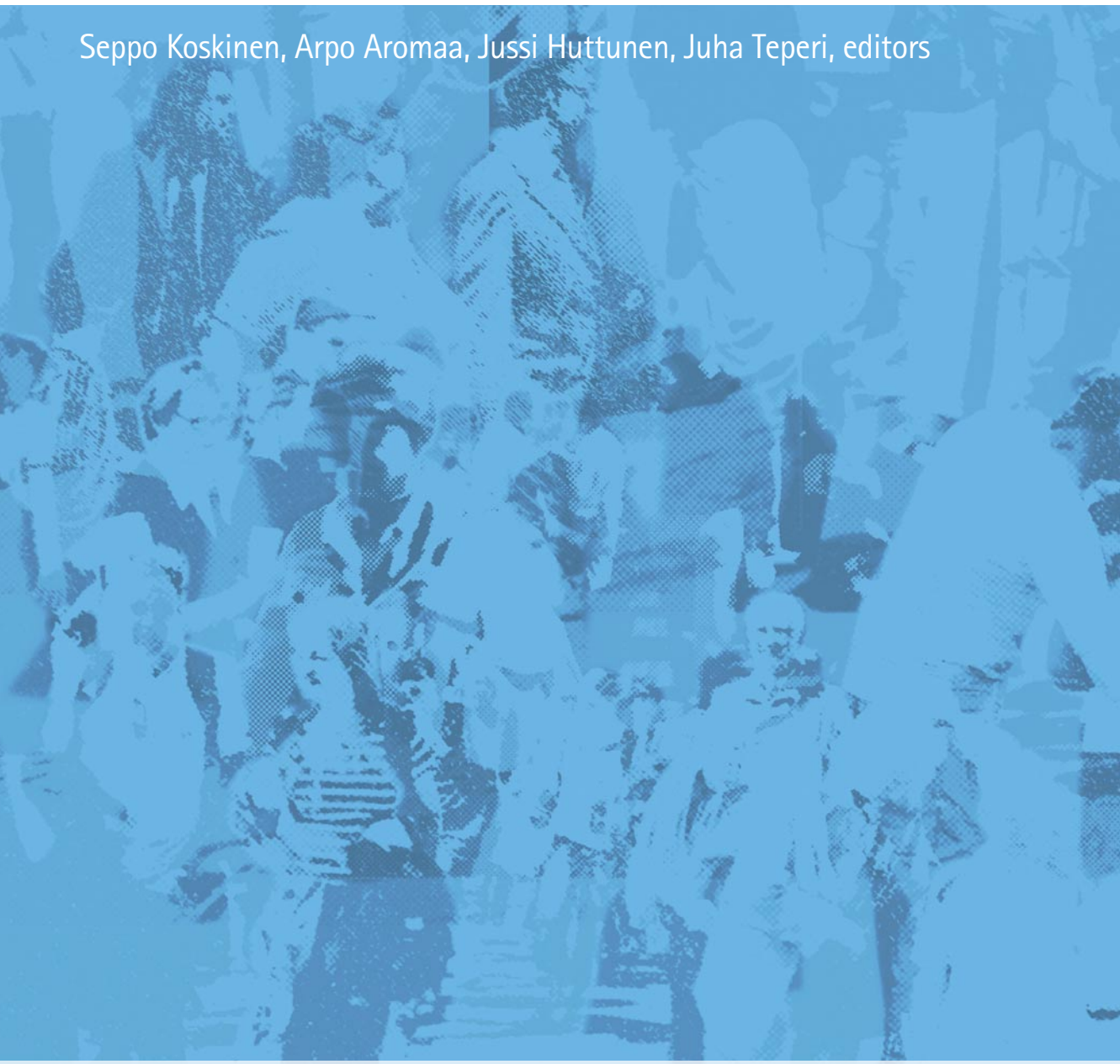
Health in Finland

Seppo Koskinen, Arpo Aromaa, Jussi Huttunen, Juha Teperi, editors



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Foreword

Public health has improved considerably in Finland. In the early 1970s, male life expectancy at birth was lower than anywhere else in Western Europe, but in the past three decades the life expectancy of Finnish men has climbed to just above the average for EU-25. At the same time, the life expectancy of Finnish women, which used to be close to the European average, now ranks among the highest in Western Europe. Mortality from coronary heart disease and stroke has decreased by three-quarters from the world's highest level in the early 1970s. The incidence of many cancers has decreased and the survival of cancer patients has improved. There has also been a major reduction in the incidence of infectious diseases, oral health has improved and mortality from traffic and work accidents has decreased. Furthermore, both perceived health and functional capacity have improved.

This progress is due to a number of factors related to population structure, living conditions and behaviour. Improvements in education levels, living and working conditions, social security, health services and health behaviour have been particularly important. Advances in social and health policy have also played a significant role in achieving these improvements.

Nevertheless, many public health problems remain unchanged and some have increased. Work disability due to mental disorders has been rapidly increasing in the last decade. Allergy, asthma, diabetes, injuries sustained in home and leisure activities, as well as obesity and alcohol-related health problems have all become more common. The improving level of health has not led to a decrease in health inequalities. In fact, health differences among subgroups of the population are in some instances even increasing. There are also other threats on the horizon. Population ageing, psychosocial problems among young people and their repercussions in later life, changing needs and expectations, as well as the growing costs of health care present huge challenges to the promotion of the nation's health.

This book is one in a series of national public health reports. It is an abbreviated and updated version of the full Finnish-language report (Suomalaisten terveys) published in 2005. Its publication has been timed to coincide with the Finnish Presidency of the EU. The book provides an up-to-date overview of the population's health and its determinants in Finland. Health care and social security have also been taken into account. Furthermore, care has been given to analyse time trends, differences between population groups and countries, costs and future health needs. We hope that the book provides to international readers a concise but comprehensive picture of public health in Finland.

The editors revised and considerably shortened the original Finnish language texts. They were then translated into English by David Kivinen. The translations were revised and updated by the authors, other experts and the editors. We wish to thank all those involved in this process.

Helsinki, May 2006

Seppo Koskinen, Arpo Aromaa, Jussi Huttunen, Juha Teperi

PART I
PUBLIC HEALTH AND ITS PROMOTION

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Juha Teperi, Lauri Vuorenkoski

Health and health care in Finland since the Second World War

In the past few decades, public health in Finland has improved to a greater extent than in many other Western European countries. Health care has evolved from a hospital-centred model into a system where the main emphasis is on prevention, promotion and primary services. Both old public health problems and new emerging ones present major challenges to future health care.

The life expectancy of people born in Finland in 1945 was 20 years shorter than that of people born in 2005. At the end of the Second World War, tuberculosis accounted for one in seven of all deaths, taking a particularly heavy toll in younger age groups. Other widespread diseases at this time included diphtheria, whooping cough, hepatitis A, paratyphoid fever as well as syphilis and gonorrhoea. Altogether, infectious diseases were responsible for almost one-third of all deaths in the country.

The infectious disease situation improved rapidly in the late 1940s and during the 1950s. Along with the improvements in living conditions and the standard of living, hygiene and nutrition improved. An immunisation programme was introduced and rapidly scaled up. Advances in drug and other therapies also changed the situation: mortality from pulmonary tuberculosis dropped sharply between 1945 and 1952 to less than one-third.

With the gradual expansion of the immunisation programme in the 1970s and 1980s, infectious diseases continued to recede as a public health concern. Many infectious diseases that used to cause serious illness and death became increasingly rare. Finland was the first country in the world to completely eradicate measles.

Many health problems during pregnancy and early childhood were also far more common in the immediate post-war years than they are today. In 1945, maternal mortality was about 80 times higher than the levels at which the figures have stabilised since the 1980s. Apart from the advances in living conditions, the network of maternity and child health clinics created after the war helped to improve the health of mothers and their newborn infants. In 2002, the infant mortality rate in Finland was down to 3 deaths for 1,000 live births.

The improvement of the nation's health over the past few decades has not been a steady, linear process. In the late 1950s and the 1960s the increase in women's life expectancy slowed down, for men the trend almost came to a halt. Unhealthy eating habits and an increase in smoking among men caused a virtual epidemic of cardiovascular diseases. In the space of ten years, from 1957 to 1967, CHD mortality in

working-age men increased almost one and a half times over to become the highest in the world. Lung cancer also contributed to the high male mortality. CHD mortality among women increased more slowly because in their case the increase in smoking came later and was slower.

Awareness of the importance of living habits began to change families' eating habits in the 1960s, and smoking among men has been decreasing consistently since the 1970s. Launched in 1972, the North Karelia Project gave added exposure to living habits, not just locally but throughout the country. Life expectancy in Finland has increased more sharply than in most other western countries, chiefly as a result of lowered mortality from cardiovascular diseases.

With the ageing of the population, the number of new cancers detected each year is steadily rising. When the effect of the changes in the age structure are controlled for, it turns out that the age-standardised incidence of cancer for men has remained unchanged and for women slightly increased over the past few decades. Among men, incidence figures have decreased most particularly for smoking-related cancers: cancer of the lungs, larynx and lip. In women we have seen a decrease in figures for cervical cancer, largely by virtue of mass screening programmes.

In the early 1970s up to 1,200 people were killed each year on the roads. Speed limits, better roads and cars and compulsory safety belts have helped to improve the situation considerably. Nonetheless in the early 2000s more than 400 persons were still killed each year on Finland's roads. The number of occupational accidents has been halved in the space of 30 years, this as a combined result of occupational safety measures and the changing nature of jobs. The increase in the number of accidents in the home and during leisure is partly attributable to the growing numbers of older people.

The number of suicides committed in Finland continued to increase until 1990, when over 1,500 persons took their own lives. Since then, mortality from suicides has decreased by more than one-quarter, which is probably due, at least in part, to determined efforts at suicide prevention and improved treatment of depression. Even so, suicide mortality in Finland remains about twice as high as in many other Western European countries.

When compared to other causes of death, direct violence is quite rare. Each year some 100 men and 40 women die as victims of violence. Compared to the rest of Western Europe, however, the situation is not at all good.

Given the lower level of mortality in the population, the main public health problems today lie increasingly in long-term illnesses and impaired functional ability. For instance, it seems that overweight, diabetes, asthma and allergies have increased considerably. Population surveys indicate a sharp increase in musculoskeletal diseases up to the 1990s, but in recent years many of them seem to have decreased again.

Apart from its other, significant adverse impacts on family life, alcohol causes more than 3,000 deaths in Finland each year.

According to population surveys the incidence of mental disorders has either remained unchanged during the past 20–25 years, or even slightly decreased. However, medical drug use and retirement on disability pension on account of mental heath problems have increased dramatically since the early 1990s. Among children and young people, it seems that mental well-being is sharply polarised: although most children enjoy at least the same level of well-being as earlier child cohorts, there are far more children today with severe problems in this respect. Mental disorders present one of the greatest challenges for the development of public health in Finland.

In spite of these partly encouraging trends, public health will remain afflicted by the same health problems in the future. Cardiovascular diseases continue to account for over 40 per cent of all deaths in Finland. Advances in cancer care will bring a sharp increase in the number of living cancer patients. The future of infectious diseases in the country will largely depend on developments in Finland's neighbouring regions. As the mean age of the population continues to rise, a growing proportion of the illness-related burden will be attributable to the degenerative diseases associated with old age.

The health of people in Finland has improved significantly over the past few decades. However, compared with other western countries, there are still marked health differences between men and women, between different socio-economic groups and between people living in different parts of the country.

Health care

Work to rebuild Finland after the ravages of the Second World War got under way with a depleted labour force who had a reduced working capacity. There was a growing recognition and understanding of the importance of each individual's welfare and the role of public health. A conscious effort got underway to create a welfare state.

Legislation on general medical care was introduced as early as 1943, stipulating that each local municipality should have its own medical officer, or a district medical officer appointed jointly with neighbouring municipalities. A provincial medical officer was charged with overseeing the provision of health care. Patients were charged a fee for the medical officer's services, although the poorest residents were sometimes exempted. In 1945, there were 4.1 doctors in Finland per 10,000 population.

The most important health care reform of the 1940s was the creation of a network of statutory maternity and child health clinics. Work to promote mother and child health had in fact started even before the war. According to the law in 1944, every local municipality was to run a municipal maternity and child health clinic that provided services free of charge. By 1946, there were almost 1,500 clinics in the country. The system had far-reaching implications for children's health and for the increase in life expectancy.

Vaccinations against tuberculosis in children were started during the war. In 1945, there were 33 tuberculosis sanatoriums in Finland. Under the provisions of the Tuberculosis Act of 1948, all persons aged 15 or over were on invitation to attend chest x-ray screenings. Together with the improvement of living conditions, these measures began to have the effect of curbing the epidemic.

Hospital development began in the 1950s. During 1950–69, the number of beds in general hospitals increased almost threefold. Previously under the control of central government, the running of general hospitals and psychiatric hospitals was taken over by local municipalities in the 1950s.

In the 1950s and 1960s, hospitals accounted for the bulk of health care spending. The imbalance between hospital and outpatient care was further magnified by the policy of cost allocation. In the late 1950s patients covered 15 per cent of the costs of hospital care, but for up to 64 per cent of the costs of outpatient care. Disease prevention was therefore very much neglected and hardly extended beyond the prevention of infectious diseases.

Outpatient care was also hampered by the shortage of medical doctors and by its scarcity outside towns and cities. In the late 1960s Finland still had Europe's third lowest density of medical

doctors after Turkey and Albania. The situation only began to improve after the establishment of three new medical faculties in 1960–72.

Even with the new network of central hospitals in place in the late 1960s, it had to be conceded that – with the exception of infant mortality and serious infectious diseases – there had been no marked improvement in public health. The life expectancy of the Finnish male aged 40 was the lowest in Europe; women ranked 23rd. There was a growing recognition now that health tied in closely with the wider society, with living conditions and living habits. It was a logical next step to concentrate on the development of preventive health care and outpatient care.

A national sickness insurance system was created in 1963 to resolve the problems of outpatient care. All persons permanently resident in Finland were eligible. No compensation was provided for hospital care. The aim of these reforms was to reduce the pressure on hospital care.

Sickness insurance did not have the effect on the use of primary health care services that had been expected. Therefore, in 1972, the Public Health Act was introduced in what was to become perhaps the most significant health care reform of the post-war period. Its aim was to shift the emphasis of health care towards preventive health care and outpatient care.

Each municipality in the country was obliged to establish a health centre either alone or in partnership with its neighbouring municipalities. The health centre brought a wide range of health services under the same roof: the GP's surgery, maternity and child welfare, dental care, long-term inpatient care and school health care. The number of doctors working in primary health care almost tripled in the space of just a few years.

The new costs arising from the Public Health Act were shared between central and local governments. Implementation of primary health care services was monitored by granting state subsidies on application. Both the National Board of Health and municipalities were required to submit five-year action plans on an annual basis.

Major business enterprises had voluntary occupational health care schemes in place from as early as the beginning of the last century. An agreement signed in 1971 by the labour market organisations on workplace health care services marked the beginning of a period of intensive occupational health care development. The Occupational Health Care Act of 1978 was marked by a strong preventive orientation. Between 1964 and 1995, the coverage of occupational health care increased from just over 20 per cent to around 80 per cent of the labour force.

The Health for All by 2000 programme (1986) emphasised the role and contribution of all sectors of society in combating health risks. In health care services, the programme priorities were to develop primary health care; to expand dental care services; to strengthen outpatient services for the elderly, to modernise psychiatric health care; and to intensify rehabilitation.

The provision of health centre services free of charge was not all good news, however. As waiting lists grew longer, patients turned increasingly to emergency services. Every time they visited the health centre, patients could find themselves seeing a different doctor. Indeed from the late 1980s onwards, a new population responsibility -based model began to gain ground that provided greater continuity of care.

The drive towards outpatient services in mental health care gathered momentum in the 1980s. The number of beds in mental hospitals decreased at the same time as the number of positions in mental health clinics went up by 89 per cent in 1975–87.

With the exception of school dentists, public dental health care only got underway with the Public Health Act in 1972. Initially, municipal dental care was only available for younger age groups, but it was gradually expanded to comprise the whole population.

A major streamlining operation in 1991 saw the country's general hospitals, psychiatric hospitals and the former tuberculosis sanatoria reorganised under the newly formed regional organisation of hospital district. Membership in one of the 21 hospital districts was compulsory for all municipalities.

In 1993 responsibility for the provision of health care was placed even more firmly on municipalities. The state subsidies system was reformed so that instead of compensating expenditure, payments were now allocated on the basis of a mathematical formula estimating population health care needs. At the same time, the earmarking of funds was dropped. The requirements of binding advance planning were also discontinued, and some of the norms governing the provision of health care services were removed. State subsidies are paid out to the individual municipality. Central health care administration was revamped and the National Board of Health, for example, was discontinued. Planning and funding functions were moved to the Ministry of Social Affairs and Health, and the National Authority for Medicolegal Affairs was set up to assume responsibility for supervision. The National Research and Development Centre for Welfare and Health (STAKES) was charged with supporting the social and health sector through research, development and information management.

This wide-ranging decentralisation reform was carried out in the depths of economic recession. During the 1990s cutbacks had to be made, some of which had still not been repaired by the beginning of the next decade. Chapter VII in this volume looks at the development of health services from the 1990s on.

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Health and social policy

Finnish health policy has two main objectives: securing the best possible health for the population and minimising disparities in health between different population groups. Until the 1970s, the main focus of health policy was on health services. Since the 1980s, subsequent versions of the Health for All policy have stressed a comprehensive approach where most public policy areas are seen as relevant to the health of the population.

Finnish health policy has long been aimed at two main objectives, viz. securing the best possible health for the population as a whole and minimising disparities in health between different population groups. The former objective breaks down into three specific goals: to reduce premature mortality; to reduce illnesses, accidents and related impairments of functional capacity; and to maintain the highest possible level of physical, mental and social well-being in the population. The latter objective of equal distribution, then, requires efforts to reduce health disparities by promoting the health most particularly of people in groups with the poorest health.

Health care has a crucial role to play in the event of illness, but it is also important in the prevention of diseases as well as in health promotion. To a very great extent, health is influenced by what goes on outside the system of health care. Health may be created, secured and adversely affected in and by people's everyday living conditions, interaction, life-styles and choices. Health is also affected by mutual social support, community and caring as well as by people's knowledge, skills and education.

The following provides an overview of the development of Finnish health policy, with special emphasis on preventive efforts and the policy decisions made during the past decade. In addition to health policy proper, the discussion briefly looks at the contributions of other public policy sectors to health promotion.

The development of health policy

Until the 1970s, Finland's health policy was geared to a gradual improvement of individual sectors within the service system. The aim of the health care service system is to provide adequate, high-quality and effective services at affordable prices or free of charge to all citizens, regardless of their place of residence or social status. This is achieved through the provision of municipal health care services and through the lowering of costs for other health care services by means of health insurance compensation.

Many public policy sectors began to give growing attention to health considerations and health promotion from the 1970s onwards. However it was not until the 1980s and the Health for All policy that a more comprehensive health-oriented public policy began to gather momentum.

Tapani Melkas, Juhani Lehto, Merja Saarinen and Päivi Santalahti wrote the chapter in the original Finnish report, Tapani Melkas and Juhani Lehto revised the shortened English version

The 1990s brought major changes to the health policy environment. These included an exceptionally severe economic recession at the beginning of the decade, problems with government finances, an overhaul of the state subsidies system that changed the relationship between local and central government, changes in the management systems in public administration, and international developments, most notably the processes of economic globalisation, European integration and political upheavals in Finland's neighbouring regions.

In the early 1990s the Health for All programme was reviewed in the light of these changes as well as the advances made in public health. On the basis of this review, an intersectoral partnership programme was drafted and submitted to the government in autumn 1992. This and subsequent documents emphasised the importance of a collective and concerted effort at health promotion among the various administrative sectors at both the local, national and international level. This encouraged increased efforts among others in the promotion of mental health and in the maintenance of the working capacity of ageing workers.

The Government adopted the Health 2015 public health programme in spring 2001. Drafted by the Public Health Committee in the late 1990s, the programme cuts across all administrative sectors because public health is largely determined in arenas of everyday life that are outside the realm of health care: at home, at schools, in the workplace, in transport, consumption and leisure environments and in immediate communities.

Prepared as part of the WHO's Health in the 21s century programme, the Health 2015 programme sets out eight specific public health targets (Table 1). The first five of those targets

Table 1. Main health policy targets up to 2015.

Targets for different age groups
1. Child well-being and health will increase, and symptoms and illness caused by insecurity will decrease appreciably.
2. Smoking by young people will decrease, to less than 15% among those aged 16–18; health problems associated with alcohol and drug use among the young will be dealt with appropriately and will not exceed the level of the early 1990s.
3. Accidental and violent death among young adult men will be cut by a third from the level of the late 1990s.
4. Working and functional capacity among people of working age and working conditions will improve, helping people to cope longer in working life; retirement will be about three years later than in 2000.
5. Average functional capacity among people over 75 will continue to improve as it has for the last 20 years.
Targets for everyone
6. Finns should expect to remain healthy for an average of two years longer than in 2000.
7. Satisfaction with availability and functioning of health services, and subjective health and experiences of environmental impacts on personal health will remain at least at the present level.
8. In implementing these targets, a further aim will be to reduce inequality and increase the welfare and relative status of those population groups in the weakest position. The objective will then be to reduce mortality differences between men and women, groups with different educational backgrounds, and different vocational groupings by one fifth.

address some of the most acute health problems in different age groups, the remaining three apply to all people. The programme includes 36 statements and policy lines on people's everyday environments and challenges to various actors in society.

Legislation and supervision

Major steps were taken to develop the legislation and administration of preventive health care in the 1990s. Resources for health promotion were strengthened in the Ministry of Social Affairs and Health. Institutes subordinate to the Ministry have developed their capacity to support local authorities in the promotion of health and welfare. In 1995, the Product Control Agency was established to assume responsibility for the control of alcohol, tobacco and chemicals surveillance.

Revisions of the Infectious Diseases Act have been aimed at shifting the focus in the preventive effort from administrative guidance to steering by information, for example by building a real-time disease register that is available to local authorities. Legislation on health protection and chemicals has been developed in partnership with the EU. A separate act has been passed to govern the use of gene technology.

The Tobacco Act was revised on two occasions in the 1990s in order to achieve more effective prevention of smoking among young people and to protect people from cigarette smoke in the workplace and in restaurants. A third revision, concerning more advanced protection in restaurants, is under discussion in Parliament in spring 2006.

Finland's membership of the European Union in 1995 meant that restrictions on the use of alcohol had to be eased. A wide range of means are applied under the umbrella of a national alcohol programme to tackle alcohol-related harm. A drug policy programme was launched in 2004, stressing not only the importance of prevention but also the need for a substantial increase in treatment and harm reduction.

Revisions to the Sports Act in 1998 were geared to supporting health promotion, and this is expected to influence decisions on the development of sports facilities and subsidies to sports organisations. The Government Resolution on health-enhancing physical activity was adopted 2002. Accident prevention has also been strengthened in a broad collaborative effort. Several nutrition policy measures have been implemented.

Traditionally, the main providers of preventive health care at the primary level have been maternity and child health clinics and the school health care service. Both of them have seen their resources cut back, but at the same time they have worked to rationalise and reorganise operations. Local councils are required by law to provide for breast cancer and cervical cancer screenings, and their coverage has been good. The nationwide immunisation programme was revised in 2005. Mass screenings in maternity and child care have also been developed.

Health-promoting public policy

Public policy development is the collaboration not only of government, but also businesses, the media, NGOs and other communities as well as private citizens. Both central and local government are in the position to influence the conditions for public health through all their administrative sectors. Key decisions in this respect include those that impact working and living conditions; that direct the provision of welfare services; that create jobs; that relate to social security; and many others.

All public policy sectors were faced with major challenges in the late 1990s. On the one hand,

with the economy still reeling from the effects of recession, they were to try and preserve the structures that over the past decades had helped significantly to bolster public health. On the other hand, they were also faced with the challenge of renewal so that they could make sure of the continued favourable development amidst the ongoing structural upheavals.

In the aftermath of the recession, the costs of social security and welfare services had to be adjusted to the new, tighter framework of general government expenditure. The key preconditions for public health – a high level of education, comprehensive health care services and at least a reasonable level of social security – remain in place.

However, there have also been changes with potentially adverse health effects. In particular, there are growing disparities in the conditions for the maintenance of health between socio-economic groups. Income differentials have increased since the recession. There remains a high level of dependence on means-tested income support. The level of minimum social security has fallen behind, and support for families with children has declined. Housing policy has failed to prevent the housing situation from getting worse in centres of growth. In the workplace, there have been developments that give cause for concern from a health perspective. Group sizes in children's day care and at schools have grown, and staff workload in welfare services has increased. To some extent this has jeopardised the quality of services and the capacity of the system to provide specific support to people living under the threat of marginalisation.

Health promotion in different policy sectors

The present programme of the Finnish Government stresses the importance of foregrounding health and social welfare concerns in public decision-making and practical measures. Local governments have also adopted strategies and produced reports highlighting the importance of the health promotion perspective in all municipal decision-making. In practice, however, health promotion is still often neglected. This causes damage that is often very difficult and costly to repair.

Sound economic policy provides a firm foundation for the population's well-being. In the early 1990s Finland's GDP fell sharply, causing the material standard of living in the country to decline. Unemployment soared to 20 per cent. The latter half of the decade saw the economy bounce back. Different population groups have benefited from this recovery in different ways: long-term unemployment decreased very slowly, and income differentials began sharply to increase.

The Government's education policy has steadily raised the level of education in Finland, and this trend is continuing. This may be part of the reason why the fall in material standards of living has not slowed down the favourable trends in public health.

A national environmental health programme was set up in 1997. Good progress has been recorded in air and water protection, for example. Problems associated with indoor air have also received attention. Studies of the social and health effects on humans have been incorporated as part of environmental impact assessments.

Working closely with other concerned partners, the Ministry of Transport and Communications started a programme in the 1990s to halve the number of deaths on the road from the figures in 1989. The programme was well on target for a long time, but at the end of the decade the progress came to a halt and the targets have not fully been met.

During the 1990s agricultural policy also supported the health objectives, helping to reduce excessive milk fat consumption. Following the crises of the late 1990s, health concerns have also gained increasing prominence in EU agricultural policy.

Consumer policy was reassessed in the early 1990s. Consumers today have easier access to information about the health effects of different products. Foods for specific health uses have been approved and brought into the marketplace.

Technological advances and changes in society have dramatically affected the nature of communications, particularly its internationalisation. Not enough is known about the effects of these changes and emerging new communications policy upon the health of the nation.

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PART II
POPULATION, LIVING CONDITIONS AND LIFESTYLES

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Population

The Finnish population will start to decline in the 2020s unless immigration increases from the current level. The proportion of the elderly will grow more rapidly than in most other countries.

At year-end 2004 Finland's population numbered 5,237,000. The fertility rate in the country has been persistently low for some time now, and combined with the continuing decline in mortality this means that the population age structure is getting older. This trend will continue to accelerate as the post-war baby boom generation reaches retirement age in the 2010s.

Population trends

Over the past decades Finland's population has grown on average by 0.3 per cent a year. Just over one-half of this increase has been attributable to the excess of birth over death, and less than half to inward migration. However, population growth has only been recorded in the metropolitan Helsinki area and in the other biggest cities. In Lapland and eastern Finland, by contrast, population numbers have declined. Unless there is a significant increase in either net migration or the fertility rate from current levels, the Finnish population will begin to dwindle in the 2020s.

Fertility was at an exceptionally high level in Finland in the 1940s, when the total fertility rate stood at 3.5 children per woman. Subsequently the figure dropped very sharply, hitting its lowest level at 1.5 children in 1973. Since then the total fertility rate has been steadily at around 1.7–1.8, the same as in most other Nordic countries and in the UK. Elsewhere in Europe the rate is lower, in many countries no more than 1.2–1.3.

Mortality has declined and consequently the number of people dying each year has remained unchanged for more than 100 years, despite the increase in the total population number and the growth of the elderly population. Mortality has decreased most rapidly among children. Older people account for a growing proportion of deaths: today 60 per cent of all deaths are in the age group 75 or over, while the corresponding proportion in the early 1970s was only one-third.

Migration, particularly to Sweden, had the effect of slowing population growth up to the 1970s, but since then immigration has exceeded emigration. The number of foreign nationals resident in Finland increased from 25,000 in 1990 to 108,000 in 2004. In spite of this the number of foreigners as a proportion of the total population is exceptionally low in Finland when compared to other EU countries, no more than 2 per cent.

Age structure

In 1950, the population pyramid describing the age structure of the Finnish population still had the appearance of a pyramid, i.e. it was wider at the bottom. The fertility rate then began sharply to decrease, and consequently the size of new age cohorts began to grow smaller. Today, the age pyramid is more like the shape of an onion (Figure 1). The post-war baby boomers are in their early fifties at the beginning of the 2000s, and continue to represent the widest point in

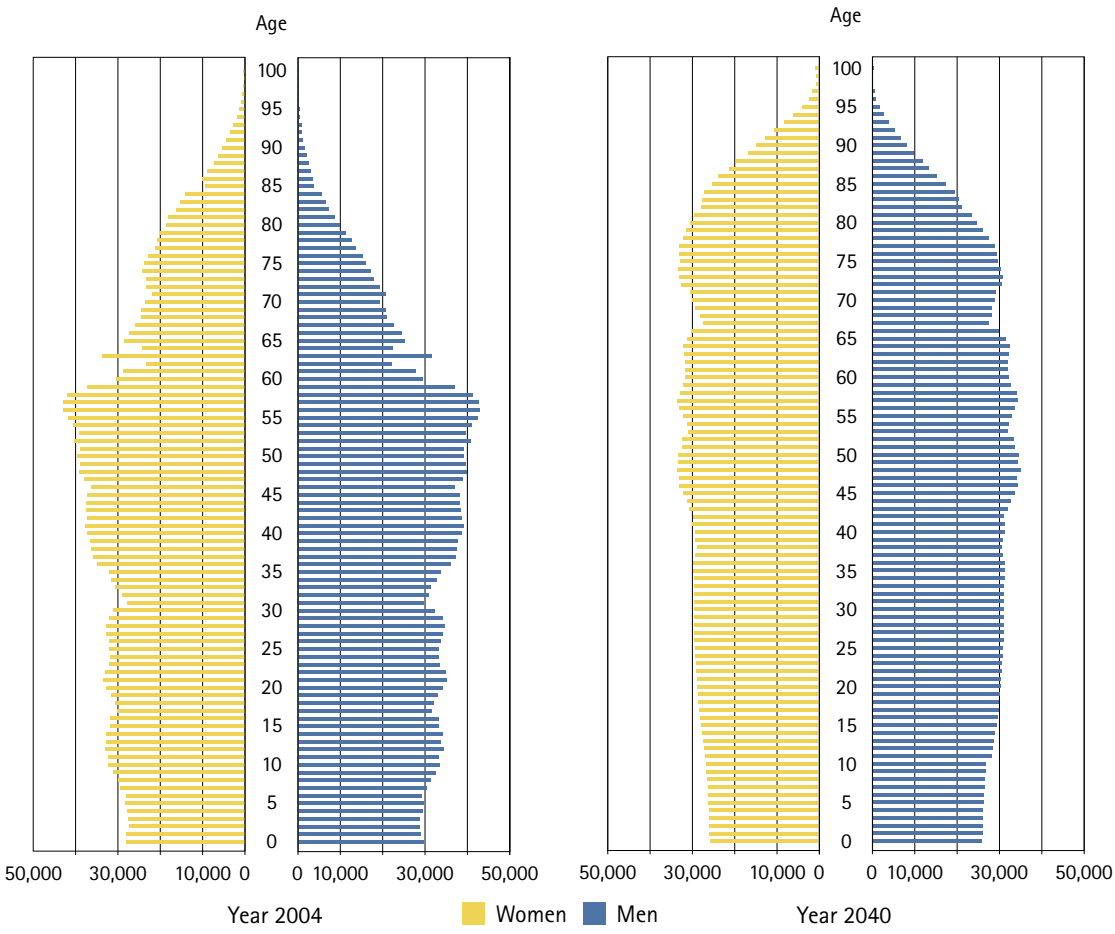

Figure 1. Population age structure at the end of 2004 and 2040 (source: Statistics Finland).

the age pyramid. The shape of this pyramid will continue to change considerably over the next few decades. According to Statistics Finland's latest population prognoses, in 2040 all age groups up to age 80 will be more or less the same size.

Until now, people of working age (15–64 years) have accounted for a much larger proportion of the total population than in many other European countries, while the number of children and older people has accordingly been much smaller. In 2004, there were 50 children and people of retirement age per 100 persons of working age in Finland, while the figure in the UK, France, Sweden and Norway, for example, was 53–54.

Population ageing presents a huge challenge in all countries of the world, but it is thought that in Finland the changes will come more rapidly than in most other places (Figure 2). Both the number of older people and their share of the total population are set to increase considerably.

At the same time as the elderly population is continuing to grow, the youngest age groups are getting smaller. The number of children under 15 is slowly decreasing. The age group 15–24 who are moving in the labour market and the whole population of working age will begin to decline by 2010.

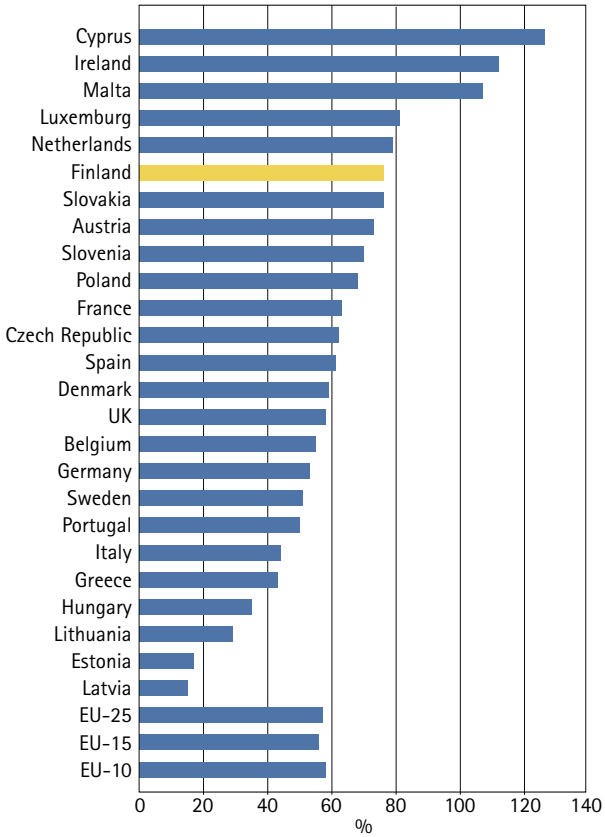

Figure 2. Growth of the population aged 65 or over (%) in 2003–2030 (source: Eurostat New Cronos).

Couple relationships and families

The marriage rate has fallen and the age at which people get married has risen since the 1970s. At the same time, however, common-law marriages have increased considerably: 22 per cent of all couples who live together in Finland today are not married. At current divorce rates, 50 per cent of all marriages in Finland break up, which is a much higher figure than in most other countries. In common-law marriages, the divorce rate is even higher.

Around four-fifths of all people in Finland live in a family: family is here defined as including both married and cohabiting couples who live together, regardless of whether they have children, and household-dwelling units consisting of one adult and his or her children. The average size of families has decreased from 3.7 persons in 1960 to the current figure of 2.8. People move out of their childhood home at a relatively young age in Finland: 65 per cent of women and 36 per cent of men aged 20 no longer live with their parents.

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Social structure and culture

The level of education has risen rapidly and is internationally very high. This change and the growing overall emphasis on health have contributed to the improvement of the population's health. Increasing income differentials may jeopardise the positive trends and add to health inequalities.

Structural changes and the rising level of education have both contributed to the improvement of the population's health over the past few decades. Changes in the cultural environment have strengthened individualism and rationalism in people's life. These changes are likely to have given increased prominence to health as a life value and to have supported lifestyles, attitudes and behaviours that are health promoting.

Social structure

There is a strong and consistent link between social position and health: the lower a person's social position, the poorer their health. This generalisation applies in all countries regardless of whether social position is considered in terms of educational level, occupation, social class, income or wealth, or any other indicator.

A person's education contributes to their prospects for career advancement and standard of living, provides knowledge and skills, and influences health consciousness, lifestyles and health behaviours. Men and women with higher education tend to have healthier living conditions and lifestyles than others. Occupation and job influence health through the pay that the individuals receive, the material standard of living that they can afford with that pay, and various job-related exposures. Employment in itself is positively associated with health, and those who have a job are healthier than their age peers who are out of work.

An important trend in the development of Finnish society has been the constantly improving educational level: people reaching working age have always been better educated than the previous generation (Figure 3). At the same time, the proportion of people in physically demanding jobs has sharply decreased. Among persons born before the 1940s, well over half received no more than basic education, whereas among those born in the 1960s and later the corresponding proportion with only basic education is less than 20 per cent.

While in 1950 half of the economically active population in Finland earned their living in agriculture and forestry, the corresponding figure by 1980 was down to 12 per cent and by 2004 to about 5 per cent. At the same time the proportion of trade and service industries has risen sharply: today they account for more than two-thirds of the total economically active population. This growth has been particularly rapid in information and communication technology.

Income inequalities have widened considerably in Finland since the low level in the early 1990s. In 1990–2002, disposable income among the decile with the highest income per consumption unit increased by 26 per cent, while the corresponding

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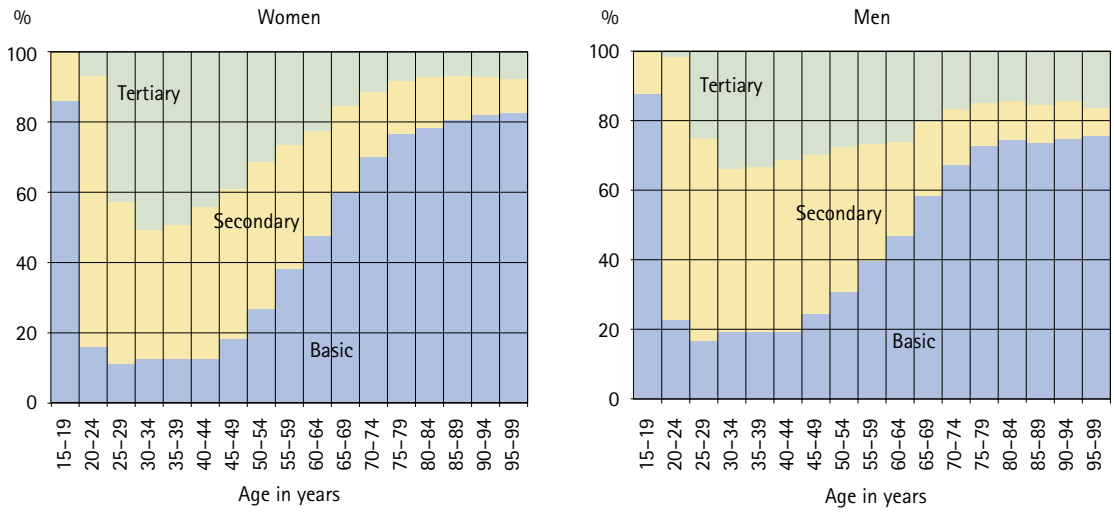

Figure 3. Breakdown of women and men aged 15 or over by education at the end of 2004 (source: Statistics Finland).

increase in disposable income for the decile with the lowest income was no more than 2 per cent. The widening of income inequalities has mostly been due to the increase in income from property. The number of poor people in Finland has continued to rise since 1994: today 14 per cent of Finnish people fall below the EU poverty line (less than 60% of median income), while in 1995 the corresponding proportion was 8 per cent. Nonetheless Finland's relative poverty rate is still one of the lowest among all OECD countries. Unemployment benefits and social security have by and large cancelled out the adverse effects of unemployment on income.

Cultural environment

Compared to the traditional way of life, modern Finnish life is in many ways more fragmented. Earlier normative sources no longer have the same binding power as they used to, nor do lifestyle choices have the same sort of anchorage in tradition or religion as they used to. Identities are less stable than before, and it is harder for people to maintain their identity than before. While stable points of anchorage for the life course are weakening, people may cling on to just about anything – this is how the growth of addictive behaviours has been explained in the modern age. In terms of lifestyles this may lead to erratic, inconsistent behaviours and even to an unhealthy life. A key lifestyle issue in Finland continues to be heavy drinking habits, which are enhanced by the increasing consumption of alcoholic beverages.

However, it seems that the ongoing changes in the cultural environment are overwhelmingly conducive to better health and longer life. The comprehensive health care system reaches the majority of the population, and for this and other reasons lifestyles overall have become healthier. In contemporary society behaviours are often channelled into consumption, and marketing increasingly associates light and healthy with modern and good. In contrast, advertising sometimes may appeal to motives that encourage unhealthy lifestyles and behaviours.

Future outlook

The improved level of education and the changes that have taken place in the industrial and occupational structure have reduced the levels of physical workload and had favourable impacts on health behaviours and people's health in general. In the future the need for prevention of mental disorders and the role of psychosocial exposures at work are likely to increase. The changes in education and social structure as well as the impact of these changes on the health of the nation will prevail with the progressive retirement of older, less educated age groups and generations whose work career has been in traditional occupations. Another factor that may affect the future development of the population's health is the new middle class as a forerunner in terms of changing attitudes and behaviours. If these people are the first to adopt healthier lifestyles, as is commonly believed, there is every reason to expect that similar changes will filter their way throughout the social ladder.

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Working life and unemployment

Physical strain and a high risk of accidents have increasingly been replaced by growing time pressures, skills requirements, organisational changes and the threat of unemployment. In early 2006 the unemployment rate was 8.2 per cent, less than one-half of the peak figures in the mid-1990s.

In the space of just two decades, Finland has transformed from an industrial society into a service and information society. The contents of work, working methods and the occupational structure have changed dramatically. At the same time, Finland has emerged as the world leader in labour productivity. The tough productivity goals are also reflected in high levels of job stress and strain.

In the 1990s the high levels of physical strain and high risk of accidents that used to characterise most jobs were increasingly replaced by growing mental stress as a result of increased time pressures, skills requirements, organisational changes and the threat of unemployment. The labour market is clearly and increasingly polarised: at the same time as around one in ten people in the labour force remain out of work, many people at work suffer from overload.

Working conditions, health status and disability for work

Chronic morbidity, co-morbidity, disability for work and premature mortality remain more common in the Finnish labour force than in the other Nordic countries, but the gap had been reduced in the past few years. The average age of retirement in Finland is 59 years, 6 years short of statutory retirement age, but it has risen since the mid-1990s. Judging by short-term absences from work, the Finnish labour force is in reasonably good health, however: the frequency of absences is about half the corresponding figures for other EU countries.

The preservation of working capacity can be enhanced by means of interventions targeted at work, working conditions and living habits. Around 80 per cent of Finnish wage earners work in workplaces with programmes aimed at the preservation of working capacity. The majority of employers and employees regard these actions as beneficial in terms of health, working capacity and business.

Mental stress emerged as a problem in working life during the 1990s. Almost one-half of all employees say there is time pressure on the job. However, compared to the late 1990s, the adverse effects of time pressure are thought to be less pressing.

Disability for work in the population of working age is unevenly distributed. A high risk of disability is associated with heavy physical jobs and with a low level of education and low wages. The risk is particularly high in forestry jobs, in building construction, among labourers, in certain jobs in the food and beverage industry and among cleaners. Occupations with a high risk of incapacity are characterised by significant

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stress and strain loads, dangerous or unhygienic working environments and often by rapidly changing work environments.

Unemployment and health

In the 1980s the unemployment rate in Finland was around 5 per cent, well below the EU average. The figure rose sharply in the early 1990s, peaking at 16.6 per cent in 1994 when it was among the highest in Europe. There were several distinctive features in the unemployment situation of the 1990s. There was a very high level of youth unemployment, and up to one-quarter of those out of work were white-collar employees. The number of long-term unemployed was and remains high. In 2003 the jobless rate was 9 per cent, and 23 per cent of the unemployed had been out of work for more than a year. In early 2006 the unemployment rate was 8.2 per cent, slightly below the average level in EU-25. No significant decrease is expected in the unemployment rate in the next few years ahead.

Although the likelihood of death is greater among the unemployed than in the employed population, the reasons for this association remain unclear. At least in Finland it seems that high mortality among people who are out of work is partly explained by health hazards preceding unemployment.

There would appear to be a causal link between long-term unemployment and mental symptoms, increased drug use and disability for work. This association is contingent upon income through unemployment security and the individual's social anchorage. With the prolongation of unemployment both of these will decline and weaken and may cause further decline in health.

