such as reduced alcohol consumption, improved eating habits and increased physical activity. Sixty-seven percent of Canadians attributed this to increased awareness of health risks. 


With respect to other key risk factors, there appear to be some positive trends in the areas of seat belt use and breast-feeding. There are however mixed trends in the area of tobacco consumption and, most recently, negative trends in the area of physical activity.

In this regard it may be reasonable to assume that health promotion measures aimed at tobacco reduction are responsible for some of the decline in heart disease and in male lung cancer. It is equally clear that health promotion has been less successful in addressing female smoking behaviour. The dramatic decline in cardiovascular mortality is likely attributable to a combination of reduced smoking, improved diet, increased exercise and improved medical care. Health promotion can also claim some credit for reduced accident mortality (particularly in the case of motor vehicles); however, there has clearly been a failure to address suicide.


Other Impacts

Assessing health promotion against the objectives of the *Ottawa Charter* also indicates various areas of progress.

In terms of building healthy public policy, there has been mixed progress at all levels of government in putting in place policies, programmes and mechanisms to address the determinants of health of the Canadian population. But there has been significant progress on some fronts such as children's initiatives to enhance healthy child development and to eliminate child poverty. 

There are a number of examples of more focused government-led healthy public policy initiatives in such areas as tobacco control, drinking and driving, nutrition, family violence and injury prevention. Several provinces have also had limited success in attempts to integrate and co-ordinate healthy public policy across government. Every province/territory in Canada has developed health goals. 

There have been a wide range of initiatives related to the creation of supportive environments. Establishing the relationship between healthy environments and healthy people has been an effective strategy for health promotion. Some of that experience includes:

- ▶ Initiatives related to the physical quality of housing and buildings 
- ▶ Encouragement to adopt practices that are both healthy and environmentally-friendly
- ▶ The 'Active Living/Go for Green' programme across several government levels which stressed the links between healthy environments and active living, and strongly supported sustainable transportation
- ▶ Comprehensive school health aims to create healthy social and environmental policies in schools and their communities.

An important strategy for strengthening community action has been the 'Healthy Communities' approach. Experience has shown that its value lies in its ability to involve multiple partners at the community level to build a shared vision, seek consensus and take action on local concerns.

The development of personal skills has continued to be an important element of health promotion. The range of personal skills supported has expanded beyond those connected to health behaviours and includes programmes and projects addressing literacy, numeracy, mutual support, self-help and organising/lobbying skills. These skills are seen to provide the foundation upon which individual and community capacity to take action to improve health is built.

The National Forum on Health

A further impact of two decades of work became evident when in October 1994, the federal government established a National Forum on Health 'to involve and

inform Canadians and to advise the federal government on innovative ways to improve our health system and the health of Canada's people.' Chaired by the Prime Minister, with the federal Minister of Health as vice-chair, the forum had 24 volunteer members who had extensive experience in the health system.



In addressing the non-medical factors affecting health, the Forum stressed that work on the determinants of health and health promotion has shifted the focus of government policies from lifestyle choices to 'the societal level, beyond factors that are within the immediate control of individuals, professionals and communities.' The Forum placed particular emphasis on the social and economic determinants of health (i.e. the impact of poverty, unemployment and cuts in social supports on the health of individuals, groups and communities). It also stressed that 'a better balance must be struck between short-term economic imperatives and the long-term health and well-being of Canadians.' Amongst its recommendations, the Forum recommended the creation of a National Population Health Institute to strengthen data collection, report on national health status and system performance and to act as a resource for the development and evaluation of public policy initiatives.

The Canadian Lessons

What are the main lessons from the Canadian experience which Europe may look to? Some factors at play in the development of health promotion provided particular impetus; other factors have limited the health promotion potential.

1 A Conceptual Basis for Action

On the basis of publication of *A New Perspective on the Health of Canadians*, the *Ottawa Charter* and *Achieving Health For All: A Framework for Health Promotion*, a strong conceptual legacy was established which has guided health promotion agendas and actions. This has been complemented by an ambitious research agenda and infrastructure.

2 Strong & Enlightened Leadership

Two events took place early on to legitimise health promotion and develop its professional and institutional capacity. The first was the creation of the Health Promotion Directorate in 1978. The second was the 1982 Cabinet approval of a health promotion policy and programme. The new programme was shaped by building selectively on the programme experience of the Directorate, and particularly the Non-Medical Use of Drugs Directorate, with its strong community development approach to programming, and the broad vision of the first Director General. These assets were reinforced through several new senior management appointments with strong support for health promotion up to the Deputy Minister level. This culminated in 1984 with the appointment of a Minister with a particular interest in health promotion.

3 Translating Concepts into Action

With the *Achieving Health for All* framework in 1985, the Minister of Health stated his intent to provoke a national dialogue among Canadians. An extensive period of consultations and marketing of the document, programme announcements and a series of knowledge development and research initiatives followed. This was reinforced by provincial/territorial health promotion activities. Most had established branches, offices or departments of health promotion.

Another incentive towards the application of health promotion concepts and strategies was provided through the ongoing process of health system reform.

