Country Highlights give an overview of the health and health-related situation in a given country and compare, where possible, its position in relation to other countries in the WHO European Region. The Highlights have been developed in collaboration with Member States for operational purposes and do not constitute a formal statistical publication. They are based on information provided by Member States and other sources as listed.

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AN OVERVIEW OF THE HEALTH SITUATION

Positive trends

Life expectancy at birth in the Netherlands has lengthened consistently over many years. However, it is now showing a tendency to level off (especially for women), although in the early 1990s it was still the sixth highest among 18 European reference countries.¹

Mortality from cardiovascular diseases, in particular from ischaemic heart disease, has further declined over the last decade, so that the female and male standardized death rates (SDRs) for these diseases were, respectively, around and below the EU average in the early 1990s.

The SDRs for all external causes, and within them for motor vehicle traffic accidents and for suicide, have been declining considerably. In 1992, the male SDRs for these causes were well below the EU average (and lowest among the reference countries for all external causes), and the female rates were around the EU average.

Negative trends

The levelling-off of life expectancy at birth could be reversed through a reduction in mortality in women aged under 65 years and in men aged over 65 years.

Both infant and maternal mortality have decreased less than in most of the reference countries during the last decade, and the maternal death rate was one of the highest at the beginning of the 1990s.

In contrast to the declining trend in male cancer mortality, the SDR for all cancers in women aged up to 65 years has been rising slightly over the last ten years while the SDR for lung cancer showed the strongest increase (87%) among the reference countries. Although the increase in cancer of the breast was comparatively low, the SDR was 20% above the EU average in 1992.

The proportion of men and women who are regular smokers has remained more or less unchanged at one of the highest levels among the EU countries.

¹ The 15 countries of the European Union (EU) plus Iceland, Norway and Switzerland.
Highlights on Health provide an overview of the health of a country’s population and the main factors related to it. Based on international comparisons, they present a summary assessment of what has been achieved so far and what could be improved in the future. In order to enlarge the basis of comparison beyond the EU, data for Iceland, Norway and Switzerland have also been included where available and relevant.

A special case of comparison is when each country is given a rank order. Although useful as summary measures, ranks can be misleading and should be interpreted with caution, especially if used alone, as they are sensitive to small differences in the value of an indicator. Also, when used to give an assessment of trends (e.g. the table at the start of the Health Status section), ranks can hide quite important changes within an individual country. Therefore bar charts (to show changes over a relatively short period) or line charts (to show time trends from 1970) have also been used. Line charts present the trends for all the 15 EU countries and their averages, although only the country referred to in a specific Highlight and the EU average are identified. This makes it possible to follow the country’s evolution in relation to that of other EU countries and to recognize how it performs in relation to observable clusters and/or the main trend.

In general, the average annual or 10-year percentage changes have been estimated on the basis of linear regression. This gives a clearer indication of the underlying changes than estimates based on the more simple and straightforward percentage change between two fixed points over a period. For mortality indicators, countries with small populations (e.g. Luxembourg or Iceland) can have fluctuating values, and in these cases three-year moving averages have been used. For maternal mortality, because the number of deaths is in general small, three-year moving averages have been calculated for all countries.

Where possible (and where relevant for trend comparisons), data for Germany up to 1990 refer to the Federal Republic within its current territorial boundaries.

To make the comparisons as valid as possible, data for each indicator have as a rule been taken from one common international source (e.g. WHO, OECD, International Labour Office) or from Eurostat (the Statistical Office of the European Communities) to ensure that they have been harmonized in a reasonably consistent way. It should also be noted that other factors (such as case ascertainment, recording and classification practices and culture and language) can influence the data at times. Unless otherwise mentioned, the source of the data used in the charts and tables is the WHO Regional Office for Europe’s HFA statistical database (June 1995, version with 1992 or 1993 data). The latest data available to WHO as of August 1996 are mentioned, as appropriate, in the text.
THE COUNTRY AND ITS PEOPLE

The Netherlands is a constitutional monarchy with a written constitution (last revised in 1983). Executive power lies with the Crown and legislative power rests with both the Crown and the bicameral Parliament. The Upper Chamber of Parliament is elected by members of the Provincial States while the Second Chamber is elected by direct universal suffrage with proportional representation. Both Chambers are elected for four years. The Sovereign appoints the Formator, who decides on a majority coalition with the parties in Parliament. The Formator and the parties in the coalition then decide on the appointment of the Prime Minister and Cabinet. The Sovereign has the power to dissolve both Chambers. The Council of State is appointed by the Crown and can be consulted on all legislative matters.