Future outlook and needs for development

The labour force will age very rapidly over the next 10 years. Chronic diseases that adversely affect working capacity increase with age, and performance levels decline. At the same time, the pace of change in working life is continuing to accelerate, people are changing jobs more and more frequently, and qualification and learning requirements are increasing. Mental stress in the workplace has increased as a result of growing time pressures, responsibility, growing skills requirements and increasing individual responsibility for results. It seems that people are still being hired very often on short or fixed-term contracts, which causes not only uncertainty but also problems stemming from inadequate training. The situation is further complicated by the high level of unemployment among young people and the consequent lack of work experience. Long-term unemployment looks set to remain high, and it is extremely difficult for employees to return to work after long spells of unemployment.

For older people and those with less education, these changes are bound to cause increased marginalisation. To prevent this, it is imperative that steps are taken to develop labour policy, labour protection, occupational health care services as well as the organisation of work and training programmes that strengthen people's professional skills and competencies.

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Physical environment

Generally speaking, the physical environment has changed in a positive direction as regards its effects on health. Environmental factors are still a major cause of cancer, allergies, asthma and other respiratory diseases. The main health hazards are related to urban and indoor air and drinking water.

There has been a steady improvement in most physical environment factors that have a bearing on human health. Nonetheless environmental factors remain a major cause of cancer, allergies, asthma and other respiratory diseases. In Finland the main environmental health hazards are related to the quality of urban and indoor air and drinking water.

Outdoor air

It is estimated that each year, fine particulate matter of urban air is responsible for 1,300 premature deaths in Finland. Emissions of sulphur dioxide, carbon monoxide and soot have all decreased, however, and flue gas cleaning and high chimney stacks have helped to improve air quality. Problems with air quality are worse in the winter when emissions are at their highest level and winds are low. In addition, airborne dust in the spring causes the amount of inhaled particles to multiply several times over.

The removal of lead compounds from petrol has reduced the level of lead exposure in the population. The sharp increase in motor traffic increased the emissions of carbon monoxide, nitrogen oxides, volatile hydrocarbons and exhaust particles until the 1990s, but since then the situation has improved as a result of advances in technology and better fuels.

In urban planning the overriding aim has been to separate transport, housing and industrial activities from one another with a view to ensuring better air quality in residential areas. Because of the sharp increase in road transport, exhaust emissions from motor vehicles are now the main source of pollution in urban air. With respect to the exposure of urban dwellers to air pollutants, the overall increase in transport emission levels and the longer periods that people spend in traffic have more than cancelled out the benefits achieved from the segregation of housing from industry and transport lanes.

Indoor air

Every other house is damaged by damp, and visible mould growth occurs in one out of five houses. Mould problems also occur in blocks of flats, schools, day care centres, hospitals and other public buildings. The contamination caused by microbial growth in indoor air causes respiratory infections, allergic symptoms, hoarseness, eye irritation, and allergic diseases.

Other major causes of problems with indoor air quality are passive smoking and radon (Table 2). The maximum recommended concentration of radon in indoor air (200 Bq/m^3) is exceeded in around 12 per cent of all dwellings, which apparently is the highest figure in the world.

Jouko Tuomisto wrote the chapter in the original Finnish report and revised the shortened English version

Table 2. Environmental health risks in Finland according to the Environmental Health Committee (1997, some estimates have been updated).

Environmental factor	No. of persons exposed	Annual mortality	Annual morbidity
Microbes in indoor air	1,500,000[1]	*) infections, respiratory or general symptoms	50,000 (10,000–100,000)
Allergens in indoor air	5,000,000	*)	*) allergies and asthma
Radon in indoor air	610,000[1)] 180,000[2)] 50,000[3)]	200 (20–700) lung cancers	200 (20–700) lung cancers
Exposure to tobacco smoke	1,500,000	60 lung cancers 700 cardiovascular diseases	20,000–30,000 respiratory symptoms, cardiovascular diseases
Pollutants in outdoor air	1,900,000	1,300 chronic heart and lung diseases, cancers	105,000 days of use of respiratory drugs 11,000 days of use of children's respiratory drugs
Microbes in foodstuffs	5,000,000	*)	500,000 diarrhoea
Microbes in household water	300,000	*)	10,000 diarrhoea
Accidents	5,000,000	2,500	790,000
Environmental noise	1,000,000	–	500,000, noise disrupts and disturbs sleep
Climate change	5,000,000	*)	Changes to living conditions and spectrum of infectious diseases
UV radiation increase	5,000,000	100 skin cancers	Skin cancer up by 30%, cataract increases

*) Not possible to assess accurately [1)] In excess of 200 Bq/m^3 [2)] In excess of 400 Bq/m^3 [3)]In excess of 800 Bq/m^3

Groundwater and surface water

The quality of environmental water in Finland is generally good, thanks among other things to highly efficient systems of waste water management. However microbial pollution in surface water causes problems for wells and in some cases outbreaks of local epidemics that are usually attributable to faecal viruses in household water. Each year hundreds to thousands of people fall ill as a result of water-borne epidemics, but there have been no deaths in Finland caused by salmonella or cholera epidemics.

Less than half of the population use drinking water that is made from surface water. Chlorination of the humus contained in surface water may produce carcinogenic compounds. Chlorinated phenols and certain solvents used in dry cleaning have caused some local health problems that have spread through groundwater. Some natural compounds of soil may cause health risks in ground water in certain areas of Finland, examples are arsenic and uranium.

Nitrates are among the main sources of agricultural emissions. Levels of nitrate exposure are lower in Finland than in Central Europe. However, in sparsely populated areas relatively high concentrations (30–100 mg/l) are commonly found in well water.

Fod chemical hazards, pesticides and additives

Pesticide residue levels are very low or negligible in Finland and present no health hazards. It also seems that (with the exception of salt), the additives used in foodstuffs are harmless. It is harder to estimate the health effects of chlorinated

environmental contaminants. In Finland, the main route for these compounds into humans is via fish from the Baltic Sea, whereas in Central Europe intake is mostly from dairy products, meat and eggs. The amount of chlorinated compounds in the environment is decreasing, but because of their persistence this is a slow process.

Future challenges

In the long term environmental changes involve some serious challenges to the health of the population. The biggest threats are presented by economic growth and its underlying production structure and way of life, which do not give sufficient attention to the requirements of sustainable development. Examples are provided by the growth of traffic and the increase in energy production. The only way that results can be achieved is by means of a coordinated, long-term international effort. The problem of mould in buildings can be resolved by raising construction standards and by improving maintenance, which will require increased training for professionals in both the health and the building and construction sectors.

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Pirjo Pietinen

Dietary habits and nutrition

Dietary habits and nutrition are important determinants of a large number of chronic diseases. The Finnish diet has become much healthier over the past decades.

Nutrition plays a major role in the aetiology of coronary heart disease, cerebrovascular disease, hypertension and cancer and apparently also in the development of diabetes and osteoporosis. Through obesity, it may also contribute to the development of musculoskeletal diseases. A healthy diet includes plenty of vegetables, is low in saturated fats and salt and high in dietary fibres, vitamins and trace elements. The Finnish diet has in many respects become healthier in recent years.

Changes in nutrition and differences between population groups

From a health point of view the most important change in the Finnish diet compared to the 1970s has been the decrease in the intake of saturated fats from 21 per cent to 14 per cent. The consumption of butter in particular has declined sharply. In the late 1980s one-half of the population used butter on their bread, today the figure has dropped to just a few per cent. The use of low-fat spreads has increased accordingly. Milk consumption has decreased since the 1950s, but by international comparison it is still rather high. Low-fat milk and skimmed milk have taken over from fatty milk products.

The consumption of fruit and berries has increased, and the use of vegetables has tripled since the early 1980s (Figure 4). Salt consumption has come down by 20% since the late 1970s and is now 10g in men and 7g in women. The recommendation is 7g in men and 6g in women.

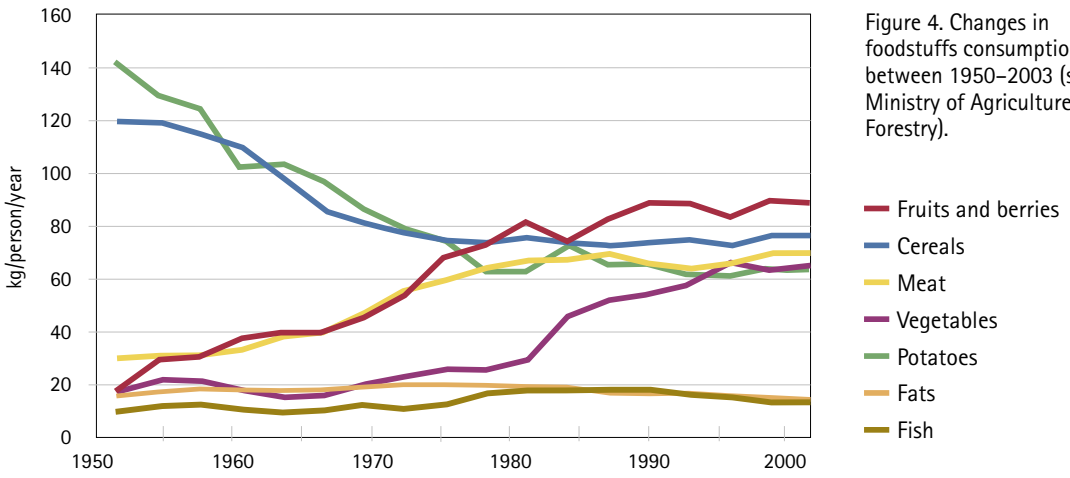

Figure 4. Changes in foodstuffs consumption between 1950–2003 (source: Ministry of Agriculture and Forestry).

Pirjo Pietinen wrote the chapter in the original Finnish report and revised the shortened English version

Apart from the positive changes seen in the diet, other factors that have had a favourable impact include selenium fertilizers and the addition of vitamin D to dairy products. The intake of dietary fibre is at a higher level than in most other countries, but the daily recommended intake is only reached by people in eastern Finland who consume large amounts of rye bread.

Women have a healthier diet than men in almost every respect. The intake of fat as a proportion of total energy supply no longer varies between socio-economic groups, although there do remain differences in the choice of foodstuffs. Men with a higher level of education have a higher intake of vitamins than men with less education. Single men who live alone often have a rather one-sided diet. Financial hardship adversely affects the diet of some segments of the population.

Factors influencing nutrition

There is broad consensus in Finland about the appropriate level of nutrition. The food industry has taken notice of the current nutrition recommendations in its product development. There is a good selection now of low-fat dairy products, the selection of rye bread and other whole grain products has improved, the amount of salt in meat products and bread has been reduced, the use of vegetable oils has been increased, and the availability of chicken and fish has improved. Foodstuffs legislation has contributed to the changes seen in the consumption of fats and salt, for example. Although Finnish salt legislation differs from the norm in the EU, Finland has fortunately been allowed to persist with its policy.

About 75 per cent of the population are covered by large-scale catering. Most of these meals are either heavily subsidised or free of charge. If the favourable trends in nutrition are to continue, it is important that steps are taken to improve the situation among people with a lower level of education and in low income groups among other things by improving the availability of catering services in the workplace and schools. The need to further develop meals-on-wheels services for older people will be highlighted with the continuing ageing of the population.

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Ilkka Vuori

Physical exercise

Regular physical activity promotes health. The proportion of physically active adults has steadily increased, but still only 30–50 per cent of adults are active enough.

Regular physical exercise has the effect of maintaining physical fitness and functional capacity with advancing age, reducing the risk of osteoporosis, overweight, high blood pressure, adult onset diabetes, coronary heart disease, stroke, and cancer of the colon and breast, and lowering premature mortality. These positive effects are achieved by moderate levels of physical exertion, for example at least half an hour's vigorous walk on most days. For children and young people, the recommendation is at least one hour of physical exercise every day.

In spring 2005, 27 per cent of Finnish men and 31 per cent of women aged 15–64 met the above recommendation and engaged in moderate physical exercise at least four times a week. Among men 10 per cent and among women 11 per cent said they engaged in physical exercise during their leisure time on a daily basis. The proportion of men and women who exercised at least twice a week in the way described above was 60 per cent and 68 per cent, respectively.

Physical exercise has increased among Finnish adults over the past 20 years, although recently this trend has been slowing down. In a European comparison Finnish people rank among the top performers (Figure 5).

Ten per cent of men and 14 per cent of women

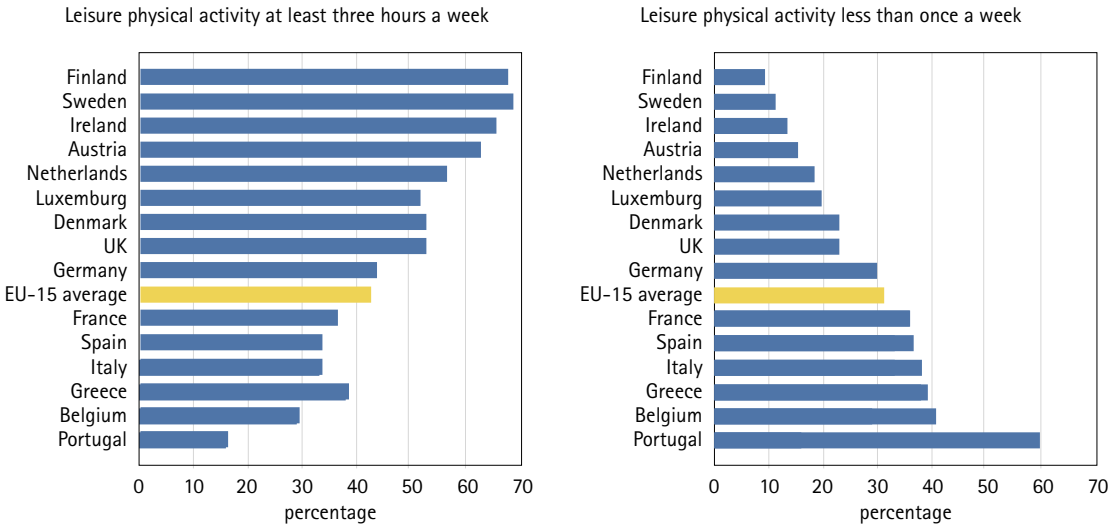

Figure 5. Percentage of population aged 15 or over in EU countries who take part in leisure physical activity (source: A pan-EU survey on consumer attitudes to physical activity, body weight and health, 1999).

Ilkka Vuori wrote the chapter in the original Finnish report and revised the shortened English version

aged 15–64 spend at least half an hour walking or cycling to and from work. Walking and cycling continued to decrease as a method of commuting until the early 1990s, but since then the figures have been rather stable.

In the age group 3–18 years, 84 per cent take part in sports. Children from white-collar families participate more often than children from blue-collar families. Among boys aged 11 years 50 per cent and among girls 45 per cent meet the recommendation to be vigorously active for at least one hour on five days a week. The corresponding figures among 13-year-olds are 36 per cent and 25 per cent, and among 15-year-olds only 27 per cent among boys and 20 per cent among girls. Compared to other European countries the level of physical activity among young people in Finland is above average among the 11-year-olds but falls below the average among those aged 13–15 years.

In the age group 65–84, 65 per cent of Finnish men and 61 per cent of women walk out of doors for at least half an hour on at least four days a week. Among men 48 per cent walk on a daily basis and among women 43 per cent. In the elderly population 85 per cent go for walks at least twice a week.

Although international comparisons suggest that the level of physical exercise in Finland is quite high, one-half to two-thirds of children and young people, two-thirds of men and women of working age and one-half of pensioners do not meet the recommended amount and intensity of physical activity for health for the corresponding age group, when participation in leisure time exercise is used as the criterion. Although these proportions get smaller when all moderate and vigorous intensity physical activity is taken into account, it is important that steps are taken to facilitate daily exercise: this needs to be done by planning, building and changing people's everyday environments in residential areas, in the workplace and at school as well as the transport and leisure environments in such a way that they physically, socially and psychologically are more conducive to physical exercise.

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Dan Apter, Osmo Kontula, Marketta Ritamies, Rita Siegberg, Outi Hovatta

Sexual health

Sexual health is rather good and relationships are long-lasting.
The incidence of sexually transmitted diseases is low.
Fertility treatments have improved.

People today have more sexual relations during their lifetime than ever before and also divorce more often than before. In spite of this a large proportion of people continue to be involved in long-term couple relationships. During the past year one in four men and 15 per cent of women have had more than one sexual partner. One in five Finnish adults do not have a regular sexual partner. Thirty per cent have their first sexual intercourse before age 16 and half before age 18. People have greater expectations of sexual intercourse in couple relationships than before. Sex life is also regarded more often as an enjoyable experience.

Couple relationships and having children

People enter into couple relationships at a young age, but the proportion who get married straightaway remains low. Women's average age at entering their first consensual union is 21, for men the corresponding age is 23 years. In 2004, consensual unions accounted for 83 per cent of all couple relationships in the age group 20–24 and for 57 per cent in the age group 25–29. Since the 1960s, the average age at first marriage has risen by six years. In 2004 the average age of women at first marriage was 29.7 years, for men it was 32.1 years.

The proportion of children born out of wedlock has steadily increased, reaching 41 per cent in 2004. Most of these children are born to cohabiting couples. People today have their first child at a later age than before. In the 1960s mother's average age at first birth was 23, in 2005 it was 28 years.

Infertility and its treatment

Almost 10 per cent of Finnish people remain childless. There have been significant advances in recent years in the treatment of fertility. Today, 4 per cent of age cohorts are born with the aid of hormonal treatments that stimulate ovulation, surgical procedures, test-tube fertilisations and artificial inseminations.

Contraception and abortions

One-quarter or 23 per cent of people aged 18–29 use no contraception. Half of them do not need contraception because they do not have sexual intercourse, a significant proportion of the rest are hoping to get pregnant. In the age group 18–29, over 40 per cent use contraceptive pills, and condom use in this age bracket is at the same level. However even in transient relationships only half of people aged 18–29 use condoms. The use of contraceptive pills decreases after age 30, and the use of IUDs, particularly the progestin releasing IUD, increases. Postcoital contraception pills have been available since 1986, and without prescription since 2002. Young people in particular have learned how to use emergency contraception. The number of sterilisations has

All the authors wrote the chapter in the original Finnish report. Dan Apter and Osmo Kontula revised the shortened English version

declined, and they are a significant method of contraception only among persons aged 40 or over.

The resources of contraception counselling and school health care services were cut in the aftermath of the economic recession of the early 1990s. This had adverse effects on sexual health. Increases were recorded in the number of induced abortions among young people (Figure 6), in the number of teenagers giving birth, and in chlamydia infections. During the current decade, sexuality education at school has improved and to some extent services as well, and sexual health indicators are now improving again.

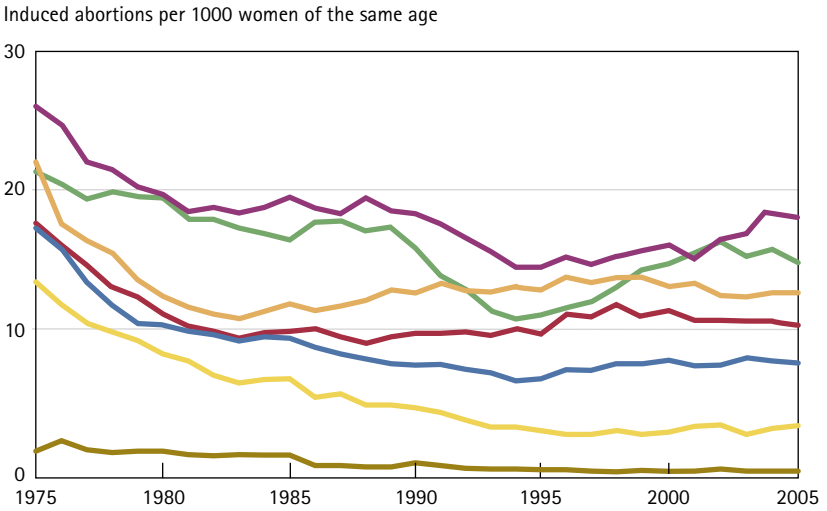

Figure 6. Induced abortions by age group in 1975–2005 per 1,000 women (source: Induced abortions – preliminary data 2005).

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Markku T. Hyyppä, Erkki Kronholm

Sleep and rest

Good sleep at night is a prerequisite for proper functioning during the day
Sleep disturbances are connected to many health problems.

A good night's sleep is crucial to adequate daytime alertness and thereby to functional capacity. Lack of sleep may lead to lowered attentiveness and reduced work and study performance, memory problems, accidents, problems with social relationships and mental disorders. Disrupted sleep and insomnia may be tied in with mental stress, mood changes, medical problems, the use of stimulants and other living habits.

About one third of the general population report having experienced transient insomnia and about one tenth report chronic insomnia. Even among those who are troubled by their symptoms, only a minority seek medical help. Sleeplessness is equally common in the adult population in Finland as it is in other EU countries for which data are available. Finnish schoolchildren, however, sleep less and suffer from sleeplessness and fatigue more often than children in most other countries (Figure 7). In recent years the amount of time that Finnish schoolchildren sleep each night has continued to shorten. Among young people the most important background factors for good sleep are a good atmosphere in the home, a healthy way of life and strong self-esteem. The consumption of sleeping pills and antidepressants that are used for the treatment of sleeplessness has continuously increased. Around 3 per cent of the population say they use sleeping pills every night or almost every night. Among people in shift or night work,

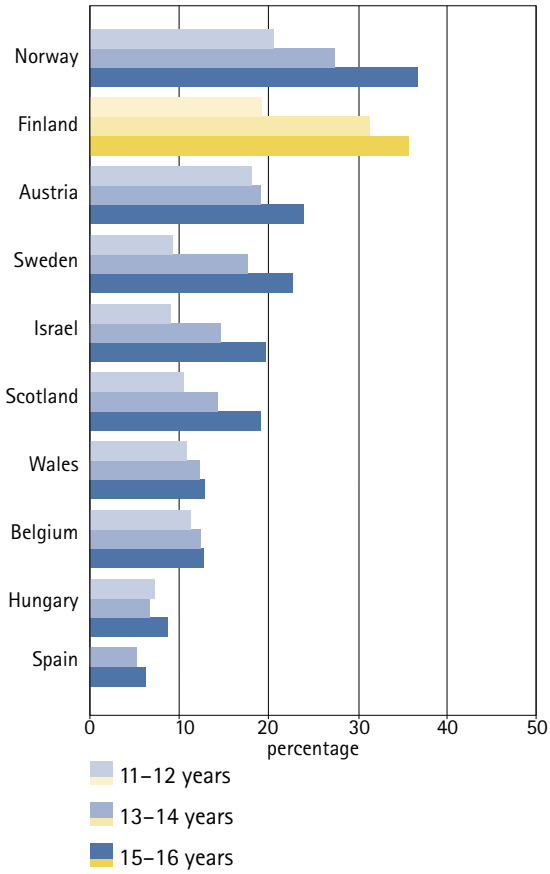

Figure 7. Morning fatigue among schoolchildren in different countries
(source: Tynjälä et al. 1993).

Markku Hyyppä and Erkki Kronholm wrote the chapter in the original Finnish report and revised the shortened English version

half report insufficient sleep or lack of sleep, and they are tired on the job.

Among men 4 per cent and among women 2 per cent suffer from sleep apnoea, including a tendency to fall asleep during the daytime and an increased risk of accidents and death. Almost 10 per cent of deaths on the road are due to accidents where the driver has fallen asleep. Chronic sleeplessness lasting more than a year can easily develop into clinical depression. Sleep disturbances add to the strain of stressful situations and their adverse health effects.

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Marjaana Lahti-Koski

Obesity

Obesity is a risk factor for many chronic diseases. It has become much more common during the past decades.

Obesity increases the risk of coronary heart disease, diabetes, osteoarthritis of the knee and the hip and many other health hazards. It seems that fat accumulating around the waist is more dangerous than fat accumulating at the hips. When the body mass index (BMI, weight divided by height squared) exceeds 30 kg/m^2, the risk of illness is clearly elevated and the person is classified as obese.

In the early 2000s one in five adults in Finland were obese (BMI>30). Obesity was most common among women aged 55–84 and men aged 55–64 (Figure 8). Obesity is almost twice as common among persons with a primary level education than in those with a tertiary education. In two decades the prevalence of obesity has doubled among men, among women it has increased by around one-third. Concomitantly, the increase in abdominal obesity has been even more prominent. Since the late 1970s the prevalence of overweight among girls aged 12–18 has more than doubled to around 12 per cent, and among boys to around 20 per cent.

Swedes, Norwegians and Danes are on average clearly slimmer than Finns. According to comparable data from the MONICA survey from the 1990s, male obesity in Finland is slightly higher than the European average, while obesity among women is at about the same level as in Central Europe but clearly more common than in southern Europe.

Obesity is due to a long-standing imbalance

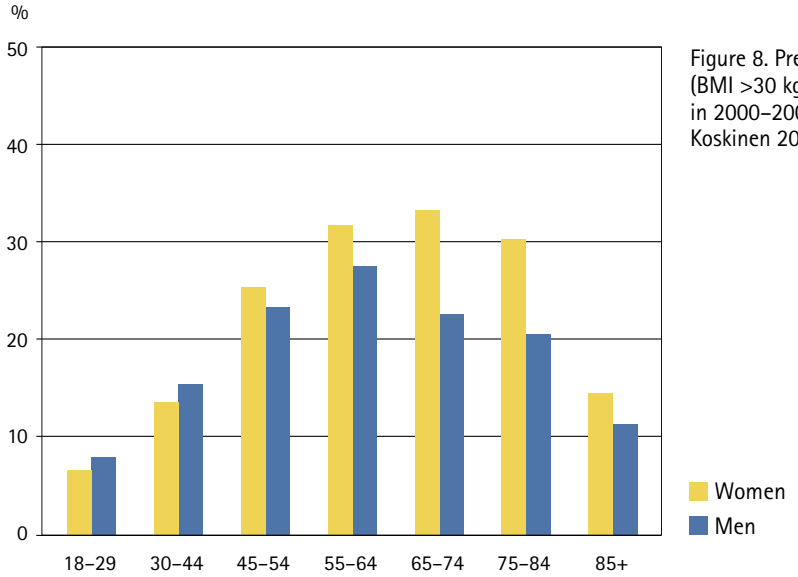

Figure 8. Prevalence (%) of obesity (BMI >30 kg/m^2) in the adult population in 2000–2001 (sources: Aromaa and Koskinen 2002; Koskinen et al. 2005).

Marjaana Lahti-Koski wrote the chapter in the original Finnish report and revised the shortened English version

in energy expenditure and energy intake. Obesity has continued to increase in Finland in spite of the evidence from population studies that energy intake has decreased. In other words, energy expenditure has decreased in relative terms even more.

Obesity is a growing public health problem. Its treatment is difficult, and the long-term results of weight management have not been very good. Indeed greater attention must be given to the prevention of obesity. Living environments should be developed with a view to promoting physical activity at schools, in the workplace and in other everyday settings, and leisure-time physical activity and healthy diets should be encouraged.

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Erkki Vartiainen, Satu Helakorpi, Kristiina Patja

Smoking

In the working age population 18 per cent of women and 26 per cent of men smoke daily. Smoking has decreased among men but not among women. Differences in the prevalence of smoking between socio-economic groups have substantially increased.

Smoking causes circulatory diseases, respiratory diseases, cancer, and various other health problems. It is the single most important preventable cause of major diseases among Finnish people. People who quit smoking significantly decrease the risk of both coronary heart disease and lung cancer.

Smoking has decreased among men since the early 1960s, but even so almost 30 per cent of men remain daily smokers (Figure 9). Smoking among women continued to increase up to the 1970s, and since then has remained unchanged. One in five working-age women are daily smokers. Half of all smokers quit before retirement age. Smoking among girls has increased in the past few decades, while smoking among boys remains unchanged. In recent years the prevalence of smoking among adolescents has decreased. Today, Finnish girls and boys smoke as much and in roughly the same numbers as girls and boys in Europe on average.

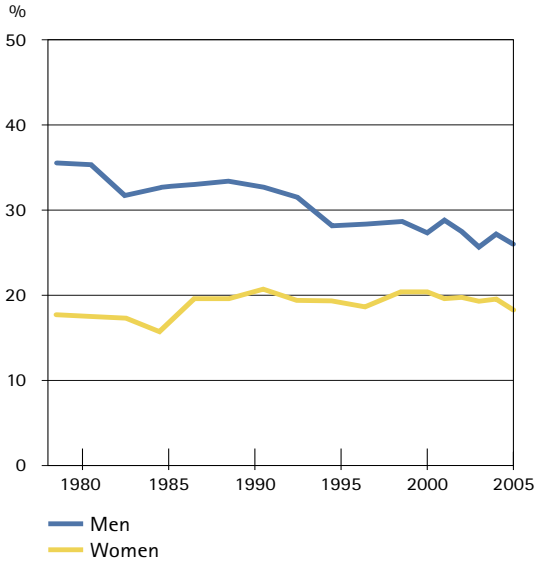

Figure 9. Proportion (%) of daily smokers in the population aged 15-64 in 1978–2005 (source: Helakorpi et al. 2005).

Smoking among men has remained unchanged in the lowest education group and sharply decreased among those with the highest level of education. Smoking among women with the highest level of education has not increased, but smoking among those with the lowest level of education has increased by 70 per cent (Figure 10). Living alone, a low level of education, unemployment and a weak social support network reduce the likelihood of success in giving up smoking. High school achievers and those children and youngsters who continue their studies after comprehensive school, are less likely than others to begin smoking. The proportion of smokers among those who dropped out of schooling after comprehensive school was as high as 60 per cent, among those who continued to university the figure was only 12 per cent.

Over 50 per cent of adult smokers would want to give up and nearly 40 per cent have seriously tried to quit smoking during the past year, but only 3 per cent have succeeded. Only one-third of daily smokers say they have been urged by health

Erkki Vartiainen wrote the chapter in the original Finnish report and, together with Satu Helakorpi and Kristiina Patja, revised the shortened English version

care personnel to give up the habit.

Constant efforts have been made in Finland to reduce smoking and its adverse effects on all people exposed to tobacco smoke by imposing restrictions on smoking in the workplace, at educational institutions and at restaurants; by introducing restrictions on marketing; by raising the minimum age limits for the sale of tobacco products; by price policy; and by means of education.

Attempts to discourage people from starting to smoke are rarely successful today, and it is even difficult to get people to quit when that decision would be important to their health and treatment. For instance, no more than one-half of infarct patients manage to quit smoking. It is important to step up efforts to deter people from starting to smoke and to support those who are trying to give up. Health care personnel must take a more active role in the fight against tobacco.

Growing differences in the prevalence of smoking between socio-economic groups will inevitably add to health inequalities unless something is done to intervene. Support for quitting smoking should be increased, and these measures should be targeted primarily at those people who have the greatest difficulty giving up. Further information is needed on the impacts of tobacco policy measures on starting and quitting smoking in different population groups.

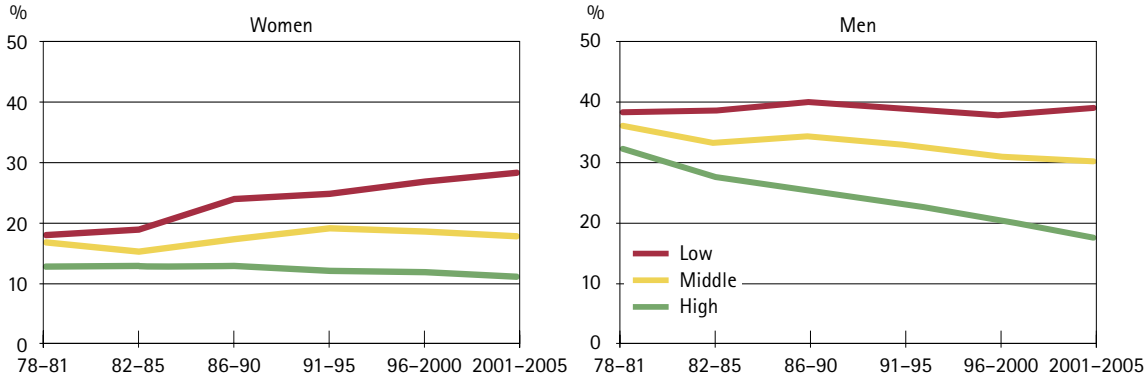

Figure 10. Age-standardised prevalence (%) of daily smoking among 25-64-year-old women and men by level of education[1] in 1978–2005 (source: Helakorpi et al. 2005).

[1]Level of education classified into tertiles according to years of education for each birth cohort

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Heli Mustonen, Jussi Simpura

Alcohol use

Excessive alcohol consumption causes severe health problems. Changes in the availability and prices of alcohol connected with Finland's membership of the EU, have led to increased alcohol consumption and alcohol-related health problems.

In 2005 average per capita consumption of 100 per cent alcohol in Finland stood at 10.5 litres. Alcohol consumption has steadily increased over a number of decades now, with the exception of the dip that occurred during the recession of the early 1990s (Figure 11). Cuts in alcohol prices in spring 2004 and the relaxation of restrictions on imports may have driven up alcohol consumption particularly among heavy drinkers. The differences in alcohol consumption between Finland and the highest consuming countries in western Europe have narrowed down as consumption in the latter has decreased. In 2003, the difference between Finland and France was about 1.5 litres of 100 per cent alcohol per capita a year, compared to 15 litres in the late 1960s.

Women account for a progressively larger proportion of total alcohol consumption: the figure now stands at 30 per cent. Among adolescents alcohol use and binge drinking increased up to the late 1990s, but since then it seems that alcohol consumption among youngsters has slightly decreased. In 2005 one-fifth of 16-year-olds got seriously drunk at least once a month and 5 per cent at least once a week. Binge drinking is more common in Finland than in most other western European countries.

Heavy drinking is also very common in the adult population in Finland, particularly among young adults. In the population aged 20–29 about half of men reported having been really drunk at least once a month, and about 70 percent of women at least once a year.

Alcohol-related harm

Alcohol remains by far the major cause of substance-related health and other harms in Finland. In 2004, almost 2,850 persons died as a consequence of alcohol use, some 80 per cent of whom were men. It has also been estimated that

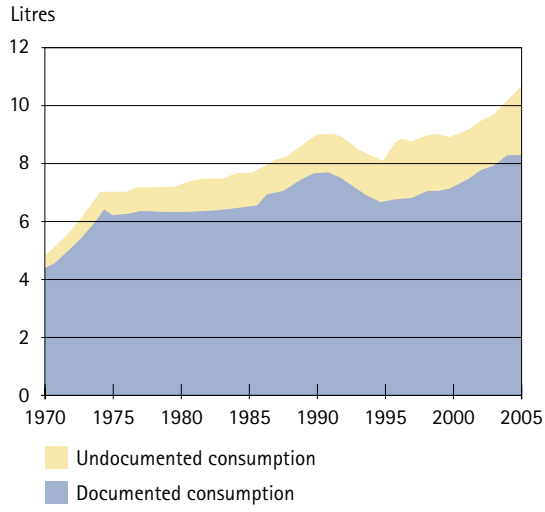

Figure 11. Per capita alcohol consumption in Finland in 1970–2005, 100% alcohol (source: STAKES).

Heli Mustonen and Jussi Simpura wrote the chapter in the original Finnish report. Heli Mustonen revised the shortened English version

alcohol was a contributory cause in more than 700 deaths. Alcohol accounts for 6 per cent of all deaths, among young men the figure is close to 50 per cent. It is estimated that alcohol use prevents 700 deaths from cardiovascular diseases each year. The annual net effect of alcohol is thus around 2,100 deaths.

A total of 1,379 persons died of alcohol-related diseases in 2004. Deaths from alcohol poisoning numbered 481, which is more than in the other Nordic countries taken together. Accidental and violent deaths under the influence of alcohol numbered 966. In 2004 the number of alcohol-related deaths was about 15 per cent higher than in 2003, prior to the cut in alcohol prices and the changes that brought easier access to alcohol. The number of alcohol-related deaths increased during 1998–2003 as well, but only by 235 deaths.

Alcohol-related mortality accounts for around one-fifth of the differences between male and female life expectancy, and for one-quarter of the socio-economic differences among men and one-tenth of the corresponding differences among women. Alcohol mortality in the male decile with the lowest income level is eight times higher than in the decile with the highest level of income.

Hospital admissions for the treatment of alcohol-related conditions have been increasing for some time now; in 2004 the figures were up by as much as 10 per cent. In 2004, there were almost 27,000 admissions in which an alcohol-related condition was the main cause, accounting for 2 per cent of all hospital admissions. The specific conditions accounting for the largest number of admissions were alcohol inebriation, alcohol dependency, organic brain syndromes and behaviour disorders as well as liver diseases and diseases of the pancreas.

Figure 12 shows the indices for total alcohol consumption and the development of certain alcohol-related consequences over the past couple of decades.

Future outlook

The traditional Finnish alcohol control system has less room to manoeuvre than before. Pricing policy has limited effect as consumers can easily make their purchases when they travel abroad. With a dense network of outlets now in place, alcohol consumption is no longer

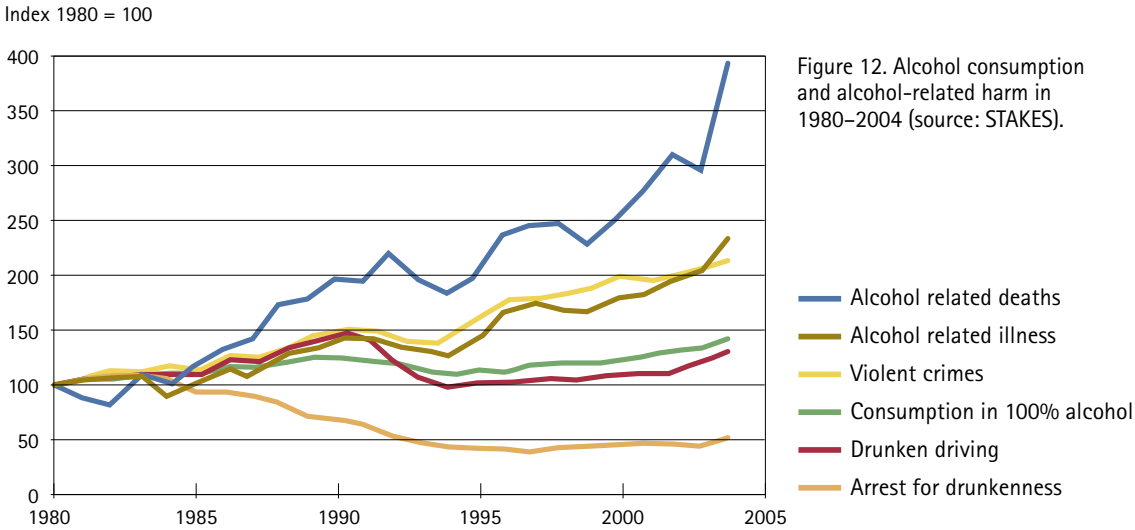

Figure 12. Alcohol consumption and alcohol-related harm in 1980–2004 (source: STAKES).

constrained by availability. The national alcohol programme issued in 2004 stresses the key role of a collaborative effort in preventing alcohol problems: this effort should involve not only social and health care services, but also sports and youth organisations, the media, labour market and other organisations, local councils and other agents involved in shaping the living environment. Furthermore, the programme emphasises the potential contribution of mini-interventions and other substance abuse services.

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Juha Partanen, Pekka Hakkarainen, Leena Metso

Drug and medication abuse

The use of illicit drugs and medicines as intoxicants increased during the 1990s. Finnish drug policy is among the strictest in Europe.

The use of illicit drugs, primarily cannabis, began to spread in Finland in the late 1960s. After the first drug wave receded in the early 1970s, drug abuse remained at a low level until the 1990s when both the supply and demand for drugs increased sharply. According to questionnaire surveys 14 per cent of men and 11 per cent of women aged 15–69 have at least sometimes tried some narcotic substance, but no more than around 1 per cent during the past month. Some 4 per cent of men and 2 per cent of women report having tried so-called hard drugs. Estimates based on different sources suggest that in 2002, about 0.6–0.7 per cent of the Finnish population aged 15–55 were problem users of amphetamines or opiates. Around 70–75 per cent of them used amphetamines.

Drug abuse continues to remain at a lower level in Finland than in most other EU countries. Experimenting is most common among young adults and people living in the metropolitan Helsinki area.

Not only illicit drugs but also legal medical substances are used for purposes of intoxication. In the working-age population 7 per cent report having sometimes abused tranquillizers, painkillers or sleeping pills; over 1 per cent have done so during the past month. Less than 2 per cent of Finnish people have sometimes used glue, solvents etc. for purposes of intoxication.

Consequences of drug use

The number of drug-related offences reported to the police increased fivefold during the 1990s, the amount of drugs seized went up considerably and the number of drug patients treated in hospital increased. In the early 2000s it seems that these trends have come to a halt.

Experimenting with drugs seems to enjoy broad approval among young people and young adults who drink heavily and who go out a lot. Most of them stop doing drugs after the experimental stage. Severe drug-related problems tend to accumulate among those young people who lack a solid foundation for a successful life. Adverse childhood conditions and a low level of education lead easily to a criminal career and to drugs becoming an important part of life. Problem drug use and related criminal activities grow out of youth unemployment, social inequality and marginalisation.

Drug policy

Finland has had one of Europe's strictest drug policies: its aim has been comprehensively to contain and restrict the spread and use of drugs and to enforce strict criminal controls. More recently an alternative policy line has gained momentum which is aimed at minimising drug-related harms through such measures as needle exchange programmes, low-threshold opiates

Juha Partanen and Leena Metso wrote the chapter in the original Finnish report. Pekka Hakkarainen and Leena Metso revised the shortened English version

substitution therapy and in difficult cases maintenance therapy. Prevention is based on the traditional premises of welfare policy, i.e. the aim is to eliminate factors predisposing to substance abuse from people's everyday environments. Special measures for drug prevention have also been developed.

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PART III
MORTALITY, MORBIDITY AND FUNCTIONAL CAPACITY

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Tuija Martelin, Seppo Koskinen, Tapani Valkonen

Mortality

Life expectancy in Finland has increased considerably mainly as a result reduced cardiovascular mortality. However, mortality differences between population groups remain large.

Life expectancy in Finland has increased very rapidly (Figure 13). Until the 1950s life expectancy improved as a result of a lowered incidence of tuberculosis and other infectious diseases as well as lowered child mortality. In the late 1950s, this improvement slowed as mortality from circulatory diseases increased among men and remained unchanged among women. Since 1970, life expectancy in Finland has rapidly increased and the country's international ranking has clearly improved. In 2004, the life expectancy of men was 75.3 years and that of women 82.3 years. The difference compared to the most long-lived populations in Europe has been reduced to around three years for men and around one year for women, or to just one-third of the corresponding difference in the 1950s.

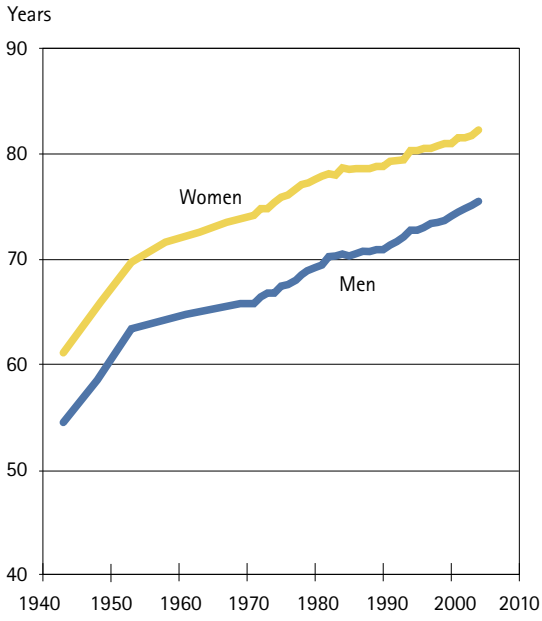

Figure 13. Life expectancy at birth in Finland in 1941–2004 (source: Statistics Finland).

Child mortality has dropped rapidly to one-quarter of the figures of the early 1970s. Infant mortality (3/1,000) and the risk of death in children aged one before age 15 (2/1,000) are now among the lowest in the world. Mortality in the middle-aged population has decreased by around one-half in three decades, mainly by virtue of a decrease in cardiovascular diseases (Figure 14), and mortality has also declined considerably in the elderly population. Nonetheless mortality among adults in Finland is still clearly higher than in countries with the lowest mortality rates.

Differences between population groups

The difference between ***male and female*** life expectancies in Finland is almost seven years. The difference has been reduced by two years since the 1970s, but it is still greater than in most other western European countries where women live 5–6 years longer than men. The relative mortality difference between men and women is greatest in the age range 20–29 years, where male mortality is more than three times higher than among women, especially on account of accidents and violent deaths.