4 Influence of Health System Reform

Clearly, the driving force behind *A New Perspective on the Health of Canadians* in 1974 was political concern about the rising costs of health care. With the federal move from cost-sharing to block funding of health in 1977, health promotion was identified by federal and provincial/territorial health ministers as a priority for joint action. Health promotion was included in the preamble of the new Canada Health Act in 1984, emphasising its important underpinnings of a broader health system.

Health care reform has been on health agendas throughout the 1980s and 90s. Much of the ‘language, concepts, principles and strategies of health promotion are being adopted in plans for reform’.

5 Partnerships for Sustainability

A strong partnership base among stakeholders has already played an important role in bringing together federal and provincial/territorial governments, voluntary and professional organisations and the private sector, and should serve as a sound foundation to build future leadership options.

Looking Forward

The Canadian experience has indicated several important factors which need to be in place if health promotion is to fulfil its potential.

It is vital that a shift occur from seeing health care as the major determinant of health to one where the broader environmental, socio-economic, political and cultural determinants of health are recognised as the major factors that need to be addressed.

Federal leadership has been instrumental in the development of health promotion in Canada as an essential element of an effective health system. Strong provincial and territorial support for health promotion is also essential.

Government commitment and intersectoral collaboration are essential for the



development of healthy public policy which should have as its goal sustainable human development.



The development of healthy public policies also requires structures which support both comprehensive approaches within ministries, as well as a capacity for co-ordinated intersectoral approaches across ministries.



Health promotion action takes place where people live, work, play and love – in communities. Thus health promotion at the local level must be supported over the long term at the national and provincial levels. This requires the appropriate devolution of power and resources to the local level, effectively balanced by the continuing leadership, financial and standard-setting activity by federal and provincial/territorial governments.



While health promotion cannot alone create an ideal future, it can help to refocus concern, at all levels from global to local, on human rather than merely economic development. By allying itself with, and contributing to, related social movements, health promotion can help us move toward a more humane, just and sustainable future.

Chapter Thirteen

Making Health Gains

The Subject: A Case Study in Oral Health Promotion Effectiveness

Oral diseases are an important, but often under-rated, public health problem because of their high prevalence, the cost of treatment, and their impact on both individuals and society as a whole.

It is an area where big health gains have been made – and can continue to be made. But to continue to make progress, real political and health leadership is necessary.

There is significant evidence to show that health promotion efforts have succeeded in producing declining dental caries and periodontal diseases, but such success is focused in those countries which have introduced effective oral health promotion policies and practices.

The evidence also indicates the effectiveness of adopting the common risk factor approach, which in oral health calls for a food and health policy to reduce sugar consumption, a community approach for better general body and oral hygiene, and for policies which support smoking cessation. Above all, community – and wider political – support is needed for water fluoridation and improved use of fluoride toothpastes.

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Effectiveness of Oral Health Promotion

Oral diseases are important public health problems because of their high prevalence, the impact on individuals and society in terms of pain, discomfort, social and functional limitation and handicap, and the effect on the quality of life.

Dental disorders are expensive for individuals and the community, ranking the

third most expensive to treat among all diseases, exceeded only by costs related to cardiovascular diseases and mental disorders.

Traditional oral health education, using health professionals, is relatively costly and could be successfully incorporated into established routines and practices within other sectors (teachers, community health workers). Oral health care should be more integrated with other health care, and oral health promotion with other health promotion.

Water fluoridation is the most cost-effective method of prevention, but it is a controversial issue and needs political commitment of decision makers. Since the 1970s there have been dramatic declines, from mean levels of 5 and 10 to lower than 1 decayed, missing or filled permanent teeth (DMFT), in children. These improvements demonstrate that dental disease is preventable and can be enormously reduced even within a decade. The generally held reason for the decline is the impact of the widescale use of fluoridated toothpastes. This is a good example of how industry and public health can work together to promote health.



The current traditional curatively-oriented strategies for improving oral health are relatively ineffective and very expensive. Oral health promotion should aim at achieving rational use of sugar products, fluoridation of the mouth, effective oral hygiene, reductions in smoking and drinking, prevention of trauma and the appropriate use of dental care.



The causes of the two major dental diseases (caries and periodontal disease) are diet, dirt and tobacco. Oral mucosal lesions, temporo-mandular joint dysfunction and pain are related to tobacco, alcohol and stress. Trauma to teeth is most related to accidents. As these causes are common to a number of chronic diseases and health impacts, it is rational to use a common risk factor approach in health promotion. A number of chronic diseases, such as heart disease, cancer, strokes, accidents and oral diseases, have risk factors in common and many are relevant to more than one chronic disease. Such risk factor oriented strategies are more inclusive and cost-effective than those directed at specific diseases.



The Health Impact

Oral diseases are the most common of all illnesses in industrial societies and are increasing in Third World countries. A feature of dental diseases is that simple and cheap public health methods are available to assist prevention and develop control. The causes are known – diet and dirt, smoking, alcohol and trauma. Oral health is ‘a comfortable and functional dentition which allows individuals to continue in their desired social role’.¹ However, oral cavities cannot be healthy or unhealthy – only people can. Oral health promotion should therefore be part of general health promotion and not a separate activity. The main oral diseases are dental caries, periodontal diseases, oral trauma and oral cancer.