The Government and the Second Chamber propose bills which the Upper Chamber can approve or reject but cannot amend.

The Netherlands is a highly decentralized country, with 12 provinces and 646 municipalities. Each province has its own representative body, the Provincial State, whose members are directly elected for four years. The Provincial States are entitled to issue ordinances concerning the welfare of the provinces and to raise taxes.

Each municipality forms a corporation with its own interests and rights subject to the general law, and is governed by a municipal council directly elected for four years which has the right to issue by-laws concerning municipal welfare and to levy certain taxes. These decentralized levels of government are responsible for most of the organization of the health care system.

The Netherlands is a founder member of the European Union (EU).²

² These introductory paragraphs are based on material from the Statesman’s Year-Book (Hunter 1994, 1995).
Demography

The population pyramid illustrates the changes in population structure between 1970 and 1993. There has been a large increase in the group aged 25–49 years, reflecting higher fertility in the decades following the Second World War. The group aged 65 years and over has also increased; this increase is greater for women than for men from the age of 70 years due to their longer life expectancy.

Fertility in the Netherlands has been one of the lowest among the reference countries for a very long time. Even though the total fertility rate has slightly increased since the mid-1980s it is, at 1.6 children per woman, still below replacement level. The population growth rate is therefore low (0.53% in 1994) despite the flow of immigrants (Council of Europe 1995). The percentage of the population aged under 15 years has declined to 18%. On the other hand, as a result of increasing longevity the proportion of the population aged 65 years and over is rising steadily and now accounts for 13% of the population. Forecasts indicate that it will rise to 16% by 2015 while the percentage of people aged 85 and over will reach 1.4% (Eurostat 1995a).

This aging process is even more pronounced for women. Over the age of 60 years women increasingly outnumber men. In 1994, 74% of the population aged 85 years and over were women.

Household composition and family structure

The demographic changes, including increasing numbers of births taking place outside marriage, are leading to considerable modifications in household size and family structure.

With an average of 2.4 persons, household size in the Netherlands is one of the lowest in the EU, only higher than in the Scandinavian countries. Couples with dependent children now account for only 33% of all private households, while single-parent households have increased to 7.8% of all private households, with the result that 16% of households with dependent children are headed by one parent only.

Nearly one in three private households are occupied by single persons, many of whom are likely to be single elderly women. In 1991, single women aged over 65 years comprised 4% of the total population and 80% of all single households where the occupant was aged over 65 years (CBS 1995a). The health and well-being of elderly people living alone can be significantly affected by the financial resources available for help with housekeeping and personal hygiene. Social exclusion may also result in isolation, which can threaten mental health. These issues affect the costs and organization of health care.

Demographic trends and structure

<table>
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</thead>
<tbody>
<tr>
<td></td>
<td>1000s</td>
<td>%</td>
<td>1000s</td>
<td>%</td>
</tr>
<tr>
<td>Population</td>
<td>15 424</td>
<td>371 563</td>
<td>17 466</td>
<td>393 243</td>
</tr>
<tr>
<td>Urban population</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distribution by age:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0–14 years</td>
<td>2 838</td>
<td>18.4</td>
<td>65 423</td>
<td>17.6</td>
</tr>
<tr>
<td>15–64 years</td>
<td>10 552</td>
<td>68.4</td>
<td>249 000</td>
<td>67.0</td>
</tr>
<tr>
<td>65+ years</td>
<td>2 034</td>
<td>13.2</td>
<td>57 140</td>
<td>15.4</td>
</tr>
<tr>
<td>85+ years</td>
<td>203</td>
<td>1.3</td>
<td>6 015</td>
<td>1.6</td>
</tr>
<tr>
<td>Total fertility rate</td>
<td>1.6</td>
<td></td>
<td>3 204</td>
<td>18.3</td>
</tr>
<tr>
<td>Dependency ratio</td>
<td>46.2</td>
<td></td>
<td>251</td>
<td>1.4</td>
</tr>
</tbody>
</table>

*As per 1st January 1995 (Eurostat 1996)

**Forecast, Eurostat intermediate scenario

† 1993 (UNDP 1996)