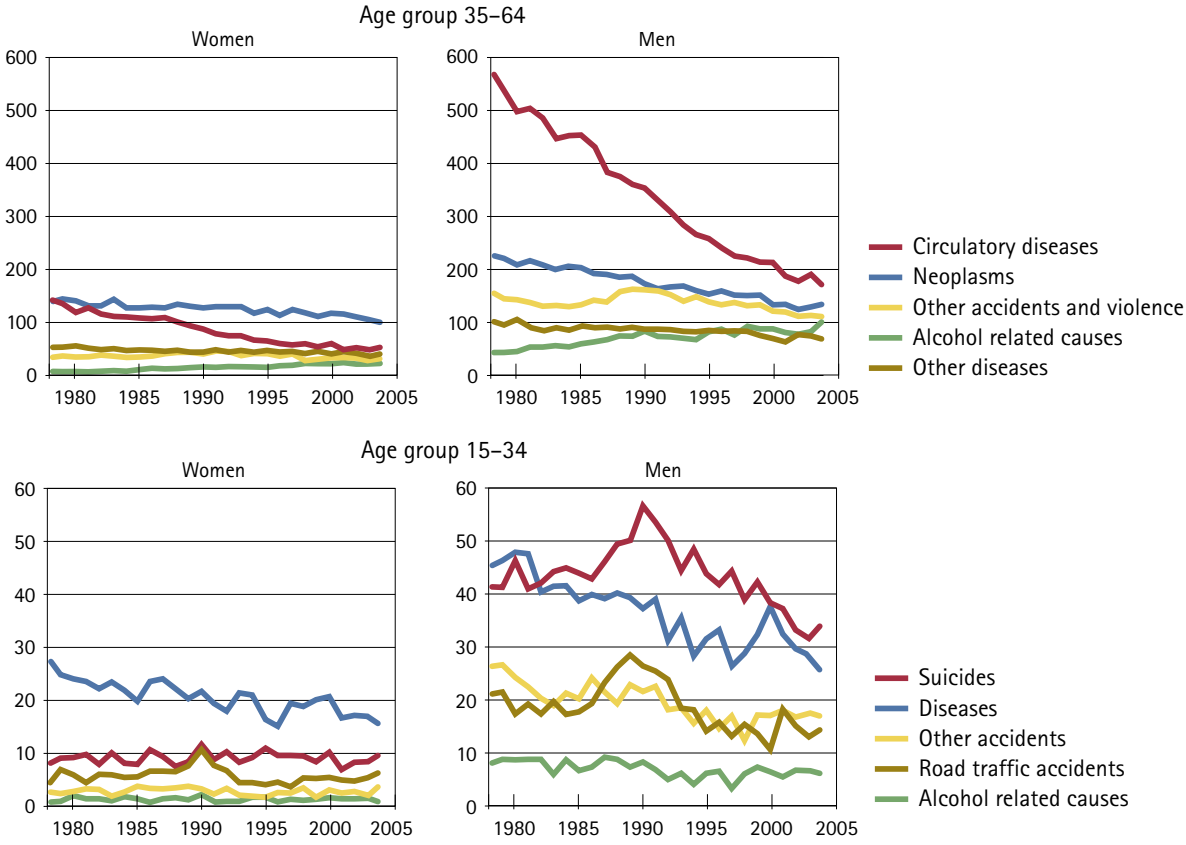

Figure 14. Age-standardised mortality (per 100,000) by cause of death in 1978–2004, age groups 35–64 and 15–34 (source: Statistics Finland).

Almost 40 per cent of the excess mortality of working age men is attributable to circulatory diseases, 6 per cent to cancer of the larynx, trachea, bronchus and lung, almost 20 per cent to alcohol-related deaths, 13 percent to suicide and nearly 20 per cent to other deaths from accidents and violence. In older age groups smoking is a major factor in mortality differences. It is estimated that alcohol use and smoking together explain about half of the difference between male and female life expectancies.

There are also marked ***regional differences*** in life expectancy. On the western coast and in Åland the figures are at the same level as in Japan, which has the world's highest life expectancy. In eastern and northern Finland the male life expectancy is four years and women's life expectancy 2–3 years shorter than in western parts of the country. These regional differences are primarily due to deaths caused by cardiovascular diseases, accidents and violence, and alcohol.

Finland has bigger mortality differences between ***social groups*** than most other western European countries. The difference between the life expectancy of workers and upper white-collar employees increased during the 1980s and 1990s by 1.4 years among men and by one year among women. According to mortality data for the turn of the millennium, a Finnish male aged 35 will on average live to be 74 if he is a worker, but to 80 – six years longer – if he is an upper white-collar employee. Among women the difference is more

Table 3. Life expectancy at age 30 by level of education in 1971–75, 1981–85, and 1996–2000 (source: Tapani Valkonen, unpublished results).

WOMEN				Change
Education	1971–75	1981–85	1996–2000	1971–75 to 1996–2000
Basic	46.6	49.0	50.4	3.8
Lower secondary	49.1	50.8	52.5	3.4
Higher secondary	49.3	51.2	53.1	3.8
Tertiary	49.4	51.8	54.1	4.7
All	46.9	49.4	51.5	4.6
Difference tertiary-basic	2.8	2.8	3.7	0.9
MEN				**Change**
Education	**1971–75**	**1981–85**	**1996–2000**	**1971–75 to 1996–2000**
Basic	38.6	40.8	43.0	4.4
Lower secondary	42.1	43.1	45.4	3.3
Higher secondary	41.5	44.1	47.4	5.9
Tertiary	43.5	45.9	49.8	6.3
All	39.4	41.7	44.9	5.5
Difference tertiary-basic	4.9	5.1	6.8	1.9

than three years (see Figure 42 on page 103). The differences by level of education (Table 3) and income are of the same magnitude or bigger.

Socio-economic mortality differences are particularly strong in violent causes of death, respiratory diseases and diseases associated with heavy alcohol consumption and among men also in lung cancer. The differences are almost as large in circulatory diseases, which because of their prevalence are the most important cause of socio-economic mortality differences.

Socio-economic mortality differences and their changes over time are due to characteristics of the living and work environment, lifestyles and health services, which are often used more frequently (relative to needs) in higher than in lower socio-economic groups. Among men one-half and among women a smaller proportion of the mortality differences are related to alcohol use and smoking.

In the past few decades the differences between ***marital status groups*** have increased, and they are particularly clear among men. One-third of all deaths among Finnish people of working age would be avoided if mortality in other marital status groups were as low as it is among married people. The differences are due both to health-related selection and the beneficial health effects of marriage.

Future outlook

It is expected that the life expectancy of both men and women will continue to rise. However, prolonged mass unemployment and other factors causing social marginalisation, the increasing prevalence of obesity and alcohol use and other changes with adverse health effects may slow down this process or even bring it to a halt.

The projection is that the mortality difference between men and women will continue to shrink because gender differences in smoking and alcohol use have decreased. The excess mortality

among people living in eastern and northern Finland in comparison with southwestern Finland will probably be reduced as a result of less pronounced regional differences in disease risk factors. It is projected that the mortality differences between socio-economic groups and marital status groups will continue to increase unless there is an effective intervention into their causes: this is because differences in smoking and unhealthy drinking habits, for example, are increasing and because long-term unemployment and problems of social marginalisation among the most underprivileged groups may also act to increase mortality differences.

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Kristiina Manderbacka

Perceived health and reported morbidity

Two-thirds of the Finnish population rate their health as rather good or good. However, self-perceived health in Finland is poorer than in the other Nordic countries.

Two-thirds of the adult population in Finland rate their own health as good or rather good. In the other Nordic countries self-rated health is better: four-fifths of Swedish and Danish adults regard their health as good or rather good. Self-perceived health has improved among the middle-age and older people, but among young adults the situation has remained unchanged (Figure 15).

People with a lower level of education, manual labourers and people in the low income bracket rate their health as much worse than do people with a high level of education, white-collar employees and those with a high income. Socio-economic differences are similar for men and women (Figure 16), and these differences have remained more or less unchanged.

About half of Finnish adults report suffering from at least one chronic disease. Among young adults one in four but in the population over 85 as many as 90 per cent have some chronic disease. The socio-economic differences are very similar to those seen in the case of self-perceived health: chronic morbidity is more common in lower than in higher socio-economic groups (Figure 16).

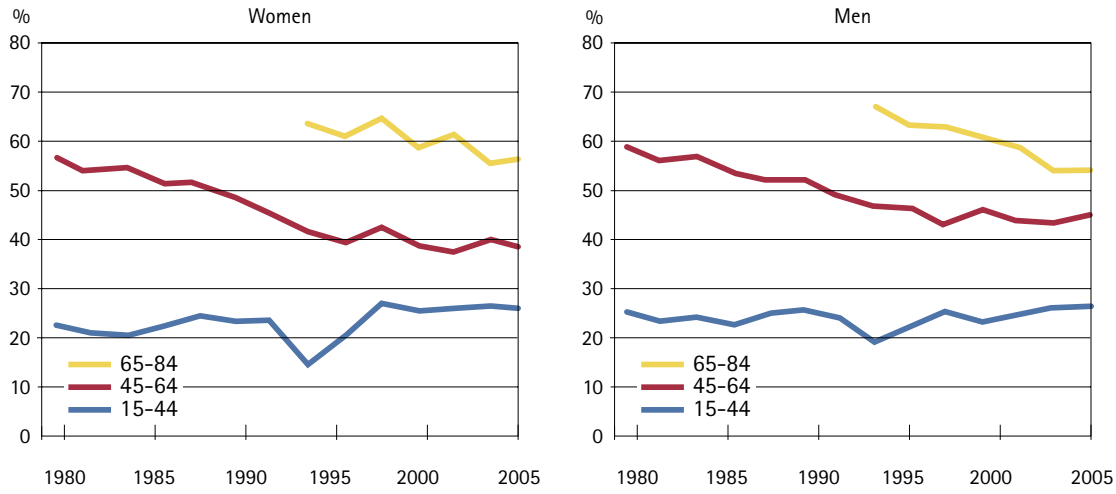

Figure 15. Proportion of people reporting average or worse health in the population aged 15–84 years in 1979–2005 (source: National Public Health Institute).

Kristiina Manderbacka wrote the chapter in the original Finnish report and revised the shortened English version

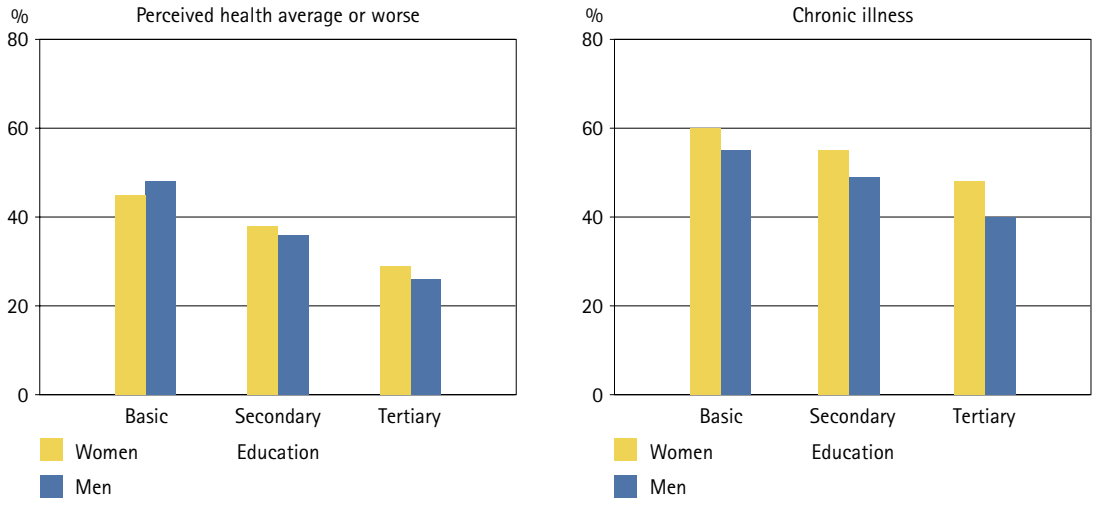

Figure 16. The health of the adult population by level of education in 2000–2001; age-standardised percentages (source: Aromaa and Koskinen 2004).

In the early 2000s, long-term morbidity in the population aged 30 and over was roughly as common as 20 years previously. The major categories of chronic disease were musculoskeletal disorders, circulatory diseases and mental disorders, but above all asthma, allergic diseases of the respiratory tract and eczemas had increased sharply since the 1980s in both children and adults.

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Functional capacity and work ability

Functional limitations increase with age. Over 7 per cent of Finns of working age are disabled for work. Both functional capacity and working ability have improved since the 1970s. Healthy or disability-free life expectancy has become an important indicator of public health. Its usefulness is demonstrated by examples on time trends and differences between educational groups.

Functional capacity

Good functional capacity means the ability to manage independently with ordinary activities of everyday living. Contradictions between the individual's own expectations and tasks or between the environment's and social community's expectations and requirements will be manifested in reduced or impaired functional capacity. Functional capacity is a relative phenomenon that takes on different forms in different contexts and the deterioration of which can be addressed and compensated in various different ways. A last resort is provided by help from other people.

Difficulties with mobility remain the most common form of impaired functional capacity, even though they have rapidly decreased. In the late 1970s 12.5 per cent of the working age population had difficulties walking 500 metres, but in the early 2000s the figure was down to 3.5 per cent. Among pensioners the prevalence of reported difficulties with walking decreased from 44 per cent to just over 30 per cent. Other forms of impaired functional capacity have also decreased especially in the population of working age (Table 4).

In the early 2000s no more than 1 per cent of the community-dwelling population aged 30–44 received assistance because of impaired functional capacity, whereas in the population aged 85 and over the proportion was over four-fifths. In the total non-institutionalised population aged 30 or over, 9 per cent received at least occasional assistance because of impaired

Table 4. Age-standardised prevalence of selected functional restrictions (%) in 1978–1980 and 2000–2001 (source: Aromaa and Koskinen 2004).

Difficulties managing or unable to manage (%)	30–64 years				65–99 years			
	Women		Men		Women		Men	
	1978–80	2000–01	1978–80	2000–01	1978–80	2000–01	1978–80	2000–01
Dressing and undressing	8	3	8	2	26	15	28	16
Shopping	8	2	10	2	33	23	28	17
Stairs (1 flight)	11	4	10	3	44	35	33	24
Walking 500 metres	13	3	12	4	45	35	44	28
Reading newspaper print	10	4	10	4	28	19	26	13

Arpo Aromaa, Raija Gould, Helka Hytti, Ari-Pekka Sihvonen and Seppo Koskinen wrote the chapters in the original Finnish report, Raija Gould, Tuija Martelin and Päivi Sainio revised the shortened English version

Table 5. Age-standardised proportion of people receiving help[1] (%) in 2000–2001 (source: Aromaa and Koskinen 2004).

	30–64 years		65–99 years	
	Women	Men	Women	Men
Never	95.5	98.1	65.5	74.8
≤ once a month	0.4	0.1	5.6	2.6
2–4 times a month	0.9	0.6	7.8	4.5
A few times a week	0.9	0.1	7.4	3.9
Daily	1.8	0.8	10.6	10.6
Round the clock or almost round the clock	0.4	0.3	3.1	3.6

[1]proportion of population living outside institutions.

functional capacity, 4 per cent at least once a day and 1 per cent received help round the clock or almost round the clock (Table 5). Furthermore some 1 per cent of the adult population lived in social welfare and health care institutions, where they typically received help at least daily. In all age groups the proportion of women who received help was considerably higher than the corresponding proportion among men.

In the early 2000s the perceived need for help in Finland is reasonably well met. Three quarters of the people who needed help said they felt their needs were adequately met. The remaining one-quarter felt they need more help, but only one in ten would need extra help weekly or more often.

At year-end 2002, 4 per cent of the elderly population aged 65 or over lived in institutions. Just over 5 per cent of people in the age group lived in an institution or were in receipt of 24-hour assistance housing services. The number of people living in institutions decreased in the 1980s and 1990s. Nowadays the functional capacity of insitutionalised elderly is weaker than before and they need ever more help and care. It is extremely likely that as the number of the oldest-old continues sharply to rise, so the need

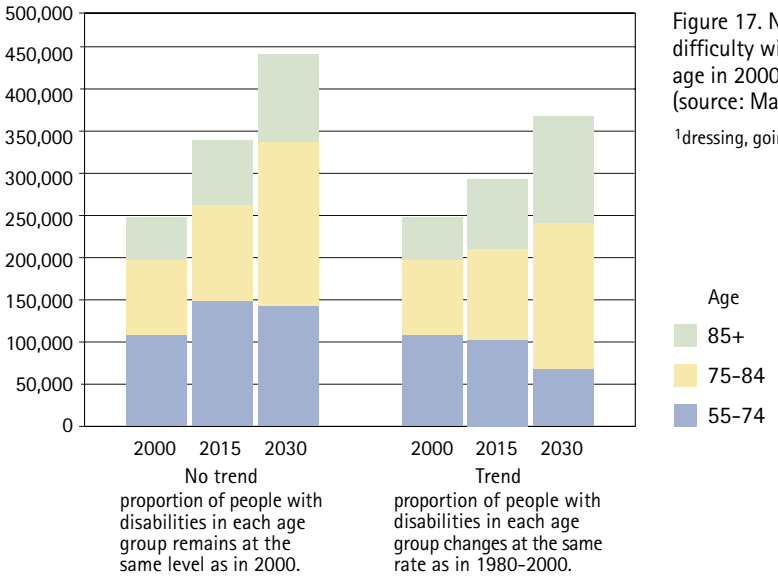

Figure 17. Number of persons experiencing difficulty with basic activities of daily living[1] by age in 2000, and forecasts for 2015 and 2030 (source: Martelin et al. 2004).

[1]dressing, going to bed and moving in the house

for inpatient care or comparable staff-intensive outpatient care will increase considerably. However if the functional capacity of the elderly population continues to improve, the need for institutional care will not necessarily grow as rapidly as the elderly population (Figure 17).

Disability for work

In the Mini-Finland Survey in 1978–80, 11 per cent of men and 6 per cent of women aged 30–64 said they were totally unable to work. Self-rated work disability has decreased, since according to the Health 2000 survey 7 per cent of men and 5 per cent of women in this age band in 2000–2001 described themselves as totally unable to work. The situation with regard to perceived disability for work has improved most of all in the age group over 45.

Data on disability pensions lend further support to the conclusion that work disability has decreased in Finland (Table 6). Disability pensions are paid to persons aged 16–64 who are incapable of doing their job or other suitable work due to illness, handicap or injury. In the population under 55, pension statistics provide a comparable picture of changes in work disability because definitions of disability have remained essentially unchanged in different pension systems. For the population over 55, on the other hand, pension statistics do not give a reliable

Table 6. Population on disability pension in 1980–2005 (source: Finnish Centre for Pensions and Social Insurance Institution joint statistics).

Year	Percentage in different age groups			Age-standardised[1] proportion of population, index 1980 = 100	
	16–64	16–54	55–64	16–64	16–54
1980	8.7	4.4	33.1	100	100
1985	8.0	4.0	29.4	90	93
1990	9.1	4.2	36.2	100	91
1995	9.2	4.2	37.3	100	84
2000	7.7	4.0	25.9	77	76
2005	7.5	4.0	20.8	71	76

[1]Standardised to 1985 population

Table 7. Recipients of disability pension as a proportion (‰) of the population by sex, age group and category of illness in 2005 (source: Finnish Centre for Pensions and Social Insurance Institution joint statistics).

Category of illness	Age group and sex							
	16–64		16–34		35–54		55–64	
	Women	Men	Women	Men	Women	Men	Women	Men
All	70.2	79.1	12.3	15.9	54.9	65.7	196.9	219.8
Mental health disorders	32.1	32.8	8.6	11.4	31.4	35.5	72.1	64.9
Nervous system	5.1	6.2	1.2	1.5	5.4	5.9	11.0	15.3
Circulatory diseases	3.2	8.1	0.1	0.1	1.6	3.6	11.6	31.6
Respiratory diseases	1.5	1.7	0.0	0.0	0.5	0.6	5.8	7.2
Musculoskeletal diseases	18.9	17.3	0.3	0.3	8.9	9.2	70.1	64.5
Injuries and poisonings	2.0	5.0	0.2	0.7	1.4	4.5	6.2	13.9
Others	7.5	8.1	1.8	2.0	5.8	6.4	20.2	22.5

picture of trends in disability for work because the pension systems have changed.

At year-end 2005, 7.5 per cent of the population aged 16–64 were in receipt of disability pension. The most common causes of work disability are mental and musculoskeletal disorders, followed by circulatory diseases. In 2005 three per cent of the population of working age received disability pension on grounds of mental health disorders and nearly two per cent on grounds of musculoskeletal disorders. Mental health disorders were most prevalent in younger age groups: over half of all disability pensions in the age group under 55 were due to mental health disorders. In the oldest ten-year age group, on the other hand, the most common cause of work disability are musculoskeletal disorders (Table 7).

The most important factor behind the reduced prevalence of disability pensions is the decrease in circulatory diseases. The number of pensions granted for musculoskeletal disorders has also sharply decreased. By contrast the number of disability pensions granted on grounds of mental health disorders has been rising.

Disability-free years

Data on mortality and morbidity in different age groups provide a way of dividing life expectancy into healthy and unhealthy years of life. The outcome of the calculation depends largely on how morbidity and functional capacity are measured. Whatever the method of measurement used, women spend a larger part of their life in ill health or suffering from impaired functional capacity than men do, but most health measures indicate that women also have more disability-free years than men.

The increase in life expectancy in Finland has brought an increase most particularly in the number of healthy years in life. Between 1980 and 2000, the life expectancy of a 65-year-old

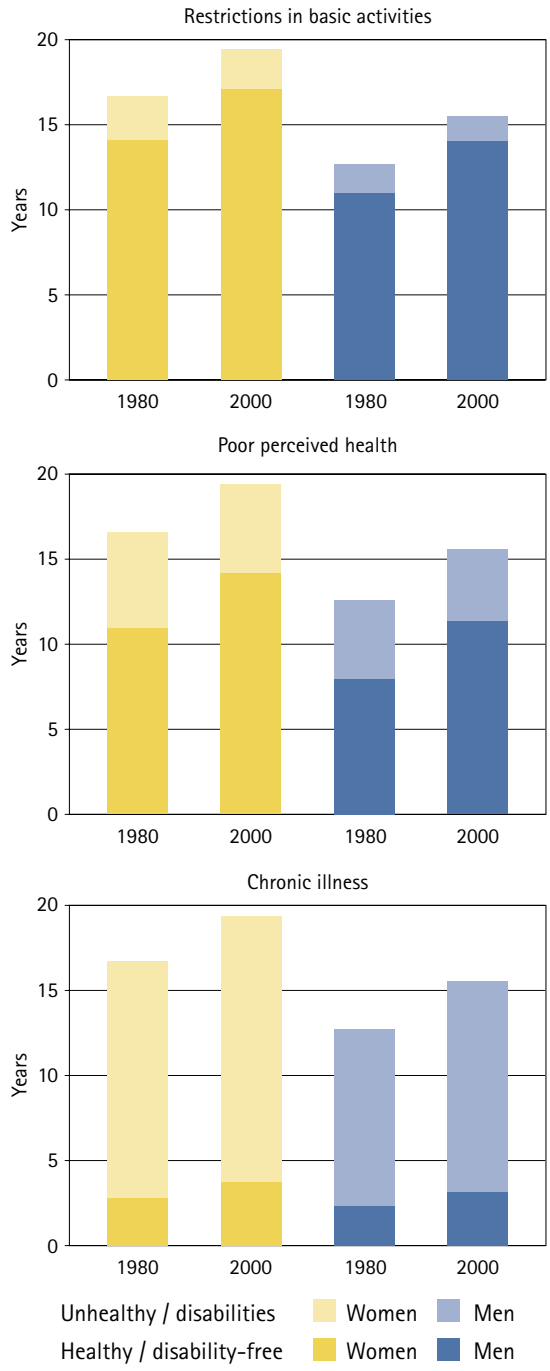

Figure 18. Breakdown of the life expectancy of a 65-year-old man and woman between healthy and unhealthy years of life according to managing with basic activities of daily living, self-perceived health and chronic illness in 1980 and 2000 (source: Sihvonen et al. 2003).

man increased by 3.0 years, that of a 65-year-old woman by 2.8 years. In both men and women, these extra years were all disability-free years, when this is defined in terms of managing with activities of daily living (Figure 18). The number of disability-free years actually increased more rapidly than total lifetime. When poor or rather poor self-perceived health was used as a measure of disability, the number of disabled life years also decreased and the number of healthy years increased considerably. The length of time lived with a chronic illness increased so that about one year of the total increase in life expectancy of three years were healthy years and two were years with a chronic illness. This is probably due not so much to an increase in morbidity as to the growing body of diseases that are known and treated.

Since the levels of morbidity and functional disability vary widely between different educational groups, the variation in the number of healthy and disability-free years by education is even greater than the variation in life expectancy. The higher the level of education, the greater the number of healthy years and the fewer the number of disabled years. Among people with a tertiary education, men have a somewhat longer disability-free life expectancy than women, even though women's overall life expectancy in this educational group is five years longer than that of men.

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PART IV
MAJOR PUBLIC HEALTH PROBLEMS

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Antti Reunanen

Circulatory diseases

The occurrence of coronary heart disease has considerably decreased in middle-aged persons mainly due to lowered levels of risk factors. The changing age structure is driving up the number of older people with CHD. Hypertension has become more prevalent partly because of the improved coverage of treatment and the lowering indications for medication.

Coronary heart disease

In the 1960s Finnish men had the world's highest CHD mortality. However from the 1970s through to 2004, CHD mortality decreased in the total population by more than 60 per cent and in the working-age population by almost 80 per cent (Figure 19). Nonetheless the CHD mortality of Finnish middle-aged men is still much higher than in most other western countries, and the figures for women are around the average (Figure 20). In 2004 coronary heart disease was responsible for 24 per cent of all deaths in Finland. Almost nine in ten or 87 per cent of those deaths were in the age group 65 or over.

Although the incidence of myocardial infarction has decreased in middle-aged groups, the number of infarct patients treated in hospitals has increased. This is explained by the greater prevalence of the disease in older age groups, which have grown very rapidly. At year-end 2004, 6.4 per cent of Finnish people aged 35 or over and 22 per cent of those over 75 were entitled to

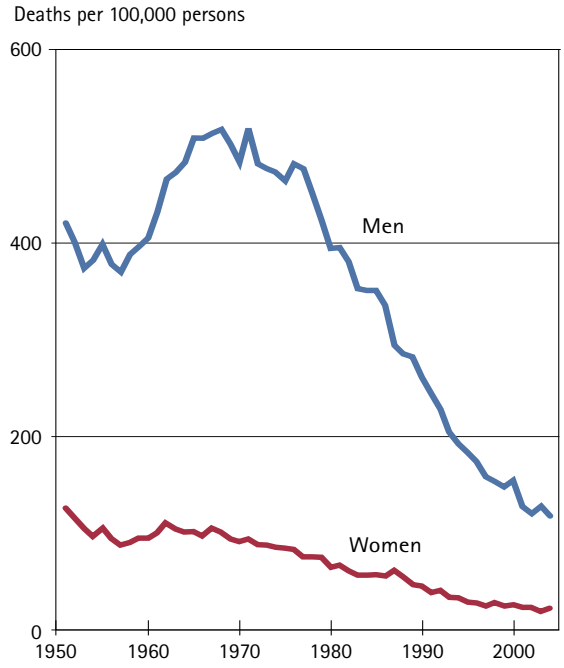

Figure 19. Age-standardised mortality from CHD in 1951–2004, population aged 35–64 (source: Statistics Finland).

Table 8. Percentage of population entitled to special reimbursement for CHD medication at year-end 2004 (source: Social Insurance Institution).

	Age group					
	35–44	45–54	55–64	65–74	75+	Age-standardised
Women	0.06	0.5	2.8	10.7	19.5	4.8
Men	0.3	2.1	7.4	18.5	27.0	8.4

Antti Reunanen wrote the chapter in the original Finnish report and revised the shortened English version

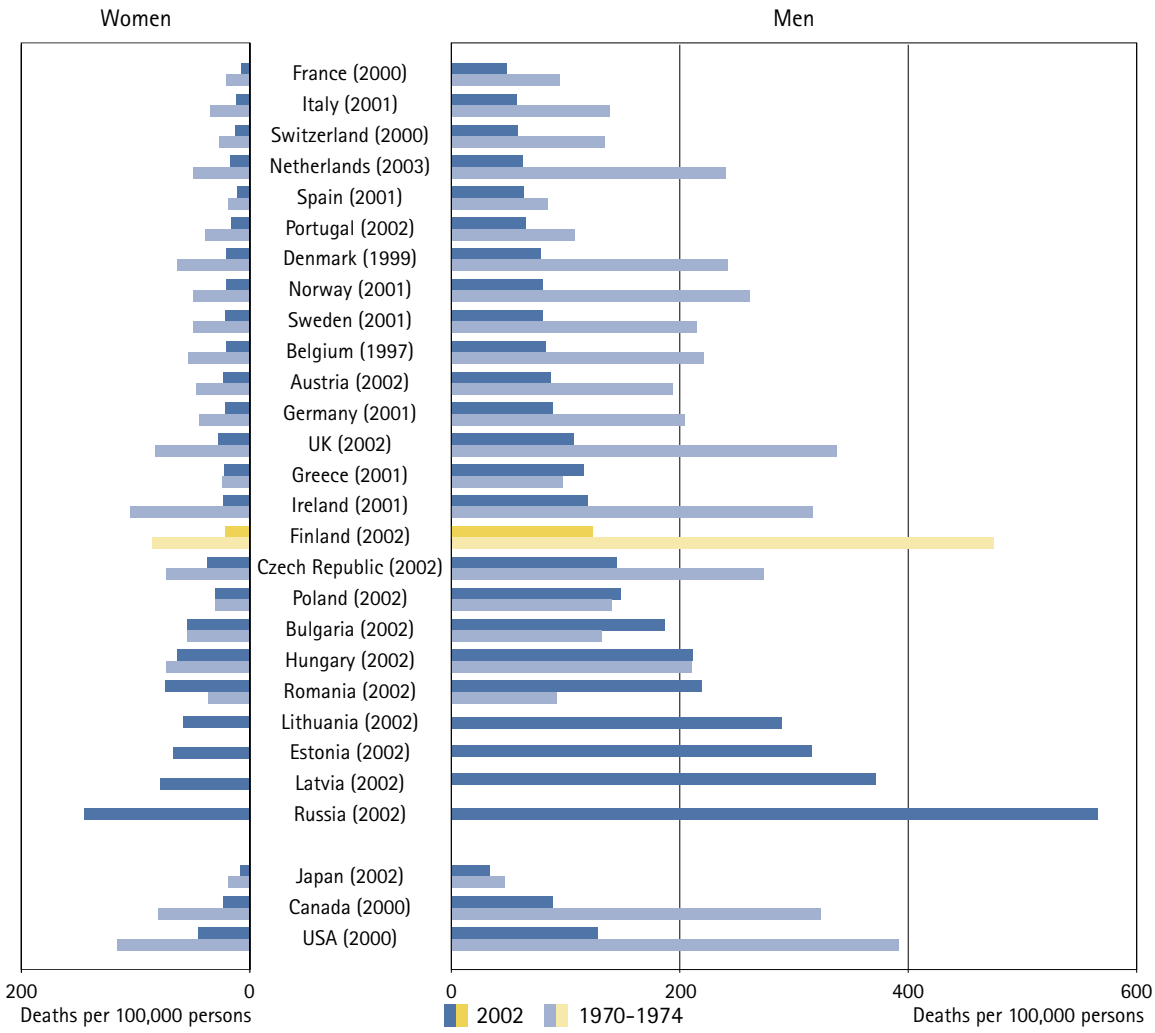

Figure 20. Age-standardised mortality from CHD in selected countries in 1970–1974 and 2002, population aged 35–64 (sources: World Health Statistics Annual 1988 and WHO database).

special reimbursement for medication for CHD (Table 8).

The decrease in CHD incidence and mortality is largely attributable to significantly lowered levels of serum cholesterol and blood pressure, and among men also to reduced smoking. Advances in the treatment of CHD have also helped to reduce mortality especially from the 1980s onwards. Thrombolytic and other medical treatment of myocardial infarction patients and coronary artery bypass operations and more recently coronary angioplasties have rapidly increased. However angioplasties are still performed less often than in many other countries.

It is expected that the incidence of CHD will continue to fall over the next few years. However because of population ageing and the improving prognosis of sufferers, the overall number of patients will rise.

Heart failure

The second most common heart disease in the Finnish population is heart failure, the main causes of which are coronary heart disease and hypertension. In the population aged 35 or over, more than 2 per cent and in the population aged 75 or over more than 10 per cent were entitled to special reimbursement for heart failure medication. The prevalence of heart failure has sharply decreased and the same trend is expected to continue with advances in the treatment of CHD and blood pressure. On the other hand the ageing of the population is driving up the number of heart failure sufferers and the need for treatment.

Cerebrovascular disorders

From the early 1970s to 2004, mortality from stroke in middle-aged Finns decreased by around 75 per cent (Figure 21). Around 1 per cent of the population have suffered a stroke. Rehabilitation following a stroke takes up considerable resources. The main reason for the decrease in stroke morbidity and mortality lies in the improved treatment of elevated blood pressure. The growing use of medication that inhibits the adhesiveness of blood platelets has helped to reduce the number of strokes among people who have had transient ischaemic attacks. Hospital treatment provided for cerebrovascular disorders has increased because the population has grown older.

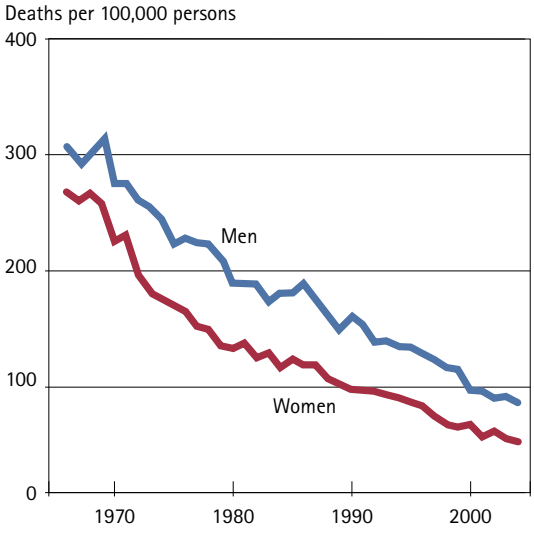

Figure 21. Age-standardised mortality from cerebrovascular disorders in 1966–2004, population aged 45–74 (source: Statistics Finland).

Hypertension

Less than 40 per cent of the adult population meet the current blood pressure target of 140/90 mmHg. One-fifth of the population aged 30 or over have such a high blood pressure that they need treatment. At year-end 2004, 9.5 per cent of the population were entitled to special reimbursement for blood pressure medication.

In 2002, the mean systolic blood pressure for middle-aged Finnish women was around 130 mmHg and for middle-aged men 132 mmHg, i.e. 15 and over 10 mmHg lower than in the early 1970s. Diastolic blood pressure decreased by almost the same amount, dropping to just under 80 among women and to just over 80 among men at the beginning of the 2000s. These favourable trends are due both to advances in medical treatment and to changes in living habits, particularly the reduced use of salt and changes in the fatty acid composition of food. At the same time, however, the population has been gaining weight and alcohol consumption has increased, which in the future may lead to higher blood pressure levels again.

The numbers receiving treatment for elevated blood pressure have continued to rise, which is due to the improved coverage of treatment and to the lowered blood pressure values that are now taken as an indication for medical treatment. As

the population continues to age the numbers requiring treatment will continue to rise unless the average blood pressure in the population can be reduced.

Disorders of lipid metabolism

The total serum cholesterol concentration has declined in the population since the early 1970s, mainly because of the lowered intake of saturated fats. In 2002 the average for women was just under 5.5 mmol/l and for men just over 5.5 mmol/l. By international comparison, however, these are still fairly high figures. In 2002 some 15 per cent of middle-aged Finns had a cholesterol concentration of over 6.5 mmol/l, and just one-third of the population were within the target range of under 5 mmol/l. It is expected that the population's serum cholesterol concentration will continue to fall as diets become healthier. Medication can help to lower serum cholesterol concentrations in at-risk groups and CHD sufferers. However at the population level the drive to reduce cholesterol levels must be based on non-medical methods.

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Markku Heliövaara, Hilkka Riihimäki

Musculoskeletal diseases

Musculoskeletal diseases are the most common cause of pain and the second most common cause of work disability in the population. The prevalence of back and neck syndromes as well as osteoarthritis has decreased.

Musculoskeletal diseases are the most common cause of pain and the second most common cause of lost working hours in Finland. The most prevalent diseases with the greatest cost implications are osteoarthritis, low-back and neck-shoulder pain and syndromes and rheumatoid arthritis. According to interview studies musculoskeletal pain has slowly decreased over the past few decades. Among chronic conditions both back and neck syndromes as well as osteoarthritis have decreased in both men and women. The changes are more pronounced in the working age population than among older people. Osteoarthritis of the knee has decreased among women but not among men (Table 9).

Osteoarthritis

Osteoarthritis refers to conditions in which the articular cartilage is degenerated and the joint space narrowed. In the middle-aged population less than 3 per cent suffer from osteoarthritis of the knee and almost 2 per cent of osteoarthritis of the hip. In the population aged 65 or over, the prevalence of osteoarthritis of the hip is around 15 per cent, and in older men osteoarthritis of the knee is equally common. Among women aged 65–74 one in five and among those over 75 one in three suffer from osteoarthritis of the knee. Among women the prevalence of osteoarthritis of the knee has decreased by one-half in 20 years, among men there have been only minor changes.

Overweight, accidents and excessive strain explain more than one-half of the prevalence of knee and hip arthrosis in the population. Levels of physical stress in the workplace have been reduced in the past decades, but overweight especially in men has increased. There have been impressive advances in artificial joint technology,

Table 9. Age-standardised prevalence (%) of clinically diagnosed osteoarthritis of the hip, osteoarthritis of the knee and back syndrome in 1978-1980 and 2000-2001 (source: Aromaa and Koskinen 2004).

	Osteoarthritis of the hip			Osteoarthritis of the knee			Back syndrome		
	30–64	65+	30+	30–64	65+	30+	30–64	65+	30+
Women									
1978-80	2.9	14.8	5.5	8.8	34.7	4.5	15.7	19.3	16.5
2000-01	1.1	14.7	4.0	2.6	23.1	7.1	8.8	17.0	10.6
Men									
1978-80	2.2	13.5	4.6	3.2	14.0	5.6	17.1	19.7	17.6
2000-01	1.9	15.9	4.9	2.9	13.9	5.3	9.0	15.7	10.4

Markku Heliövaara and Hilkka Riihimäki wrote the chapter in the original Finnish report, Markku Heliövaara revised the shortened English version

and consequently osteoarthritis results less often than before in severe functional limitations.

Back syndrome, back pain and pain in the neck–shoulder region

In the early 2000s almost one-third of the Finnish population aged over 30 reported experiences of back pain during the past month. In the population of working age back pain has slowly decreased over the past 20 years, but among older people it has actually increased somewhat.

The prevalence of chronic low-back syndrome has declined over the past 20 years by one-half among middle-aged men and even in the age group over 65 to some extent. In the early 2000s 9 per cent of the population aged 30–64 and 16 per cent of those aged 65 or over were diagnosed with back syndrome.

During the past month around one-quarter of adult men and up to 40 per cent of adult women have suffered from neck pain, and shoulder pain is equally common. In the early 2000s chronic neck syndrome was diagnosed in 5 per cent of men and 7 per cent of women, whereas 20 years earlier the figures were 10 per and 14 per cent, respectively.

Rheumatoid arthritis

The incidence rate of rheumatoid arthritis in Finland is 24 cases among men and 43 cases among women per 100,000 person-years. In the Finnish population aged 30 or over, 1.1 per cent of women and 0.5 per cent of men have rheumatoid-factor-positive arthritis. Among women 0.9 per cent and among men 0.4 per cent have rheumatoid arthritis causing typical joint erosions in hand radiographs. Since the 1970s the average age at onset of rheumatoid arthritis has increased by more than five years, and consequently the age-standardised incidence of the disease has declined by 15 per cent. It is expected that the prevalence of the disease will continue to fall in the near future. Rheumatoid arthritis is a major cause of functional disability, and poses a significant drain on the health care system. Severe disabilities due to rheumatoid arthritis have sharply decreased in recent decades, which is probably explained in large part by treatment.

Discussion

The declining prevalence of musculoskeletal diseases will compensate for the extra burden caused by the changes in the age structure to health care and social insurance, but advances in treatment methods will nevertheless drive up the need for services. Treatment and rehabilitation greatly improve the functional capacity of patients, and they should be universally available. Known risk factors for musculoskeletal diseases that can be modified include heavy physical labour and repetitive strain, accidents, smoking, overweight, lack of physical exercise and driving. General health promotion and the aim of a physically active, health-oriented way of life are key to the effective prevention of musculoskeletal diseases.

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Olli Impivaara

Osteoporosis

Osteoporosis (bone loss) is associated with most fractures in adults. Due to these fragility fractures osteoporosis causes increased mortality, much disability and substantial economic costs.

Osteoporosis is characterised by low bone mass and deterioration of bone tissue, with a consequent increase in bone fragility and susceptibility to fracture, especially in old age. The public health impact of osteoporosis lies in these fragility fractures which result in increased mortality, much disability and substantial economic costs. The strength of bone in later life depends on the peak bone mass reached during growth and on the subsequent rate of bone loss. Bone mass and findings related to osteoporosis vary widely between individuals and populations according to hereditary factors and lifestyles. Moreover, osteoporosis may be caused by certain illnesses and pharmacotherapies. At all ages, physical exercise and adequate intakes of calcium and vitamin D are essential for bone health, whereas tobacco smoking, excessive salt intake and heavy alcohol consumption have detrimental effects.

Dual energy X-ray absorptiometry (DXA) is the current method of choice for the diagnosis of osteoporosis. DXA results are generally classified by means of reference values derived from young healthy women, as proposed by the WHO. However, a uniform diagnostic classification is not always reached because the values measured by various DXA systems are not commensurable, and the reference ranges and classification practices vary. Divergent practices confuse the classification since an individual may be deemed osteoporotic at one skeletal site but normal at another site, and the classification therefore depends on how the measurements at one or more sites are taken into account at the individual level. The diagnostic classification should therefore be made more consistent. In any case, low bone mass appears to be common in Finland. In a survey of Finnish men and women aged 57–65, two per cent of men and 14 per cent of women had osteoporosis in the proximal femur or in the lumbar spine, according to the WHO criteria. Osteopenia was similarly diagnosed in 40 per cent of men and 56 per cent of women.

Population screening for osteoporosis is not justified. Instead, the health care system should be encouraged to detect patients at high risk of bone fracture, to evaluate them clinically, and offer them treatment and care as appropriate. Such patients include those with suspected or confirmed osteoporosis, liability to fall, or a sustained fragility fracture in the past.

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Jouko Lönnqvist

Mental health problems

Mental health problems are equally common in Finland as in other western countries. No major changes seem to have occurred in the prevalence of mental disorders. The lifetime prevalence of psychosis is 3 per cent. During the past year 5 per cent have experienced severe depression and 5 per cent anxiety disorders. 7 per cent of men and 1.5 per cent of women suffer from alcohol dependency.

Mental symptoms

Mental symptoms are common and part of the normal human response to stress, provided that they are temporary. In spring 2005, 21 per cent of working age men and 25 per cent of women reported sleeplessness during the past month. The corresponding figures for depressiveness were 10 per cent and 12 per cent. Furthermore, 17 per cent of men and 18 per cent of women thought they were more stressed than other people. The numbers who said they felt stressed in the working-age population increased in the 1980s and 1990s, but this trend has come to a halt in the 2000s. According to the General Health Questionnaire, mental health symptoms in the Finnish population were as common in the early 2000s as they were 20 years earlier (Figure 22). In the working age population 4 per cent report having used tranquillizers, 4 per cent antidepressants and 5 per cent sleeping pills during the past week. Finnish adults and children have mental symptoms equally often as people in other western countries.