Dental caries is the most common disease affecting mankind. It is caused by frequent use of non-milk extrinsic sugars. Since the 1970s health promotion has produced dramatic declines in decayed, missing or filled permanent teeth (DMFT) in

children. Currently, the Nordic countries, the Netherlands and the UK have the lowest caries levels in Europe with one tooth affected by caries at age 12, compared to levels of 5 and above in the 1960s.² There is no conclusive scientific evidence on the relative roles of individual factors in the decline, but it can be explained by successful oral health promotion activities. Improvements in oral health demonstrate that dental disease is preventable and can be reduced enormously within a decade.



The generally held consensus for the decline is that it is due to widescale use of fluoridated toothpastes. Of 55 experts, most agreed that the widespread use of fluoride, especially fluoride in toothpastes, was the main reason.³ The decreases are mainly due to factors external to dentistry and, disappointingly, dental services are seen to have contributed little to the improvement – 3% of the variation in changes in 12 year-old caries levels in 18 industrialised countries, whereas broad socio-economic factors (including or excluding fluoridated toothpastes) explained 65%.

Health education and individualised preventive measures did not have a measurable effect on the decline.^{4,7} The current curatively-oriented strategies for improving oral health are relatively ineffective and very expensive, thus inappropriate for most industrialised countries, and of little relevance for developing countries. Their expense and reliance on technology makes dental treatment unavailable to millions of people. Increased spending on traditional dental care has only a marginal effect on the population's oral health status. However, the fact is that simple and cheap but effective public health methods are available.



Gingivitis and periodontal diseases are caused by accumulation of plaque. The most important way to reduce plaque is by tooth-brushing twice a day.^{8,9} There has been a reduction in the prevalence of periodontal diseases, which has mainly been explained by improved oral hygiene, reductions in smoking and improved living and housing standards.

Trauma to teeth is caused by falls, fights, contact sports, bullying and accidents. The prevalence of trauma to teeth is high. One in five children in European countries have broken teeth.

Oral cancer is the most life-threatening of all oral diseases. Risk factors related to oral cancer include tobacco and alcohol use and chewing betel quid.¹⁰

Social Impact

Oral health has an important social impact, especially in relation to pain, social and intellectual functioning.

Social and psychological impact of dental diseases has been measured by eating restrictions, communication restrictions, pain, discomfort and aesthetic dissatisfaction.¹¹ Every fourth person in the UK reported toothache over the previous 12 months.¹² Chronic pain has a special effect on quality of life, often causing a great deal of emotional, physical, and economic stress.¹³ Eating and chewing difficulties are a major problem, with 41% taking longer than average to complete a meal, and 9% feeling uncomfortable when eating in the presence of others. Embarrassment during social contacts attributed to the appearance of teeth or dentures, or the dropping of

dentures while speaking, was reported by 13%.¹⁴ Eating problems (37%) and communication problems (19%) are common.¹²

Oral health varies with social class. Health education activities have failed to reduce these differences. Some health education programmes have targeted deprived groups. Also the programmes targeting the whole population tend to fail in reducing inequalities.¹⁵

Economic Impact

Dental disorders are expensive for individuals and the community, ranking third among all diseases and exceeded only by costs related to cardiovascular diseases and mental disorders.¹⁶ In the UK £1.5 billion of the NHS budget is spent on dental services.¹⁷ The loss in work time among employed people is 2 hours per person per year.¹⁸



Dental services systems have had very little effect on dental caries,^{4,19} although preventive dental treatment, especially use of sealants²⁰ have had an effect on caries. Use of oral health services by children and adolescents is not influenced systematically by socioeconomic factors any more in most countries in Europe, but among adults and disadvantaged population groups, utilisation is lower.

Traditional oral health education using health professionals is relatively costly and could be successfully incorporated into established routines and practices within other community sectors eg. teachers, community health workers.²¹



Water fluoridation is the most cost-effective method of oral disease prevention. However it is a controversial issue and therefore needs strong public support.



Political Impact

Dental professionals have an important role in oral health promotion by influencing public policy, by creating healthy environments and by reorienting oral health care systems. They played an effective part in advocating water fluoridation for communities with the proper sized centralized pipe water system. However political commitment is required for implementing water fluoridation to reach all people, limit socio-economic differences and provide a cost-effective solution.

Oral health care needs to be more integrated with other health care systems and oral health promotion with other health promotion activities. As levels of health have improved, inequalities have widened. Additionally, those functional and psychosocial problems associated with poor oral health are particularly marked in already vulnerable populations, such as the elderly and low income groups.¹⁷

Strategies for Oral Health Promotion

Oral health promotion should aim at achieving rational use of sugar products, fluoridation of the mouth, effective oral hygiene, reductions in smoking and drinking, prevention of trauma and the appropriate use of dental services.