‡ 1994 (Council of Europe 1995)
Migrant population and ethnic profile

On 1 January 1994 there were 780 000 foreigners in the Netherlands, 5.1% of the total population. The biggest foreign groups are Turks and Moroccans, followed by Germans, United Kingdom citizens, Belgians and Surinam nationals (CBS 1996). In 1995, the Netherlands received 29 258 new requests for asylum, a 43% increase compared to 1992. Immigrants from ethnic minorities can have specific patterns of disease and health needs because of genetic and behavioural factors and exposure to different environments in their countries of origin. Access to health care that can meet such specific needs or that is culturally and linguistically acceptable can also be difficult. Moreover, immigrants can be at a higher risk of living in relative poverty and being marginalized in their host countries, which can exacerbate their diseases. Illegal immigrants in particular can find it difficult to use health care, and follow-up to any care given can be problematic.

Education

The relevance of educational attainment to health has been well documented. In Europe, where primary education is universal, the proportion of the population with more than a lower secondary education would be the appropriate indicator for educational achievement. A recent survey on education of the workforce in the former 12 EU countries (Eurostat 1995c) shows that in this respect the performance of the Netherlands is one of the best in the EU. Moreover the earlier gender divide has been greatly reduced. Nevertheless, the female rate of enrolment in upper secondary and higher education remains somewhat lower than the male rate but higher than in most of the EU countries (Eurostat 1995d).

As today’s families are relatively small and many children are growing up without siblings or (at least temporarily) with only one parent, and as a high proportion of women are employed outside the home, the availability of preschool facilities is important in respect of both children’s social integration and

### Percentage of people with at least secondary education (higher level), 1993

<table>
<thead>
<tr>
<th></th>
<th>NET EU a</th>
<th>NET EU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (25–59 years)</td>
<td>75</td>
<td>54</td>
</tr>
<tr>
<td>55–59 years old</td>
<td>59</td>
<td>35</td>
</tr>
<tr>
<td>25–29 years old</td>
<td>84</td>
<td>69</td>
</tr>
</tbody>
</table>

* Excluding Italy (data not compatible)

Source: EUROSTAT 1995c
mothers’ and children’s psychosocial wellbeing. Mothers who want to work in the Netherlands face serious obstacles (Fagnani 1993): pre-school education provided by education authorities is only available from the age of 4 years (Eurostat 1995d).

**Economy**

The Netherlands has a mixed economy. In the early 1990s:

- agriculture employed 4% of the population and accounted for 4% of the GDP; there are important regional variations – in the Province of Flevoland, for example, 20% of the GDP comes from the primary sector;

- industry represented 32% of the GDP and employed 25% of the population, the biggest share being represented by the food, beverage and tobacco industry; 5% of the electricity is produced by nuclear power, and the generation of electricity by windmills (710 were installed in 1993) is increasing but still represents much less than 1% of total production (Hunter 1995);

- the service sector employed 70% of the workforce and accounted for 64% of GDP.

Women only make up 40% of all people in civilian employment. Although this figure is only slightly below the EU average, it is low when compared to the other north-west European countries. Unemployment has been rising and in 1993, 9% of the workforce were unemployed (34% of them aged under 25 years and 53% of them women) (Eurostat 1995a).
HEALTH STATUS

A description of the population’s health status against the background of the reference countries\(^3\) shows that since 1980 the Netherlands has managed to keep its above average position as regards most of the key health indicators.

- Life expectancy was sixth highest in 1992 against second best in 1980, because the rate of increase over the previous decade had been less than that of other countries.
- Infant mortality has remained below the EU average, and although there has been a 25% decrease in the absolute value, the relative position has worsened.
- The reduction in maternal mortality has been much smaller than in most of the reference countries, and therefore in the early 1990s the Netherlands had one of the highest average maternal death rates.
- While the rate of decrease of the standardized death rate (SDR) for all cardiovascular diseases (CVDs) and for cerebrovascular disease in people aged 0–64 years has been less than that of the EU average, mortality from ischaemic heart disease has dropped substantially to a level below the EU average in 1992.
- Overall cancer mortality in the population aged 0–64 years declined to just below the EU average in 1992, with a net decrease in the male death rate and a slight increase in the SDR for women.

\(^3\) See footnote 1 on page 3.
The Netherlands’ relative position with respect to the SDR from lung cancer in people aged 0–64 years remained unchanged at third highest among the reference countries between 1980 and 1992, but whereas the male rate decreased markedly over this period, the female rate went up by 87%, the strongest increase among the reference countries.