Mental health disorders

The proportion of people suffering from mental health disorders during the past year ranges in different countries from 20 to 29 per cent. Different mental health disorders often present simultaneously. In western countries mental health disorders account for more than one-fifth of all health-related disorders. In Finland 43 per cent of all people on disability pension in 2004 had been awarded the pension

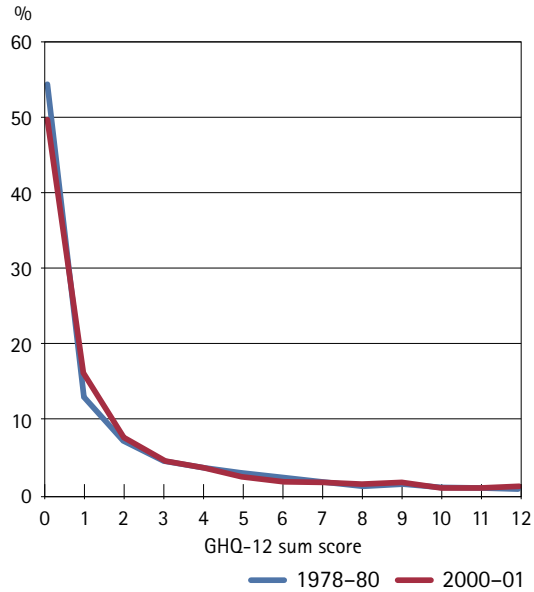

Figure 22. Perceived psychological well-being according to the GHQ-12 measure in 1978–80 and 2000–01 (source: Aromaa and Koskinen 2004).

Jouko Lönnqvist wrote the chapter in the original Finnish report and revised the shortened English version.

on grounds of mental health and behavioural disorders. Depression is a very severe public health problem on account of its high prevalence and the harm and damage it causes. During the past year 5 per cent of the adult population have experienced a severe episode of depression. The lifetime prevalence of all psychoses, including schizophrenia, is 3 per cent. Among adult men 7 per cent suffer from alcohol dependency, among women the figure is 1.5 per cent. During the past year 4 per cent of men and 5 per cent of women have suffered from anxiety disorders, but the symptomatology and harm associated with these disorders are less severe than those of the disorders discussed above. The symptomatology of burnout falls in the middle ground between anxiety and depression.

Depression

Among women more than 6 per cent and among men more than 3 per cent have suffered a severe episode of depression during the past year (Table 10). One-fifth or 19 per cent of all disability pensions in 2004 were awarded on grounds of depressive disorders. Several western countries including Finland have launched national programmes aimed at the prevention and treatment of depression. The main focus is to provide effective treatment for individual depressive episodes and to prevent recurrence. The prospects of successful treatment have improved, but in 1996 no more than 13 per cent of people suffering from severe depressive disorders were treated with antidepressants and a significant proportion of the rest received no treatment at all.

Depression is the most common mental health disorder among young people. In the age group 15–19, 6 per cent of girls and 4 per cent of boys suffered from severe depression in 1996. In the next five-year age group of young adults, the figure was up from 5 per cent to 9 per cent: 11 per cent among women and 8 per cent among men.

Psychoses

Psychoses take up a significant proportion of the resources of psychiatric health care services. This is because the illness often presents at a young age, acute episodes often require hospitalisation, the spells of illness tend to be very long, and pharmacotherapy lasts several years. Psychoses have dramatic effects on the individual's functional and working capacity as well as on their quality of life. Very often psychoses also involve considerable need for social support from the patient's immediate environment and from the treatment system. New antipsychotic drugs have helped to improve patients' quality of life and improved compliance to treatment that is necessary for successful long-term care.

The single most important psychosis is schizophrenia. Schizophrenia usually causes long-term disability and need for care and therefore imposes a great burden upon society. The risk of

Table 10. 12 month prevalence (%) of mental disorders[1] in 2000–01 in Finland (source: Pirkola et al. 2005).

Disorder/Symptom	Women	Men	All
Major depressive disorder	6.3	3.4	4.9
Any anxiety disorder	4.8	3.7	4.2
Alcohol dependence	1.4	6.5	3.9

[1] CIDI -DSM-IV

falling ill with schizophrenia is the greatest among young adults. It seems that the incidence of the illness is decreasing.

Substance abuse and substance-related disorders

Almost 8 per cent of working age men and less than two per cent of working age women in Finland suffer from alcohol dependence. The increasing level of total alcohol consumption is driving up the prevalence of alcohol dependence and other mental health disorders. Alcohol-related deaths account for 6 per cent of all deaths in the country, among young men the proportion is roughly one-half. The treatment of alcohol dependence, intoxication and alcohol-related diseases presents a huge burden on the health and substance abuse services. The steps taken in 2004 to cut alcohol prices and make it more easily available have resulted in a significant increase in alcohol-related harm.

Alcohol is the single most important intoxicating substance in Finland. The number of drug abusers in need of treatment is also rising. In 1999 around half a per cent of the Finnish population aged 15–55 were amphetamine or opiate problem users.

Drug abuse increased among children and youths in the 1980s and 1990s, but no longer in the early 2000s. In 2005 one-fifth or 20 per cent of Finnish youths aged 14–18 drank to the point of severe intoxication at least once a month, 5 per cent at least once a week. Binge drinking among Finnish youngsters is more common, but drug use less common than in Europe on average.

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Jouko Lönnqvist

Suicides

Suicides decreased by almost 40 per cent among men and by 25 per cent among women from 1990 to 2004. Compared with other countries in Western Europe, however, suicide mortality is still quite high in Finland. Suicides account for one-third of all deaths among young adults in Finland.

The suicide rate in Finland increased periodically from the end of the Second World War through to 1990. Since then, the number of suicides among men has dropped by almost 40 per cent and among women by 25 per cent (Figure 23) Suicides are almost four times as common among men as they are among women. In the work-age population only CHD and among women breast cancer are more common causes of death than suicides, the importance of which is underlined by its high prevalence among young adults: in the age group 15–34 suicides account for 40 per cent of male and 25 per cent of female mortality.

Finland has a particularly high male suicide mortality rate (Figure 24). However, compared with the rest of Western Europe, suicide mortality is also quite high among women.

Among the major underlying causes of suicide are mental health problems, particularly depression and alcohol problems, negative life events, lack of social support and serious somatic illnesses. Successful prevention of suicides requires early detection and treatment of depression, the prevention of alcohol problems and the treatment of mental health problems and particularly depression and alcohol addiction in connection with severe personality disorders. The treatment of psychoses and support in life crises disorders are also important to reducing the risk of suicide.

Finland has had good success in the prevention of suicides, which have decreased by almost one-third from 1990 to 2004. One of the contributing factors has been the growing acceptance of depression as a problem that can be effectively treated.

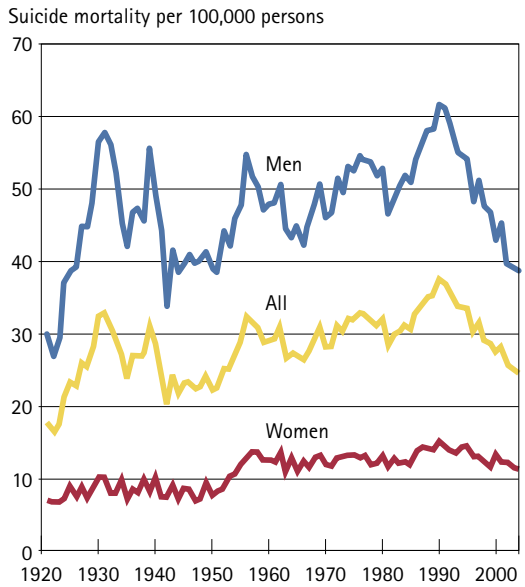

Figure 23. Suicide mortality per 100,000 population in Finland in 1921–2004 (source: Statistics Finland).

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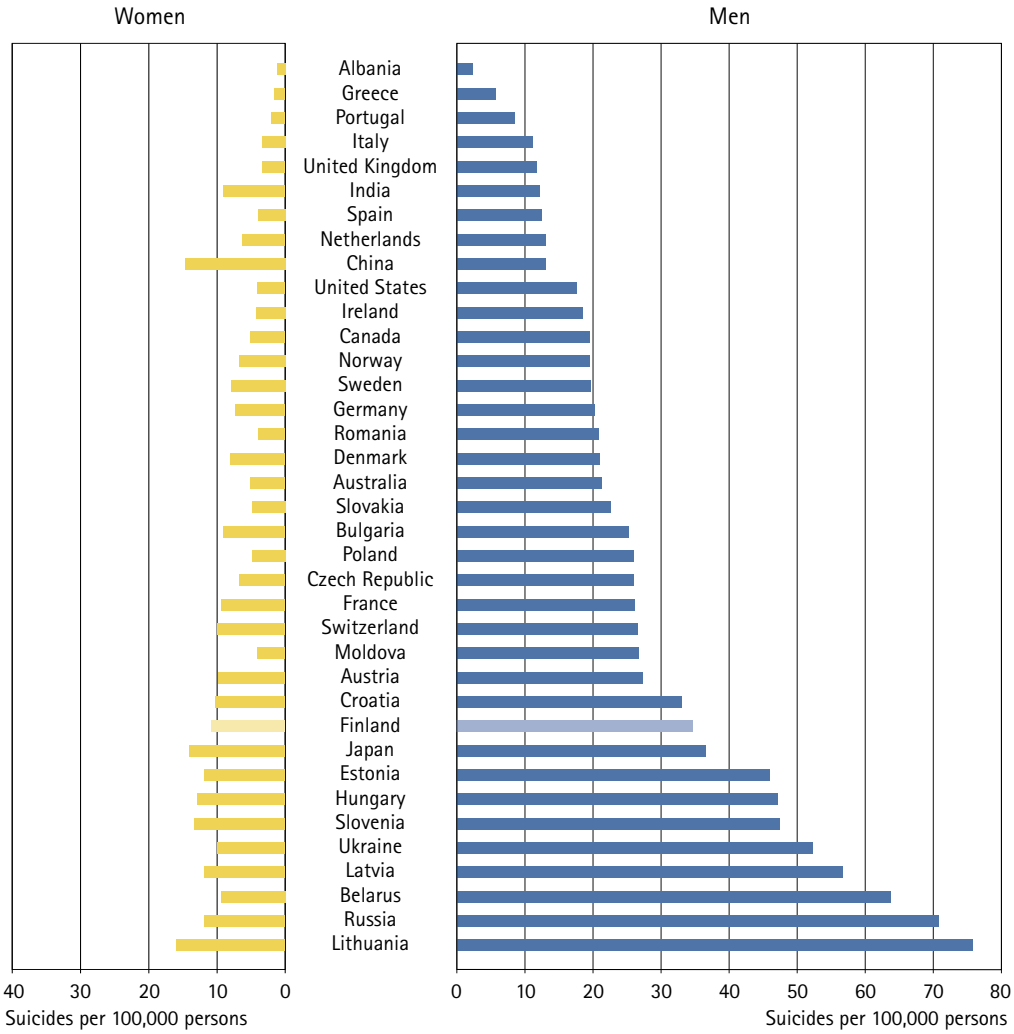

Figure 24. Suicide rates per 100,000 population in selected countries in 2000[1] (source: http://www.who.int/mental_health/prevention/suicide/suiciderates/en/, accessed 16.3.2006).

[1]Latest data from 1998-2001

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Lyly Teppo, Eero Pukkala, Risto Sankila

Cancers

Cancer is the main cause of death after cardiovascular diseases. More than one in four people in Finland are diagnosed with cancer during their lifetime. Internationally, cancer mortality in Finland is at an exceptionally low level.

As in other advanced western countries, cancer is the second most common cause of death in Finland after cardiovascular diseases. More than one in four people in Finland fall ill with cancer at some stage in their life, and malignant tumours are responsible for almost one in five deaths.

There have been only minor changes in the age-standardised incidence of total cancer in males since 1955, while the occurrence of different types of cancer has changed (Figure 25). Incidence rates have decreased for cancers of the stomach, oesophagus, larynx and lip, and since the 1970s very sharply for lung cancer. The single biggest factor behind the decrease in cancers of the lung, larynx and lip is the decrease in smoking since the 1960s.

The incidence of cancer of the urinary bladder and tumours of the brain and nervous system increased until the early 1990s, which is probably due to improved diagnostics. The increase in prostate cancer rates gathered speed in the early 1990s with the growing use of serum PSA determinations. Since 1993, prostate cancer has been the most common cancer in Finnish

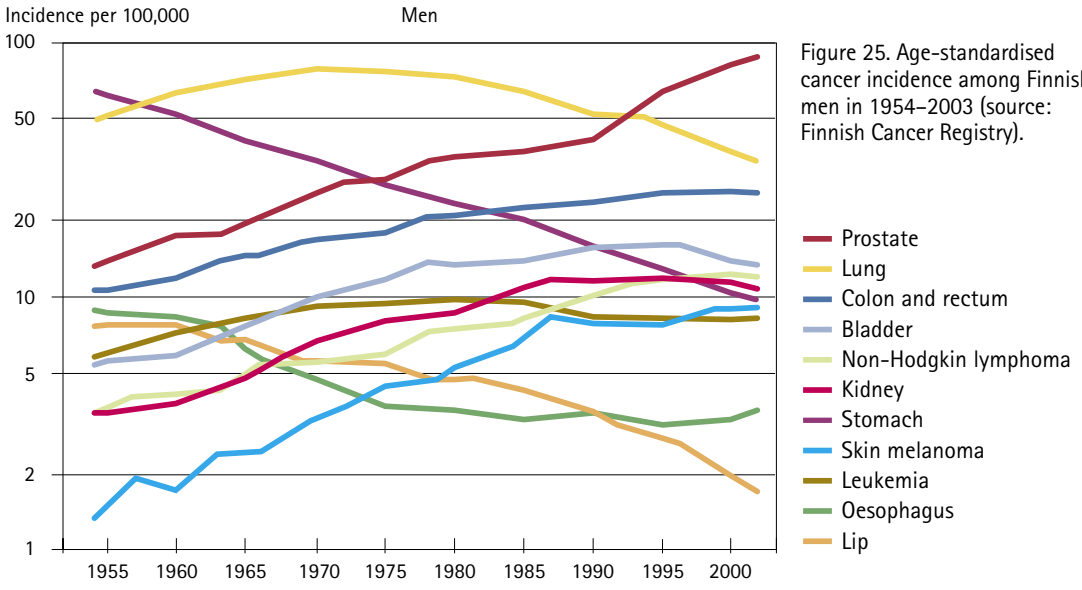

Figure 25. Age-standardised cancer incidence among Finnish men in 1954–2003 (source: Finnish Cancer Registry).

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men. Changes in dietary habits are at least partly accountable for the increased rates of intestinal cancer. The increased incidence of skin melanoma probably has to do with the growing popularity of sunbathing.

Total cancer morbidity among women has slightly increased since the 1950s. Almost half of all new cancers in women are detected in the breast or genital organs. The incidence trends for most cancers among women have followed similar patterns as among men: stomach and oesophageal cancers have decreased, while intestinal, kidney and urinary bladder cancers as well as skin melanoma and tumours of the central nervous system have become more common (Figure 26). The incidence of lung cancer among women has increased, which is due to the growing number of female smokers.

Cancer is rare among people aged under 40 years, but the risk then begins to increase very rapidly. Only 5 per cent of all cancer patients are under 40 at the time of diagnosis. Children account for less than one per cent of all cases of cancer in the population. The most common types of cancer in children are brain tumours and leukaemia.

Cancers associated with low socio-economic status include cancers of the oesophagus, stomach and uterine cervix. Lung cancer is most common in men in the lowest socio-economic groups: the incidence among men with basic schooling is up to four times higher than among men with an academic degree. Women's lung cancer was most common in the highest socio-economic groups until the 1970s, but since then it has increased in the lowest social class. Cancers of the colon and rectum, breast, uterine corpus, prostate and testis are clearly associated with a high social status.

The prognosis of cancer patients has continuously improved. In patients whose cancer was diagnosed around 2000, the five-year relative survival rate (60%) was 11 percentage

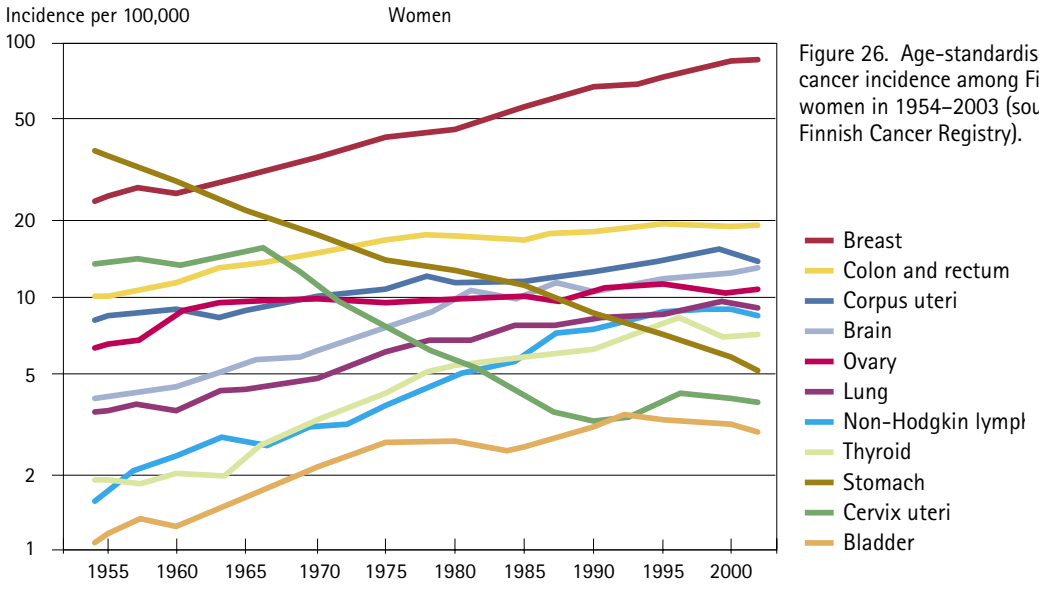

Figure 26. Age-standardised cancer incidence among Finnish women in 1954–2003 (source: Finnish Cancer Registry).

points higher than for patients whose cancer was detected 20 years earlier. Part of the explanation lies in the earlier detection of cancer, part in improved treatments.

The changes in the incidence and prognosis of cancer have resulted in a steady decline in male cancer mortality during the past 20 years. The mortality figures for women have changed less dramatically. Internationally, cancer mortality in Finland is at an exceptionally low level (Figure 27).

Risk factors for cancer

Smoking is the single most important risk factor for cancer. It is responsible for over 90 per cent of all lung cancers. Indeed, differences in smoking explain almost all of the changes in the incidence of lung cancer and part of the changes in some other cancers, as well as the differences between population groups. About 5 per cent of all cancers are probably associated with alcohol use. Heavy alcohol use together with smoking may increase the risk of cancer of the upper part of the digestive tract.

Around one-third of all cancers are related to nutrition. Regular physical exercise reduces the risk of many cancers. It also seems that having a large number of children, young age at first childbirth and a small number of menstrual cycles have a protective effect against cancers of the breast, ovary and uterine corpus. Changes in the incidence of these cancers and the differences seen between population groups are largely explained by variations in these factors.

It is estimated that factors in the work environment cause no more than 2–5 per cent of all cancers. Air pollution increases the risk of lung

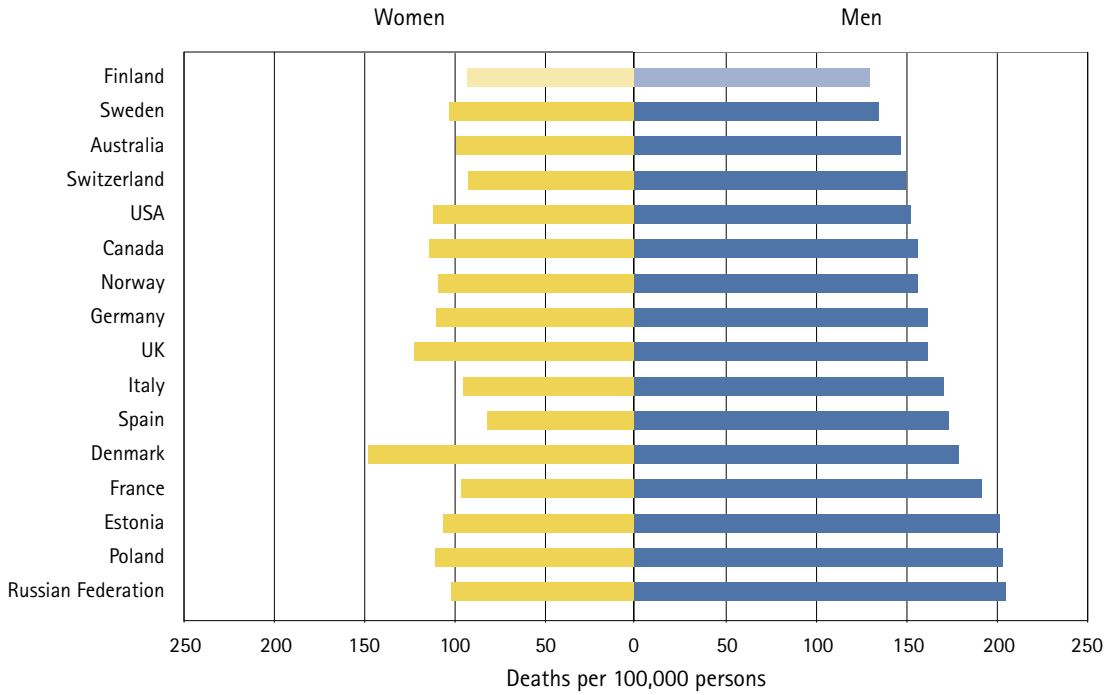

Figure 27. Age-standardised cancer[1] mortality in selected countries, 2002 estimates (source: Globocan 2002, IARC).

[1] All sites but skin

cancer, but its role is insignificant when compared to smoking. Ionizing radiation can cause cancer and recurring sunburn increases the incidence of skin melanoma. The lowered incidence of stomach cancer probably is attributable to the reduced occurrence of Helicobacter pylori infections.

Future outlook

Forecasts are that the age-standardised total cancer morbidity of Finnish men will not increase, but that of women will. It is predicted that the incidence of cancers with a poor prognosis, such as lung and stomach cancers, will decrease, thus improving the average prognosis of cancer patients. The number of people diagnosed with cancer will increase very rapidly because of population ageing, increasing risk of cancer in women and improving prognosis of cancer.

If all smokers in Finland were to give up smoking today, the incidence of lung cancer in men would decrease by around 80 per cent in just two decades. Cancer takes a long time to develop, and consequently changes in carcinogenic exposure manifest only after a lengthy time lag.

Cancer mortality can also be reduced by developing early detection and treatment of cancer. Screening programmes have reduced the incidence of cervical cancer to one-quarter since the 1960s. In 1987 Finland was the first country in the world to introduce nationwide mammography screening for breast cancer. As a result breast cancer mortality of the participating women aged 50–59 will be reduced by around 25 per cent. In 2004, a screening programme for colorectal cancer was launched. A major trial of prostate cancer screening by using serum PSA determination is ongoing.

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Pauli Leinikki, Eija Kela, Petri Ruutu

Infectious diseases

Common infectious diseases continue to remain a major public health burden. In addition to the well known diseases, new communicable diseases such as EHEC and bird flu may cause serious harm. Also the problem of increasing resistance to antibiotics needs to be tackled.

Improving standards of hygiene, excellent living conditions and effective prevention and treatment have helped to do away with many epidemics in Finland. Nonetheless infectious diseases continue to remain a major threat to the health of the Finnish people. Some diseases that were thought to have been eradicated have reappeared; examples include the polio epidemic in the 1980s and the cases of diphtheria that surfaced in connection with the Russian epidemic in the 1990s. New infectious diseases discovered over the past few decades include HIV, EHEC, Lyme disease and pulmonary chlamydia. An old infectious disease (such as influenza) may also mutate into new forms. Microbes may cause chronic diseases such as gastric ulcers, stomach cancer and cervical cancer. The social and economic impacts of infectious diseases are often underestimated because those impacts are not fully reflected in statistics on causes of death, hospital admissions and outpatient care.

The National Public Health Institute maintains a nationwide register of infectious diseases in which data are collected from both medical doctors and the laboratories confirming their diagnoses. Each year 50,000 notifications are entered into the register, providing an accurate reflection of changes in the infectious disease situation. In the late 1990s the infectious disease register was complemented with notification systems for suspected epidemics and hospital infections. The monitoring system supports regional and local health care services by providing up-to-date information on the current situation.

Serious bacterial diseases

Microbes can spread in the human body through the bloodstream and cause a generalised infection (septicemia). If untreated, this kind of infection can be life-threatening: almost one-quarter of all adults affected and 4 per cent of children die in spite of receiving treatment. The most common pathogenes are staphylococci and pneumococci, among older people also E. coli and in children streptococci. Haemophilus influenzae type B (Hib), which used to be a common cause of serious infections in children, was eradicated in the late 1980s by immunisation. Three in four persons with a serious bacterial infection have some predisposing illness.

Respiratory infections

Respiratory infections are the main cause of absence from day care, school and work. The influenza A virus causes severe epidemics from time to time leading to 1,500 extra deaths. The annual incidence of pneumonia is around 12 cases per 1,000 population; in the age groups under 5 and over 75, the incidence is three times higher than in the population on average. A significant proportion of pneumonia cases could be prevented by immunisation. During their first years of life children suffer on average 5–10 respiratory

Pauli Leinikki wrote the chapter in the original Finnish report and together with Eija Kela and Petri Ruutu revised the shortened English version

infections a year. By their second birthday 70 per cent of all children have suffered at least one spell of otitis, almost 30 per cent at least three. Determined and persistent efforts have helped to reduce pulmonary tuberculosis morbidity to 6.6 cases per 100,000 in 2005, only 3 per cent of the level prevailing at the early 1960s (Figure 28). Multiresistant tuberculosis strains have occurred only occasionally.

Food and waterborne infections

Salmonella infections in humans and domestic animals are more common in the EU and in Finland's neighbouring regions than in Finland. The number of new salmonella cases reported each year is less than five per 10,000 population, and around 85 per cent of all infections originate from abroad. The food monitoring system is at least partly to credit for this situation. A new mechanism introduced in 1998 for the notification of suspected food and waterborne epidemics has revealed several new outbreaks. Each year there are around seven campylobacter infections per 10,000 population; about 70 per cent of these infections are contracted abroad. Yersinia has caused several foodborne epidemics. The first indigenous EHEC epidemic was reported in summer 1997, but since then no more than a few isolated cases have appeared annually. Norovirus has caused a number of major epidemics, prompting several local authorities to make improvements to their water supply systems.

Other digestive tract infections

Helicobacter pylori infections are very common. They are implicated in the pathogenesis of gastric and duodenal ulceration as well as in stomach cancer. Antibodies are found more often in older than in younger people, and the infection is in fact receding.

Viral hepatitides

The prevalence of hepatitis A began sharply to decline in the 1950s. Today less than one per cent of the adult population have antibodies against the disease. Sources of the disease have included food and contaminated drugs. Hepatitis A vaccinations have been offered to intravenous drug users in Finland since 2005. Hepatitis B, which spreads through infected blood or unprotected sex, caused a number of epidemics among IDUs in the 1990s. Needle and syringe exchange programmes and vaccinations offered at exchange centres have helped significantly to reduce the incidence of

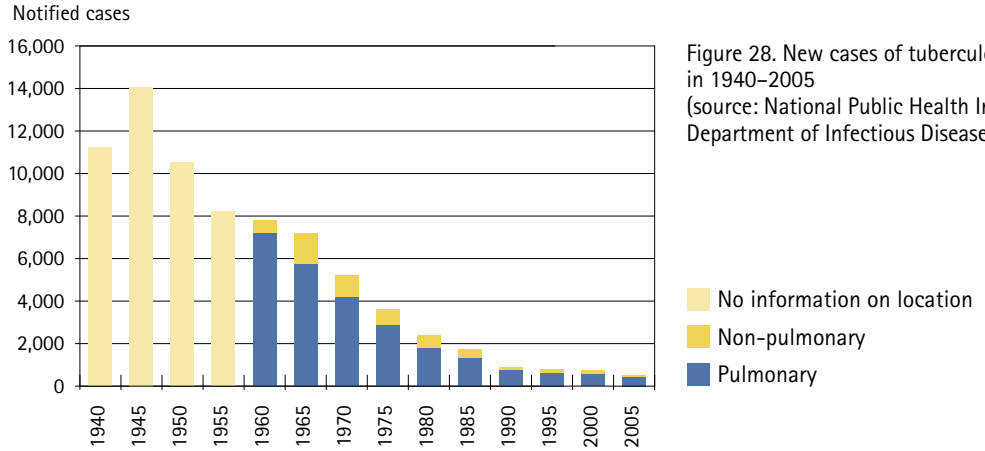

Figure 28. New cases of tuberculosis diagnosed in 1940–2005
(source: National Public Health Institute, Department of Infectious Disease Epidemiology).

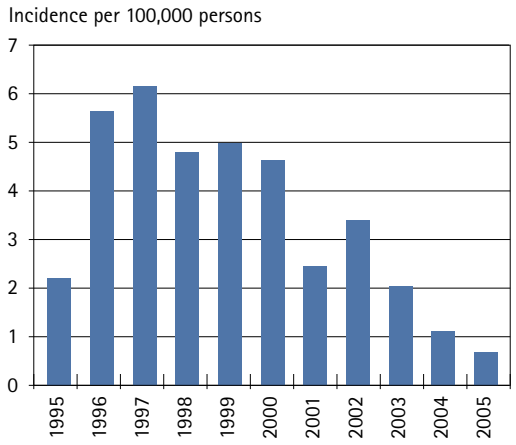

Figure 29. Incidence of acute hepatitis B diagnosed in 1995–2005
(source: National Public Health Institute, Department of Infectious Disease Epidemiology).

hepatitis B (Figure 29). Hepatitis C is transmitted in Finland almost exclusively through joint use of needles and syringes. One in five of those infected are at risk of developing a serious liver disease over the next 20 years. The needle and syringe exchange programme has also reduced the occurrence of hepatitis C.

HIV and AIDS

HIV and AIDS are less common in Finland than in most other countries. In the late 1990s an epidemic spread among some 200 IDUs in the greater Helsinki region, but the outbreak was effectively contained by counselling and the needle and syringe exchange programme (Figure 30). Most infections through heterosexual contact originate from other countries. Advances in pharmacotherapy have helped to reduce AIDS morbidity by one-half and mortality to one-tenth compared to the situation in the mid-1990s.

Sexually transmitted diseases

A sentinel system has been set up as one of the tools to monitor the prevalence of sexually transmitted diseases. The system comprises various points of contact for patients who suspect they are infected. The sentinel system provides a continuous source of information on the role of tourism, prostitution and other risk factors as well as on variations in these factors.

The most common sexually transmitted disease in Finland is chlamydia, which is diagnosed in more than 13,000 people each year (around 25/10,000 population, see Figure 31). The increasing prevalence of chlamydia is at least partly due to the development of diagnostics. Each year chlamydia causes some 2,400 serious ovarian infections and 1,800 ectopic pregnancies. The occurrence of gonorrhoea has sharply decreased to around 0.5/10,000 (Figure 31). The annual number of syphilis cases is around half the number of gonorrhoea cases. The papilloma

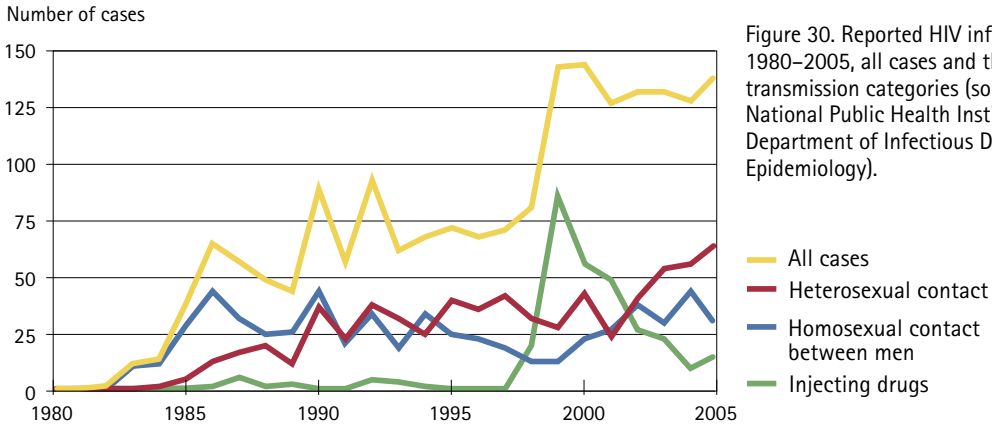

Figure 30. Reported HIV infections in 1980–2005, all cases and the major transmission categories (source: National Public Health Institute, Department of Infectious Disease Epidemiology).

virus is a major cause of cervical cancer, and a vaccination is now being tested. Sexually transmitted herpes infections are also common.

Hospital infections and antibiotic resistance

Around 3–5 per cent of hospital patients develop a hospital-acquired infection, resulting on average in four additional bed days and causing considerable extra costs. Hospital infections cause some 500 deaths each year and are a contributing factor in a further 1,500. Infections caused by antibiotic-resistant microbes present a growing problem. All strains of microbes have developed significant resistance to all types of antibiotic drugs. The problem mainly affects hospitals, but it is also a significant cause of concern in outpatient care. In some countries the penicillin-resistant pneumococcus is responsible for up to one-half of all pneumococcus infections, but in Finland less than one per cent are resistant strains. Methicillin-resistant Staphylococcus aureus and multiresistant tuberculosis are also serious threats.

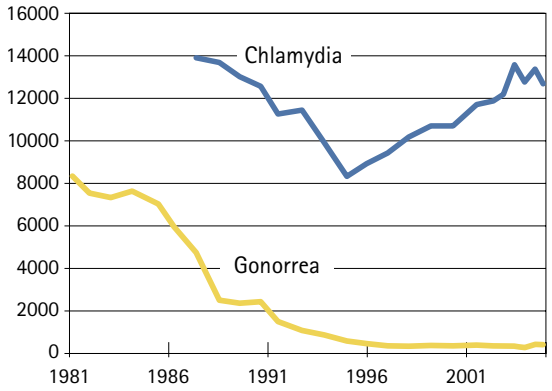

Figure 31. Reported cases of chlamydia and gonorrhoea in 1981–2005 (source: National Public Health Institute, Department of Infectious Disease Epidemiology).

Table 11. Prevalence of diseases preventable by immunisation before the beginning of immunisation and in 2005 (source: National Public Health Institute, Department of Infectious Disease Epidemiology).

Disease	Number of reported cases before immunisation (year)	2005
Diphteria	17 899 (1945)	0
Whooping cough	18 969 (1952)	1631
Polio	623 (1956)	0
Measles	11 353 (1974)	0
Mumps	15 543 (1959)	1
Rubella	6 418 (1979)	0
Tuberculosis	46 351 (1950)	347*
Hepatitis B	286 (1992)	57
Haemophilus disease	174 (1986)	1

*Includes tuberculosis of the lungs and other organs

Immunisation

Many serious infectious diseases have been virtually eradicated by means of immunisation (Table 11). The free vaccination programme provided through maternity clinics and schools is highly effective and ranks among the best in the world. The population generally takes a positive attitude to immunisation and consequently the coverage of immunisation is as high as 98–99 per cent. Vaccines for measles, rubella and mumps were added to the programme in 1982 and for Hib (haemophilus) in 1993. Booster vaccinations against tuberculosis in children were abandoned as tuberculosis morbidity had dropped to a very low level. Vaccines against hepatitis B and influenza are only provided for at-risk groups.

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Kaj Koskela, Pekka Eränkö

Chronic bronchitis and chronic obstructive pulmonary disease

Smoking is the most common cause of chronic obstructive pulmonary disease. There are also hereditary and work-related causes. 11 per cent of Finnish people aged 30 or over have symptoms of chronic bronchitis.

Chronic bronchitis is preceded by a stage in which bronchial symptoms are present in connection with respiratory infections, stress or allergen exposure. In some chronic bronchitis patients the condition develops into chronic obstructive pulmonary disease, leading to small airways disease and often emphysema. The prospects for intervention are the best in the early stages of the disease, and therefore resources should be focused upon prevention, early detection and active early treatment (Figure 32).

The most important risk factor for chronic obstructive pulmonary disease is smoking; 15–20 per cent of smokers fall ill with the disease. Other risk factors include inherited alpha1-antitrypsin deficiency as well as work-related causes, such as dust in the workplace, particularly quartz, asbestos, and wood dust, fluorides, and dust exposure related to the handling of animal fodder. In Finland chronic bronchitis is three times as common in farmers as in the rest of the population.

In the Finnish population aged 30 or over, 11 per cent suffer from chronic bronchial coughing. The symptom has become less common among men and more common among women over the past decades. All in all there are some 400,000 people in Finland with chronic bronchitis, and

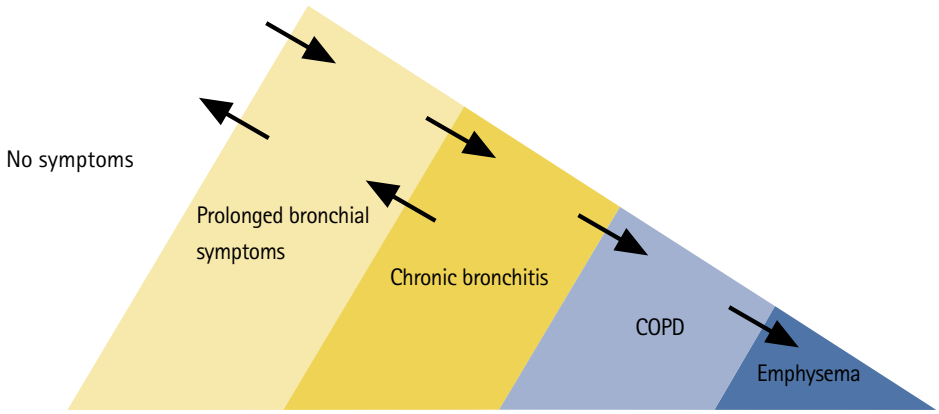

Figure 32. Course of chronic obstructive pulmonary disease.

Kaj Koskela† wrote the chapter in the original Finnish report, Pekka Eränkö revised the shortened English version

almost half of them have COPD. Each year chronic bronchitis and COPD account for almost one million outpatient visits, and 0.14 per cent of the population is admitted to hospital for treatment. COPD kills around 1,000 people in Finland each year.

The prevalence of COPD reflects changes in the population's smoking habits at a certain time lag. Population ageing increases the prevalence of both chronic bronchitis and COPD. Treatment helps to extend patients' lives. The decrease in smoking among men in the past decades will lower the incidence rate of the disease, while the increase in smoking among women will in turn increase the number of new cases.

The key to the prevention of COPD is to reduce smoking. Steps are also needed to reduce exposure in the workplace and in outdoor air, and to improve the quality of indoor air. Furthermore it is important that improvements are made to the early detection of chronic bronchitis and COPD, particularly among smokers. Active treatment is needed from the very earliest stages of the disease. Smoking cessation is the most important goal. Treatment includes eliminating the causes of the disease, early rehabilitation and supervised self-care treatment, pharmacotherapy, hospital treatment where necessary and rehabilitation. Oxygen therapy at home can help to reduce the need for institutional treatment in people suffering from severe obstructive lung disease and to increase their life expectancy.

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Tari Haahtela

Allergies and asthma

Asthma and allergic rhinitis have markedly increased during the past 40 years. Among adults 15–20 per cent suffer from allergic rhinitis, 2–6 per cent from asthma, 2–5 per cent from atopic eczema and 1–2 per cent from allergies to foodstuffs.

Prevalence and harm associated with allergies

Evidence from population surveys and health care registers suggests that the number of allergy and asthma patients has markedly increased in recent decades. Among conscripts, for example, the number of asthma diagnoses increased 12-fold from 1966 (0.29%) to 2003 (3.45%). The prevalence of allergic rhinitis remained low until 1970 but then began steadily to increase. The prevalence of atopic eczema, however, has remained fairly constant since the early 1980s. The increase in the prevalence of clinical allergies has been in line with the increasing level of serum specific IgE antibodies from the 1970s to the 1990s in randomly selected Finnish general populations.

The most significant diseases within the family of allergies are atopic (IgE-associated) conditions. Asthma, allergic rhinitis and atopic eczema are now among the most common long-term illnesses in children and youngsters. With the exception of atopic eczema and food allergies, allergic diseases are equally common in the adult population (Table 12). Allergic reactions to drugs and insect stings are also common. Severe generalised allergic reactions, anaphylaxis, also seem to be on the increase, but no definite figures are available. In 1999 an anaphylaxis register was founded in Finland to better understand the causes and consequences of life-threatening reactions.

Other immunological mechanisms are also involved in allergies, such as allergic contact dermatitis and hypersensitivity pneumonitis like farmers' lung. Nickel allergy has increased considerably, and at least 10 per cent of teenage girls who wear nickel-containing jewellery get contact dermatitis.

Table 12. Allergy prevalence estimates in the Finnish population (Academy of Finland and the Finnish Medical Society Duodecim consensus meeting 1998).

	Adult population	12–18-year-olds
Allergic rhinitis	15–20	20–25
Asthma	2–6	5–7
Wheezing	5–10	13–20
Atopic eczema	2–5	15–19
Contact dermatitis	15	2–20 (men, women)
Food allergy	1–2	10*

* under 6-year-olds

Tari Haahtela wrote the chapter in the original Finnish report and revised the shortened English version.

Asthma accounts for over 3 per cent of all outpatient visits and other allergies for around 2 per cent. Among children, 6 per cent of outpatient visits to the doctor are because of asthma, and other allergies account for the same proportion. Around 2 per cent of disability pensions are granted on grounds of asthma and allergies.

Although the number of people entitled to special reimbursement for asthma medication has increased almost fourfold in the past 20 years, hospital admissions and mortality due to asthma have decreased at the same time by at least 80 per cent in relation to the number of asthmatics. During the past 10 years disability pensions awarded because of asthma have decreased by around 70 per cent. The treatment of allergies and asthma has improved considerably and the Finnish Asthma Programme 1994–2004 had a major impact on asthma morbidity. However, asthma is still the second most prevalent disease after hypertension in the drug reimbursement register (around 220,000 patients in 2005).

Allergies and asthma account for around 4 per cent of total health care costs. In 2003 asthma caused total costs of 214 million euros (disability, outpatient visits, hospital care, drugs). Furthermore, allergic diseases are a major source of indirect costs, including the renovation of homes, schools and workplaces that cause allergic symptoms (e.g. buildings damaged by moisture and mould).

Impact of living environment

The growing prevalence of atopic conditions is associated with environmental changes. Living conditions have greatly improved in affluent countries. The microbial environment has changed significantly with improving standards of water and food hygiene, immunisation programmes and antibiotics. The overall microbial load in cramped housing and poor hygienic conditions seem to have provided protection against atopic allergies through constant stimulation of innate immunity. Improved hygiene and living conditions have reduced dangerous childhood infections, but hindered the development of natural tolerance against harmless environmental proteins, such as pollens and animal dusts.

Breastfeeding up to six months of age, the introduction of solid food beyond the age of six months and a tobacco smoke-free environment may slightly reduce the risk of allergy during early childhood. Otherwise, there are no evidence-based means for the primary prevention of allergies. For effective prevention we need much more data on the environmental factors predisposing to allergic diseases.

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Antti Reunanen

Diabetes

Some 0.9 per cent of the Finnish population have type 1 diabetes and 3.7 per cent have type 2 diabetes. Both type 2 diabetes and type 1 diabetes, which emerges in childhood, are continuously increasing.

In the Finnish population 4.5 per cent have diabetes that requires medical attention. Roughly the same number have asymptomatic diabetes that will only show up in a glucose tolerance test. Some 0.9 per cent have type 1 diabetes and 3.7 per cent have type 2 diabetes, the majority of whom take diabetes medication (Table 13). The incidence of type 1 diabetes is highest in childhood and youth. Type 2 diabetes begins to increase after age 30 and peaks at retirement age. Finland has long had the world's highest prevalence of type 1 diabetes (Figure 33). The incidence of type 2 diabetes is at a fairly high level compared with other Western countries.

Diabetes has increased considerably. The incidence of type 1 diabetes has quadrupled since the beginning of the 1950s, and it is estimated that the numbers with type 2 diabetes as a proportion of the population aged 30 or over have increased 10-fold during the past 50 years. It is thought that the increase in the occurrence of type 2 diabetes is largely due to overweight and increasing physical inactivity. The reasons for the growth of type 1 diabetes are not known.