A Common Risk Factor Approach

One of the principles of health promotion is to focus on the whole population rather than on disease specific at-risk groups.^{22,23} The Common Risk/Health Factor Approach (CRHFA) distinguishes between actions aimed at reducing ‘risk factors’ and actions aimed at promoting ‘health factors’. The strategy includes reducing risks, promoting health and strengthening possibilities to cope with ‘given’ risk factors. A major benefit of the CRHFA is the focus on improving health conditions in general for the whole population, and for specific groups at high risk. It thereby reduces social inequities. A number of chronic conditions such as heart disease, cancer, strokes, accidents and oral diseases have risk factors in common. Such risk factor oriented strategies are more rational than those directed at specific diseases.²⁴ The key concept underlying the integrated common risk approach is that promoting general health by controlling a small number of risk factors, may have a major impact on a large number of diseases, and at a lower cost than disease specific approaches.



For example, the same unhealthy diet affects the incidence of heart disease, cancer and oral diseases. Working with food policy strategists to change diet, reducing intakes of non-milk extrinsic sugars, fat and salt, increasing complex carbohydrate and/or fibre availability, and promoting foods high in antioxidants (such as fruit, vegetables and cereal products), is more likely to succeed than one which only stresses control of sugars for caries reduction. Similarly programmes which reduce smoking to prevent cancer and heart disease, should be fully coordinated to be effective in oral health as well. Preventing tooth trauma also requires a broadly based strategy to prevent accidents, especially those affecting the head, for example, the use of mouth guards in contact sports, and wearing of cycle helmets.

In summary, policy proposals embracing the common risk factor approach could effectively be developed to include:

- ▶ A food and health policy to reduce sugars consumption
- ▶ A community approach to improve body hygiene and oral hygiene
- ▶ A smoking cessation policy
- ▶ A policy on preventing accidents



In addition to those four strategies the specific oral strategies required are:

- ▶ Policies on water fluoridation and fluoride toothpaste use
- ▶ Ensuring the availability of appropriate dental care

Fluoridating the mouth

The most effective preventive method for dental caries is appropriate use of fluoride.²⁵ Fluoridated toothpaste is the most practical and acceptable method of fluoridating the mouth. Numerous randomised clinical trials have confirmed their preventive effect.²⁶ Therefore obtaining cheap fluoride toothpaste should be supported.



Water fluoridation is still the most cost-effective preventive method in medicine and it is therefore recommended to all member states by WHO.^{5,25,26} It is a good example of an environmental change affecting the whole population and reducing social inequalities. In some areas in Europe water fluoridation has been stopped (e.g. Sweden, Finland, Scotland, Germany), because of public resistance. Globally, water fluoridation is still slowly increasing. Extensive epidemiological studies have shown that caries reduction by water fluoridation has in general been over 50%.²⁶ There is also concern that fluorides cause mild enamel fluorosis.²⁷ Fluoridated salt is used successfully in Hungary and Switzerland. The other fluoride methods, topical fluoride applications and rinsing, are not effective as population strategies, but may be valuable for high caries risk individuals.

Reduction of use of non-milk extrinsic sugars

Extensive evidence suggests that sugars are the most important dietary factor in the cause of dental caries.²⁸ Numerous epidemiological studies conducted at the population level suggest that there is a direct relationship between the quantity and frequency of sucrose consumption and the development of caries. An extensive review of evidence showed that cooked staple starch foods, such as rice, potatoes and bread, appear to be of low cariogenicity. There is no evidence that intrinsic sugars or milk sugars have adverse effects on health.²⁹

In 100 reports analysed by Cannon,³⁰ 82 recommended a reduction in the consumption of sugars. There was a general agreement in all the reports that extrinsic sugars consumption should be reduced.³¹ It is essential to incorporate a policy to reduce sugar consumption to 11% of total calories into a diet and health policy.³² COMA proposed that the population's average intake of Non Milk Extrinsic Sugars (NMES) should not exceed about 60 g/day or 10 per cent of total dietary energy,²⁹ and WHO judges that the upper limit of the population's nutrient goal for free sugars should be about 10 per cent of energy. There is no lower limit.²⁸



The recommendations of the COMA Report³² are important. In order to reduce the risk of dental caries, the consumption of NMES by the population should be decreased. These sugars should be replaced by fresh fruit, vegetables and starchy foods. For infants and young children simple sugars should not be added to bottle

feeds; sugared drinks should not be given in feeders; dummies or comforters should not be dipped in sugars or sugary drinks. The schools should promote healthy eating patterns, both by nutrition education and by providing and encouraging nutritionally sound food choices. The Government should seek the means to reduce the use of sugared liquid medicine.³² For older people COMA recommends that elderly people should reduce dietary intakes of fat and simple sugars, and increase intakes of starchy foods, non-starch polysaccharides and vitamin D.³³



Effective strategies include:



- ▶ Guidelines for carers of young children and nurseries, to reduce sugars in liquid medicines and drinks
- ▶ Support for midwives and health visitors in providing accurate advice on breastfeeding, feeding and weaning foods
- ▶ Increase in the sale and prescription of sugar-free medicines. In Europe, no new licenses should be issued for sugar-containing paediatric medicines, and the sale of sugar-free medicines should be increased
- ▶ Nordic countries have given emphasis to health education of mothers and parents of infants. In Finland dental education was effectively introduced into Mother and Child Health clinic activities for pregnant women and their husbands in the '70s³⁴
- ▶ Sugar substitutes, especially xylitol, sorbitol and non-caloric sweeteners, should be promoted. There should be increased use of sugar substitutes in soft drinks
- ▶ Regulatory changes in Holland have resulted in a ban on TV advertisements of sugared products at times when children are likely to be watching
- ▶ Several non-profit-making associations for toothfriendly sweets have informed the public of the availability and benefits of toothfriendly non-sugar confectionery. This has taken place in Switzerland, UK, Germany, Belgium, and France³⁵
- ▶ There should also be restrictions on food stores, ensuring they do not place confectionery at low level or near the cashier check-out for small children to reach
- ▶ Greater efforts are needed to reduce consumption of non-milk extrinsic sugars

The Settings Approach

Opportunities for oral health promotion are present in a wide range of settings.³⁶ Table 13.1 provides some examples of how oral health promotion activity can be delivered. Within the primary care sector, a wide range of



opportunities exist. For example, working with general medical practitioners, general dental practitioners, pharmacists and health visitors have the potential for achieving significant oral health gains. Within the setting of the education system, nurseries, schools, colleges and other training institutions offer many openings for oral health promotion. Comprehensive interventions involving individualisation, feedback and reinforcement, or other psychological strategies, could enhance the positive outcomes of these interventions.³⁷ Community settings could include working with community groups, the retail sector, social services departments and the voluntary sector. Other possible settings for oral health promotion include a variety of workplaces and regional and national projects. Within these various settings different target groups may be most apparent. Evidence shows that narrowly focused and isolated local initiatives often achieve very little and may ultimately waste limited resources.

At home, parents of small children carry the main responsibility for adopting appropriate oral hygiene, fluoride and dietary habits during the primary socialisation period of a child. Strong associations exist between the habits of parents and their children.³⁸ Early infant caries has been successfully reduced in Nordic countries by extensive oral health education, starting with mothers from early months of pregnancy. Daily consumption of xylitol chewing gums among 3-year-olds,³⁹ reflects the powerful effect of parents on the health habits of their children. Several dental health education studies have succeeded in changing oral hygiene and sugar habits, but the effect seems to be short⁴⁰. Successful interventions have also been conducted in the working place.^{3,41,42} Special emphasis should be put on availability of healthy food and drink products in different settings. Smoking cessation programmes would also benefit significantly in reducing risk of periodontitis.⁴³



Table 13.1 An overview of effective oral health programmes

SETTING	AUTHOR	PROGRAMME	TARGET GROUP	TYPE OF RESEARCH	OUTCOME MEASURES	RESULTS
HOME	Ekman and Persson 1990 ⁴⁴	Oral hygiene instruction to the parents	Infants & parents	Post-test only, non-equivalent control	Knowledge	Parental knowledge, attitudes, behaviour and caries improved
	Rayner 1992 ⁴⁵	Dental health education, Supervised brushing, Home visits	Pre-school children	Experimental	Objective behaviour & health	Home visits important, Effects of school-based practices quickly lost, if not supported by home environment
SCHOOL	Axelsson et al. 1987 ⁴⁶	2-3 monthly prophylaxis & oral hygiene instructions with active involvement	Schoolchildren	Experimental	Objective behaviour & health	Plaque, gingivitis and periodontal scores & caries improved
	Wight and Blinkhom 1988 ⁴⁷	Dental health education by hygienists and by teachers	Schoolchildren	Quasi-experimental	Knowledge & objective behaviour	Both groups were effective but teachers cost-effective
	ter Horst and Hoogstraten 1989 ⁴¹	Dental health education film	Schoolchildren	Quasi-experimental	Knowledge	Knowledge improvements are relatively easy to achieve
	Hplund 1990 ⁴⁹	Learning by teaching	Schoolchildren	Quasi-experimental	Knowledge behaviour	The total amount and frequency of sugar intake reduced
	Fuller and Harding 1991 ⁵⁰	Sugar clock	Schoolchildren	Quasi-experimental	Knowledge	Effective in improving short and long term knowledge
SCHOOL	Albander et al. 1994 ⁵¹	Traditional oral hygiene, Active participation, Feedback, Involvement of parents	13-year-olds	Randomised control trial	Objective behaviour & health	Plaque and gingival bleeding scores improved
	Schou and Wight 1994 ¹⁵	Oral health campaign	Schoolchildren	Quasi-experimental	Objective behaviour & health	Only non-deprived children benefited from the programme
WORK PLACE	Hetland et al. 1981 ⁵²	Oral hygiene instructions, Professional cleansing by auxiliaries	Adults	Experimental	Objective behaviour & health	Chairside oral hygiene, instructions effective
	Soderholm et al. 1982 ⁵³	Chairside instructions by hygienist	Adults	Experimental	Objective behaviour & health	Improved & maintained periodontal health
	Schou 1985 ⁵⁴	Active participation	Adults; unskilled workers	Experimental	Objective behaviour & health	Plaque and gingival bleeding scores improved by 50%
COMMUNITY	Ambjörnson and Rise Demonstration 1985 ⁵⁵	Verbal information	Elderly	Experimental	Objective behaviour	Verbal information gave short term improvement but demonstration produced also long term improvement
	ter Horst et al. 1985 ⁵⁶	Recall letter	Adults	Experimental	Objective behaviour	Stimulation to dental attendance by letter was effective

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Chapter Fourteen

A Fundamental Human Right

Subject: Equity in Health.