The SDR for cervical cancer in women aged 0–64 years improved substantially, but the rate for breast cancer remained at a high level relative to the rates in the reference countries.

Mortality from all accidental and violent deaths has decreased and in 1992 the Netherlands had the second lowest rate among the reference countries. The relative position with respect to motor vehicle traffic accidents and suicide also improved.

Measures relating to the total population often hide important differences between segments of that population, for instance between men and women. In general, women have higher morbidity but lower death rates than men. In 1992, life expectancy at birth of Dutch women (80.5 years) was 6.2 years longer than that of Dutch men (74.3 years).

Similar differences can be observed between social classes: life expectancy at birth of Dutch men with high socioeconomic status is 4.5 years longer than that of men with low status, and this difference is still over 3 years at the age of 65 years. There is also a strong social gradient in the frequency of disease, chronic illness and disability. This is reflected in the life expectancy in good health where there are differences of over 12 years between men in the lowest and highest socioeconomic groups as defined by educational and income level (RIVM 1993: 164, 209).

When asked in 1989/1991 how they perceived their health in general, only one in five people aged over 15 years said that their health was less than good. As with other health indicators, perceived health often deteriorates with age; even so, over half (54%) of the population aged 75 years and over assessed their health as good or even very good. The proportion of people with the lowest educational status perceiving their health as less than good was three times higher than among those with the highest status, and similar differences have been observed as regards groups with the lowest and highest income levels (CBS 1992: 25).
Life expectancy

Life expectancy at birth in the countries which today form the EU has shown a steady upward trend since 1970 for both sexes. In the Netherlands, this trend has been less pronounced, especially since 1980. Life expectancy for Dutch women rose sharply in the 1970s and then dropped from third highest among the reference countries in 1980 (and highest in the EU) to slightly above the EU average in the early 1990s (in 1993 this had dropped to below the EU average).

A country’s position as regards life expectancy at the age of 65 years and loss in life expectancy due to premature death (i.e. deaths before the age of 65 years) gives some indication of the potential for improving overall life expectancy (see charts on next page). Female life expectancy at 65 years continues to be better than the EU average, although again it remained virtually unchanged in the 1980s following the sharp increase of the 1970s. Also in the 1970s, female premature death was responsible for fewer years of life lost than in most of the reference countries. However, as there was little improvement in this respect, the position of the Netherlands was about average by the early 1990s. In contrast, men have retained their position as regards premature deaths, but male life expectancy at 65 years is now less than the EU average.

Longevity raises the question of whether the quality of life in older age is satisfying or afflicted with a heavy burden of ill health. Disability-free life expectancy can be assessed by computing the average number of years that people have to live with short-term and permanent disabilities or in institutions (nursing homes) and deducting those years from their total (remaining) life expectancy. The gap of over 6 years between female and male total life expectancy disappears when disability-free life expectancy is considered, as women can expect to spend about 75% of their lives in good health and men about 82%. The situation at 65 years is even inverted, with a disability-free life expectancy of 9 years for men against 8 years for women.

A comparison of the situations in 1983 and 1990 when life expectancy and (good) perceived health are combined shows that during this period the number of years spent in good health increased significantly for men under the age of 75 years but remained about the same for women (RIVM 1994: 62).

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>Total life expectancy</th>
<th>Healthy life expectancy</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>0 (birth)</td>
<td>73.8</td>
<td>80.1</td>
</tr>
<tr>
<td>65</td>
<td>14.4</td>
<td>19.0</td>
</tr>
</tbody>
</table>

Source: RIVM 1994: 40
Main causes of death

Cancers are the most frequent cause of death under the age of 65 years, followed by CVDs. However, over all ages the situation is reversed and CVDs cause more deaths than cancers. A more detailed analysis of age-specific mortality patterns shows that the causes of up to 80% of all deaths in each age group can be classified in three main categories: external causes (the most prominent causes until the age of 35 years), cancers and CVDs.