Unless the environmental factors predisposing to the disease are identified and successfully tackled, it is expected that the prevalence of type 1 diabetes will continue to rise. The numbers suffering from type 2 diabetes will increase as a result of the growth of overweight and population ageing, but interventions to change people's diet and physical exercise habits can help significantly to slow this increase.

Acute disorders of glucose balance due to diabetes are rare. Far more important than these are the late complications of diabetes that are due

Table 13. Prevalence (%) of diabetes in Finland at year-end 2005 (sources: Reunanen 2004, SII sickness insurance statistics 2005).

	Age group			
	0–29	30–64	65–	Total
All	**0.6**	**4.1**	**14.6**	**4.5**
Medication users	0.6	3.0	10.1	3.3
Type 1	0.5	0.8	1.7	0.9
Type 2	0.09	3.3	13.0	3.7
Medication	0.06	2.1	8.5	2.4
Diet	0.03	1.2	4.5	1.3

Antti Reunanen wrote the chapter in the original Finnish report and revised the shortened English version.

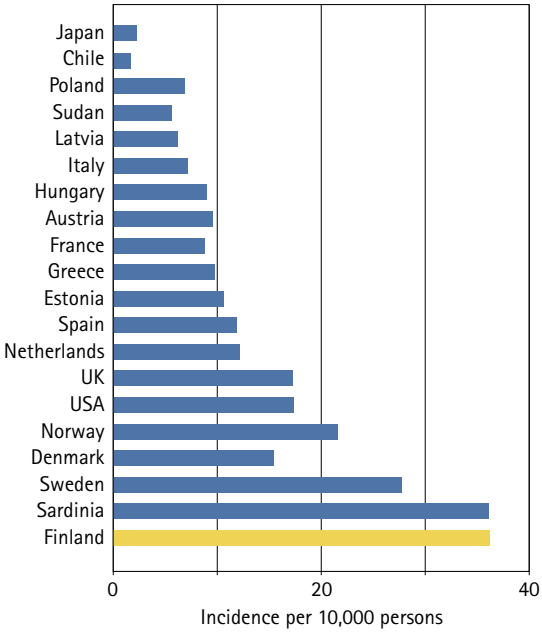

Figure 33. Age-standardised annual incidence of insulin-dependent diabetes in children under 15 in selected countries in the 1990s (source: Karvonen et al. 2000).

to the disorders in the structure and function of the small blood vessels that are typical of diabetes (retinopathy, nephropathy and neuropathy) and to atherosclerosis, which develops more rapidly in diabetes. Because of these complications mortality among diabetes sufferers is about three times higher than in the rest of the population.

The continuing growth of diabetes places an increasing drain on health care resources. One way to alleviate the situation might be through improved self-care. For purposes of preventing complications it is crucial to maintain a good glucose balance and to avoid the risk factors for arterial disease. It is at least equally important to prevent type 2 diabetes by reducing obesity and increasing physical exercise.

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Raimo Sulkava

Dementia

About 60 per cent of dementia patients suffer from Alzheimer's disease. Dementia increases steeply with age and in the age group over 85 about one-third suffer from moderate or severe dementia. With the growing number of older people in the population and the improving survival of patients with dementia, the number of dementia patients is set to increase very rapidly.

Dementia is a progressive brain disorder which causes sufferers to lose the capacity to look after themselves to the point that they are eventually dependent on others. Some 60 per cent of dementia patients have Alzheimer's disease, 15 per cent have vascular dementia and 15 per cent Lewy disease. Dementia increases sharply with age and in the age group over 85 about one-third have moderate or severe dementia (Table 14).

Dementia is the major cause of long-term institutionalisation among older people. More and more demented people can now take advantage of improved service housing facilities which provide a more inspiring and home-like care environment than traditional institutional care. Improvements in outpatient services, and home nursing and home help services in particular, have also allowed increasing numbers to continue to live at home. The burden placed on outpatient staff and particularly on family caregivers has clearly increased. At the same time patients in institutional care are ever more frail.

It is expected that the incidence of vascular dementia will decrease in the future by virtue of the prevention and treatment of circulatory diseases. However, the number of people with dementia will sharply rise as the population continues rapidly to age, and this is expected to increase the need for all forms of treatment unless there is a breakthrough in medication development that will halt the progress or even prevent Alzheimer's disease. The need for care is driven up not only by population ageing but also by the longer duration of the disease. The improved general health of dementia patients and better treatment have increased the average duration of Alzheimer's disease to around 11 years and that of vascular dementia to around 8 years.

Considered from the point of view of society at large, the main priority is to provide financial and other support to the family members looking after demented patients at home. At the same time, home nursing and home help services as well as short-term rehabilitation in institutional settings should be developed to provide as much support as possible to family members

Table 14. Prevalence of moderate and severe dementia according to Finnish population studies (sources: Sulkava et al. 1985, Polvikoski et al. 2001).

Age	Prevalence (%)
30–64	0.26
65–74	4.2
75–84	10.7
85–	35.0

Raimo Sulkava wrote the chapter in the original Finnish report and revised the shortened English version

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Sirkka-Liisa Rudanko

Visual impairments

In the Finnish adult population, 1.6 per cent are visually impaired and 0.5 per cent are blind. Almost 90 per cent of the visually impaired are aged 65 or over.

In Finland people are classified as visually impaired when their best corrected visual acuity of both eyes is less than 0.3 or their visual field diameter is less than 60 degrees. In cases with best corrected visual acuity of less than 0.05 or with a visual field diameter of less than 20 degrees, people are classified as blind. In the Finnish adult population (18 years or over), 1.6% are visually impaired and 0.5 % are blind. Various diseases associated with ageing, e.g. diabetes, glaucoma, cataract or retinal degeneration, may decrease visual acuity. In the population of working age the rate of visual impairment is only 0.3 per cent, whereas in the population aged 85 or over, the rate of visual impairment is as high as 30 per cent. In all, almost 90 per cent of the visually impaired in Finland are aged 65 or over.

In children and young people, three-quarters of the causes of visual impairment are prenatal. Prospects for the prevention of visual impairment in children have improved significantly during the past two decades, due to advances in neonatal intensive care and pediatric eye surgery as well as the adoption of an eye screening programme for prematurely born infants with low gestational age. Traumatic visual impairment has become rare.

In the population of working age, major causes of visual impairment include inherited retinal degenerations and diabetic retinopathy. However, the rate of visual impairment in individuals with diabetes has decreased by one-half due to regular eye screening for diabetic retinopathy, early treatment with laser and vitreoretinal surgery.

In the elderly, age-related macular degeneration, glaucoma and diabetes are the most common causes of visual impairment (60%, 9% and 8%, respectively). Other causes include cerebrovascular disorders, intracerebral tumours and multiple sclerosis. In most cases of glaucoma and diabetes, visual impairment can be prevented by effective treatment. For cases of age-related macular degeneration, prevention is not yet available. In cases of cataract, aged people are effectively operated on.

Despite advances in prevention and ophthalmologic care, the prevalence of visual impairment is expected to increase by one-third over the next two decades due to population ageing. Additional rehabilitation services need to be provided for the elderly with visual impairment so as to support their independent living in the home.

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Sirkka-Liisa Rudanko wrote the chapter in the original Finnish report and revised the shortened English version.

Timo Marttila

Hearing impairments

In the adult population around 4 per cent have at least moderately impaired hearing. The most important external cause of hearing defects is noise.

In children, most bilateral hearing impairments that require rehabilitation are due to hereditary inner ear defects. Rubella used to be a major cause of hearing defects, but the disease has now been eradicated with an immunisation programme that was launched in 1982. Universally the goal has been to diagnose significant hearing impairments before the age of 6 months.

The prevalence of hearing impairments in children is 1.3/1,000. Mild hearing impairments that adversely affect speech and language development are often discovered too late, which has serious consequences for both linguistic and psychological development.

Around 4 per cent of adults have at least moderately impaired hearing (pure tone average in the better ear >40dB HL; 0.5, 1 and 2kHz). In the age group under 45 the proportion is just 0.5 per cent, but among older people aged 85 or over the figure is over 50 per cent. Deafness (hearing threshold >80dB HL) is very rare before retirement age, but in the age group 65 or over 1.2 per cent and in the age group 85 or over around 4 per cent are deaf.

Around two-thirds of all hearing defects are due to age-related hearing loss. About one-fifth of hearing defects are caused by acoustic trauma. In recent years the incidence of hearing impairments caused by noise in the workplace has decreased, but there is growing concern about the damaging effects of loud music on hearing among young people. Even a minor loss of hearing may severely affect speech understanding and reduce working capacity.

One in three people in the population suffer from occasional tinnitus, one in six suffer continuously, for one in fifteen it is disturbing and for one per cent very disturbing. All people have tinnitus at some stage of their life or another. Underlying causes of disturbing tinnitus may include noise-induced hearing loss, Menière's disease, age-related hearing loss and depression.

Almost 3 per cent of the Finnish population use a hearing aid. It is estimated that around 25–30 per cent of all hearing aids are unused. Older people can learn how to make good use of a hearing aid if they get enough advice and support. People with hearing loss often need other auxiliary devices in addition to a hearing aid so that they can listen to the radio and television, use the telephone, and hear the doorbell and warning signals, for example.

Inner-ear implant operations are performed on children who have been deaf from birth or a very early age. In Finland inner-ear implants have also been successfully used in persons who have lost their hearing in adulthood.

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Timo Marttila wrote the chapter in the original Finnish report and revised the shortened English version.

Eeva Widström, Liisa Suominen-Taipale

Oral diseases

Dental caries and diseases of the parodontium are the most common oral health problems in Finland. Oral health has considerably improved, but among children the progress has recently come to a halt. The most important measures of prevention are cleaning the teeth and avoiding sugar.

Oral health in children and young people has improved significantly over the past few decades both in Finland and most other Western European countries. Apart from rising standards of living and education, this can be attributed above all to improved oral hygiene and the regular use of fluoride toothpastes. Among children aged five, the proportion who have had dental caries has decreased to around one-half, among those aged 12 to around one-third over the past 30 years. In the age group under 18 about half (47%) had dental caries in 2003 (Figure 34). Thirty years ago, 88 per cent of all children at comprehensive school needed fillings, today the proportion is down to one-third. Orthodontic treatment has increased during the past decades. In 2003 more than one in ten (12%) children under age 18 received free orthodontic treatment in the public dental service (PDS).

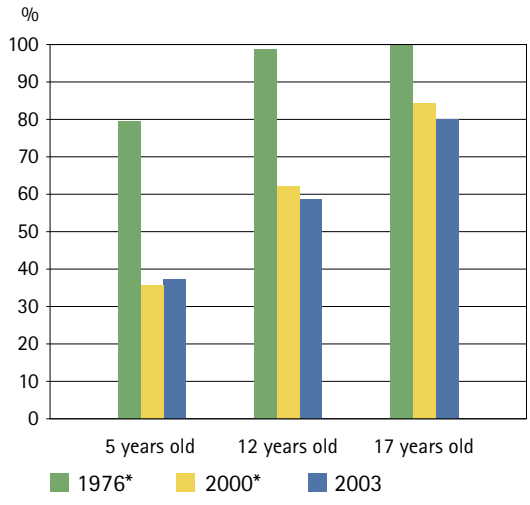

Figure 34. Proportion (%) of children with caries experience (DMF>0) in 1976, 2000 and 2003 (sources: Nordblad et al. 2004, STAKES).
*aged 18 in 1976 and 2000

There has also been a marked improvement in the oral health of adults. In the late 1970s around 30 per cent of the total population had no teeth of their own, now the figure is down to 15 per cent. In the age group under 45 there are only very few edentulous people, but among those over 65 the proportion is still as high as 44 per cent (Table 15). Loss of all teeth is far more common among people with a low level of education than among those with a high level of education. In the late 1970s around two-thirds of men aged 30 or over and among women more than one-half had untreated caries in their dentition. By the early 2000s, the proportion was down to one-half of the figure 20 years earlier. Around 20 per cent of the population have severe periodontal diseases.

Considerable resources are invested in conservative dental treatments even though the methods of prevention are well known. In both the public and private sector, the main effort in dental care is devoted to the restorative care of caries, which accounts for around half of all treatment measures. Periodontal inflammations

Eeva Widström wrote the chapter in the original Finnish report and, together with Liisa Suominen-Taipale, revised the shortened English version.

Table 15. Prevalence of edentulousness in the adult population in 2000–2001 (source: Aromaa and Koskinen 2004).

	Proportion (%) of edentulous persons by age group					
	30–44	45–54	55–64	65–74	75–84	85+
Men	0.6	6.1	12.6	29.9	44.6	51.1
Women	0.1	5.7	17.8	37.6	52.0	60.4

account for around one-tenth. Information on prosthetic treatment is not available. At health care centres [PDS], orthodontic treatment and examinations account for around one one-third each (27–28%), and restorative care for one fifth (17%) of all dental care for children.

The oral health of children, adolescents and young adults is good today, and even in older age groups the situation has improved. The middle-aged will need restorative care, primarily fillings, on a continuous basis. The new filling materials introduced in the mid-1990s don't last as long as the amalgam fillings they replaced. The need for new fillings comes primarily from the appearance of deficits in old fillings and secondary caries underneath existing fillings. Older people also develop new caries as their gums recede with age and salivation decreases. Over the next few decades the number of filled teeth in older people is set to increase and fewer people will have lost all their teeth. The main focus of restorative dental care will shift from middle-aged groups to the elderly population. Changes in diet and mealtimes as well as the growing habit of eating snacks present a new threat to oral health.

Effective basic prevention of dental disease relies on the same cornerstones as before, that is limiting the consumption of sugar-containing foods and drinks and using fluoride toothpaste at least twice a day. Improved preventive self-care is a key to better oral health today.

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Pekka Kannus, Antti Impinen

Injuries in home, sports and other leisure activities

Home and leisure accidents account for 80 per cent of all accidents and they have increased in recent decades. Those involved in leisure accidents are mostly young people, while those involved in home accidents are predominantly older people.

Injuries occurring in the home and in sports and other leisure activities account for 80 per cent of all injuries in Finland. The number of these injuries has increased considerably in recent decades (Figure 35). Each year almost 3,000 Finnish people are killed in unintentional injuries, which translates into around 6 per cent of all deaths. Annually, injuries in the home and leisure activities account for around 80 per cent of all injurious deaths in this country. Additionally, some 400 people are killed in traffic accidents and around 50 people die in occupational accidents. Some traffic accidents meet the characteristics of injuries in sports and leisure activities.

Most of the injuries at home occur in older people, while victims of sports-related injuries are typically younger people. Among women, injuries at home typically occur in connection with cooking, cleaning and other movement around the home, while among men the most common causes are related to repairs and maintenance work and moving around the home. Some 70 per cent of injuries in sports happen to men, and most of these injuries are strains and sprains. The majority of these patients are under 25. Sports-related injuries occur most often in jogging, ball

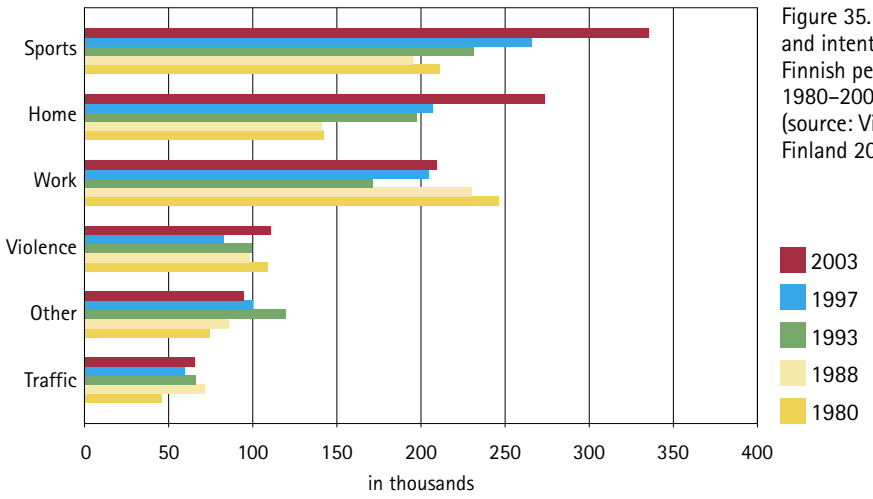

Figure 35. Number of unintentional and intentional injuries among Finnish people aged 15–74 in 1980–2003 (source: Victimisation and fear in Finland 2003).

Pekka Kannus wrote the chapter in the original Finnish report and, together with Antti Impinen, revised the shortened English version.

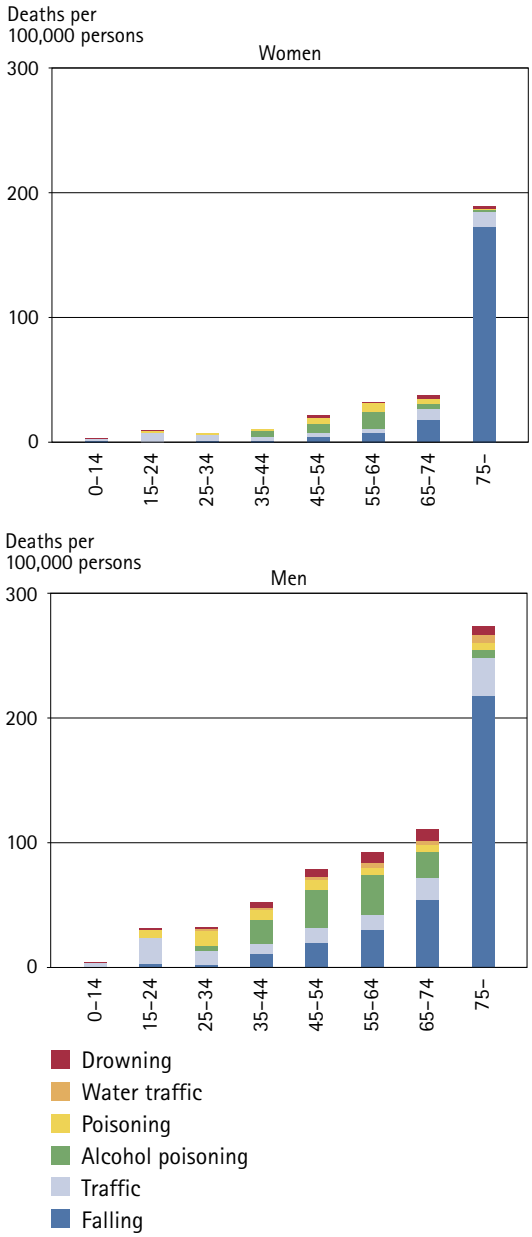

Figure 36. Injury mortality per 100,000 population in Finland in 2004, by gender and age (source: Statistics Finland).

games and strength sports. The risk of injury is around three times greater in contact sports than in non-contact sports.

The most important category of injury during home, sports and other leisure activities is falling, especially among older people. Falls are the most common cause of injury death and injury-related hospital admission and their number has sharply increased. In 2004, more than 1,100 people were killed in falls, and almost 900 of them were 65 or over (Figure 36). The most significant consequence of falling among elderly people is hip fracture, the annual number of which increased from 1,400 in 1968 to around 7,000 in 2004. If this trend continues, the number of hip fractures in Finland will increase around 2.5-fold by 2030.

Injuries in home, sports and other leisure activities are a major cause of death, lost working days, medical treatment and treatment costs. In addition, these problems have sharply increased in recent decades. It is therefore important that more resources are devoted to monitoring these injuries and finding new ways for their prevention.

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Matti Järvinen, Petri Jääskeläinen

Traffic accidents

In the 1970s over 1,000 people died each year in traffic accidents, but this number has been reduced to less than 400. Injuries and deaths due to traffic accidents are now less frequent in Finland than in the EU on average.

The number of fatal traffic accidents in Finland increased up to the 1970s more or less in step with the growth of traffic. In 1972, a parliamentary committee set the target of halving the number of deaths on the road and proposed a range of measures for the attainment of this target. The results have been excellent: at the same time as transport volumes increased by some 30 per cent from 1973 to 1980, the number of deaths dropped by 50 per cent. In the 1980s this favourable trend came to a halt and was even reversed, but in the 1990s and 2000s traffic safety has improved by virtue of broadly based cooperation and a national traffic safety programme.

Since the mid-1990s the decrease in the number of fatal traffic accidents has fallen short of targets (Figure 37). Exposure to fatal traffic accidents is highest among young adults who take risks on the road and among older people who are frail and have reduced perception and functional capacity. The numbers injured on the road are almost 20 times higher than the numbers killed, and the number of people sustaining permanent injuries is about three times higher than the number of people killed.

Finland has a high standard of road safety. Relative to the country's population, the number of deaths on the road is 15 per cent lower than

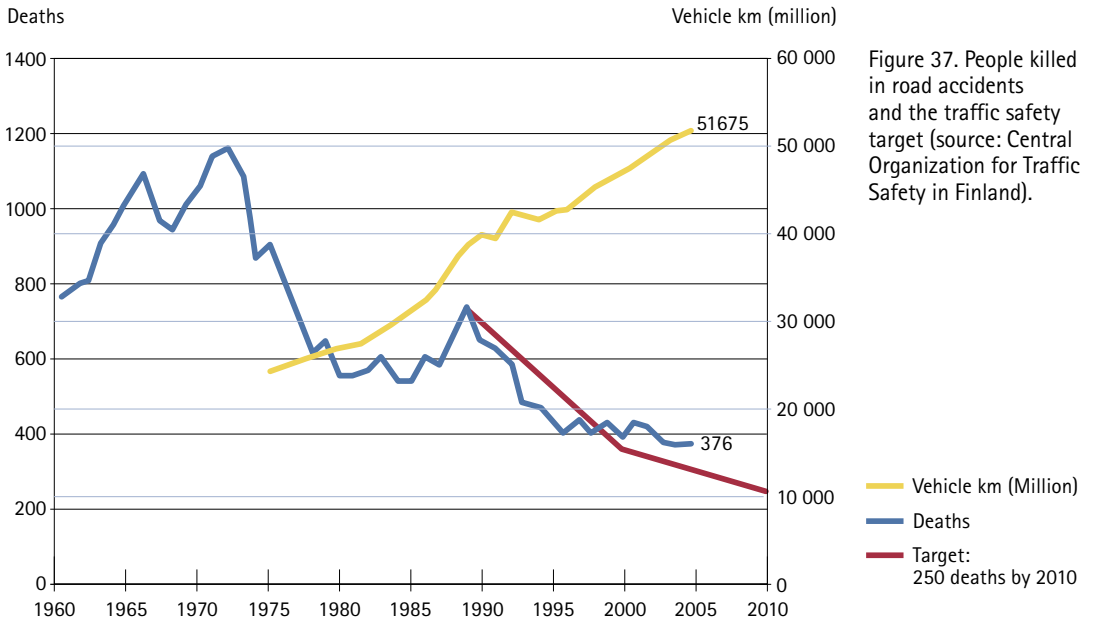

Figure 37. People killed in road accidents and the traffic safety target (source: Central Organization for Traffic Safety in Finland).

Matti Järvinen wrote the chapter in the original Finnish report and, together with Petri Jääskeläinen, revised the shortened English version.

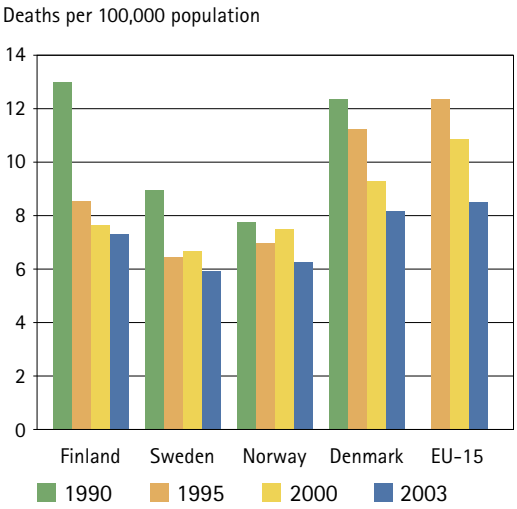

Figure 38. People killed in road accidents in the Nordic countries and EU-15 per 100,000 population (source: Central Organization for Traffic Safety in Finland).

the EU-15 average (Figure 38) and the prevalence of traffic accidents leading to injuries is no more than one-half the corresponding EU figure.

The continued improvement of road safety is under threat from a number of trends: the 2–3 per cent annual increase in the number of cars on the road, rising average speeds, the increasing disregard since the mid-1990s of traffic laws and other road users, and substance use. Around one in 600 drivers are over the drink-driving limit (0.5 per mille of alcohol in the blood). Drink-driving accounts for more than one-fifth of all deaths on the road.

Around 85 per cent of drivers and passengers in the front of the car use seatbelts in built-up areas, outside built-up areas the figure is over 90 per cent. On the backseat of cars almost 80 per cent use seatbelts, but in vans only around 60 per cent. It is estimated that seatbelts would have saved lives in about every other fatal road accident. Only just over one-quarter of cyclists use a helmet, and the use of reflectors in the dark is almost equally rare.

Road safety in Finland is promoted through a national traffic safety programme aimed at preventing traffic accidents through a joint effort in different areas of social life. Among the strategies proposed are to curb the growth of traffic, to provide all groups in society with equal opportunities for mobility by means of urban and regional planning, to emphasise security considerations in transport planning decision-making and to make the best possible use of new technology. Continuous campaigning and life-long road safety education are crucial to maintaining the population's security awareness.

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Jorma Rantanen, Heikki Laitinen, Timo Kauppinen

Occupational accidents

In Finland the risk of occupational accidents and fatal accidents has decreased markedly in recent decades and now corresponds to the European average. Each year one in ten workers have an accident in the workplace or while commuting between home and work.

Technological development, changes in the nature of work and structural changes in production have a major impact on the risk of accidents in the workplace. In the 1940s a total of some 300 people were killed each year in occupational accidents (40/100,000 workers). Since then the number of fatal accidents has steadily declined to less than 40 a year (about 2/100,000 workers). In addition, some 40 persons are killed while commuting to and from work. The incidence of occupational accidents leading to work absences of at least three days is 27/100,000 workers, or just one-third of the level recorded in the 1970s. In Finland the risk of reported occupational accidents and fatal accidents is at around the same level as in Europe on average, but clearly higher than in Sweden and Denmark, for instance.

The risk of occupational accidents among workers in manufacturing industries and building and construction is around ten times higher than among administrative and clerical personnel and employees in technical, scientific or artistic jobs (Figure 39). Work environment factors, machinery and equipment, tools, objects and structures in the work environment are responsible for more than 80 per cent of all accidents. The body parts affected most often are the back and upper and lower extremities.

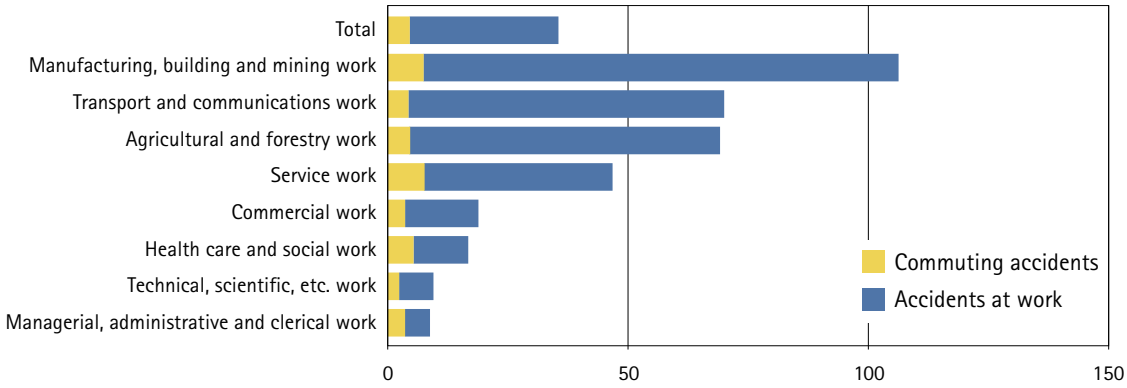

Figure 39. Occupational accidents leading to work absences of at least three days per one thousand person-years by occupational category in 2000 (source: Statistics Finland).

Jorma Rantanen and Heikki Laitinen wrote the chapter in the original Finnish report, Timo Kauppinen revised the shortened English version

Each year around 10 per cent of all workers have an accident in the workplace or while commuting between home and work. Three in four cases happen in the workplace, 5 per cent on the road during working hours and just over one-fifth while travelling to and from work. Almost 3 per cent of workers are victimised by violence or threat of violence during the year, and over one per cent are victims of physical violence either in the workplace or while commuting.

The risk of occupational accidents is three times higher in men than in women, and almost all fatal accidents in the workplace happen to men. However women aged under 45 are affected by occupational accidents and violence or the threat of violence almost equally often as men of the same age. Each year up to one-quarter of all workers in transport and building and construction jobs have an accident or are affected by violence or the threat of violence in their job. Violence and the threat of violence occur most often in social and health care jobs (Figure 40).

The best way to prevent accidents in the workplace is by developing the work environment and safer technologies, by improving the work organisation and by increasing awareness in the workplace of safe working methods and procedures. Special attention should be given to the most serious risks and to the occupations where the risk of accidents and violence is the greatest. The Occupational Safety Act that was amended and updated in 2003 places stringent requirements on the quality of the work environment, stressing the key role of new technology in preventing occupational accidents and violence in the workplace.

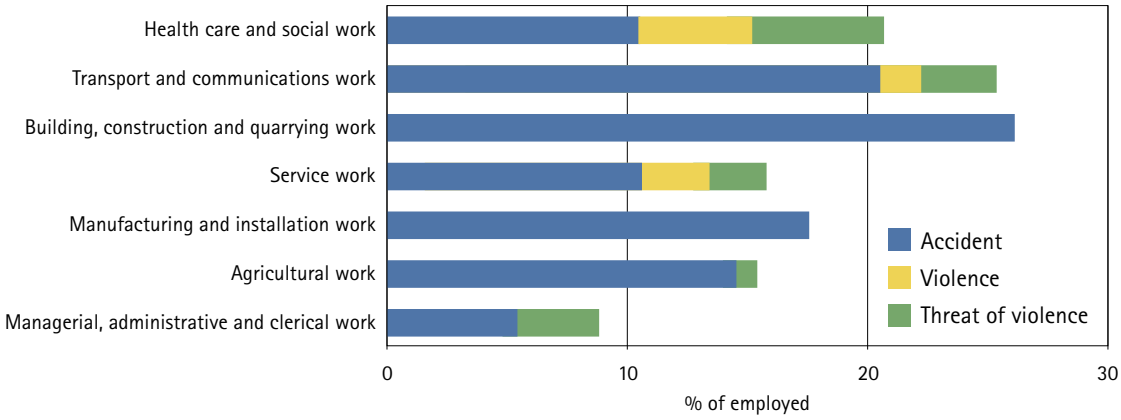

Figure 40. Victims of occupational accidents, violence or the threat of violence by occupational category in 2003 (source: Kauppinen et al. 2004).

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Jorma Rantanen, Timo Kauppinen

Occupational diseases and work-related health hazards

Each year an occupational disease is diagnosed in 0.2 per cent of the workforce. Work-related diseases account for some 7 per cent of deaths in the employed population. Around 60 per cent of the workforce are still exposed to various physical hazards.

Occupational diseases

Each year around 0.2 per cent of the workforce in Finland is diagnosed with an occupational disease. One-fifth of these are chronic diseases that cause serious damage to health or incapacity for work or that necessitate a change of occupation or job tasks. The incidence of occupational diseases has decreased by around 50 per cent since 1990. The incidence rate in Finland seems to be around the EU average, although country comparisons are complicated by differences in legislation, diagnostics and reporting.

The risk of occupational disease in food production, building construction and many other industrial jobs as well as in agriculture is 2–5 times higher than the average for all occupations (Figure 41). These same occupations also have the highest risks of occupational accidents. The most common categories of occupational disease in 2002 were repetitive strain injury to the hands and arms and other musculoskeletal diseases (27%), occupational eczemas (20%), noise-induced hearing loss (17%), asbestos-related diseases (12%) and allergic respiratory diseases (11%). Health problems associated with the mental stress of work have not yet been incorporated into legislation on occupational diseases.

Work-related diseases

Work-related diseases comprise all those diseases in the aetiology, course or prognosis of which work has a direct and significant impact. Work-related diseases account for around 7 per cent of mortality in the employed population, i.e. more than 10 times as much as occupational diseases and accidents taken together. Work-related diseases include many musculoskeletal disorders, cardiovascular diseases, several respiratory diseases and some cancers. For example, one-third of all asthma cases in men have their aetiology in work-related factors which either cause the asthma or adversely affect its prognosis.

Hazards and stress factors in the work environment

In 2003 around 60 per cent of the workforce were exposed to various physical hazards, primarily noise and cold or heat, and around 45 per cent were exposed to chemicals. Around 34 per cent of the workforce perceived a threat of accidents, and over one-third felt they suffered from poor ergonomics. Time pressure and exceptional

Jorma Rantanen wrote the chapter in the original Finnish report, Timo Kauppinen revised the shortened English version.

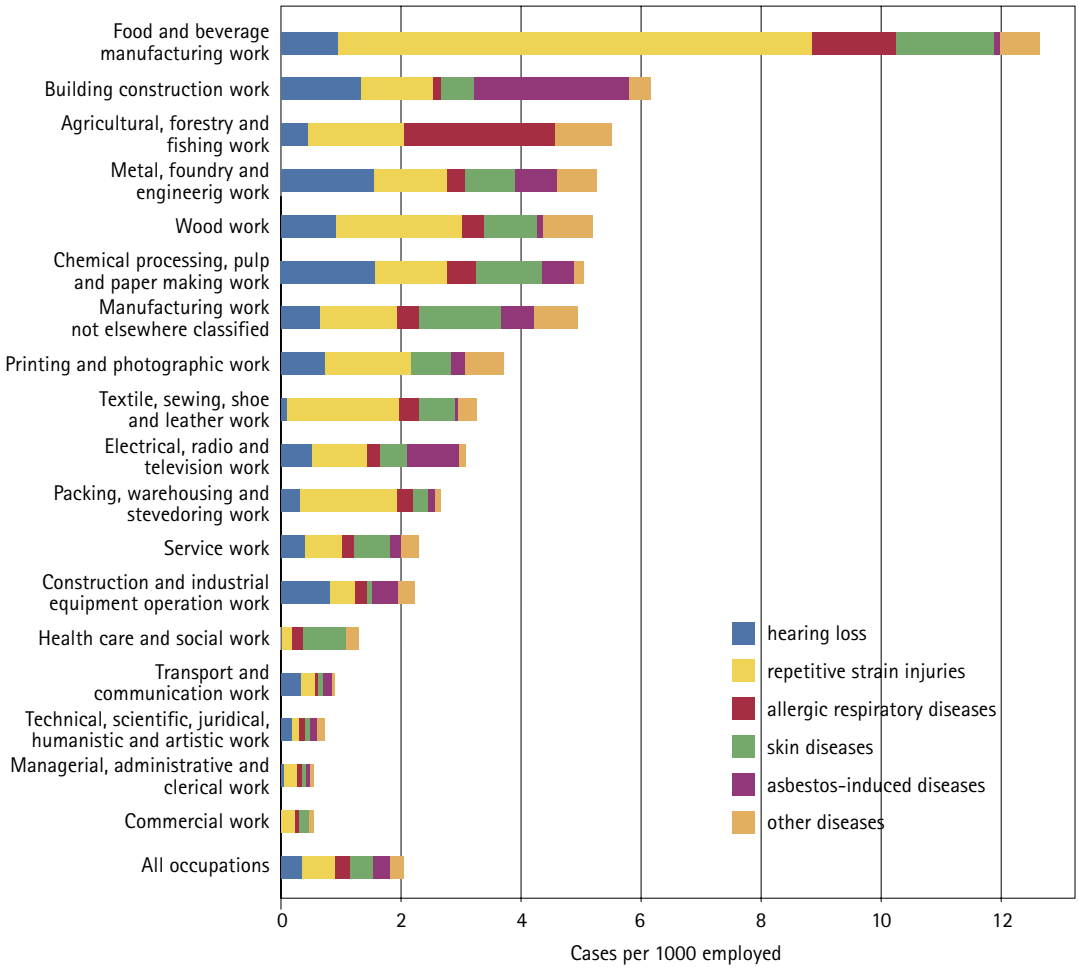

Figure 41. Reported work-related diseases in 2002 by occupation and diagnosis per one thousand workers employed (source: Riihimäki et al. 2003).

working hours were a problem for 30–50 per cent of the workforce. Although exposure to various hazards is still relatively common, the intensity of exposures has tended to decline. Physical strain and stress, which are chronically present in several occupations, have decreased somewhat in recent years. Currently the level of exposure to health hazards and stress factors in the Finnish work environment is around the average level for all EU countries. Compared to other EU countries there is a higher frequency in Finland of noise problems, moving and lifting heavy objects, exceptional working hours, terminal work and related stress problems.

Future outlook

The pace of change in the world of work is accelerating, the frequency of job changes increasing and competency and learning requirements intensifying. Automation and other technological development are helping to reduce the physical stress load, but mental stress may be

increasing. The growing productivity and quality requirements at work are weighing most heavily on ageing workers.

Effective prevention of occupational and work-related diseases requires that the risks and hazards in the workplace are reduced to a level where the risk of falling ill is minimised. Furthermore, it is necessary to improve the training of employees, to strengthen the capacity of workplace communities to cope with changes and to promote employees' health in general. These preventive efforts must be integrated with the development of production, technology, work organisations and workplace communities.

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PART V
HEALTH DIFFERENCES

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Tuija Martelin, Seppo Koskinen, Eero Lahelma

Health disparities between population groups

In Finland women live 7 years longer than men. The difference in life expectancy between the highest and lowest socio-economic groups is about six years in men and three years in women. Mortality differentials are large also between regions and marital status groups. Corresponding differences in morbidity and functional capacity are observed between socio-economic groups, regions and marital status groups. In an international comparison, health differences in Finland are large or at the average level, despite policy efforts to reduce them.

Differences between men and women

The difference between the life expectancy of Finnish women and men was at its highest in 1977 at 8.8 years. Since then the difference has been reduced to less than seven years, but it is still greater than in western Europe on average. Alcohol use and smoking explain half of the difference between the male and female life expectancy, the other half is primarily attributable to other factors increasing the risk of death from circulatory diseases, accidents and violence.

Circulatory diseases are more common among men, whereas women suffer more often from musculoskeletal disorders as well as mental and psychosomatic symptoms. Many illnesses and limitations of functional capacity are more common in women than in men. When institutional care, restrictive long-term illness and short-term restrictions in functional capacity are taken into account in calculations of the total duration of impaired functional capacity, men and women enjoyed the same number of healthy years of life in the mid-1990s.

Regional differences

The life expectancy of people living on the Swedish-speaking west coast of Finland and in the Åland islands is almost at the same level as in Japan, which has the world's highest life expectancy. In eastern and northern Finland, life expectancy is 2–4 years shorter. People in the wealthiest areas of the metropolitan Helsinki region live about one year longer than the Japanese, while in the poorest areas life expectancy is almost 10 years shorter. Circulatory diseases, accidental and violent causes of death and alcohol-related deaths are the major reasons for these regional differences in mortality. Other health indicators give a relatively similar picture of regional differences as an analysis of mortality.

In many lifestyles that affect the risk of illness, the differences between western Finland on the

Table 16. Age-standardised mortality of manual workers relative to mortality of non-manual workers (= 1.00) among men aged 30–59 in selected European countries in 1991–1995 (source: Mackenbach et al. 2003).

Finland	1.9
Sweden	1.6
Norway	1.5
Denmark	1.5
England/Wales	1.5
Italy/Turin	1.4

one hand and eastern and northern Finland, on the other, have virtually disappeared. On this basis it is reasonable to assume that regional health disparities are also going to decrease.

Socio-economic health differences

Finland has more pronounced socio-economic mortality differences than most other western European countries (Table 16), and these differences have increased by more than one year since the 1980s. At the turn of the millennium the life expectancy of a 35-year-old upper white-collar man was 6.0 years longer than for a manual worker; in women the corresponding difference was 3.2 years (Figure 42). The mortality differences between education groups (see Table 3 on page 50) and income groups are equally clear and consistent.

Mortality differences are the most pronounced in accidental and violent causes of death, respiratory diseases and diseases related to heavy alcohol use and among men in lung cancer. However, the high prevalence of circulatory diseases makes them the single most important cause of socio-economic mortality differences. The increase in mortality differences has been primarily due to a much more favourable trend in mortality from these causes among the higher than among the lower socio-economic groups.

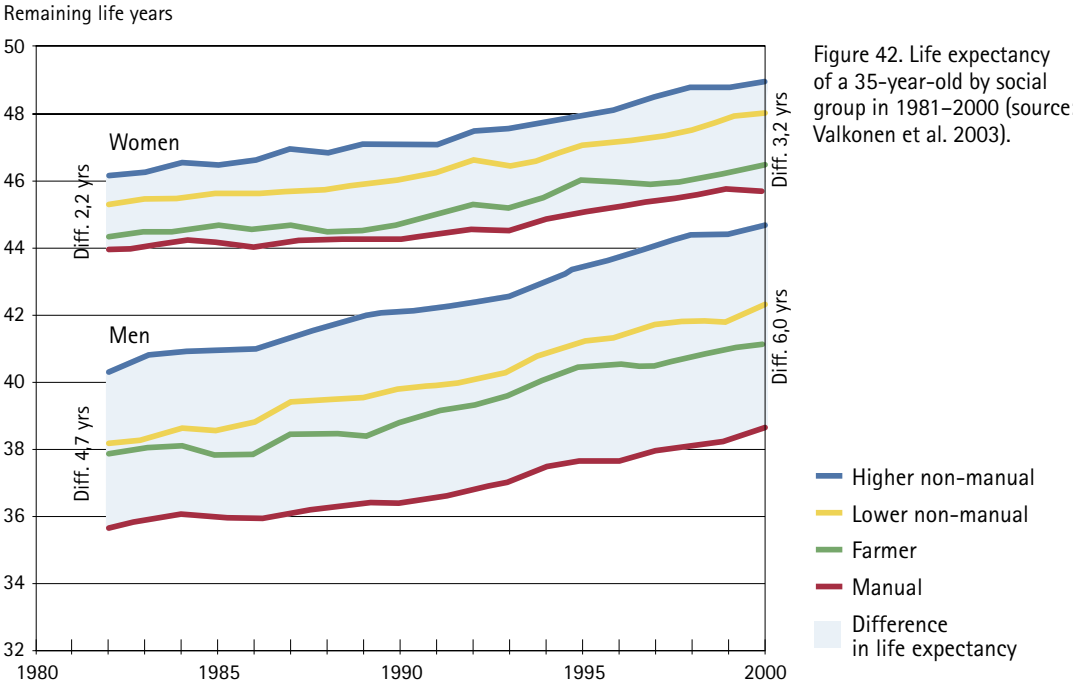

Figure 42. Life expectancy of a 35-year-old by social group in 1981–2000 (source: Valkonen et al. 2003).

Table 17. Prevalence of less than good self-assessed health among persons with a low level of education compared with the corresponding prevalence among persons with a high level of education (= 1.00) among women and men aged 25–69 in selected European countries in the 1990s (source: Kunst et al. 2005).

	Women	Men
Finland	2.1	1.9
Sweden	2.4	2.1
Norway	2.4	1.9
Denmark	2.2	1.9
England	2.1	2.4
Netherlands	1.9	2.3
West Germany	1.3	1.3
Austria	1.9	2.2
Italy	1.5	2.0
Spain	2.3	1.9

Socio-economic morbidity differences in Finland are at about the same level as in western Europe on average (Table 17), and they have remained more or less unchanged over the past decades. Limitations in functional capacity vary by socio-economic status in much the same way as morbidity and mortality. Men with a tertiary education can look forward to 10.9 more years of good health and women to 8.4 more years of good health than men and women with no more than basic education.

These socio-economic health inequalities are due to both differences in the living and work environment and to lifestyles and health services. Among men around one-quarter and among women a slightly smaller proportion of the mortality differences between socio-economic groups are due to deaths caused by alcohol, and smoking has roughly the same kind of effect. In some diseases, such as coronary heart disease, preventive and curative efforts have contributed to more pronounced health inequalities.

Childhood living conditions and parental socio-economic status predict both socio-economic status and lifestyle as well as health in adulthood.

Other health differences

Married people are in much better health than those who remain single, who are divorced and who have been widowed. The differences have continued to increase over the past few decades, and they are particularly pronounced among men. In the late 1990s, more than one-third of all deaths among Finnish people of working age would have been avoided if mortality among other marital status groups had been as low as among married people. The differences are due to both health-related selection and to the beneficial health effects of having a partner.