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The Purpose: Equity in health is probably the most important issue for health promoters. The desire for equity gives power to many health promotion interventions. The authors argue here that:

- 1 Health services can be effective partners in helping reduce health differentials when given the resources and a mandate to do so
- 2 Education is an effective tool to improve health literacy and promote health equity
- 3 Action to improve equity in health must be conducted within the context of economic, social and human development
- 4 Community development approaches are powerful tools for improving equity in health
- 5 Health is among the most powerful forces for economic vitality, and high rates of return follow investments in health

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Introduction

Equity in health is at the heart of health promotion and is touched on directly or indirectly in almost every chapter in this Evidence Book. The material presented in this last chapter is intended therefore to supplement the rest of the work, by

summarising evidence that supports the following contentions:

- ▶ Properly implemented policies and actions to improve equity in health as well as having positive impact on the measured status of peoples' health can also have:
- ▶ Positive social impact by strengthening communities and families
- ▶ Beneficial economic impact following from a healthier, more vigorous and more productive society
- ▶ Positive political impact following effective advocacy for reduction in differentials in health

The positive impacts are reciprocal. Strong communities, healthy public policy and sustainable economic development can all work inevitably to improve equity in health. During the almost two decades since the Black Report¹ was published, much has occurred to improve equity in health in Europe, yet much remains to be done.² Fortunately, there is today in Europe strong momentum to place equity in health at the centre stage of both policy and action, at all levels of society. Here, the progress is described and the evidence is laid out on a range of strategies to improve equity in health.

The term 'equity in health' is used here as the World Health Organization and Whitehead³ have suggested, with a focus on the ideal of providing a fair opportunity for all people to enjoy health to their fullest potential. It would indeed be a slippery slope to interpret the goal as *equal* health status for everyone. Whitehead's³ guidance on this matter is clear and reasonable, pointing out as she does that a realistic goal is the reduction of differences between peoples' health as much as possible through equal *opportunity* for health. A ubiquitous sports metaphor makes the point well – the playing field should be as level as possible so that differences in play are determined fairly. 


Determinants of equity in health

There is very substantial evidence that socio-economic conditions related to income, education and employment are at the root of much of ill health.^{4,5} This is not a problem of struggling economies only, as data from across Europe show. It was estimated in 1993 that more than 57 million people from virtually every country in the region lived in almost 23 million poor households.⁶ Even in the richest countries in Europe, those with the best resources live several years longer and have fewer illnesses and disabilities than do the poorer.⁷

Intervention to improve these conditions is obviously very challenging, but possible.⁸ A recent assessment by the WHO⁹ concluded '...health is best where active steps are taken to address the social determinants of health (such as poverty, homelessness, unemployment). In concert with this assessment, improving equity in health is today among the highest priorities at the WHO. In recent remarks describing

new policy on health and economic development, Director General Brundtland emphasised the need for improved policies on health that include economics, the environment and social issues.¹⁰

WHO's construction of the problem is consistent with important socio-economic models of the day, in which health is conceived as an outcome of the effects of all the factors affecting the lives of individuals, families and communities, through different mechanisms and pathways.¹¹ This viewpoint places individuals at the centre together with the factors of age, sex and genes that shape their health potential. Surrounding them are layers of environmental factors, potentially modifiable, that progress from micro- to the macro-environmental levels. The closest layer is personal behaviour and ways of living that can promote or damage health. The next layer is social and community influences that provide mutual support for members of the community in unfavourable conditions, but that can also fail to support, or have even a negative effect. The third layer includes structural factors such as housing, working conditions, access to services, food supplies and provision of essential facilities.


Overarching all of these are the prevailing socio-economic, cultural and environmental conditions of living, both national and international.  The main value of the model in the present context is that it helps to make the following critical point: equity in health is impossible to separate from many other issues of public concern that do not ostensibly have health foci. The complex issues that affect health outcomes and the socio-economic inequalities in them means that for Health Authorities to play an effective part in tackling these, they need both a specific focus on health inequalities and a commitment to multi agency working to make positive change. This complexity is a theme taken up again elsewhere in this chapter.

Research and Demonstration

The literature on effectiveness of actions to improve equity in health spans a very broad range of disciplines and study methods. Within this diverse literature is to be found evidence for the full range of health promotion outcomes leading to improved equity in health (as described by Professor Nutbeam ▶ *Chapter 1*), including improved health literacy, social action and influence, and healthy public policy. The nature of the evidence shifts, of course, with the arena of study. No single method or approach is appropriate to all problems. Of necessity then, the evidence reviewed below spans a broad range from international ecological analyses that depend entirely on statistical methods, to community demonstration projects that depend entirely on qualitative descriptive methods.