The high morbidity and mortality of the unemployed is partly due to the fact that people who are in ill health find themselves out of work more often than others. As for mental health problems, it has been shown that unemployment is directly responsible for causing illness. In young people in particular, long-term unemployment easily leads to marginalisation and related health problems.

Reducing health disparities

Socio-economic health disparities are due first and foremost to such differences in exposures related to living conditions and lifestyles that can be reduced. Health inequalities present a major problem for any modern welfare state committed to values of equality. Health disparities also reflect adversely on the average health of the population. If the health of other population groups could be raised to the same level as is enjoyed by people who are now in the best position, the nation as a whole would be in significantly better health.

One of Finland's key health policy objectives has long been to reduce health disparities between

different population groups. However health inequalities between socio-economic groups and marital status groups have continued to increase. This is not something that has to happen by necessity. Determined efforts in the field of both health and welfare policies have in fact helped significantly to reduce health disparities between northeastern and southwestern Finland. Indeed the necessary decisions are now in place to start drafting a national strategy and a related action plan aimed at reducing socio-economic health inequalities.

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Päivikki Koponen, Arpo Aromaa

Health in Finland in an international comparison

Finnish lifestyles and the Finnish environment are supportive of good health. Life expectancy is still shorter than the EU average in men but average in women. Cardiovascular diseases and violence explain much of the difference.

Work to create clearly defined European health indicators is ongoing. So far international comparisons of health data are limited by lack of standardisation both in indicator definitions and in methods of measurement. This chapter deals with a few key health indicators where at least reasonably comparable data are available from most European Union Member States (EU MSs). Finnish data are compared with averages from the Nordic countries (Denmark, Finland, Iceland, Norway and Sweden), and from the 15-EU MSs before the year 2004, and the new MSs since 2004.

Health determinants

Population and living conditions

As the baby boomers who were born in the late 1940s continue to grow older, Finland's elderly population aged 65 or over will soon be growing faster than in most other European countries (see Figure 2 on page 21).

In 2004 77.6 per cent of Finns aged 25–64 had completed at least upper secondary education, while the average for the EU-15 countries was 65.0 per cent. Finnish women in particular are among the highest educated in Europe. In 2003 Finland's PPP-adjusted per capita GDP was slightly higher (27,619 dollars) than the EU average (26,779 dollars). Since the record levels reached in the 1990s, unemployment rates in Finland in 2005 (men 8.2%, women 8.6%) were close to the EU average (men 7.9%, women 8.9%). Finnish women have full-time jobs far more often than women in the EU countries on average (part-time employment for women in Finland 17.8%, EU-15 countries 35.2%).

Nutrition, exercise and obesity

Finland's per capita consumption of vegetables, fruit and vegetable fats has remained lower than in most other EU countries. However the consumption of animal fats has sharply decreased in Finland at the same time as vegetable and fruit consumption has increased considerably. These changes towards a healthier diet have happened very quickly in Finland compared to many other European countries.

In 2001/2002 Finnish schoolchildren reported eating vegetables and fruit less often than schoolchildren in most other European countries, but their daily use of soft drinks and sweets was the lowest in Europe.

According to survey data, the reported level of exercise among Finnish adults is higher than the corresponding proportion in other EU countries.

Paivikki Koponen and Arpo Aromaa wrote the chapter in the original Finnish report and revised the shortened English version

However, in 2001/2002 the physical activity of Finnish 11-year-olds was among the highest in Europe, while the physical activity of children aged 13 and 15 was below the European average.

In 2001 the proportion of Finnish men and women who were overweight (BMI 27 or over) was higher (31.8%) than in the EU countries on average (27.6%, data available for nine countries only).

Smoking

Smoking among Finnish men has decreased sharply since the 1970s, which is internationally unique. In the EU, only Swedish men smoke less than Finnish men (Table 18). There are only a few EU countries where daily smoking among women is less common than in Finland (e.g. Italy and Sweden). Smoking among schoolchildren, however, is somewhat more common in Finland than in the EU countries on average.

Table 18. Percentage of daily smokers in the population aged over 15 in selected European countries in 2002 or 2003 (source: HFA Database).

	Men	Women
Finland	28	19
Hungary	41	28
Germany	37	34
France	33	27
Lithuania	44	13
Denmark	31	25
Italy	31	17
Sweden	17	18

Risk of circulatory diseases

In the Finnish Monica study areas, risk scores for cardiovascular diseases (based on daily smoking, elevated blood pressure, total cholesterol and overweight) decreased among both men and women at an average or higher rate. The average risk scores for Finnish people remained higher than the average for all Monica study areas.

Alcohol and drugs

In 2003 Finland's per capita consumption of pure alcohol was about the same as in the EU-15 countries on average (9.3 litres), but higher than in the Nordic countries on average (7.0 litres). In 2003 mortality from chronic liver diseases among men aged 0–64 was higher in Finland (16.6/100,000) than in the other Nordic countries (8.9) and in the EU-15 countries on average (13.1). In the new EU countries (members since 2004), chronic liver diseases are more than twice as common a cause of death as in the EU-15 countries.

According to survey results in 2001/2002, binge drinking is more common among schoolchildren in Finland than in most other countries included in the survey. In Finland the proportion of young adults reporting current use of cannabis (4%) was lower than in many other countries in 2002–2004. The lifetime prevalence of reported drug use among Finnish youths aged 15–16 also was among the lowest in Europe in 2003. Drug abuse increased in Finland after the mid-1990s and there is serious cause for concern that the drug situation in Finland is approaching the situation in those European countries where drugs have long been a major problem.

Health status and mortality

Mortality

In the 1960s the life expectancy of Finnish men was still 3–6 years shorter and that of Finnish women 1–3 years shorter than elsewhere in western Europe. Since then mortality in Finland has declined very rapidly, particularly as a result of a lowered number of deaths from circulatory diseases but also from cancers and traffic accidents. In 2003 the life expectancy at birth of Finnish men was 75.3 years, almost one

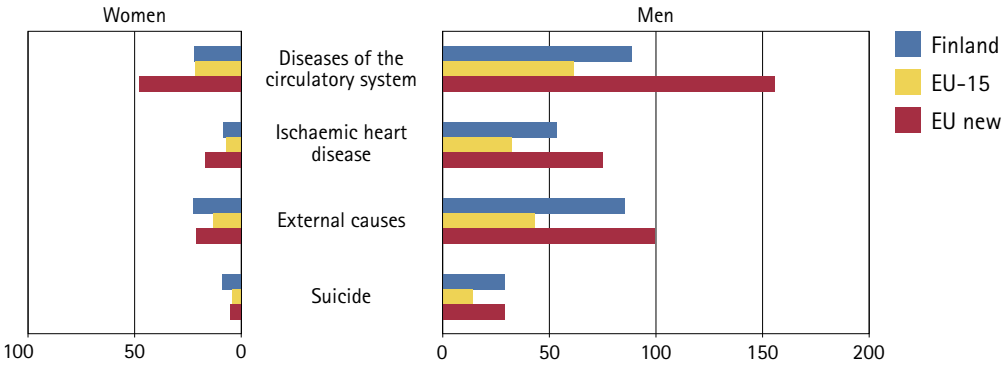

Figure 43. Age-standardised mortality from all circulatory diseases, ischaemic heart disease, all external causes and suicide among persons under 65 per 100,000 population in 2003 in Finland, the EU-15 countries and the new EU countries (since 2004) on average (source: HFA Database).

year less than the average for the EU countries (76.1), while the figure for women was 82.1 years, almost the same as the EU average (82.0). The comparatively high mortality of Finnish men is primarily due to cardiovascular diseases and external causes of death (Figure 43).

Circulatory diseases and diabetes

Circulatory diseases are the most common cause of death in all EU countries. Although circulatory diseases have decreased very rapidly in Finland, as indeed in many other countries, the mortality of Finnish men particularly from these diseases remains much higher than in the other Nordic countries and in the EU countries on average (Figure 43).

Among children under 15, the incidence of type 1 diabetes is 2–3 times higher in Finland than in most other western European countries. The incidence of type 2 diabetes in Finland is at a fairly high western level.

Cancers

Mortality from cancer has declined in Finland ever since the 1970s, whereas in most other European countries it only began to decrease in the 1980s; in some cases it is still rising. Finnish men and women are diagnosed with cancer less often than men and women in other EU-15 countries on average. The incidence of breast cancer among women and prostate cancer among men is higher in Finland than in the EU countries on average (Table 19). Finland's low cancer mortality has to do with our lower

	Incidence		Mortality	
	Finland	EU-15	Finland	EU-15
Lung cancer				
women	10.1	12.0	8.2	12.2
men	33.4	48.8	34.4	41.9
Breast cancer				
women	84.7	77.3	17.4	21.2
Cervical cancer	4.3	9.0	1.8	3.2
Prostate cancer	84.4	56.8	18.0	18.1
All sites but skin				
women	227.9	233.9	93.0	105.7
men	264.1	300.1	130.2	165.5

Table 19. Age-standardised (ASR World) cancer incidence and mortality in 2002 in Finland and in EU-15 countries on average, all ages per 100,000 population (source: Globocan 2002).

incidence of cancers caused by smoking and with the comprehensive system of cervical cancer and breast cancer screenings. Furthermore, the outcomes of several cancer treatments have improved more in Finland than in other EU countries.

Infectious diseases

Many serious infectious diseases are very rare in Finland, thanks largely to inclusive vaccination programmes and the country's high standard of living. Compared to the rest of Europe, Finland has a lower incidence of HIV and AIDS, for example (Table 20). Many other infectious diseases, such as measles and the mumps, are also much less common in Finland than in the Nordic and EU countries on average.

Accidents, poisonings and suicides

Mortality from accidents, poisonings and violence among Finnish men and women is higher than in the EU countries on average (Figure 43). Although suicides have decreased in Finland by almost one-third from 1990 to 2004, suicide mortality of Finnish men and women under 65 was still the highest among the EU-15 countries in 2003, i.e. about twice as high as in the EU countries on average.

In 2003 age-adjusted mortality for all ages from motor vehicle traffic accidents was lower in Finland (7.19 per 100,000) than in the EU countries on average (9.5). In the same year the number of reported traffic accidents causing injuries or disabilities was less than half (132.5/ 100,000) of the average for EU countries (318.5). The rate of occupational accidents and the related risk of death in Finland is around the same level as in western Europe on average.

Accidents, poisonings and suicides are an exceptionally serious public health problem in Finland. Part of the reason lies in Finnish drinking habits and the increased level of alcohol consumption.

Health of women and children

The number of abortions carried out in Finland has remained lower than in the EU countries on average (Table 21). Caesarean section rates

	Finland	Nordic countries	EU-15	EU new (since 2004)
Hepatitis B 2004	1.09	2.20	3.19	4.10
Aids 2003	0.48	0.47	2.20	0.38
Tuberculosis 2004	6.10	5.40	9.68	23.12
Syphilis 2003	2.55	1.63	2.37	4.67

Table 20. Incidence of selected infectious diseases per 100,000 population in 2003 or 2004 (source: HFA Database).

	Finland	Nordic countries	EU-15	EU new (since 2004)
Abortions / 1,000 live births 2003	189	251	228	215
Caesarean section / 1,000 live births 2003	162	171	236*	174
Infant mortality / 1,000 live births 2002	2.97	3.65	4.46	6.63

* Data for 2002.

Table 21. Indicators of reproductive health and child health in 2002 or 2003 (source: HFA Database).

in Finland have also remained lower than the EU average. Infant mortality is also lower in Finland than the EU average. Maternal mortality is among the lowest in Europe. Breastfeeding is more common in Finland than in many other EU countries, but less common than in Sweden, for example. The coverage of vaccination programmes in Finland is among the highest in Europe: almost all children in Finland are vaccinated against whooping cough, diphtheria, tetanus and measles, whereas in many EU countries no more than 70–80 per cent of children are covered. The dental health of Finnish children is also better than average.

Health disparities between population groups

Although the life expectancy of Finnish men has increased more rapidly than that of Finnish women, the difference between the male and female life expectancy in Finland (7 years) is still about one year higher than in the EU countries on average. The gender differences in mortality from external causes and circulatory diseases in the population under 65 are greater in Finland than in the EU countries on average (Figure 43).

Educational differences in self-perceived health are very similar among Finnish men and women to those seen elsewhere in Europe (see Table 17 on page 104). Differences between social status groups in male mortality are greater in Finland than in most other western European countries (Table 16 on page 103), which is partly attributable to differences in alcohol use. There are also marked socio-economic differences in smoking both in Finland and in many other countries.

Health care

Health services

The number of hospital beds has decreased faster in Finland and in the other Nordic countries than in the EU countries on average. Nonetheless in 2003 there were still more hospital beds in Finland than in the EU-15 countries on average (Table 22), although differences in data coverage do cause some problems with comparability. There are fewer hospital beds in Finnish acute hospitals than in the EU countries on average. Following the sharp decrease in the number of psychiatric beds the figures are now close to those in most other EU countries.

In 2003 the number of doctors relative to the population number was somewhat lower in Finland than in the EU-15 countries on average. There are much more dentists in Finland than in the EU countries on average. The number of qualified nurses and midwives is much higher in Finland (in 2001, 2180.7 per 100,000 inhabitants) than in the EU-15 countries on average (768.9).

In 2003 the average length of stay in acute hospitals in Finland was shorter (4.3 days) than in other EU countries (6.9 days) and in other Nordic countries on average (4.7 days). By contrast in all hospitals the length of stay in Finland (10.2 days

	Finland	Nordic countries	EU–15
All hospitals	725	577	584
Acute hospitals (average admission less than 30 days)	229	199	401
Psychiatric beds	98	71	13–150

Table 22. Hospital beds per 100,000 population in 2003 (source: HFA Database).

in 2003) was slightly longer than the EU average (9.5 days) and clearly longer than the Nordic average (7.0 days).

Health care costs and quality of services

In 2003 Finland's total health care costs were lower than the EU and Nordic averages. In the wake of the recession in the 1990s, the costs of health care in Finland declined even though most other EU countries saw a continued increase. As a result, Finland's health care expenditure as a proportion of GDP (7.4%) in 2003 was one of the lowest in the EU. In the same year the corresponding figure for Germany was 11.1 per cent, for France 10.1 per cent and for the Netherlands 9.8 per cent.

In Finland the annual growth in drug expenditure (1998 to 2003) has been higher than in most other European countries. In 2003 drug expenditure as a percentage of total health spending in Finland was 16 per cent, while in other European countries this share varied from 27.6 in Hungary to 9.4 per cent in Norway. The costs of outpatient care as a proportion of total health care expenditure in Finland have remained higher than the EU average. Fees collected from clients account for a large proportion of total health care expenditure and limit treatment options. In Finland this share has remained higher than in most other EU countries. A large proportion of these fees in Finland are out of pocket costs for medicines.

There is only limited comparable data on the quality of health care services. The outcomes of cancer treatment in Finland are among the best in the world.

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PART VI
HEALTH AND HEALTH NEEDS AT DIFFERENT STAGES OF LIFE

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Jukka Rajantie, Jaakko Perheentupa

Health of children

Finland has one of the world's lowest child mortality rates, but there still remain many widespread health problems. Psychosocial health problems, asthma, allergies and diabetes are all increasing. Childhood factors are known to have a crucial bearing on mental health and social coping in adulthood, as well as on way of life and attitudes that will later be major determinants of health.

Morbidity

At year-end 2004, 4 per cent of children under 16 received care allowances for a chronic disease or disability and 4.2 per cent of those under 15 received compensation for the costs of long-term medical treatment. At least 10–15 per cent of children have mental disorders that require examination and treatment (Table 23). Furthermore, 15–20 per cent of schoolchildren have problems due to bullying. Two per cent of those aged 14–15 have suicidal thoughts. At least 10 per cent of schoolchildren have learning and development disorders. About one in five children have some allergy and half of them have continuous symptoms. Almost 3 per cent of children under 15 are eligible to receive special reimbursements for asthma medication. More than 2 per cent of newborn babies have serious congenital anomalies and over half of them are left with a permanent impairment caused by these anomalies.

The incidence rate of epilepsy in infants is 0.9–1.9 and in children aged 1–9 years 0.3–0.7 cases a year per 1,000 children. The incidence of insulin-dependent diabetes in Finnish children is now the highest in the world: by the early 2000s the figure had climbed to 0.5/1,000. Among schoolchildren 6 per cent say they suffer from chronic backpain and over 10 per cent are

Table 23. Estimated prevalences (%) of certain disabilities and chronic diseases in children (source: Rajantie et al. 1993, updated on the basis of the latest research and expert assessments).

Permanent disabilities	
Mental handicap	1.2
Malformations (congenital, debilitating)	1.2
Severe scoliosis	0.4
Cerebral Palsy	0.3
Severe hearing impairment	0.3
Severe visual impairment	0.15
Sequelae of accidents	0.1
Long-term or permanent functional disorders	
Mental disorders	10–15
Allergy	
- asthma	4–7
- allergic rhinitis	15–23
- allergic eczema	15–19
Dyslexia and concentration difficulties	10
Stammering	1.5
Squint	1.2
Epilepsy	0.9
Diabetes	0.4
Rheumatoid arthritis	0.1
Cancer	0.1
Coeliac disease	0.05
Muscular disease	0.05
Ulcerative colitis	0.02

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diagnosed with deformities of the spine. Each year one in one thousand children suffer a joint inflammation and likewise one in one thousand suffer permanent injury in a traffic accident.

During their first year of life children have on average 5–10 spells of infectious disease and over the next few years 2–3 infections a year. Although caries has decreased since the 1970s, one half of children aged 12 still have dental decay.

Children in Finland go to see the doctor on average 3–4 times a year. Both the number and duration of hospital admissions have decreased. Today, children spend on average half a day a year in hospital. The major causes of hospital admissions are mental health problems (29%), perinatal reasons (18%), and respiratory diseases (10%). Each year some 10 per cent of young children and adolescents visit hospital first aid units because of an accident. The use of pharmaceuticals in children has increased. Almost one half of all children use prescribed drugs during the year.

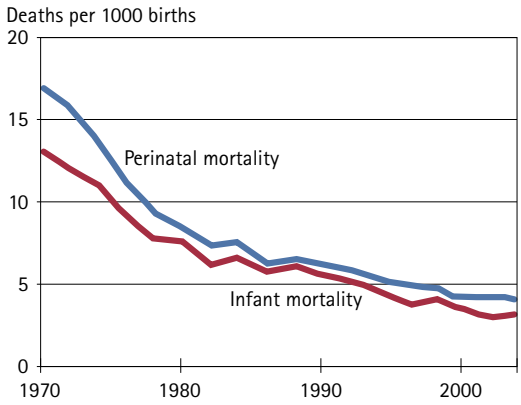

Figure 44. Infant mortality and perinatal mortality in 1970–2004 (source: Statistics Finland).

Mortality

Child mortality has sharply decreased. In the early 1900s more than 20 per cent of newborn infants died before age 5, by the late 1970s the figure was down to 1 per cent. In 2004, child mortality had dropped further to 0.4 per cent. Indeed mortality in Finnish children under 5 is now one of the lowest in the world. In 2004 stillbirths numbered 3.2, perinatal mortality 4.0 and infant mortality 3.3 per 1,000 births (Figure 44). The most important causes of perinatal mortality are premature birth and congenital anomalies. The most common causes of death in the age group 1–14 are accidents (46% in 2004) and cancer (18%). In boys, deaths from accidents are twice as common as in girls. Mortality differences between regions and social groups used to be very large, but in recent decades these have been significantly reduced.

Future outlook

There is a definite risk of adverse changes in children's psychosocial well-being and in the living conditions and way of life that impact their future health. It is therefore important to identify preventive health care for children as a key priority for health policy development. Finland's internationally unique system of maternity and child health clinics and school health care services are under threat of decline and are in need of intensive development. It is also necessary to set up a programme for the prevention of bullying at school. Greater effort must be invested in educating pregnant mothers about the adverse effects of alcohol, drugs and smoking. A comprehensive treatment programme is needed for children with learning and concentration difficulties.

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Arja Rimpelä

Health of adolescents and young people

About 10 per cent of youths aged 12 to 18 suffer from a chronic disease that affects their everyday life. The most common reported chronic health problems are asthma, allergic rhinitis and other allergies, which have all increased since the 1970s. Stress symptoms are reported by one in four adolescents.

Serious illnesses are rare among adolescents and young people in the age group 10-20, although various symptoms do occur quite commonly. Many habits and customs adopted in youth as well as educational and career choices and the attainment of sexual maturity set the foundation for health in adulthood.

Mortality and morbidity

Mortality is lowest in the age group 5–14, but among boys in particular mortality from accidents and suicides begins sharply to increase after age 14. Among boys aged 15–19, more than 50 in 100,000 die each year as a result of accidents or violence, in the age group 10–14 the figure is no more than 10/100,000. Mortality among Finnish girls is slightly lower than the European average, but mortality among boys is some 50 per cent higher than in Sweden, for example.

Almost one in ten adolescents report having some chronic illness, defect or disability that affects their everyday life. The most common reported chronic health problems are asthma, allergic rhinitis and other allergies. All of these have increased since at least the 1970s. Around 4 per cent of young people in Finland suffer from asthma.

More than 80 per cent of young people regard their own health as good. Nonetheless many symptoms are showing a tendency to increase. One in four in the age group 14–16 report stress symptoms (headache, stomach ache, irritation and temper tantrums, etc.) that occur daily or almost daily. Among schoolchildren aged 15–16, some 15 per cent feel tired every day and one in five have weekly neck and shoulder pains. It is estimated that approximately 12 per cent have severe or moderate depression.

Biological maturity and sexual health

On average, girls today reach sexual maturity shortly before age 13 and boys 1–2 years later. Pregnancies among children under 15 are very rare in Finland. Among girls aged 15–19, almost 15 in 1,000 have an abortion and 10 in 1,000 carry the child to term. The prevalence of chlamydia infections in girls aged 15–19 is around 18/1,000 and in boys around 5/1,000. Other sexually transmitted infections are very rare.

Health behaviour

Regular smoking and alcohol use are virtually non-existent among children aged 12, but in the age group 14 nearly one in ten smoke daily

Arja Rimpelä wrote the chapter in the original Finnish report and revised the shortened English version

and one in twenty binge drink at least once a month. In the age group 18, one in three are daily smokers and the same proportion binge drink once a month. Experimenting with drugs increased in the 1990s, but in the early 2000s this has been decreasing (Figure 45). In 2005 almost one half of adolescents aged 16–18 knew at least one friend who had experimented with drugs. In the age group 15–16 the most commonly used substances were a mixture of alcohol and pills and hashish. Among boys 9 per cent and among girls 7 per cent had got high by sniffing. Around 1–2 per cent had tried hard drugs. It seems that the numbers engaging in physical exercise have slightly increased. Overweight increased 2–3 fold from the early 1980s to 2003. In 2003, 19 per cent of boys and 12 per cent of girls aged 12–18 were overweight.

Health differentials

The foundations for socio-economic health differentials are laid at school age. Poor school performance and poor health are associated with each other. Smoking, binge drinking and poor oral hygiene are associated with poor school performance. Poor success at school often has its background in learning difficulties. The differentiation of health behaviour in adolescents

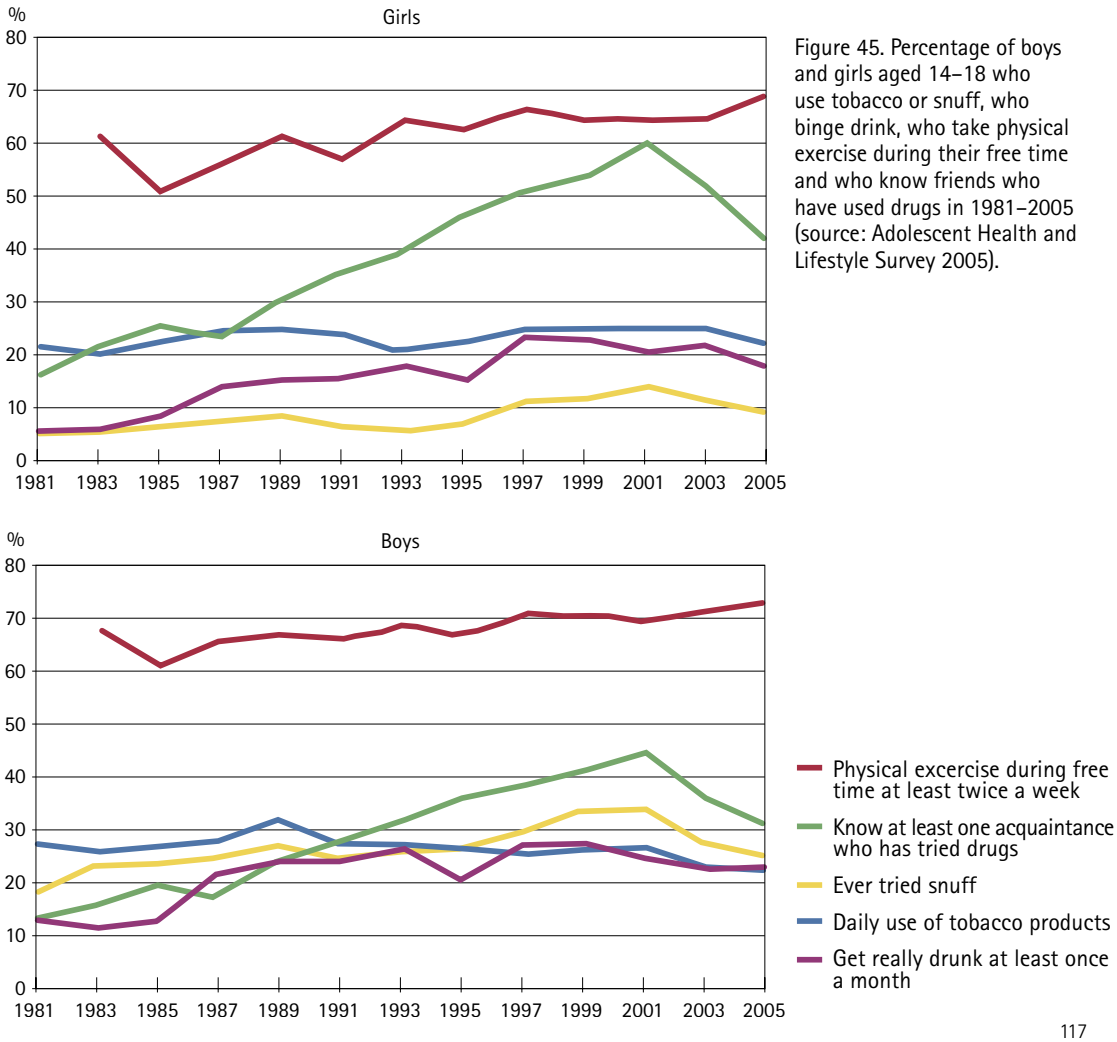

Figure 45. Percentage of boys and girls aged 14–18 who use tobacco or snuff, who binge drink, who take physical exercise during their free time and who know friends who have used drugs in 1981–2005 (source: Adolescent Health and Lifestyle Survey 2005).

begins at ages 13–16 at the latest. Those who finish their schooling early and those who opt for a vocational training path drink more often and in general lead a less healthy life than their age peers who continue to upper secondary school.

There are up to 2–3-fold differences between schools in the occurrence of stress symptoms among pupils, suggesting that it is possible to tackle problems in well-being at school by means of the choice of working methods and by improving school health and welfare services. Living in a nuclear family has a protective effect against health problems; children who live in other types of families have more health problems. The family also influences the choice of study career.

Future challenges

Although the majority of young people in Finland are healthy and lead a healthy life, recent trends are certainly giving cause for concern. Diabetes, asthma and allergies are all increasing. Easy access to tobacco products lowers the threshold to experimenting and leads to regular smoking and nicotine addiction. The easy availability of alcohol and the permissive attitude of adults also influence young people's alcohol use. More and more youngsters today have symptoms of stress, which are often a sign of general malaise. The increase in neck, shoulder and lower back symptoms is at least partly due to the growing amount of time that young people today spend in static positions with computers. This in turn is due, among other things, to how lessons and breaks between lessons are arranged at school and to the decrease in physical exercise classes. The growth of fatigue and tiredness is explained by the fact that children today go to bed later than before and consequently sleep less during the night, by changes in schoolwork and the societal factors contributing to the general malaise among young people. Depression among young people has increased, too. Cutbacks in health care and school services in the 1990s have very much hampered the prevention, early detection and treatment of mental health problems. Bullying at school is common and its frequency varies from one school to the next. The prevention of marginalisation and the tackling of learning difficulties are among the key challenges for the promotion of health in young people.

All youths in the country can be reached via school up to age 16, and beyond that 80–90 per cent can still be reached via educational institutions. Surveys of working conditions at school and evaluations of school welfare should be an integral part of school quality assessments. Welfare assessments should be grounded in the premise that schools are not just for obtaining knowledge, but they are also social communities where young people learn the rules of community, where they can feel comfortable and at ease. Parents and teachers should work more closely with each other with a view to promoting the welfare of pupils.

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Timo Sahi

Health of conscripts

Conscripts are healthier than the rest of the population of the same age. This is due, in part, to prior screening, and in part to army health care.

In Finland all men aged 19 are drafted for military service of 6–12 months. Men liable for military service can apply to do non-military service because of serious reasons of conscience founded on religious or ethical conviction. Four-fifths of each age cohort or 80 per cent opt for military service and less than 10 per cent for non-military service. Women have been able to apply for voluntary military service since 1995. Among the men who took the medical examination at conscription for the first time in 1999, 3.5 per cent were found to be permanently and 4.4 per cent temporarily unfit for service for health reasons. Almost half of these were due to mental health disorders. In 2001 9 per cent of all conscripts had to discontinue their national service for health reasons, most commonly (60%) because of mental health problems. Part of them completed their service later.

Among the most common causes of illness in conscripts are acute infections, followed by accidents and musculoskeletal strain symptoms and injuries. One-fifth of young men at conscription age suffer from allergic rhinitis, allergic eczema, asthma or some other allergy. Mortality among conscripts is around half the mortality rate for all Finnish men aged 15–24.

Health education for conscripts amounts to around 20 hours, 4–5 hours of which is devoted to general health education and the rest to first aid. All conscripts starting their national service receive an information booklet on Health and functional capacity. Work is currently underway to develop mechanisms for mental health screening at conscription. Steps are needed to be prepared for an increase in drug use. Anonymous sample studies are conducted annually to monitor drug use and health habits among conscripts.

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Esko Laes, Mika Gissler

Health of pregnant women

Expectant mothers are in good health. Their average age has increased, which has increased several risk factors. The average number of pre- and postnatal visits to health clinics is as high as 17. Abortion rates are close to the EU average.

Around 85 per cent of Finnish women give birth to at least one child. On average Finnish women have 1.9 children, while the completed fertility rate in the EU is just over 1.5. Around 15 per cent of Finnish couples suffer from childlessness, but one-third of them are successfully treated by advanced fertility treatments. The median age of first-time mothers is almost 28 years, for all parturients the figure is around 30 years. The proportion of parturients under 30 has decreased to 51 per cent while the proportion of parturients aged 35 or over has increased to 17 per cent (Figure 46). The older the parturient, the greater the risk of problems with glucose metabolism and blood pressure. The need for prenatal care and for interventions during pregnancy and delivery also increase with maternal age.

Outpatient visits and care days during pregnancy

During pregnancy, the health of mothers is monitored by maternity and child health clinics as well as by hospital maternity clinics. The recommended number of prenatal visits for first-time mothers is 13–17, for mothers who have given birth before 9–13 visits, including 1–2 postnatal checkups. In recent years the average number of all visits has been at 17, which includes

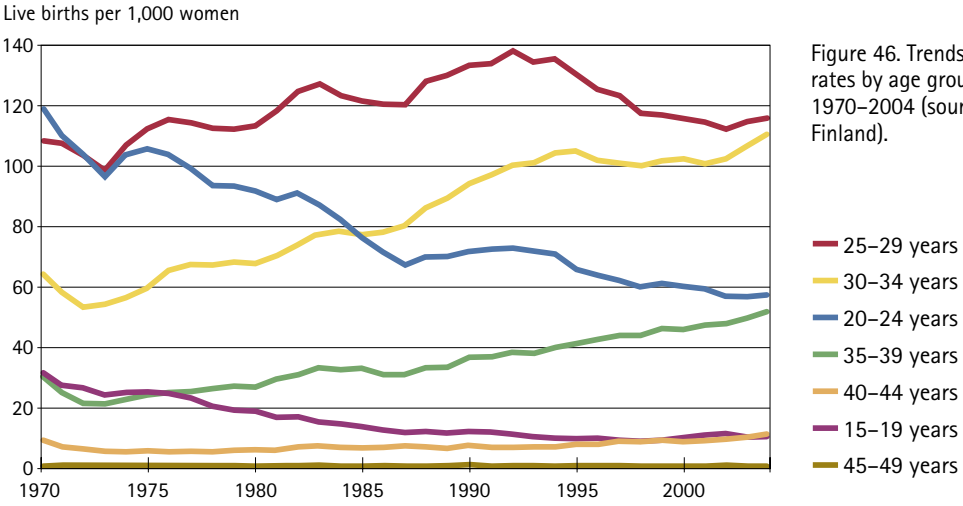

Figure 46. Trends in fertility rates by age group in 1970–2004 (source: Statistics Finland).

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on average three visits to the hospital maternity clinic. During their pregnancy about one in five expecting mothers are admitted to hospital for treatment. The average length of stay in hospital after childbirth is 3.5 days.

Course of pregnancy and childbirth

In 1995–2004 there were 29 maternal deaths in childbirth or 5/100,000 childbirths, which is slightly lower than the EU average. Caesarean sections have increased from 10 per cent in the 1970s to around 17 per cent, partly because of the growing proportion of older parturients. Around one-quarter of all women have at least one miscarriage in their reproductive life, almost 5 per cent have an ectopic pregnancy and almost one-fifth have an abortion. The abortion rate in Finland is at the same level as in the EU on average (9/1,000 reproductive-age women/year), but this remains clearly lower than in the other Nordic countries (12–18/1,000)

Diseases in pregnancy

About one in five pregnant women are found to have elevated blood pressure (>140/90) at some stage of their pregnancy. Each year around 1 per cent of pregnant women are admitted to hospital because of elevated blood pressure. Pre-eclampsia occurs in about 5 per cent and elevated blood sugar rates in around 15 per cent. A considerable proportion of mothers with a disorder of glucose metabolism are overweight and some of them have elevated blood pressure. Asymptomatic bacteriuria is diagnosed in 5–10 per cent of pregnant women and symptomatic cystitis in 1–2 per cent. Some 15 per cent have mental problems during the early stages of pregnancy. Depression is reported in 8–10 per cent of pregnant mothers, postpartum depression in 10–15 per cent, or 30–40 per cent if mild cases are included. The number of mothers with postpartum psychosis is 1–2 in one thousand.

Health behaviours affecting the course of pregnancy

Smoking slows foetal growth, causes premature births and increases perinatal mortality. Some 15 per cent of pregnant women continue to smoke and 3–5 per cent drink more than the recommended limit (more than 10 alcohol units a week or more than five units a day). The incidence rate of foetal alcohol syndrome (FAS) in Finland is around 1–2 per one thousand newborns. One-third of all drug addicts are women of reproductive age, and a large proportion of them have hepatitis C. Indeed the health of both expecting methods and newborn babies can be significantly improved by interventions aimed at changing people's health behaviours.

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Eino Heikkinen

Health and functional capacity in the elderly population

The elderly population in Finland is growing faster than in most other countries. As most diseases and functional limitations increase steeply with advancing age, the overall burden of disease and disability is set to grow. Many old people are, however, in quite good health, and much more can be done to improve the environment, prevent and treat diseases, and improve rehabilitation so that a growing proportion of the elderly can lead a good and active life.

The elderly population has grown very rapidly. It is predicted that by 2030, the number of people aged 65 or over will have increased by a further 75 per cent, while the figure for the whole of the EU will remain at less than 60 per cent (see Figure 2 on page 21). By then, 26 per cent of the Finnish population will be over 65. Health policy is aimed at improving the health and functional capacity of the swelling elderly population so that people can retain their independence longer.

Morbidity

Illnesses increase with advancing age: in the population aged 75–84 no more than one in ten have no clinically diagnosed diseases. In the age group over 75, about half have a cardiovascular disease, 30–40 per cent a musculoskeletal disease and around 30 per cent chronic respiratory diseases. Dementias and malignant tumours are among the diseases that increase most sharply with advancing age. Among persons aged 65–74, 40 per cent have symptoms that adversely affect their daily life, in older age groups the proportion is one-half. Some 20 per cent of men and 30 per cent of women aged 75–84 have symptoms of depression, increasing to around 40 per cent in older people. However the prevalence of clinical depression is only 5–10 %. Even in older age groups the proportion who rate their health as poor is quite low: in the age group 65–74 years 6 per cent, 75–84 years 15 per cent and 85 years 25 per cent rate their own health as poor.

Functional capacity

Ageing processes, increasing morbidity and lifestyle changes combine to have an adverse effect on functional capacity and increase the need for help. The onset, speed and impacts of ageing-related changes on quality of life and independent living vary in different areas of functional capacity and in different individuals.

The physical performance level of an 80-year-old is no more than 40–80 per cent of the performance level of a 30-year-old. In the age group 75–84 three-quarters and among people aged 85 or over just one-third reach a walking

Eino Heikkinen wrote the chapter in the original Finnish report and revised the shortened English version.

speed of 0.8 m/s, i.e. fast enough to safely cross the road at traffic lights. Among women aged 85 or over, less than one-half and among men almost two-thirds are capable of climbing one flight of stairs without having to stop to rest. In this age group one in three women and every other man is capable of walking half a kilometre. Among women aged 85 or over 75 per cent and among men 90 per cent are capable of moving within the house. Loss of muscle power is a major reason for the decline in physical performance level.

A significant proportion of older people have difficulty in hearing speech, especially in noisy environments and in conversations with several people. Almost one in four in the age group 75–84 and half of those over 85 have a markedly reduced hearing threshold (>40 dB) at speech frequencies. One in four people aged 75–84 and every other person aged 85 or over have difficulty reading newspaper and book print. In the population aged 75–84 years 7 per cent and among those aged 85 or over 30 per cent have visual handicaps (visual acuity <0.3).

Cognitive functions also change with advancing age. In healthy individuals these changes are relatively minor up to age 75–80 and usually have no impact on everyday life. Around one-third of the population over 85 suffer from dementia.

Service needs and quality of life

The vast majority, 96 per cent of people of retirement age live outside institutions but account for more than one-third of the total use of public social and health services. One-third of women and one-quarter of men aged 65 or over receive help because of reduced functional capacity. Among non-institutionalised men and women of retirement age, 14 per cent receive help at least daily (see Table 5 on page 55).

Losses of close friends and relatives, loneliness, illnesses and the need for help due to disabilities adversely affect quality of life in old age. For older people the single most important sense of meaning in life comes from other, close people. Other sources of meaning include respect for life, health and functional capacity.

Future outlook

Many of the diseases that restrict the functional capacity of older people have become less common, the living environment has changed and the involvement of older people in various activities has increased. These and other changes have contributed to the improvements seen in the functional capacity particularly of younger pensioners (see Table 4 on page 54), and this trend is expected to continue. However it seems that there have been no improvements in the functional capacity of people over 85.

Even if the incidence rate of diseases continued to decline and treatments continued to improve, the growth of the elderly population means that the numbers with diseases and functional disabilities will continue to rise (see Figure 17 on page 55). It is expected that the growing number of the oldest-old will increase the need for long-term care and demanding home care, which are highly resource intensive.

Good results can be obtained in the elderly population by stepping up efforts in prevention and rehabilitation. Age and diseases are no obstacle to improving mobility, for instance. The key to maintaining functional capacity lies in adequate physical and mental activity. In the future people who reach retirement age will have a higher level of education than today and a different way of life, which will also be reflected in their services needs. The reduction of socio-economic differences presents an important challenge to health policy: highly educated and well-to-do pensioners have a longer life

expectancy than others as well as better health and functional capacity.

The planning of health services not only for older people but the whole population is based on a notion of health in which health is seen as consisting in a balance between the individual's functional capacity, their aims and social and physical environment. The challenge of improving the health and functional capacity of older people calls for health promotion and disease prevention that take account of the needs and desires of these people.

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PART VII
SERVICES AND SOCIAL SECURITY RELATED TO HEALTH AND ILLNESS

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Juha Teperi

The development of health care services since the 1990s

The recession in the first half of the 1990s resulted in cutbacks in preventive and some other prioritised services. A national health care programme launched in 2002 is aimed at major improvements in health care.

Changes in the health care steering mechanism, costs and financing

Over several past decades, the provision of health care has been gradually delegated to local authorities. However, central government has still been able effectively to steer the health care system by means of transfers earmarked for investment and the creation of new posts.

Since 1993, central government transfers to local government have been paid out to local municipalities on an imputed basis using a formula that estimates local service needs. Municipalities have both the power and the responsibility to provide health care services in what they consider the most appropriate manner. The reform was motivated both by the tendency of the earlier transfers system to drive up expenditures, and by a general drive to relieve central government of its responsibilities. On the other hand there were also concerns at the time of the reform that residents in all parts of the country would not receive equal treatment.

The legislative reform was introduced during the deepest recession that any OECD country had seen since the Second World War. The new system was immediately put to the test in the most extreme conditions.

Real health care expenditure declined year-on-year for three years running (1992–1994). It was not until 2002 that the peak figures recorded in 1991 were reached. Although real health care expenditure has continued to increase since the recession, the growth has been slower than previously. This is clearly demonstrated by the statistic that in recent years, Finland's health care expenditure as a proportion of GDP has been among the lowest in EU countries (EU-15).

The fears about increasing inequalities between local municipalities have not been borne out, at least with respect to the costs of health care. However, the 1990s saw significant changes in the funding of health care services. The share of central government dropped from around 35 per cent to less than 20 per cent. The share of fees charged directly to service users went up to 20 per cent. At the same time the contributions of the Social Insurance Institution and local governments in particular increased considerably, the latter rising from 32 per cent in 1997 to 43 per cent in 2002.

In the late 1990s the overall impact of this multichannel funding system became somewhat regressive: low income earners today contribute a larger proportion of their disposable income

to the production of health care services than do people with a high income.

Production and use of health services

As was discussed above, Finland increased the resources made available to health care to a lesser extent than many other countries and to a lesser extent than it would have done had it not been for the recession. How has the relative decrease in funding been reflected in different areas of health care, or in different patient groups?

In the early 1990s somatic specialised medical care recorded an increase both in the number of treatment episodes it produced, in the number of outpatient visits and in the overall number of patients treated. This was achieved first of all by transferring long-term patients to primary health care, and secondly by raising productivity. The increase in resources for specialised medical care since 1993 is seen in the allocation of the medical labour force: in 2004 the number of person-years worked by medical doctors was 30 per cent higher than 10 years previously.

In psychiatry, the number of hospital bed days was halved during the 1990s. Nonetheless the number of hospital admissions increased by more than one-third. The dramatic decrease in the average duration of admissions was partly due to the removal of long-term patients from psychiatric hospitals, but the same trend was also seen among those patient groups that continued to remain in care. The expert opinion is that the sharp increase seen in the number of outpatient visits cannot fully compensate for the change.

As a result of the mass removal of elderly patients from specialised medical care, the patient population on PHC inpatient wards now requires increasingly demanding care. At the same time some of the patients requiring longer-term care have moved into often privately owned service flats operated by social services. The number of those flats has sharply increased. By contrast the number of older people in receipt of home care services seemed to decrease in the 1990s.

The number of people seeing a GP in primary health care increased up to 1997. Since then the number of visits at health centres has slowly come down, at the same time as visits to occupational health physicians have increased.

A real decrease was recorded in several preventive services. The sharpest decline was seen in the number of visits to child health

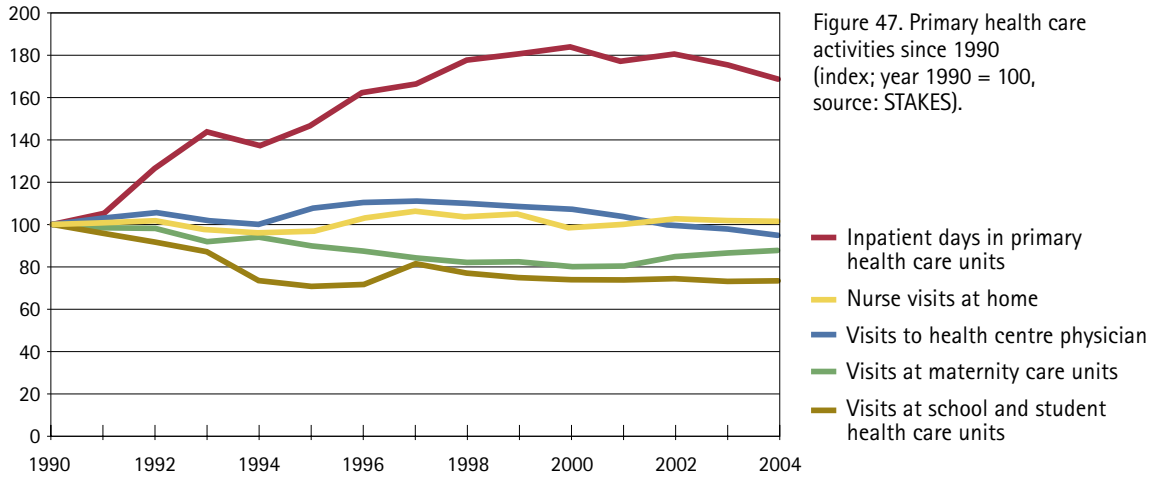

Figure 47. Primary health care activities since 1990 (index; year 1990 = 100, source: STAKES).

clinics and particularly in school health care and student health care services. Services provided by maternity care units were significantly reduced (Figure 47).

The area that has come through the recession and the subsequent period of economic recovery most unscathed is acute medical care. The volume of preventive services has been scaled down, and long-term care has concentrated on patients requiring the most attention. The health policy goals which emphasised the development of preventive services, outpatient care and home help services, suffered the most under the pressures of the 1990s. In a rather crude simplification, services for people of working age and capable of working have remained unchanged or even increased, services for children and young people have been cut and those for the elderly and the disabled have been partly outsourced with a view to achieving greater cost effectiveness in production.

Challenges for the development of health care

The biggest long-term challenges for health care are presented by population ageing, the rapid advances in (medical) technology, budgetary constraints in general government, the growing expectations placed on the health care system and the growing trends of globalisation. In the shorter term, the main focus is on the development needs identified in the existing system. Considered against actual needs, the area that leaves the most to be desired is the development of services for children, the elderly and mental health patients.

Compared to the nation's socio-economic development in general, health differentials between population groups are exceptionally large in Finland. A key priority in future efforts to develop the health care system is to seek ways in which to improve the health of the most underprivileged groups. It is also necessary to find structures that will support the coordinated regional development of specialised medical care, primary health care and social welfare services.

In 2002 the Finnish government decided to set up a National Health Project focusing on five main areas: providing for effective primary health care and preventive services, guaranteeing access to care, ensuring the availability and expertise of personnel, reforming functions and structures and increasing funding for health care services. The project's most visible achievements during its first years have been to establish time limits for access to non-urgent care. The main challenge for the years ahead is to strengthen primary health care and preventive work.

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Health care personnel and staff welfare

Compared with other health systems, a key distinctive characteristic of Finnish health care is the central role played by nursing staff. The growing demand for services coupled with an ageing workforce present major challenges for the future.

According to the Statistics Finland register of municipal personnel, the number of staff working in health care in 2000 was 121,000 – just short of the figure recorded ten years previously before the onset of the recession (124,000).

Health care personnel in Finland have a very high level of education, and they are more or less evenly distributed across the country. The personnel structure has remained more or less unchanged during the 1990s and 2000s. With the exception of a new training programme for practical nurses, there have been no major changes in the education system.

Health care education and the day-to-day operation of health care in Finland have traditionally leaned heavily towards nursing staff: auxiliary, practical, staff and registered nurses account for over 50 per cent of the total number of qualified health care personnel in the country. The level of education among health care personnel has steadily increased.

Some two-thirds of personnel are on permanent contracts, although there does tend to be some cyclical variation in the figure (65–71%). The single biggest area of health care is specialised inpatient care, which continues to account for more than one-half of personnel in municipal health care services. The majority of staff are women, but the gender balance varies widely depending on the area concerned. In administration, for example, men account for 20 per cent of staff, while the overall average is no more than 9 per cent.

Most health care personnel are aged between 35 and 49 years. Their mean age increased by five years over the period from 1990 to 2000. The differences in mean age between different functions of health care are not very great, but over the next few years large numbers of pharmacists, dentists and doctors will be retiring.

The rate of retirement is rapidly accelerating at the same time as population ageing is driving up the need for health care and social services. In 2001 a committee under the Ministry of Social Affairs and Health observed that more than 6,000 new staff will be needed to redress just the current shortfall of personnel in the care of the elderly. In addition, 12,000 new staff in different occupational groups will be needed to meet the growing demands in social and health care by 2010. In practice this means that the number of student places in initial vocational training and at polytechnics and universities will have to be increased by some 10 per cent. According to the committee it is important to enhance the appeal of health care careers. Special attention must be

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given to promoting welfare in the workplace and reconciling work and family life.

In the 1990s and early 2000s there have also been some major structural changes that have affected the work environment of health care personnel. Indeed since the 1990s the health and work ability of health care personnel have increasingly come under threat from cutbacks in resources, constant operational and administrative changes, the ageing of personnel as well as the increase in short-term employment and the threat of unemployment.

Follow-up data since the 1980s have clearly underscored the high level of physical and mental strain involved in work in the health care sector. According to the research evidence experiences of stress and strain increased between 1990 and 2004. Employees themselves thought the reason lay in the increasing knowledge requirements on the job and the increasing workload. Research results on municipal sector employment indicate that the high mental demands and lack of employee participation in decision-making predict sickness absenteeism. One of the distinctive characteristics of work in the social welfare and health sector is the high level of responsibility for people's health and well-being. This sense of responsibility is reported by virtually all occupational groups from medical doctors to housekeepers.

Although health care personnel are not in particularly poor health when considered in terms of work-related diseases or mortality in different occupational groups, women doctors did record a higher mortality from suicides than any other occupational group in 1991–2001. Mortality from suicides was also high among practical nurses and medical technicians. Long-term illnesses increased most sharply among housekeepers, general assistants and registered nurses. In the light of long-term sickness absences and other indicators, the increasing workload in hospitals has affected ageing employees more than others.

Health care is a labour-intensive sector and the deterioration of health among staff members will no doubt adversely affect their welfare in the workplace, drive up employers' labour costs and possibly have adverse effects on the quality of the service provided to clients and patients, even on the outcomes of care.

The most recent results from follow-up studies suggest that fair and just management and decision-making in hospitals is a major predictor of illness in hospital staff. Especially in situations of change, staff welfare depends crucially on the accuracy of information on which decisions are based; on listening to the views and opinions of staff members; and on treating staff equally and with respect.

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Kari Mattila

Primary health care

Primary health care services are provided through municipal health centres, occupational health services and by private physicians. About 5 per cent of PHC patients are referred to specialised medical care.

One important dividing line within the health care system runs between primary health care and specialised medical care. The target for primary health care is the population. In addition to focusing on the individual, the responsibilities of primary health care require a community approach. Primary health care is universally accessible and constitutes the foundation for the country's health system. For that system to work properly, it is crucially important that there is good cooperation between specialised medical care and primary health care.

A nationwide health centre system was established in Finland with the introduction of the Primary Health Care Act in 1972. The Act charges local authorities with the task of providing health care that addresses individuals and their living environment and medical care for individuals and related activities aimed at maintaining and promoting the population's health. For the execution of this task, the local municipality is to operate a health centre. The unit responsible is thus the municipality.

Primary health care services are provided through health centres operated by municipalities, occupational health services and private medical doctors. In 2004 a total of around 25 million outpatient visits were made to local health centres. Visits to see a doctor accounted for 9.2 million of these visits, 15.8 million visits were made to other health care staff. The primary health care sector employed 9 persons per 1,000 population; 0.7 of them were municipal health centre doctors. Only 5 per cent of primary health care patients are referred to specialist medical care.

Health visitors' contribution to disease prevention and health promotion has ensured adequate coverage and a high standard of services at a reasonable cost. In the 1990s and 2000s the number of visits for health counselling has declined. At the same time primary health care has been working more closely with specialised medical care in a bid to increase its efficiency. Advanced screening methods, including ultrasound, have been introduced on a broad scale. Breast and cervical cancer screenings are provided throughout the country.

Health care for local residents is the most visible part of the work of health centres. This includes surgery and emergency care by doctors and nurses, rehabilitation, home nursing services and care at health centre hospital. Care is provided under the supervision of GPs. Health centres are well equipped to take and analyse laboratory samples and to take x-rays. Since 1997 the number of visits to see a health centre GP have decreased 14 per cent (Figure 48).

There are a total of 3,500 health centre doctors. One-third of them are specialised in general practice. The biggest occupational groups at the health centre are nurses of various ranks, health

Kari Mattila wrote the chapter in the original Finnish report and revised the shortened English version

visitors and practical nurses.

Improved transport links and telephone services have made it possible for health centres to take steps to concentrate their night-time emergency services in larger units. Increasing demands on efficiency are also causing increased pressure in this direction. Each local municipality is under obligation to provide a comprehensive ambulance service within its area, even if it does not produce the service itself. Dental care is discussed in more detail elsewhere in this report.

After a minor dip in the use of occupational health care services during the recession in the 1990s, the number of visits has now climbed to 2.8 million a year (Figure 48).

Occupational health care services provided through health centres are largely focused on self-employed persons and particularly on farmers. Health centres account for close to 20 per cent of all occupational health services.

Most private doctors are specialists. Compared to other private services available, there are only few doctors in the private sector who specialise in general practice. The number of visits to private doctors decreased somewhat during the recession, but since then the figures have been slightly up again (Figure 48).

In the 1990s the amount of money spent by local authorities on primary health care decreased by ten per cent. At the same time, local municipalities have had to pour increasing sums into specialised medical care. Primary health care has not developed in balance with specialised medical care. If the current shortage of specialists is addressed without taking into account the needs of primary health care, there is the risk that health centres will be abandoned and the main focus of health care will shift to specialist medical care. Averting this scenario is one of the biggest challenges now facing health care.

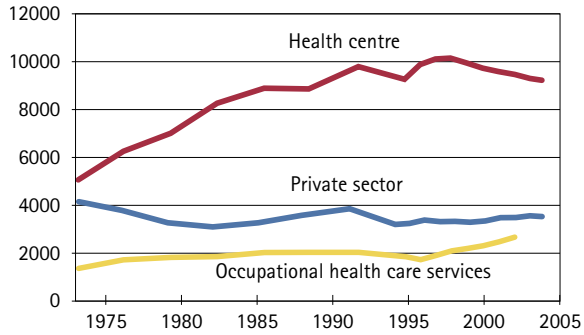

Figure 48. Number of annual visits (1,000) to the doctor at health centres, in occupational health care services and in the private sector in 1973–2004.

A major challenge for the immediate future in the field of primary health care is the integration of mental health work as part of health centre services. Special development efforts will be needed to support independent living in the community among older age groups, to secure the availability of home care and to facilitate cooperation between health care and social welfare services.

The division of labour between primary health care and specialised medical care must also be constantly rethought as the spectrum of diseases continues to change and treatments continue to develop. Flexible chains of care based on patient needs is one way to strengthen and improve cooperation.

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Juha Teperi

Specialised medical care

Specialised care has assumed an increasingly prominent role in the past few years. Cooperation between and within hospital districts remains a challenge.

Specialised medical care refers to the area of health care that is provided by specialists in specialised fields of medicine. It is the second tier in the health care system: with the exception of urgent cases, admission to treatment requires a referral. In addition to the examination and treatment of diseases, specialist medical care also includes preventive and rehabilitative services.

The Act on Specialized Medical Care took effect at the beginning of 1991, creating 21 hospital districts in the country. It is required that each municipality belong to a hospital district. The reform of the system of central government transfers to local government in 1993 had significant implications for specialised medical care. Previously, the transfers were paid directly to the service providers, whereas from 1993 the monies for specialised medical care were paid to the local municipality.

New tools were needed to make the most of the new dynamics. Contract steering mechanisms are one of the ways in which local municipalities can steer and direct specialist medical care, gain better predictability of costs and provide a more solid foundation for operational planning in hospital districts. Quality management and division of labour (chain of care) elements are often built into these contracts as well.

The biggest organisational change of recent years has been the creation of the Hospital District of Helsinki and Uusimaa (HUS) at the beginning of 2000. The new hospital district takes in more than one-quarter of the country's total population.

The average duration of inpatient admissions dropped by around one-half from 1988 to 2004 (Figure 49). The number of admissions, on the other hand, went up by almost 20 per cent by 1997. This was due not only to treatments for one illness being split up between multiple admissions, but there was also an increase in the actual number of (different) patients admitted for treatment. The number of day surgery procedures increased almost fourfold in 1994–2002.

During the recession in 1991–1994, the costs of somatic inpatient care decreased in real terms by seven per cent. Since then the figures have been steadily rising: in 2003, the real value of resources was 23 per cent higher than in 1991. In 2003 the number of person-years worked by doctors in specialist medical care was 31 per cent higher than in 1991.

Productivity in specialist medical care increased significantly in the early 1990s: at the same time as the resources decreased, output remained at more or less the same level or even increased somewhat. Since then the resources available have increased, but there has been no further increase in productivity.

As low-intensity care days at the end of the admission period have increasingly been replaced by higher intensity care days with new patients,

this has meant an increase in the actual workload. For personnel, this has meant a constant increase in the pace of work and ever-growing job demands.

In 2002 one-third of all outpatient visits to specialists were still in the private sector, and most of these visits were concentrated in larger population centres and in higher income brackets. This is also reflected in municipal inpatient care in that private specialist surgeries are a major avenue to public hospital treatment. This is a problematic situation in terms of fair and equal service provision.

Almost all hospital districts are making major efforts in the field of quality work, and they have been working together to develop methods for comparing and improving productivity and effectiveness since 1997.

New legislation in 2004 concerning access to care sets out maximum time limits within which people are entitled to receive care. The new law also gives a more pronounced role to specialised medical care by charging the hospital district with responsibility for organising the care of patients who have been referred to hospital and for drafting national eligibility criteria for admission to care.

Specialised medical care depends most critically on adequate and a sufficiently high level of expertise and competence. The impending shortage of labour may affect all occupational groups in health care. Long-term, sustainable strategies are needed in the field of both personnel and education policy.

In the area of specialised medical care, further efforts are needed to develop outpatient services with a view to ensuring adequate access to those services. Another challenge relates to quality development. Advances in technology and population ageing call for increasing service production outside the hospital walls.

Substantial efforts are needed to step up cooperation between the hospital districts. There is reason to question whether it makes sense for each of the 21 districts to provide a full range of services. Perhaps an even more significant

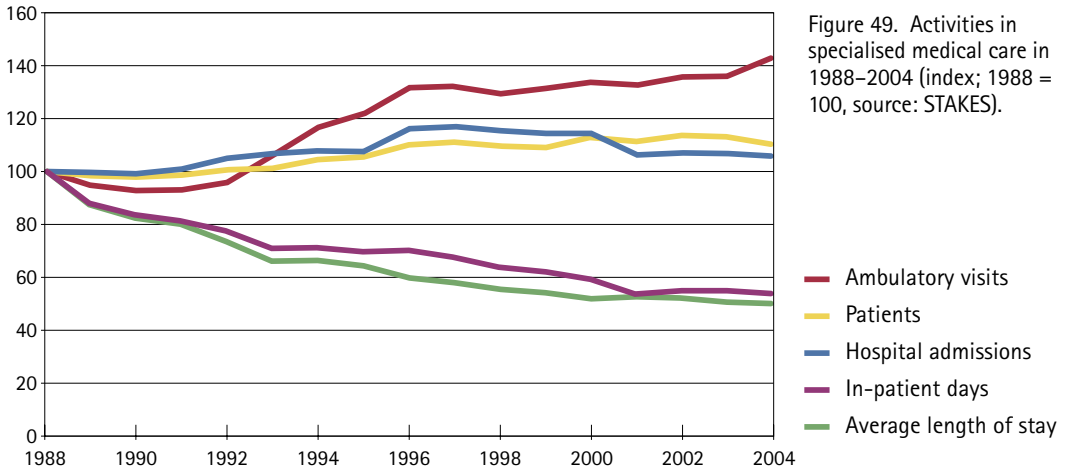

Figure 49. Activities in specialised medical care in 1988–2004 (index; 1988 = 100, source: STAKES).

challenge is presented by the need to step up cooperation between specialised medical care and primary health care within hospital districts. This will require even more determined efforts to develop new models of regional cooperation.

Steps to increase efficiency will not in themselves be enough to meet the challenges of the future. That will require entirely new ways of organising and producing health care.

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Mental health work and psychiatric care

The number of psychiatric in-patient beds has decreased sharply, but there has been no corresponding increase in psychiatric outpatient services. Further efforts are needed to strengthen mental health promotion and the prevention of mental disorders.

Mental health work comprises the promotion of mental health as well as the prevention, treatment and rehabilitation of mental health disorders. In addition to the provision of mental health services, another area of mental health work is the improvement of the population's mental well-being.

Mental health work is officially the responsibility of health and social services, but many NGOs, private firms and citizens contribute as well. Specialised psychiatric services constitute only a small, but an important part of mental health work.

According to a major health survey in 2000–2001, the prevalence of psychiatric disorders in Finland was at the same level as 20 years earlier. The evidence suggests that well over one-half of the people who were in need of mental health services were not receiving any form of care or help. According to several population surveys, no more than one in three persons with major depression receives care.

Another survey found that around one-half of children who presented with psychiatric symptoms sought medical advice or treatment. No increase was seen in the rate of psychiatric problems in children from 1989 to 1999, but during this period the use of mental health services among children doubled.

The number of disability pensions and daily sickness allowances paid out on grounds of psychiatric disorders has increased. In the ten-year period from 1993 to 2004, the consumption of psychopharmaceutical drugs measured in terms of defined daily dose (DDD) went up by 67 per cent. This was mainly due to an increase in prescriptions of antidepressants which nearly quadrupled.

In the early 1980s there were still some 20,000 psychiatric beds in the country. By 2004 the number had dropped to less than 4,700. The number of in-patient days has dropped at the same rate, but the total number of patients receiving care each year has remained more or less unchanged. In other words, the duration of hospitalisations has become significantly shorter over the past 20 years. Long-term psychiatric hospital stays have been replaced by supported living in community-based rehabilitation or nursing homes, which for the most part are privately owned and operated. In 2003 these homes had almost 5,000 inhabitants. The decrease in the number of psychiatric beds has also been facilitated by the transfer of long-term patients with dementia or intellectual disabilities to non-psychiatric treatment facilities.

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The provision of out-patient psychiatric services has increasingly been transferred from hospital districts to local authorities. The overall number of psychiatric outpatient visits has steadily grown, and in 2004 more than 2.1 million out-patient mental health visits were provided by the health services. The growth in community support functions such as day hospitals, day activity centres, group homes, rehabilitation homes and other supported housing services, however, falls short of needs. Many commentators have described the structural overhaul of psychiatric care in the 1990s as an uncontrolled exercise in slashing resources which led to an unsustainable situation for psychiatric patients and their families.

The most important part of mental health work is done in connection with basic social welfare and primary health care services, and it is on this area that future development efforts must concentrate. The main purpose and function of primary services lies in the promotion of mental health, preventive work as well as in the diagnosis, treatment and rehabilitation of mental health disorders. Each local municipality should have its own strategic plan for mental health work. Efforts for the promotion of mental health and for the prevention of mental health disorders should be significantly stepped up. These efforts can make use of a variety of different methods.

National development projects have had a huge significance in Finland where responsibility for service provision is heavily decentralised. The local authorities who bear the main responsibility must be able to draw upon national recommendations and development initiatives. Indeed in 2001 the Ministry of Social Affairs and Health and the Association of Finnish Local and Regional Authorities issued a set of quality recommendations for mental health services. Three pilot regions for the development of mental health and substance abuse services were established in 2005, as part of the national health care project.

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Kimmo Räsänen

Occupational health services

About 90 per cent of employees have access to occupational health services. Increasingly, the main challenge for these services is presented by mental health problems and psychosocial aspects of working life.

Occupational health services provide a range of services aimed at the prevention and treatment of diseases; the maintenance of working capacity; the promotion of health in the working population; and support for participation in the labour force.

The Act on Occupational Health Services requires that employers provide occupational health care services for all wage earners in their employ with a view to preventing health hazards and maintaining their working capacity. The law says that in connection with preventive occupational health services, the employer may also provide outpatient services at GP level. The revised legislation that entered into force at the beginning of 2002 and the related decrees, education and the criteria for reimbursement put ever greater emphasis on the preventive component.

Occupational health services work to promote people's working capacity by concentrating on the individual (resources and health), on the working environment (ergonomics, occupational hygiene, safety in the workplace) and the workplace community (management, interaction). In practice occupational health services are provided by multidisciplinary teams including physicians, nurses, physiotherapists, psychologists and other experts.

One-half of the justified and reasonable costs (60% for preventive actions) incurred to the employer from the provision of occupational health care services are reimbursed from sickness insurance funds. Entrepreneurs and the self-employed may also organise occupational health services for themselves, and they too are eligible for compensation.

More than 80 per cent of the active labour force in Finland are covered by occupational health services, and for wage earners the figure is over 90 per cent. Among farmers around one-half and in other self-employed groups about one-quarter have provided for their own occupational health services. The lowest coverage is found in building construction, in the transport sector and in small companies. There is only little geographical variation in coverage.

All in all there are approximately one thousand occupational health care stations in the country. Municipal health centres are by far the biggest producers of occupational health services, both in terms of the number of enterprises and individual clients covered. When measured in terms of overall costs, however, the biggest providers are occupational health stations run by business enterprises.

The costs of occupational health care in 2003, as reported to the Social Insurance Institution,

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amounted to 375 million euros; out of this total 167 million euros were compensated to employers. The average cost per person covered by these services varied between 116 to 249 euros, and the average reimbursement varied between 56 to 118 euros by service provider group.

Medical care is included among the occupational health services of 80 per cent of all wage earners. Occupational health services account for over one-half of all their outpatient visits to a doctor. However, overall service use is not higher than in other population groups, but services provided by occupational health services compensate for health centre services.

In 2001 around one-fifth of employer representatives were very satisfied and more than one-half were rather satisfied with the value for money of occupational health services. Among employees, two-thirds rated occupational health services as excellent or good in 2003.

During the first decade of the 2000s the ageing of the labour force will continue to accelerate and the mental stress caused by the rapid changes in the workplace will increase. The adaptability of occupational health services will be tested most particularly by how well they succeed in their partnership efforts of maintaining people's working capacity. The integration of occupational health services as part of business enterprises' production process means that the development of the workplace community and the workplace environment is given increasing prominence alongside the traditional individual orientation.

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Eeva Widström

Oral health care

In a major reform in the early 2000s, cost-sharing has been extended to cover the whole population.

In most EU member states dental services are largely produced by private dentists. The Nordic countries have a different system for oral health care delivery. The Nordic model is characterised by a fairly large public dental service (PDS) which covers even the more sparsely populated areas with salaried personnel. The state has a central role in the guidance and supervision of dental care. The private sector is complementary to the public sector. In Finland PDS has a market share of about 50 per cent of total dental care production. Financed from central and local government tax revenue and patient fees, PDS is run by local municipalities. The costs to patients of attending private care are also subsidised through national health insurance (NHI), financed by employers, employees and the state.

Finland was slower than the other Nordic countries to introduce public dental services. The first move in this direction came in 1956 when municipal dental health care was made available to schoolchildren. Fifteen years later, the Public Health Care Act obliged local municipalities to provide health care, including dental services, to all residents. Due to lack of resources, dental services were initially restricted to children. In the 1980s PDS started gradually to offer services to young adults and special needs groups. At the same time, NHI reimbursed private dental care to the same age groups. In 2000, persons born in 1956 or later (58% of the population of 5.1 million) should have been offered dental care through PDS or subsidised private services. With the exception of World War II veterans, older adults had to use private dental services but received no reimbursements. Children's oral health care in PDS was free. In practice, around one-third of Finnish people lived in areas where the whole population, regardless of age, had access to public oral health care (PDS). Another one-third lived in areas where health centres provided oral health care – according to the statutes – mainly for people born in 1956 or later, and one-third in areas where the PDS, at its own discretion, provided services only for some of the younger age groups. Universal access was most common in rural areas; bigger towns and cities had the most restrictions. Private services were concentrated in the bigger cities and southern parts of the country.

A major dental care reform

In 2001–2002 the oral health care provision system was thoroughly reformed. The Primary Health Care Act and National Health Insurance laws were revised. The age limits restricting access to PDS were removed and subsidies for private dental care were expanded to cover all age groups. However, prosthetics was still excluded. The health policy aims of the reform were to improve adults' access to necessary dental care, to increase equity in the use of the services and

to lower the cost barriers. Another important aim was to integrate oral health care with general health care.

The reform increased the demand for oral health care in the adult population. Bigger cities with little tradition of treating adults in PDS had difficulties supplying the services and the queues became long. According to national statistics every third adult had used PDS or subsidised private services in 2000, before the reform. In 2004 the corresponding figure was almost 50 per cent. The use of public services increased most of all in urban municipalities, and in the private sector the number of reimbursement recipients doubled. Access to emergency dental services in PDS improved. The coverage of children's care in PDS remained at 76 per cent a year. From 2000 to 2004 the number of working age dental practitioners decreased slightly and the number of dental hygienists increased. Furthermore, PDS employed about 10 per cent more personnel and the number of full-time private dentists fell slightly. The total running costs (patient fees included) of oral health care increased by about 15 per cent.

In 2004 there were 4,540 active dentists (one dentist to about 1,100 inhabitants) and 1,260 dental hygienists in Finland. PDS treated about 960,000 adults and 850,000 children and the private sector about one million adults. The total running costs of PDS were 337 million euros and those of the private sector (technical laboratory costs included) 431 million euros, altogether just over 7 per cent of total health care expenditure.

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Jukka Kivekäs

Rehabilitation services

Rehabilitation has expanded markedly since the early 1990s, especially among the disabled and severely handicapped.

Various authorities are involved in the provision of rehabilitation. Social welfare and health services, the education sector and labour administration all have their own responsibilities in the field of rehabilitation. Social insurance institutions are also major providers of rehabilitation services.

Public health care and social welfare still produce most of the services they offer, but the share of purchased services has been growing in recent years. The single biggest service provider in rehabilitation is the Social Insurance Institution, which both purchases a large amount of rehabilitation services and produces these services itself. Labour administration purchases vocational training services and produces and sells services for career guidance, for example.

In 2000, total rehabilitation expenditure in Finland amounted to 1.2 billion euros. The increase in the resources invested in rehabilitation during the 1990s was primarily attributable to services for the disabled and the medical rehabilitation of the severely handicapped. From 1994 to 2002, the number of severely handicapped (medical) patients in rehabilitation programmes provided by the Social Insurance Institution increased by 60 per cent.

Changes to pension legislation in 1996 and 2004 have had the effect of increasing participation in rehabilitation programmes and strengthened the role of the employment pensions system in occupational rehabilitation. The scope and area of rehabilitation has expanded considerably within the field of occupational health care, where activities aimed at maintaining working capacity can be regarded as a form of early rehabilitation.

The National Pensions Act has been revised so that recipients of full disability pension now have the option of putting their pension on hold for a period from six months to two years and returning to work. In this case they are eligible for special disability allowance. In addition, it is required that occupational rehabilitation plans are drawn up for all severely disabled young people aged 16–18 with a view to supporting their education and employment. The long-term unemployed aged under 25 are required to take part in rehabilitative work in order to gain eligibility for income security benefits.

Compared to the amount of resources invested in rehabilitation, there is only limited research based knowledge about its effectiveness. Working under the auspices of the Ministry of Social Affairs and Health, the Advisory Board for Rehabilitation published a research programme for the development of rehabilitation in 2003.

The biggest issue in this field is the rehabilitation of the increasing number of elderly persons, among whom special rehabilitation programmes for war veterans and invalids are decreasing rapidly. It is expected that

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rehabilitation will expand to take in new groups in the future, such as drug and substance abusers, convicts released from prison and people suffering from work fatigue. Intensive development efforts are also needed to step up the treatment and rehabilitation of children and youths with psychiatric problems.

The main focus in the development of rehabilitation over the next few years will probably be upon improving multiprofessional cooperation within the field. Among the new forms of rehabilitation, key elements are the support mechanisms that extend through to working life (e.g. supported employment) and the patient's own commitment to rehabilitation. The diversity of the service and funding systems for rehabilitation underlines the importance of case management. A rehabilitative approach must be adopted as the leading principle in all social welfare and health services.

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Marja Vaarama, Anja Noro

Care of older persons

The goal of increased support for older persons living at home has not yet been met. The rapid ageing of population in Finland is driving up the need for care. In the future better coordination is needed between service providers.

Even minor and temporary changes in the functional capacity of ageing people can give rise to a need for home care if there is no one at home to provide help. Other factors that determine the need for help, apart from living alone, are the barriers for indoor mobility and the accessibility of the living environment.

The number of one-person elderly household-dwelling units has increased. In 2000, 59 per cent of household-dwelling units aged over 75 were one-person households. Around 19 per cent of household-dwelling units over 75 have a substandard level of housing amenities.

Dementias commonly lead to impaired functional capacity and greatly increase the need for services. The forecast implies that the number of persons with dementia in Finland will increase from 80,000 in 1999 to 110,000 in 2030.

The key aim of services for older persons has been to support independent living in the community. Among the services available for older people are home help, home nursing, home care (combining home help and home nursing), support services, day activities, day care, day nursing and support for informal care. Support services include cleaning, laundering, bathing as well as transport, meals, escort and security services.

The number of home help customers has decreased considerably (Table 24). As the number of both long and short-term home care customers seems to have declined, responsibility for care has increasingly been shifted to family members.

The proportion of older people aged 75 or

Table 24. Percentage of population aged 75 or over receiving services for older people in 1988–2004 (source: SOTKA/Evergreen 2000 Plus database).

	1988	1995	2000	2004	Change % 1988–2004	Change % 1995–2004
Home help	31.5	22.1	19.7	17.7	-43.8	-10.2
Support services	15.1	13.4	13.5	13.0	-13.9	-3.7
Support for informal care	3.3	2.7	3.0	3.6	9.1	20.0
Service housing	2.1	3.4	5.1	5.5	161.9	7.8
Nursing home places for older people (all)	7.8	6.5	5.3	4.5	-42.3	-15.1
Long-term beds in health centres	3.4	3.7	3.1	2.5	-26.5	-19.4
Long-term beds in specialised health care	3.0	0.3	0.2	0.0	-100.0	-100.0

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over living in service flats has rapidly increased. Deinstitutionalisation that started in the 1980s has continued throughout the 1990s and beyond.

In relation to the number of older people in the country, the availability of services has decreased and the structure of those services has changed. In relative terms the biggest cutbacks have been made in home services and in long-term specialised medical care. The only increases have been seen in support for informal care and in the number of service flats. In the social welfare sector, then, the changes in the service structure have implied lower staffing levels in institutional care and increasing support for care provided by family members. In long-term health care, there has first been a shift in emphasis from specialised medical care to primary level care, but more recently there have also been cutbacks in long-term primary care. Because of all the cutbacks, the plans and intentions of increasing home care have come to nothing. As support for independent living in the community is supposed to be the cornerstone of future old age policy, there is reason to question the long-term viability of recent developments.

Outpatient and housing services must be developed in such a way that older people can continue to live independently in their own homes as long as possible. Steps are needed to guarantee the quality of institutional care so that older people who cannot fend for themselves can nonetheless enjoy a humane old age.

This challenge of supporting independent living in the community must be taken seriously at all levels of public administration. Effective housing and planning policy can help to reduce the need for services. Business and industry should work to identify the needs of older clients and develop services to facilitate their everyday life and to support the adoption of new technology.

It is imperative to have better coordination and integration of social welfare and health care services. Private services are needed alongside the existing range of public services, and better coordination is needed between service providers.

The staff age structure is old, and it is very difficult to coax younger people into old age services. It is necessary therefore to create a service system where work with chronically ill and persons with dementia is recognized as a challenging and respected job.

More research is needed into the implications of population ageing to different institutions in society and to the operation of society as a whole. More knowledge is needed about how service needs can be prevented by supporting old people's functional capacity. Improved service impact also calls for research into outcomes and effectiveness.

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Markus Kaski

Care of the disabled

Even after a major reorganisation of services, the care of disabled persons still requires considerable improvement.

Social security and services

The aim of social security based on disability is to support the independence of disabled individuals. The support is provided in the form of monetary benefits and services. The purpose of disability benefits paid out by the Social Insurance Institution is to compensate for the harm and the financial burden resulting from the disability. Depending on the individual's life situation, the benefit may consist of child care subsidies, disability allowance for persons of working age, or pensioners' care allowance. According to the Employment Accidents Act, the Motor Liability Insurance Act and the Military Injuries Act, disabled persons are eligible for an injury or handicap supplement. On the basis of the Services and Assistance for the Disabled Act, the disabled are entitled to receive compensation for costs arising from their disability. Furthermore, local authorities may compensate the costs of informal care.

The care of the disabled is based on services provided for the population through the regular social welfare and health care system. This system is complemented by services provided on the basis of the Act on Special Care for Mentally Handicapped and the Services and Assistance for the Disabled Act. Responsibility for service provision rests with the local municipalities. The services are produced either by the local authorities themselves or in partnership with neighbouring municipalities, or they are purchased from joint municipal authorities or from private service producers. In addition to services provided on the basis of the Act on Special Care for Mentally Handicapped and the Services and Assistance for the Disabled Act, the disabled have access to housing services, technical aids, rehabilitation services, etc.

A common indicator for the prevalence of disability is the number of people in receipt of disability pension. At year-end 2004 the figure was 7.8 per cent of the working age population. In addition, 11.8 per cent of unemployed job applicants in 2004 were disabled.

In 2004 1.9 per cent of the population were in receipt of services under the Services and Assistance for the Disabled Act. Most of them were transport services for the severely disabled. Other services include personal assistants, interpreter services and modifications on housing. A total of some 2,560 severely disabled persons lived in service flats. Most persons with intellectual disabilities continue to live with their parents or on their own.

Each year some 19,000 persons take advantage of the special services provided for persons with intellectual disabilities. On the basis of the benefits paid out by the Social Insurance Institution, it is estimated that there are some 30,000 intellectually disabled people in Finland. Epidemiological population studies,

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however, suggest that more than 1 per cent of the population or more than 50,000 people are intellectually disabled. There are good grounds to assume that the social security and services intended for the disabled do not reach all the people who would need those services and who are entitled to them.

The changing society and the development of welfare for the disabled

The provision of specialised care services for the disabled used to be heavily centralised, but the situation has now changed completely with the current trend in health care being from institutional treatment to a growing emphasis on outpatient services. With the changes that have seen traditional specialised institutions give up overall responsibility for service provision, it has also become increasingly difficult to form a coherent overall picture of the service system. At the same time, with the disappearance of regional responsibilities, the development of care for the disabled has become ever less systematic and increasingly conducted through detached projects. These changes caused a growing sense of insecurity among the disabled in the 1990s and made it much harder for them to plan their lives ahead.

Although institutional care for the disabled has been reduced according to plan since the recession in the 1990s, the development of outpatient care has not kept up proportionately.

With the reduced number of bed places the standard of living in institutions has improved. The main focus at large central institutions has shifted towards rehabilitation and short-term stays supporting outpatient care provision.

Services for the disabled face a whole host of challenges. Following the decentralisation of the service system, a new balance must now be struck between services produced by the local authorities and specialised services. For many rehabilitees, service coordination and planning are indispensable.

Multiprofessional care for the disabled requires both a comprehensive approach and orientation and often strong expertise in a narrow specialist area, because many disabled groups have their own special needs. In order to support the development and rehabilitation of the disabled individual, it is necessary to integrate rehabilitation need assessment and individual service planning (case management) with key turning-points in the individual's life where there is special need for support or where information needs to be transferred to the disabled person's new points of contact.

A stronger individual orientation is needed to make better use of technology as a way of facilitating the everyday life of disabled people. The current technical aids system that is grounded in several different laws, that involves a number of different actors and that in general lacks cohesion, must be reorganised with a view to securing the application of new technology. In the near future provisions will need to be made for the housing and other support services needed by the intellectually disabled living with their ageing parents.

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Timo Klaukka

Pharmaceutical services and the use of medicines

The use of new, more expensive medicines such as antidepressants, cholesterol-reducing drugs and hypnotics has increased. Efforts to reduce the growing medical expenses have not been successful. Patients' out-of-pocket costs have also increased.

Rising medication costs are a problem in all western countries. In contrast to other items of health care expenditure, the costs of pharmacotherapy have continued to rise in Finland, and did so even through the recession (Figure 50). In the early 1990s medication costs accounted for less than 10 per cent of total health care expenditure, and by 2004 the figure had risen to over 16 per cent.

In the 1990s the Ministry of Social Affairs and Health appointed three working groups to look into ways in which to curb this growth. The proportion of medication costs payable by patients themselves was increased during the recession. In terms of cost effects the reform that had the greatest impact was the decision in 1992 to withdraw the right to tax deductions for medical expenses: the cost of this move to taxpayers amounted to around 100 million euros. This was followed by decisions to lower the percentage of costs reimbursed and to increase the minimum amount payable by the customer on each purchase.

All the working groups have stressed the importance of the prescription practice to medication costs. Consequently the Centre for

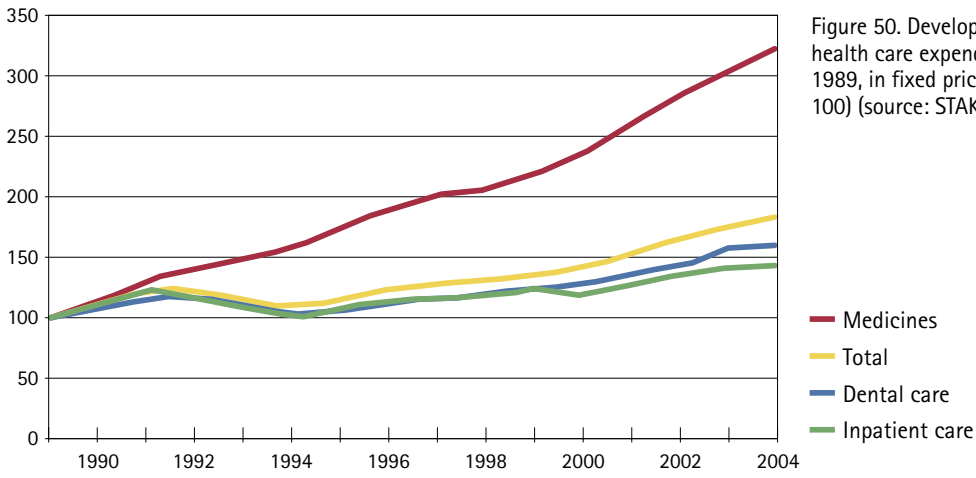

Figure 50. Development of health care expenditure since 1989, in fixed prices (1989 = 100) (source: STAKES).

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Pharmacotherapy Development (ROHTO) was set up in 2003 under the auspices of the Ministry of Social Affairs and Health.

There have been hardly any changes in the number of people using medical drugs as a proportion of the total population. In relative terms the proportion of people using prescription drugs has increased among children and in the age group over 75, but among middle-aged people the figures have actually decreased somewhat. The use of self-medication drugs for various symptoms has decreased. The rule of thumb says that the consumption of most medical drugs is around 1.4 times higher among women than men. However, the ratio does vary between different types of medication.

Polymedication increases most rapidly in the age group 75 or over. Part of the explanation lies in the increasing use of several concomitant medications in the treatment of many major public health diseases. Primarily, however, the reason is that life expectancy in the population has continued to rise, which has had the effect of increasing morbidity as well as the need for pharmacotherapy.

Within individual groups of medical drugs, consumption trends varied widely in the 1990s and continue to do so today. The fastest increase has been recorded for the use of antidepressants and cholesterol-reducing drugs: in both cases consumption has increased several times over within the space of just a few years. Similar trends are seen in all western countries. Other groups that have seen an increase include gastric ulcer medication and hypnotics.

The one factor that drives up the costs of medication use most of all is the arrival of new drugs to replace those used previously. This has happened in the pharmacotherapy of many major diseases. In recent years the costs of the treatment of psychoses, for example, have soared dramatically. In 2005 new medications were used by around 64 per cent of all neuroleptics users, but these same medications accounted for 91 per cent of the total costs of neuroleptics use.

The changes made in pharmacotherapy are most marked in treatments for such conditions as asthma, elevated blood pressure, diabetes, cancer and heart failure. Medication costs are also driven up by many new hi-tech drugs: these kinds of drugs have become increasingly available in the treatment of multiple sclerosis, blood coagulation disorders, cancer and certain hormone deficiencies.

Because of the rising costs there have also been calls to slow down the growth of pharmacotherapy. Today, a new drug can gain eligibility for a special reimbursement status no sooner than two years after a reasonable wholesale price has been approved as a criterion for reimbursement. Exceptions can be made if the pharmaceutical product has particularly beneficial effects on overall economy.

Since 1998, pharmaceuticals companies have been required to attach to their price applications for new drugs a health economic evaluation. This is to provide the Pharmaceuticals Pricing Board (PPB), which works under the auspices of the Ministry of Social Affairs and Health, a more solid basis for its judgement of whether or not the price application is reasonable. One of the difficulties in making this evaluation is that it is virtually impossible to know in advance how widely the new drug will be used, and there are also likely to be uncertainties about its clinical properties.

There is indirect evidence but no conclusive proof that medical drug use has benefits to society at large and that drug use can help to reduce other health care expenditure. For example, the use of asthma drugs has increased and become more expensive, and at the same time the focus has shifted towards the prevention of

symptoms. From 1986 to 2005, the number of asthma patients eligible for drugs in the special refund category increased almost threefold, but the number of hospital bed days due to asthma and also the relative number of asthma deaths have dropped to less than one-quarter. Pharmacotherapy has continued at the same time to increase and become so much more expensive that the decrease in the number of hospital bed days is not enough to offset the growth of medication expenses.

The number of elective gastric ulcer operations has clearly decreased at the same time as new ulcer drugs have become available. The number of suicides committed by men decreased in the 1990s by almost one-third, but it is difficult to show a causal connection with the use of new antidepressants.

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Veijo Saano

Alternative medicine

Each year one in three people in Finland use or try out some alternative therapy that is not available through the official health care system. Very few of these methods are those of traditional folk healing and most of them are recent commercial imports.

Alternative medicine refers to treatments, therapies and methods of diagnosis that are not based on science. Confidence in these treatments and methods of diagnosis is based on the models for explaining the causes of the illness and the way that the treatments work. Inferences are also drawn from the patient's perception of the symptoms. Alternative medicine is also known as belief-based medicine. Alternative medicine is not traditional folk medicine but a modern, organised industry that uses industrially manufactured products.

Alternative therapists are allowed to practise in Finland without an officially recognized degree in health care. There are no official registers on alternative therapists. There are thousands of practising alternative therapists and around 50 known organisations.

Official medicine wants to dissociate itself from methods of whose effectiveness there is no evidence. In Finland many physicians offer acupuncture treatment that is grounded in Chinese medicine. This is usually to provide relief to only few specific symptoms (headache, backache, pain from muscular tension). In alternative medicine acupuncture is used more extensively and the explanations offered for how the treatment works are based on energies and energy channels that are alien to the natural sciences.

The best known among alternative therapies are those that are reminiscent of medication. Most of these are food supplements that have the appearance of pharmaceuticals but are regulated under the Food Act. Advertising of medicinal effects is prohibited. There are some 3,000 different kinds of food supplements in the marketplace. Product turnover is considerable.

There are also various kinds of anthroposophic and homeopathic products in the marketplace. These products are registered under the Medicines Act but are released for sale without any evidence of therapeutic efficacy; therefore their use is restricted to minor ailments and symptoms. Products used in alternative treatments are more readily available and accessible than pharmaceuticals. They may be sold without restriction at chemists, natural health product shops and grocery shops, even by mail order.

Alternative medicine services nowadays extend across the whole country. The use of alternative therapies in Finland is at more or less the same level as in other European post-industrial welfare states. Annual sales of natural products that have the appearance of medical drugs have no longer changed very much over the past 15 years.

By contrast it seems that the use of services provided by alternative therapists is continuing to increase. The use of these services has spread

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throughout society, although women are more frequent customers than men. Only a small proportion of the population, around 1–2 per cent rely for their treatment exclusively on alternative medicine.

There are recurring calls for the inclusion of belief-based medicine in the official health care system, with advocates claiming that its therapies are effective and economical. However only a few of the most popular alternative treatments have actually been tested in clinical studies. In Finland the growth of alternative therapies has had no impact on the overall costs of health care. Apparently, these therapies have been adopted as a complement to rather than a substitute for proper care. There is no evidence on alternative medicine having any economic benefits.