Health Impact


Health impact as the term is used here refers to the health both of individuals and of populations, and to effective health services whose work contributes to improving equity in health. As indicated by Professor McKee (▶ *Chapter 11*) opportunities do exist for health services to contribute to improved equity in health. Evidence on this comes

for example from a recent systematic review-of-reviews of interventions implemented through the health services, aimed at improving the health of disadvantaged groups.¹² The review concentrated on interventions which health services could implement alone or in collaboration with other agencies. It identified 21 scholarly reviews and 94 studies that satisfied strict inclusion criteria, and summarised: ‘Although it is likely that the most significant contribution to reducing health inequalities will be in improving economic and social conditions ... there is a range of interventions which can be promoted through health services to reduce inequalities.’ 

A range of characteristics of success were identified. These included:


- ▶ systematic and intensive approaches to delivering effective health care to disadvantaged groups, improvement in access and prompts to encourage use of services
- ▶ strategies employing a combination of interventions and those involving a multi-disciplinary approach
- ▶ making sure interventions addressed expressed or identified needs of the target population and the involvement of peers in the delivery of interventions


The challenge, *in terms of service provision*, is to further convince health services that there are effective ways for them to be involved and to further explore and disseminate the practice methods that have been demonstrated to work.

At the level of individuals, other chapters have reviewed evidence on a wide range of issues, especially nutrition and tobacco, that are strongly related to socio-economic disparities and therefore to health inequities. Here, we draw attention to the fact that many of the individual-oriented intervention strategies described in other chapters are educational, aimed at changing health-related knowledge, attitudes or behaviour. From an equity-in-health perspective, the main value of such ‘health literacy’ interventions may be empowerment of the individual that follows from being able to make informed decisions in difficult circumstances. The strengthening of individuals that can be seen in participants in many community development and health projects²⁸ has a learning base that includes both education and social action and often leads to developments in community service provision. This has been referred to as making people ‘Fit to *Fightback*’. 

The evidence for the effectiveness of education as an intervention tool to address specifically inequality in health is scant, but positive. A comprehensive review of evidence on this matter was commissioned by the Dutch Government and carried out by Gepkens and Gunning-Schepers.^{13,14} They examined 129 interventions intended in one way or another to address the problem of inequalities in health, a large subset of which used education methods. In the majority of cases investigated the effects were positive. There is, in addition, good evidence that when educational initiatives employ modern approaches built on key social-psychological processes (e.g., the role of social relationships in influencing behaviour), education effects are strongest.¹⁵

At the level of populations, the best evidence on the social and economic determinants of health in Europe comes from ecological analyses (intra- and inter-


national comparisons) that without exception support two conclusions, as succinctly reported by Bobak.¹⁶ The first is that socio-economic differences in health are universal. The second is that relative deprivation rather than absolute poverty is the crucial element in understanding health inequalities in a Europe that is far from the crushing poverty of some other regions of the world. 

Furthermore, deprivation can have many faces, including limited opportunity to participate in society, isolation, limited ability to deal with information, lack of material resources, poverty, poor education, and inadequate or no employment, among others. 

The evidence is strong that deprivation in these areas is closely linked to poorer health.^{3-5,17} The fundamental understanding to be drawn from this line of evidence, therefore, is that health promotion to improve equity in health *must* be conducted within the context of economic, social and human development.¹⁸ *A range of examples of this kind of work can be drawn from around Europe. At a local level these could include the provision of welfare benefits services in Health Centres.²⁹ At a city wide level the development of city planning for health within the HFA framework provides a range of good examples. The work on women's health developed in Glasgow and now promoted around the EU is a sterling example of this. Ref. Action for Women's Health: Making changes through organisations.*

Social Impact

Many interventions for equity in health have their most important impact at the community level. They use community development and regeneration methods to increase the ability of local people to define and solve problems and develop resources.¹⁹ Some of these programmes are aimed initially at solving specific community problems like poverty, but have the additional benefit of increasing the community's mastery in general. Others are from the start aimed at building community capacity to engage a wide range of problems and to take advantage of opportunities for development. There is great diversity in community development programmes with regard to purpose, size, structure, funding, staffing and duration. Despite this diversity, it is possible to draw general lessons that seem to apply to virtually all community development programmes.

Foremost is that successful community development is systematic, and it is participatory.^{20,21} Typically, the early phases concentrate on mapping not only community problems, but also community resources and opportunities. This is followed usually by programme planning, implementation, constant evaluation, and adjustment, a process often extending several years. At every stage participation/involvement of the local community is a key factor with assistance by professionals from public health and health promotion, local authority and other arenas as needed. Other key elements for success, based on experience in Europe, include promoting strong citizen groups, coordinating and integrating programmes, prioritising employment opportunities, combating poverty, making a long term commitment to the programme, and providing adequate and protected resources.¹⁸ 

Healthy Cities,²² and Health for All (HFA) with hundreds of participating communities, provides a strong multi-agency framework and philosophical model for the support of community development and health approaches in Europe. There are a number of demonstrations of the positive social impact of community development and regeneration programmes. Prime examples of these can be found in the findings of the UK Public Health Alliance's *Poverty and Health: Tools for Change*²³ research programme. This work explored community focused collaborative work on poverty and health. A pack was produced to provide a resource for people living and working in areas of poverty. It was hoped that the material would be considered and used by planners and policy makers responsible for the health and welfare of local populations.