Although it is often argued that alternative medicine is harmless, there have in fact been detrimental effects. If a natural health product has pharmacological effects, then it also has detrimental effects. Not only herbal products that have received insufficient research but also therapists that operate without any supervision present a threat to patient safety.

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Ilmo Keskimäki

Use of health services in different social groups

Despite equitable structures of health care, some socio-economic disparities still remain in service use. One of the reasons seems to be the relatively high out-of-pocket costs of Finnish patients.

The aim of health policy in Finland is to ensure universal and equal access to adequate health services, regardless of the individual's social or economic circumstances. This object is supported by various features of the health care system. First of all the service system covers the whole country and everyone who lives in Finland is eligible to use its services. The health services are for the most part funded from tax revenues. Many of the service charges are relatively low, and some services continue to remain free of charge. Furthermore, a universal sickness insurance system compensates the costs and loss of income due to illness. In the 1970s and 1980s regional disparities in the provision of health services were reduced by means of a national planning and central government transfers system. In the 1990s the same goal was pursued by allocating central government transfers according to the need for health services as estimated on the basis of population structure and municipal finances.

Social disparities in health service use

There are also aspects of the Finnish health care system that potentially give rise to inequality on account differences in people's social or economic circumstances. These include some services with high user charges, or services for which additional fees are charged. Examples include dental care for the adult population, private health care services and the system of special patient fees in public hospitals. Regional differences in the coverage and content of occupational health services also cause inequalities in access to services.

When the sickness insurance system was launched in the early 1960s, oral health care was initially excluded. Since then the scope and coverage of municipal dental care and sickness insurance have been gradually expanded. However, marked differences between social groups in the use of dental care services continue to prevail.

At the end of 2002 public support for oral health care was extended to cover the whole population. According to early experiences the reform has increased the use of dental care. However, the reform maintained quite a large deductible payable by the patients, and the relative inequalities between social groups continue to prevail.

The use of private health services is supported from sickness insurance funds. On average, sickness insurance covers just over 30 per cent of the costs of private health care, and therefore people of limited financial means have restricted access to these services. Almost one-fifth of

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all outpatient visits to a doctor are to private physicians, and in some specialties the proportion is much greater.

According to a study by the OECD in 21 countries in 1999, the use of all physician visits relative to needs leaned most clearly towards higher income brackets in Finland, the United States and Portugal. The segmentation of services according to provider into municipal health centres serving the whole population and into provision by private physicians and occupational health care was the reason for Finland's unflattering ranking.

The two marked factors contributing to socio-economic inequality among patients in hospital care are the system of special patient fees in municipal hospitals and the prominent role of private outpatient care in the referral of patients to further examinations and hospital treatment in public hospitals. In addition, the limited availability of certain surgical procedures in public hospitals obviously gives rise to inequality among patients according to their financial resources.

In public hospitals patients have been able to choose their doctor by paying an increased bed-day fee as well as a supplementary fee for the doctor. Waiting lists for surgical procedures among these patients have been shorter than for regular patients, even though this conflicts with regulations.

In 2006 the system of special fees will be phased out, but public hospitals will still be allowed to replace them by setting up special clinics operating on patients' fees during evenings and weekends. While hospitals have not presented any plans for such clinics, it is difficult to predict what kind of impact the reform will have in terms of equal access and availability if these clinics are eventually introduced.

In the 1990s the number of surgical admissions in the lowest income quintile was around 20 per cent lower than in other quintiles. Examples of surgical procedures where the highest income brackets are overrepresented are cardiovascular procedures and cataract operations. By the early 2000s, the differences between income groups somewhat decreased along with the increased availability of these procedures.

There has been only limited research in Finland on socio-economic differences in the quality of health care services. However there are some indications that such differences do indeed exist at least in hospital treatment. In the early 1990s, higher socioeconomic status (SES) patients who had suffered their first myocardial infarct were treated more often in the acute stage with thrombolytic treatment compared to lower SES patients. Upon discharge from hospital, men in the highest income tertile were more often prescribed medication that was known to be effective. Furthermore, in the high income bracket one in five men had a bypass operation of coronary angioplasty during the first year after their infarct, whereas among lower income groups only one in ten had these procedures. Recently socioeconomic differences have been reported in the use of cholesterol-lowering drugs among coronary patients, but not in the use of beta-blockers or antithrombotic drugs.

Future challenges

Mental health care was hit far more severely than other health care sectors by the cutbacks made during the economic recession of the early 1990s. The people who were affected most by these cutbacks and by the reduced supply of services were the socially underprivileged groups who suffer more often than others from mental health problems and who have limited opportunities to

take advantage of private mental health services.

Health care has traditionally had an important role in reducing socio-economic health differentials. In the Finnish case good examples are provided by the impact of the maternity and child welfare services on children's health as well as the impact of cervical cancer screenings. However the health care may also serve to maintain or even increase health differentials if the most deprived groups in health and social terms do not have the same access as other groups to the health services they need.

The challenge for health care is to take better account of the needs of socially deprived groups in the planning, financing and organisation of health services as well as in treatment.

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Jyrki Elo

Sickness-related social security

The Finnish system of health-related social or obligatory insurance covers loss of earnings and out-of-pocket costs due to medicines, travel and private sector services. This system is complemented by pension, traffic accident and occupational accident insurances and those for pharmaceuticals and patient injuries.

It is difficult to predict anyone's illness or the costs and losses related to illness. In order to ensure that the costs incurred to individuals are not unreasonable, the financial risks are spread out by means of the social security system. This is to guarantee the living of individuals and financial access to the services they need.

This chapter provides an overview of the statutory system of economic social security in Finland in case of illness. There are two main branches in the system: compensation is provided for loss of income, on the one hand, and for sickness costs and non-monetary losses, on the other. Compensation for loss of income is taxable income, whereas compensation or reimbursement for expenses is not. Depending on each individual's circumstances, sickness-related social security is organised through a variety of different insurance and pension systems. All in all the sickness-related social security system, from the client's point of view, is complex.

Social security administered by the Social Insurance Institution (SII) covers all people who live primarily in Finland. Eligibility is based on residence, not on citizenship. As regards other providers of social security benefits, eligibility is restricted to persons who are insured under the system concerned or to cases where the injury, accident or occupational disease is caused in an insured situation.

Short-term incapacity for work

During short, less than 12-month periods of incapacity for work due to illness or injury, loss of income can be compensated by income security benefits. Most typically, short-term loss of income is compensated by sickness allowance.

Sickness allowance compensates up to 70 per cent of lost income. The allowance is not paid for the first day of disability or for the nine following weekdays. The percentage of income compensated decreases progressively with rising income.

In practice, the nine-day waiting period is of little significance to workers because the employer is liable to pay full wages for the day of injury or illness and the next nine working days. Self-employed persons and farmers can get sickness allowance after a shorter waiting period.

The sickness insurance system defines working capacity as a two-valued measure in that the individual either is or is not incapacitated for work. Accident and traffic insurance systems also provide compensation for partial incapacity for work, and the compensation is fully related to the loss of income.

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Loss of income due to the care of a sick child

The parent's involvement in the care of a child in hospital or at home or participation in a rehabilitation course that is necessary because of the child's illness may cause loss of income. Special care allowance from sickness insurance is available to compensate for the temporary loss of income. The allowance corresponds to the amount of sickness allowance for the parent. It is granted for no more than 60 days for the same illness period, although that limit can be exceeded on grounds of illness severity and for care-related reasons.

Income during rehabilitation

The basic idea of income security during rehabilitation is that active participation in rehabilitation shall be financially worthwhile for the disabled individual. Persons who take part in rehabilitation which requires them to be absent from work are eligible to receive a rehabilitation allowance. The allowance is granted if the right to rehabilitation is based on existing law. There is a fixed waiting period.

Young disabled persons aged 16–19 are eligible to receive a special rehabilitation allowance for the implementation of an individual training and rehabilitation plan. The aim is to ensure the rehabilitation of young persons whose work capacity has weakened significantly due to illness, defect or injury, and to promote their employment.

Long-term incapacity for work

In the case of incapacity for work lasting more than 12 months, income security is provided in the form of disability pension, workers' compensation pension or rehabilitation subsidy. Based on employment pension acts, the amount of disability pension is dependent on the duration of the individual's previous employment, the amount of earned income and the pension accrual rate, which varies according to age. Disability pension paid on grounds of the Motor Insurance Liability Insurance Act is based on the principle of full compensation. Workers' compensation pension, which is paid on the basis of accident insurance, is 85 per cent of the disabled person's full annual income.

The definition of incapacity for work varies depending on the Act concerned. If the individual is partially incapacitated for work, they may be eligible to receive a portion of the full pension corresponding to the degree of the loss of working capacity.

The SII's national pension will bring financial security for those disabled persons who have not been able to earn enough employment-based pension for a moderate living.

Costs of medical care

Reimbursement for the costs of private medical care may be obtained through sickness insurance. Medical care costs in the case of occupational diseases or accidents are compensated through accident insurance and in the case of bodily injury incurred in connection with medical treatment or health care through patient insurance. With the exception of sickness insurance, the costs are usually compensated in full. Sickness insurance only covers costs incurred from the use of private health care services, and there are various deductibles involved. The true percentage of compensation for doctors' fees in 2005 was 29 per cent and for examinations and treatments 32 per cent.

The single biggest expense item compensated through sickness insurance is the costs of prescribed medicines. Basic reimbursement for medicines prescribed by a doctor is 42 per cent. There are two different levels of special

reimbursement, i.e. 72 per cent and 100 per cent, in the case of a number of severe, long-term illnesses. If the out-of-pocket costs for all the patient's reimbursed medication purchased during a calendar year exceed a defined ceiling, the excess will be reimbursed in full.

Compensation for service costs and handicap

On the basis of the Motor Insurance Liability Insurance Act, a lump sum compensation is made for a permanent injury or disability, dependent on the handicap and the age of the injured person.

For people with long-term illnesses, a monthly compensation is provided through a system of disability benefits and care allowances to help them manage with everyday activities at home and in outpatient care.

For permanent handicap due to an occupational accident, occupational disease or road accident, compensation is provided in the form of a one time or continuous disability allowance. Individuals in precarious financial circumstances may receive financial aid from the local social welfare office. This is last-resort income security.

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PART VIII
PUBLIC HEALTH PROBLEMS AND NEED FOR CARE: COSTS AND FUTURE OUTLOOK

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Urpo Kiiskinen, Juha Teperi, Unto Häkkinen, Arpo Aromaa

The societal costs of public health problems

This chapter presents the first harmonised estimates of the societal costs of common public health problems and functional limitations. In 1995 circulatory diseases (17%) and mental health disorders (13%) were the main causes of direct costs of care. Mental health disorders (26%) and musculoskeletal diseases (21%) caused the greatest burden in terms of the value of lost labour input.

This chapter describes the health and functional capacity of the Finnish population in 1995 in terms of social costs. Direct costs are defined exclusively in terms of the direct costs of health care; because of missing data it was not possible to take account of the time costs arising from treatments or travel. Indirect costs refer to the duration of reduced functional capacity that could otherwise have been used to increase the welfare of the individual patient or society as a whole. The assessment of indirect costs is restricted to the population of working age and the active labour force.

Direct costs

The assessment of the costs of inpatient care covers general hospitals, psychiatric hospitals, primary care (health centre) hospitals and certain other hospitals (e.g. hospitals for the intellectually disabled and private hospitals). The data on treatment periods and days are drawn from the hospital discharge register. The costs of somatic specialised health care are assessed on the basis of average admission costs adjusted to severity and relative resource use of care required according to the DRG (Diagnosis Related Groups) classification.

A significant proportion of the total costs of inpatient care (2.8 billion euros) was attributable to the treatment of mental health problems (20%) and cardiovascular diseases (19%). These two major categories were followed by neoplasms (8%), injuries and poisonings (8%) and diseases of the musculoskeletal system (7%).

The two main categories responsible for outpatient costs (which totalled 1.8 billion euros) were diseases of the respiratory system (19%) and the musculoskeletal system (17%). The third biggest category was diseases of the nervous system and sense organs (including middle ear infections) (13%), while cardiovascular diseases ranked only fourth (10%). Direct costs of outpatient care also include the costs of dental care, which in 1995 were estimated at around 400 million euros.

Medication costs (760 million euros) were divided between disease groups on the basis of pharmacies' prescription drugs database. OTC drugs (235 million euros) and other pharmaceutical products (18 million euros)

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are excluded from the total figure. The single main source of prescription drug costs were cardiovascular diseases (26%), followed by diseases of the respiratory system (12%) and mental health disorders (10%).

Direct health care costs from rehabilitation (amounting to around 100 million euros) are defined as comprising medical rehabilitation compensated by the Social Insurance Institution. In this connection it needs to be noted that most rehabilitation is provided as part of normal health care. In money terms the biggest part of the resources invested in medical rehabilitation went to the group of musculoskeletal diseases (42%). The next biggest investments were in the rehabilitation of people with diseases of the nervous system and sense organs (22%) and with mental health problems (14%).

All in all the treatment of cardiovascular diseases accounted for the largest proportion of health care resources (17%) (Table 25). Other disease groups with a greater than 10 per cent share were mental health disorders (13%), diseases of the respiratory system (11%) and diseases of the musculoskeletal system (11%).

The exclusive focus here on health care services impacts the way that direct health care costs are broken down between different disease groups. It is difficult to draw a clear line of distinction particularly between certain social welfare and health care services. Furthermore, a significant proportion of caring takes place outside of official systems and therefore is not covered in the statistics.

Indirect costs

Sickness absences are one of the causes of lost labour input. In 1995 the Social Insurance Institution (SII) paid compensations for a total of some 12 million sickness days. The costs are estimated on the basis of sickness allowance data for 1995, which included periods and days of absence, allowances paid and income estimated for the period absent. The analysis does not include sickness absence spells of less than 10 days (in 1995 an estimated 17 million days).

At year-end 1995 the number of disability pension recipients in Finland was around 290,000. The number of potentially lost person-years at work in 1995 is estimated on the basis of the mean number of pensions at year-end 1994 and 1995.

The number of lost working years due to premature deaths is based on Statistics Finland's cause-of-death statistics. The lost life expectancy for persons deceased in 1995 is calculated on the basis of average survival probabilities in different age groups and genders.

In 1995 a total of almost half a million working-age years were lost. Mental disorders and diseases of the musculoskeletal system both accounted for 21 per cent of these losses, followed by injuries and poisonings (17%) and by circulatory diseases (14%).

Most (some 290,000) of all lost working years were the result of permanent disability, which was most typically due to mental health problems (33%) or musculoskeletal disorders (31%). The third most common reason for disability pension was cardiovascular diseases (12%).

Premature deaths accounted for almost one-third (approx. 160,000) of lost working years. In these cases the breakdown of the causes differed clearly from the causes of disability. Accidents were by far the most common cause of death in young ages, accounting for 41 per cent of loss of working life expectancy. Cancers and cardiovascular diseases both accounted for 17 per cent of loss of working years through deaths.

Temporary disabilities accounted for almost one-tenth (approx. 44,000) of all working years lost to illness. Most of these were due to

Table 25. Total direct costs of care by disease group.

	Men		Women		Total	
Disease group	**1,000 euros**		**1,000 euros**		**1,000 euros**	
Infective and parasitic diseases	37 562	2 %	37 828	1 %	75 390	1 %
Neoplasms	144 982	6 %	189 320	6 %	334 302	6 %
Endocrine, nutritional and metabolic diseases	73 926	3 %	104 180	3 %	178 106	3 %
Diseases of the blood and blood-forming organs	19 558	1 %	19 908	1 %	39 466	1 %
Mental disorders	305 822	13 %	386 252	13 %	692 074	13 %
Diseases of the nervous system and sense organs	203 763	9 %	242 447	8 %	446 211	8 %
Diseases of the circulatory system	425 870	18 %	492 484	16 %	918 353	17 %
Diseases of the respiratory system	275 596	12 %	313 466	10 %	589 062	11 %
Diseases of the digestive system	157 736	7 %	143 709	5 %	301 446	6 %
Diseases of the genitourinary system	108 683	5 %	156 702	5 %	265 384	5 %
Complications of pregnancy, childbirth and puerperium	17	0 %	178 186	6 %	178 204	3 %
Diseases of the skin and subcutaneous tissue	54 294	2 %	66 713	2 %	121 007	2 %
Diseases of the musculoskeletal system	224 481	10 %	358 487	12 %	582 968	11 %
Congenital anomalies	14 774	1 %	14 994	0 %	29 767	1 %
Causes of perinatal diseases and mortality	12 132	1 %	9 258	0 %	21 389	0 %
Injuries and poisonings	168 890	7 %	147 995	5 %	316 885	6 %
Others (symptoms, cat V, missing)	120 286	5 %	192 480	6 %	312 767	6 %
Total	**2 348 373**	**100 %**	**3 054 410**	**100 %**	**5 402 782**	**100 %**
Costs allocated to diseases	2 228 086		2 861 929		5 090 016	76 %
Others (symptoms, cat V, missing)	120 286		192 480		312 767	5 %
Non-allocated prescription drugs	20 701		26 426		47 128	1 %
OTC drugs and other pharmaceutical products					245 723	4 %
Medical devices					214 440	3 %
Institutions for the handicapped					134 550	2 %
Dental care					395 746	6 %
Administration etc.					260 187	4 %
Total					**6 700 556**	**100 %**

Table 26. Imputed value of lost labour input by disease group.

	Men		Women		Total	
Disease group	1,000 euros		1,000 euros		1,000 euros	
Infective and parasitic diseases	53 858	1 %	41 241	1 %	95 098	1 %
Neoplasms	263 385	5 %	344 307	8 %	607 692	6 %
Endocrine, nutritional and metabolic diseases	101 032	2 %	65 817	2 %	166 849	2 %
Diseases of the blood and blood-forming organs	4 405	0 %	3 149	0 %	7 554	0 %
Mental disorders	1 336 933	24 %	1 205 216	30 %	2 542 149	26 %
Diseases of the nervous system and sense organs	327 640	6 %	261 510	6 %	589 150	6 %
Diseases of the circulatory system	806 657	15 %	297 475	7 %	1 104 132	12 %
Diseases of the respiratory system	151 575	3 %	127 758	3 %	279 333	3 %
Diseases of the digestive system	162 725	3 %	62 291	2 %	225 015	2 %
Diseases of the genitourinary system	11 229	0 %	35 053	1 %	46 283	0 %
Complications of pregnancy, childbirth and puerperium	5 391	0 %	32 905	1 %	38 296	0 %
Diseases of the skin and subcutaneous tissue	30 467	1 %	31 215	1 %	61 683	1 %
Diseases of the musculoskeletal system	937 759	17 %	1 033 694	25 %	1 971 453	21 %
Congenital anomalies	100 615	2 %	97 348	2 %	197 963	2 %
Causes of perinatal diseases and mortality	22 093	0 %	18 586	0 %	40 679	0 %
Injuries and poisonings	1 138 546	21 %	356 386	9 %	1 494 932	16 %
Others (symptoms, cat. V, missing)	64 955	1 %	63 986	2 %	128 941	1 %
Total	**5 519 266**	**100 %**	**4 077 937**	**100 %**	**9 597 203**	**100 %**

musculoskeletal disorders (33%), mental health problems (15%), injuries and poisonings (13%) and cardiovascular diseases (9%).

The total value of the labour input was calculated on the basis of gross wages for different age groups, to which employers' social security contributions and operating surplus were added. Thus calculated the indirect costs of diseases to society amounted to losses of about 9.6 billion euros in 1995 (Table 26). Permanent incapacity for work accounted for the majority or some 5.6 billion euros of this total. Premature deaths caused imputed losses of around 2.4 billion and work absences imputed losses of around 1.7 billion euros. The single biggest cause of imputed losses to society were mental health problems (26%), followed by musculoskeletal diseases (21%), injuries and poisonings (16%) and cardiovascular diseases (12%).

Summary

When inpatient admissions, visits to the doctor, and medical rehabilitation were all taken into account, the main sources of direct costs were

circulatory diseases followed by mental health disorders. Together with respiratory diseases and musculoskeletal disorders, they accounted for one-half of all direct costs.

The bulk of indirect costs resulting from loss of working capacity were due to permanent incapacity for work, but also to premature deaths and sickness absenteeism. One-quarter of indirect costs were due to mental health disorders. Musculoskeletal diseases were the second most common cause of indirect costs, injuries and poisonings the third most common.

It is important to exercise caution in interpreting these results, and the volumes of direct and indirect costs should not be directly compared with each other. It is also necessary to remember that changes in the prevalence of diseases do not automatically result in corresponding changes in the level of costs.

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Health and need for care: future outlook

Forecasts of the population's health and need for care are the basis for rational health policy and health care planning.

The purpose of population health forecasts is to provide a sound basis for informed decision-making with a view to the promotion of public health. From a planning point of view it is particularly important to know what kind of burden will be placed in the future on the service system and the social security system.

Key concerns in health forecasts include changes in the prevalence of diseases and their risk factors, the development of service and benefit needs due to diseases and related functional limitations, the impact of changes in social position on health and service use, the development of technology and care practices and their impacts on the need for services. For purposes of reliable forecasts and calculations it is necessary to have as clear a picture as possible of the current situation and recent trends in development.

Health is influenced not only by personal characteristics but also by lifestyle and living conditions. At the population level another important variable is the number and structure of the population, particularly its age structure: population ageing and population growth both lead to an increase in the number of people who are ill. Health problems often cause a need for care and other services as well as various kinds of benefits. Apart from health problems, another factor that influences the need for care is the kind of treatments that are available. Service use and access to benefits also depend on a variety of others factors, most importantly on supply and availability and on the culture of seeking and granting services and benefits.

In spite of national and regional information needs Finland has no mechanism in place for the regular and coordinated production of health forecasts. However according to the most recent national forecasts it seems that the need for institutional care is set to increase considerably if this is assessed on the basis of the number of treatment periods. By contrast the overall need for institutional beds, measured in terms of treatment days, may even decrease over the next decade, despite the ageing of the population, if current trends continue. The need for resources available for the prevention and treatment of specific health problems may change quite suddenly. In particular, health problems typical of older people are set to increase. New methods of prevention and treatment and sudden changes in health problems may quickly and unexpectedly increase or decrease the need for care.

The continuing growth of obesity in the population, the possible spread of new infectious

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diseases and the increase in certain cancers are examples of current health problems whose impact on the need for health services depends directly on whether scientists succeed in finding new ways of resolving and overcoming these problems. New treatments and medications may also significantly drive up the number of people in need of care.

Finland is well placed to produce high-quality forecasts of the development of public health if the accumulated expertise and the wide range of registers and population surveys available are put to good use. To determine the prevalence of many diseases and changes in their prevalence it is necessary to have repeated studies where the occurrence of diseases and their major risk factors are assessed in large enough population samples by using valid methods of measurement. This kind of data provides a sound basis for as reliable prognoses as possible on trends in morbidity. In order that the need for care can be adequately predicted, it is also necessary to have as clear a picture as possible of changes in treatment practices, new techniques and their cost impacts, the service system's resources and the culture of seeking treatment in the population.

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PART IX
SUMMARY AND CONCLUSIONS

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Arpo Aromaa, Jussi Huttunen, Seppo Koskinen, Juha Teperi

The development of public health and related factors: summary

Public health in Finland has rapidly improved over the past few decades. Life expectancy no longer lags far behind from the highest European figures and many major public health problems have considerably decreased. The main challenges now are to maintain the positive developments and to find ways to tackle increasing public health problems, such as diabetes, allergies, obesity, alcohol-related harm, and health disparities between population groups. Furthermore, as the number of older people in the population continues to rise, diseases and functional limitations that are common in old age present another major challenge.

Public health in Finland has continuously improved. Infectious diseases have receded, and the main causes of premature mortality now are cardiovascular diseases, cancers, accidents, suicides and chronic lung diseases. Mortality from these causes has also been on the decrease, and consequently average life expectancy has increased. Male life expectancy is approaching the EU average, female life expectancy has already reached that level.

Other diseases that have a major impact on the health and functional capacity of the population include musculoskeletal diseases, mental health disorders, infectious diseases, allergies and diabetes. These are all major causes of morbidity, but with the exception of diabetes they account for only very little premature mortality.

There are marked health differentials between regions, socio-economic groups and marital status groups. On virtually all measures the population in eastern and northern Finland is less healthy than in western and southern parts of the country. Male life expectancy among groups with a higher education and social status is about six years longer than in groups with less education and a lower social status; among women the difference is around three years. Non-married persons have much worse health than the married.

Major public health problems

Circulatory diseases. Mortality from coronary heart disease (CHD) has decreased since the late 1960s by almost 80 per cent in the working age population. The decline in CHD morbidity and mortality is due to a healthier diet, the reduced number of smokers and improved treatments.

The incidence rate of cerebrovascular disorders and mortality from these disorders has sharply declined. Mortality in the middle-aged population has dropped by 75 per cent since the 1970s. Average blood pressure levels have

continuously decreased since the 1970s. This change is attributable to healthier lifestyles and improved pharmacotherapy.

It is projected that cardiovascular morbidity and mortality will continue to decrease in the working age population over the next 5–10 years. Nonetheless the need for health services addressing these diseases will continue to grow because of population ageing.

Musculoskeletal diseases. The age-adjusted prevalence of musculoskeletal diseases has declined but they are still the leading cause of pain and the second most common cause of lost working hours in Finland. It is possible that the prevalence of musculoskeletal diseases will continue to decrease. However with the continuing growth of the elderly population the need for services will continue to rise.

Mental health problems. Mental health problems are equally common in Finland as in other western countries. Disability pensions granted on grounds of mental health problems have rapidly increased, but according to survey results no major changes seem to have occurred in the prevalence of mental disorders. The lifetime prevalence of psychosis is 3 per cent. During the past year 5 per cent have experienced severe depression and 5 per cent anxiety disorders. Almost 7 per cent of men and 1.5 per cent of women suffer from alcohol dependency. Mental problems are the single leading cause of incapacity for work.

Suicide mortality increased from the 1950s through to the late 1980s. Since 1990, suicides have decreased in all age groups among both men and women. Possible reasons include the development of increasingly effective medication and preventive efforts. Nonetheless suicide mortality in Finland remains at an exceptionally high level internationally.

Cancers. Overall cancer morbidity among men has remained unchanged since the early 1950s, although there have been major shifts in the occurrence of different types of cancer. Cancer morbidity among women has gradually increased since the 1950s. The prognosis of cancer patients has continually improved.

Cancer mortality in Finland is among the lowest in Europe. As a result of population ageing, the rising cancer incidence rate among women and improving treatment results, the number of both new cancer patients and people who have ever had cancer is set to rise sharply over the next 15 years.

Infectious diseases. Infectious diseases remain a major cause of acute morbidity and an important contributory cause of death in the elderly population. Respiratory infections are the leading cause of short-term disability for work in Finland. Tuberculosis has continued to decrease and the number of new cases detected each year is only 6.6 per 100,000 population.

The number of HIV carriers in the population is one of the lowest in the industrial world. Chlamydia remains the most common sexually transmitted bacterial infection. Chlamydia infections increased during the late 1990s.

A growing number of microbes are resistant to the most common types of antibiotics, and it seems that this adverse trend is gathering further momentum. However the situation in Finland with respect to microbial drug resistance is still relatively good and is continuously monitored.

Immunisation coverage in Finland remains very good. The general immunisation programme was updated at the beginning of 2005.

Chronic bronchitis and chronic obstructive pulmonary disease. 11 per cent of Finnish people aged 30 or over have symptoms of chronic

bronchitis. The decrease in smoking among men in the past decades will lower the incidence rate of the disease, while the increase in smoking among women will in turn increase the number of new cases.

Allergies and asthma. Some 25–30 per cent of the population have some allergic illness or symptoms. Over the past 30 years the number of allergy patients seeking treatment has sharply increased. Improved diagnostics can only explain part of the growth seen in atopic allergies, which is thus mainly a true increase. Results in the treatment of asthma have rapidly improved, and consequently both mortality and the need for hospital treatment have decreased.

Diabetes. Some 0.9 per cent of the Finnish population have type 1 diabetes and 3.7 per cent have type 2 diabetes. Type 1 diabetes, which typically occurs in children and young people, and adult-onset type 2 diabetes have both increased considerably. Finland has the world's highest prevalence of type 1 diabetes.

Dementia. Dementia increases steeply with age and in the age group over 85 about one-third suffer from moderate or severe dementia. About 60 per cent of dementia patients suffer from Alzheimer's disease. With the growing number of older people in the population and the improving survival of patients with dementia, the number of dementia patients is set to increase very rapidly.

Dental diseases. Compared internationally, Finnish children have very good dental health. Young adults, too, have healthier dentition than before, and edentulousness has rapidly decreased in all age groups. Nonetheless 15 per cent of people shortly before retirement age still have no teeth of their own. Severe periodontal diseases occur in around 20 per cent of the population.

Accidents. Each year about one-fifth of the population have an accident which leads to some kind of injury. Accidents are responsible for 6 per cent of all deaths and 8 per cent of hospital bed days in Finland, as well as being a major cause of disability for work and impaired functional capacity. In the age group 1–39 years, accidents are the most common cause of death. The biggest category is represented by accidents that happen in the home, in sports and other leisure activities, which account for 70 per cent of all accidents and cause 80 per cent of all accidental deaths. Accidents in the home, in sports and leisure activities have recently been increasing.

The number of fatal road accidents has sharply decreased. In the early 1970s around 1,100 people were killed on the road each year, in 2005 the figure was just under 400. The numbers sustaining permanent injuries in road accidents has declined accordingly. Some 80 persons are killed annually in accidents at the workplace or while commuting.

Health of children, adolescents and pregnant women. More than one in five children suffer from some long-standing illness. The most common illnesses are asthma and allergic diseases. At least 10 per cent have mental disorders requiring examination and treatment. Accidents are the most common causes of death among pre-school and school-age children. Mortality from accidents decreased rapidly in the 1970s and has continued to do so since then, albeit at a slower rate.

Diabetes has increased among children and its incidence is currently the highest in the world. Allergies and asthma have also increased considerably. It seems that mental symptoms requiring examination and treatment have become increasingly severe. Children's dental health is very good, but in recent years the positive development has come to a halt.

Mortality from diseases and accidents among young people has continuously decreased, but even so nearly 10 per cent of teenagers in the age

group 12–18 still report having some chronic illness, defect or disability that affects their everyday life, most typically asthma and allergies. Depression among young people appears to have increased in the 1990s. The majority of young people rate their own health as good or very good.

Pregnancies in young girls decreased up to the mid-1990s, even though age at the onset of sex life continued to fall. During the late 1990s the number of both childbirths and particularly abortions as well as the incidence of venereal diseases increased among girls under 20, but during the first years of the 2000s the situation has remained stable.

The health of expecting mothers is good and maternal mortality is very low. The number of abortions decreased for more than two decades up to 1995, increased temporarily during the late 1990s and since then has remained at the same level .

Elderly population. The elderly population has grown rapidly with the rising level of life expectancy. Many diseases and functional limitations have decreased, particularly in the youngest age groups of the population of retirement age. However, as the elderly population continues rapidly to grow, the numbers living with illnesses that increase with advancing age are also bound to rise. The sharpest increase will be seen in the numbers with diabetes, dementing illnesses, circulatory diseases and mental health disorders associated with old age.

Distribution of health and functional capacity in the population

Gender differences. In all age groups male mortality is clearly higher than female mortality. On average, women in Finland now live to be nearly 7 years older than men. This difference has been reduced since the late 1970s by two years. Approximately one-half of the excess mortality of males is explained by the earlier tendency for men to smoke and drink much more heavily than women.

The gender differences in morbidity and impaired functional capacity are generally smaller than mortality differences.

Regional differences. People who live in northern and eastern Finland are in worse health than those who live in western and southern Finland. The main reasons for regional mortality differences lie in circulatory diseases, accidental and violent deaths as well as alcohol-related causes of death. Morbidity is also more common and self-reported health worse in eastern and northern Finland.

Many of the factors that increase the risk of illness are no longer more common in eastern and northern Finland than in the west and southwest, or the difference has been significantly reduced. It is reasonable to expect therefore that the health differences between eastern and northern Finland on the one hand and western and southwestern Finland, on the other, will decrease in the future. The poor health situation in certain black spots in the metropolitan Helsinki area may become increasingly prominent among regional health differences.

Socio-economic health differentials. People with a higher education live longer than those with less education. These differences have continued to grow since the early 1980s. Socio-economic mortality differences are more pronounced than in most other western European countries, but morbidity differences are at around the same level as in western Europe on average.

Other health variations. Married people are in much better health than other marital status groups. With respect to mortality the difference is now at least as great as that between socio-economic groups. Morbidity differences are also considerable.

Unemployment causes mental health problems, and in general people who are out of work tend to be less healthy than the employed. Mortality, too, is higher than average among the unemployed, but this is due at least in part to health risks and health problems preceding unemployment.

Compared to other European countries the Finnish population has, until very recently, been exceptionally homogeneous in ethnic terms. However, as a result of increasing immigration, ethnic minorities have now begun to grow up whose health is threatened by high unemployment and isolation from the mainstream population.

Factors affecting health and functional capacity

Population, social structure and living conditions. The population structure in Finland has changed very rapidly. In 1960–2005 the Finnish population increased by 810,000, i.e. by 0.3 per cent a year. However, population growth has only been recorded in the metropolitan Helsinki area and in the other biggest cities. The regional differences in these population changes are due to variations in fertility and mortality as well as in migration.

It is estimated that by 2030, the proportion of the population aged 65 or over will increase from the current level of 16 per cent to about 26 per cent. This growth will gather pace most particularly during the 2010s as baby boomers reach retirement. The numbers aged 80 will accordingly increase very rapidly, particularly around 2030, and cover 10 per cent of the whole population by 2040, while the present figure is below 4 per cent.

More than half of the population are married. The marriage rate has decreased, but at the same time common-law marriages have increased. Indeed couple relationships are now more common rather than less common than before. At the current fertility level women give birth on average to 1.8 children.

The population's level of education has continuously risen. Well over half of those born before the 1940s have no more than a basic education, whereas the corresponding figure for those born during the 1960s and later is less than 20 per cent. The industrial structure in Finland has changed very rapidly as the country has evolved from an agrarian into an industrial and further into a service society.

Finland's GDP increased uninterruptedly until the recession of the early 1990s. The recession caused unemployment to soar to around 20 per cent, with the number of people out of work exceeding 0.5 million. The national economy returned to a growth track in 1994, and strong growth has continued ever since.

During the first decades of the 20th century, improving living conditions had a very significant impact on the health of the nation. This has remained a significant factor in the past few decades as well.

Physical environment. The state of the physical environment has improved. Pollution from energy production and industry has decreased. On the other hand, the sharp increase in traffic volumes increased emissions of carbon monoxide, nitrogen oxides, volatile hydrocarbons and exhaust particles up to the 1990s, but since then the situation has improved as a result of advances in technology and better fuels. Problems with air quality are worse in the winter when emissions are at their highest level and winds are low.

The quality of indoor air has emerged as a major environmental health problem. Symptoms and illnesses caused by mould growth in buildings are particularly common. Radon exposure in indoor air combined with smoking

causes a few hundred cases of lung cancer in Finland each year. Passive smoking causes perhaps some one hundred cases of lung cancer each year.

Lifestyles and living habits. Living habits in the adult population have become much healthier since the 1960s. As a result of these changes the incidence of many common chronic diseases and related mortality and disability have decreased.

Dietary habits have changed very rapidly in all age groups since the 1960s. The intake of fat has decreased and the quality of fats consumed has improved. At the same time the consumption of vegetables, fruits and berries has increased, and the use of salt has decreased. Obesity, on the other hand, has increased in all age groups. Physical exercise related to work and commuting has decreased, but exercise during leisure has increased.

Smoking has decreased among adult men, and Finnish people of working age now smoke less than in most other European countries. Smoking among young people, on the other hand, is at an exceptionally high level internationally.

Alcohol consumption in Finland is at the same level as in other industrial countries on average but the consumption is increasing in Finland, contrary to many other European countries. Changes in overall consumption have followed economic trends as well as changes in the price of alcohol. It is estimated that in the age group 15–69, five per cent of women and just over twenty per cent of men are high-risk consumers. Changes in the availability and prices of alcohol connected with Finland's membership of the EU, have led to increased alcohol consumption and alcohol-related health problems. Harm related to binge drinking is more common in Finland than in most other industrial countries with the same level of consumption and living standards.

Drug use increased clearly in the 1990s. Estimates are that at least 10 per cent of the population aged 15 or over have ever tried or used drugs in their lifetime. One in ten of those who have tried drugs use them regularly and about 0.6–0.7 per cent of the Finnish population aged 15–55 are problem users of amphetamines or opiates. Finland has a highly restrictive drug policy aimed at preventing the use and spread of drugs and at control by means of criminal law.

Among the threats that lie ahead over the next few years are the growing use of alcohol as well as the growth of obesity and drug problems. Young people represent a particularly problematic group in that their binge drinking and smoking are at an exceptionally high level. This age group is also at particular risk with regard to drug use.

Health care services and social security. From 1970 to 1990 there was a major drive to increase and develop the country's health services. Following the introduction of the Public Health Act in 1972, a primary health care network consisting of municipal health centres was created to cover the whole country. Important advances were made in prevention and in the early detection of diseases, and both the coverage and quality of treatment improved. In the 1990s, then, the overriding concern was to cut public expenditure. Partly to reach this aim, a highly decentralised steering system was established in 1993. Based on their own tax revenue and non-earmarked state subsidies, municipalities can now decide on most aspects of care provision. The number of inpatient care days in hospitals has decreased at the same time as the number of patients has increased and the demand for more sophisticated procedures has grown. If recent developments continue, the overall demand for institutional bed days may even decrease over the next decade in spite of the ageing of the population.

Given the shortage of resources many health care and social security reforms have been postponed in recent years and the burden of costs for treatment

has increasingly been shifted to patients and clients. So far it seems that these changes have had no impact on the health of the population. The threat is that some clients may not be able to afford the services and medications they need, leading to increased socio-economic health differentials.

The need for resources allocated to the prevention and treatment of specific health problems may change very rapidly. Today people of retirement age account for more than 40 per cent of total health care costs, and that figure is sharply rising. However new methods of prevention and treatment and sudden changes in health problems may quickly and unexpectedly increase or decrease the need for care.

Public health in Finland in an international perspective

In 2003 male life expectancy in Finland was 75.3 years and in the EU-15 countries 76.1 years, while the figures for women were 82.1 years and 82.0 years, respectively. In Finnish men, mortality differences by education and occupational status are among the highest in the European Union. The population in Finland is ageing faster than in most other EU countries, and therefore the numbers needing treatment are also increasing very rapidly.

Child mortality and maternal mortality in Finland are low, even though childbearing mothers are older than in many other countries. The number of abortions relative to women of reproductive age is close to the level in the EU countries on average.

Circulatory diseases are more common in Finland than in the EU on average, in spite of the sharp decrease in their incidence. Male cancer morbidity rates are lower than the European average and female rates are close to the average. Mortality from cancer is among the lowest in Europe, which is due to the reduced number of smokers and an advanced screening, diagnosis and treatment system. No reliable international comparative data are available on musculoskeletal diseases and mental health disorders.

Comprehensive immunisation programmes, successful prevention and the country's remote location have all helped to bring infectious diseases under better control in Finland compared to the EU on average. HIV and immunodeficiency are at a lower level than elsewhere in Europe, in spite of the epidemic that occurred in the late 1990s among intravenous drug users.

Only limited comparative data are available on oral health in the adult population. Finnish children have healthier teeth than children in the EU on average, but according to interview studies adults in Finland still have lost more teeth than people in the EU on average.

Mortality from accidents and poisonings among women and particularly among men is at a considerably higher level in Finland than in most other EU countries. The number of injuries caused in traffic accidents is less than half the EU average, and mortality from traffic accidents is lower than in other EU countries. Occupational accidents are also as common in Finland as in western Europe on average.

Dietary habits in the adult population have rapidly become healthier, and the diet of schoolchildren also compares favourably with the European average. The proportion of smokers in the adult population is low, but among young people the numbers who smoke are higher than in the EU countries on average.

In many other EU countries the consumption of alcohol has decreased, but in Finland both consumption and alcohol-related harms are on the increase. Binge drinking is widespread among youths in Finland. Drug abuse is at a clearly lower level than in other EU countries.

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Conclusions and recommendations

Changing living conditions are impacting health

New measures are needed to maintain and promote the health and the functional and working capacity of ageing people. More attention needs to be paid to the prevention of health hazards in the physical environment. Health must also be recognized as a priority concern in the development of community structures.

Behaviours with adverse health effects require closer attention

New means must be found to reduce socio-economic health differences. Certain health-damaging behaviours are on the increase especially among young people. In order to prevent these adverse trends it is essential to have legislative controls, more effective health education as well as tax and price policies for tobacco and alcohol products that support health objectives.

The prevention of major public health concerns must be stepped up

The rates of circulatory diseases and certain cancers have rapidly decreased and oral health has improved. To make sure that these favourable trends continue, it is necessary to undertake new research and to make better use of existing data.

The prevalence of certain cancers, allergic diseases and asthma and diabetes has increased over the past decades. More research is needed to uncover the underlying causes of these trends and to find out how they can be halted. Preventive measures must be taken as soon as they are necessary and possible.

Immunisation programmes have helped to keep infectious diseases well in check. Continuous surveillance and prevention as well as international cooperation is needed to make sure that the situation does not deteriorate. The increased resistance of bacteria to antibiotics calls for close monitoring of the use of these drugs and advice on their appropriate use.

Health disparities between population groups must be reduced

There are major health variations between socio-economic groups and between different regions in Finland. More information is needed on the reasons for these health differences and on ways in which they can be reduced. It is particularly important to develop health promoting measures that can help to improve the health of the most disadvantaged groups.

It is increasingly important to maintain the functional and working capacity of the ageing population

The maintenance and promotion of functional capacity is crucially important to the working ability and independence of older people. Common diseases are among the most important

reasons for declining functional capacity. Steps are needed to develop and improve the prevention, early detection and effective treatment and rehabilitation of these diseases.

In the workplace, steps are needed to promote the health and working ability of ageing workers. It is important to make sure that living and working environments are safe and healthy, that they facilitate everyday activities and promote the activity of older people.

Rehabilitation plays an important role in the maintenance of working ability and functional capacity. Rehabilitation should start as early as possible and be based on the individual's needs and resources. As the population continues to age it will be necessary to have more rehabilitation services as well as related counselling services.

Good health depends on good services and a high standard of social security

The health care system as a whole works very well and services in general are readily available. However there are marked differences between socio-economic groups and between different parts of the country in the availability, use and adequacy of care services. The improved efficiency of health services has not fully satisfied the growing demand for services.

High-quality treatment and care can be guaranteed for everyone by developing primary health care, by increasing cooperation between primary and specialised health care services, and by making good use of municipal, private and voluntary services. It is important that the continuity and seamlessness of care is improved. The costs incurred to the patient must not prohibit access to care.

Social services tie in closely with the health care system. It is imperative that steps are taken to develop the cooperation both between different administrative branches in local government and between local and regional services. More services are needed for older people, and they must be tailored to their individual needs and support their independence in the home.

Information must be adopted as a steering instrument

Health information management must be developed into an integral system that is based, on the one hand, on registers and statistics, and on the other hand on periodic population studies to collect data on the health of the population, related factors, health needs and the satisfaction of those needs. The observations must be regularly made available to professionals at different levels, to planning authorities, decision-makers and other citizens.

Health in Finland

Public health in Finland has rapidly improved over the past few decades. From a poor start, life expectancy has almost reached the best European figures. Mortality from coronary heart disease and stroke has decreased by three-quarters from the world's highest level in the early 1970s. There has also been a major reduction in the incidence of many cancers and infectious diseases, oral health has improved and mortality from traffic and work accidents has decreased. Furthermore, both perceived health and functional capacity have improved.

This progress is due to a number of factors related to population structure, living conditions and behaviour. Improvements in education levels, living and working conditions, social security, health services and health behaviour have been particularly important. Advances in social and health policy have also played a significant role in achieving these improvements.

The main challenges now are to maintain the positive developments and to find ways to tackle increasing public health problems, such as diabetes, allergies, obesity, alcohol-related harm, and health disparities between population groups. Furthermore, as the number of older people in the population continues to rise, diseases and functional limitations that are common in old age present a major challenge.

This book gives an up-to-date overview of the population's health and its determinants in Finland. Health care and social security have also been taken into account. Furthermore, care has been given to analyse time trends, differences between population groups and countries, costs and future health needs. The book provides to international readers a concise but comprehensive picture of public health in Finland.

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