An important part of the programme has been to identify and describe exemplars of good practice. Among the outcomes observed have been:

- ▶ Increased income for individuals and communities as a result of increased employment of local people, improved benefit uptake and rescheduling of debt
- ▶ Improved quality of life and well-being in communities as a result of making contact with isolated people and improving self-esteem, motivation and skills
- ▶ Improved community support as a result of providing services such as confidential counselling services for women
- ▶ Improved community involvement resulting from the mounting of a 'listen to us' health survey and a successful campaign for a nursery school
- ▶ Improved links between lay and professional people, that resulted from involving local people in assessing needs and planning for mental health services
- ▶ Improved inter-agency collaboration and strategic development, resulting from the forming of alliances between unlikely partners and the development of inter-agency working groups on poverty and health
- ▶ Improved understanding of health as a community issue that resulted from better awareness of income and accommodation as health issues among mental health professionals

The summary of evidence is that broad based community development and regeneration approaches are powerful tools for improving equity in health *locally* when they are supported and implemented correctly. They are to be recommended as a high priority health promotion in communities that do not as yet have such a programme, and further strengthened in communities that do.



Economic Impact

It is almost axiomatic that a society that prioritises equity in the health of its members will enjoy a wide range of positive economic impacts. It has been demonstrated time and again that health and education are among the most powerful forces for economic health, and studies have shown repeatedly that high rates of return follow investments in health and education.²⁴ It is clear from the data that in poorer countries, basic investments in health and education can leverage positive economic outcomes. Such has been the experiences of Trinidad and Tobago, Cuba, Chile, Singapore and Costa Rica, where health and education investment is a priority and poverty has been reduced to affect less than 10% of the people.²⁴ In Europe, there remains great disparity from country to country, both in the level of investment in health and education, and in economic vitality. Since many factors play a role in the economics equation, it is impossible to state the degree to which positive economic impact follows improved investment for equity in health. However, countries with high investment in health also tend to enjoy strong, growing economies, while countries with modest investment in health experience weaker economies.²⁴ This correlation makes the argument that investment in health should be viewed as part-and-parcel of a recipe both for *sustainable* human development and *sustainable* economic development. The G7 has gone further, based on the strength of the evidence, to conclude that people's health is critical to economic development and that without promoting health there is no hope of attaining development objectives.¹⁷



Political Impact

There have been various political approaches to promoting equity in health in European countries, a natural consequence of economic, social and political heterogeneity in the region. In Whitehead's²⁵ discussion of the diffusion of ideas on social inequalities in health in Europe, she draws on three country case studies to illustrate the diversity of approaches. One is of the Netherlands, where consensus, built painstakingly over three decades, has resulted in a national programme of research and development focusing on causal mechanisms and evaluation of interventions to address health inequalities. Another is of Britain, characterised by political confrontation met with denial when the Black Report¹ was issued in 1980, followed abruptly in the mid-90's with reduction in health inequalities becoming a main goal of the new Labour government. The third case is that of Sweden, where the issue of health inequalities has been an important public issue for sixty years, and reducing inequalities in health has been a major policy objective since the mid-80's.

A key point is that no matter the path taken, the issue of equality in health has high and growing political currency in today's Europe. This is reflected, too, in the experience of the best known international framework for equity in health, WHO's *Health For All* programme.²⁶ Now updated as *Health for All in the Twenty-first Century*, it sets global priorities for the first two decades of the new millennium, and ten targets that aim to create the necessary conditions for people throughout the world to reach and maintain the highest attainable level of health.



This approach is also taken by WHO's recent *Agenda 21*, the sustainable development strategy that views health as fundamental to sustainable development. **Most European countries are signatories of both HFA and Agenda 21.**

This has led to the formation of frameworks for action at the national level, with most European countries having health policies that attempt to tackle the *Health for All* targets and sustainable development programmes that support Agenda 21. Both programmes provide tools (Healthy Cities and Local Agenda 21) for enabling positive change at the community level. These programmes are exemplars for collaboration between health, local government and voluntary and academic agencies.²⁷

Thus, while it has taken several decades to emerge, the political impact of tackling the equity in health issue has been positive in much of Europe, at the local, national and international levels. The challenge, of course, is that there remains a very long way to go before Europe enjoys a degree of equity in health that would signal success of the political movement. Yet there is reason to be optimistic, based on the evidence, that concerted public and professional advocacy for equity in health can influence positively political outcomes.

Conclusion

Here, the case has been made that a range of methods are at hand to improve equity in health. Further, improving equity in health is at the core of modern health philosophy and practice. It serves not only the direct interests of individuals and families, but serves also human development interests at all levels of society. **There are sound health, economic and political reasons for the reduction of inequity in health in Europe, all of these underpinned by the fact that good health is a fundamental human right. The role of health agencies in this work is key. While they are not the only players, the lead that they can provide is very important. They need to be further supported in developing and enabling the collaborative approaches that have been demonstrated to affect positively issues of equity.**

This progress is to be relished, not because the challenge has been met, but because it shows that effective methods are available. Needed now on centre stage is strong policy and serious resources to implement effective *collaborative working* in every country, city, town and village in Europe.

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