A comparison between countries of death rates related to these causes (chart page 13) can indicate how far the observed mortality might be reduced. As almost all causes underlying these deaths are influenced by collective and individual habits and

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4 This category includes all mortality due to poisoning, suicide, homicide and all types of accident.
Main causes of death by age and sex group, 1992/1993
(standardized death rates per 100 000 by age and sex group)

These charts show age- and sex-specific death rates for the main causes of death in The Netherlands in 1992. These rates are compared with the lowest corresponding rate observed in any country of the EU, which can thus be considered as a reference value potentially attainable by other countries. The sum of these minima, however, has to be considered as an artificial value which is sensitive to different national coding practices or coding errors. The dashed lines show the smallest overall SDR observed in any one EU country.
behaviour, a wide variety of health promotion and prevention measures can be applied to bring about changes that will reduce health risks and thus diseases and premature deaths.

The most striking features of the Dutch age- and sex-specific death rates are the consistently good results as regards preventable causes such as accidents or CVDs and the comparatively high mortality from “ill defined conditions”.

- At 1–14 years, overall mortality is around the EU average for both sexes, but mortality from the main causes of death is low, except congenital anomalies, for which boys rank second highest and girls about average for the EU. Furthermore, death rates for the residual category of “all other causes” are also second highest, within which the most sizeable group is “ill defined conditions” for both sexes (CBS 1995a: 504f).
- At 15–34 years, the total male age-specific death rate is the lowest among the EU countries. Both sexes have the lowest SDR for external causes of injury and poisoning and (very) low rates for the other main causes of death. Among the residual causes, the death rates for “ill defined conditions” for both sexes, and AIDS for men are highest.
- At 35–64 years, overall mortality of men is the third lowest among the EU countries but just above the EU average for women. The female SDR for CVD is around the EU average, whereas cancer mortality is below the EU average for men and fourth highest for women.
- At 65 years and over, the total age-specific death rate is the third lowest in the EU for women and slightly above the EU average for men. While the SDR for CVDs is the third lowest in the EU for men and the second lowest for women, male cancer mortality is the second highest and the female SDR is just above the EU average. Male mortality from respiratory diseases is also comparatively high (10% above the EU average).

**Cardiovascular diseases**

The overall trend in SDRs from CVDs in the population aged 0–64 years has been falling since 1970 in western Europe. In the Netherlands, this downward trend for men more or less mirrors the EU average. However, the trend for women was among the lowest in the reference countries between 1970 and 1980, but by the early 1990s it was also close to the EU average. Nevertheless, in 1992 CVDs death rates for both sexes were slightly below the EU average. SDRs from ischaemic heart disease were around average for both sexes whereas for cerebrovascular disease the male death rate was third lowest among the EU countries and the female rate...
was about average.

There is a very marked variation in the prevalence of CVDs risk factors (such as hypertension, hypercholesterolaemia and overweight) between the different socioeconomic groups (RIVM 1994: 87). The greatest potential for improvement in the risk factors, and eventually in mortality, is in the lower socioeconomic group.

Cancer

Cancer mortality in the population aged 0–64 years shows very pronounced gender-specific trends and patterns.

- Male death rates from all cancers have fallen continuously and since the mid-1970s have been clearly below the EU average.
- In contrast, female SDRs have not followed the trend of the EU average: they fell during
the 1970s and then remained more or less static, with the result that the Netherlands is the only EU country where premature cancer mortality for females has gone up since 1980.

- The rising trend in female cancer mortality is mostly due to a strong increase in lung cancer mortality, with one in seven deaths due to cancer of the lung. The female SDR for lung cancer rose by 87% after 1982 (the highest rise in the reference countries), and in 1992 was the fourth highest among the reference countries and nearly 60% above the EU average.

- Male death rates from lung cancer have fallen steadily since 1970, but despite a marked drop during the 1980s (19% against the 5% EU average) the Netherlands was still the fifth highest among the reference countries.

According to data from 1991 almost 31 000 new cases of male and 28 000 female cancers were recorded during that year (CBS 1995b: 205f). On
average some 20 000 men and 15 500 women die from cancers every year in the Netherlands (CBS 1995b: 118–123). The gender difference basically reflects the effect of different chances of survival for the most frequent sites in each sex group: breast cancer in women (one in three new cases) and cancer of the trachea, bronchus and lung in men (one in four new cases). For both sexes, the sites with the next highest incidence are the digestive organs (some 24% of new cases), followed by the prostate (14%) and urinary tract (8%) for men, and genital organs (13%), skin (7%) and respiratory system (6%) for women.

**External causes of death and injury**

This category covers all deaths that are not due to somatic deficiencies such as illness but mainly to accidents, (accidental) poisoning, violent acts
(homicide) and suicide. The trend within the EU for mortality caused by these factors, and in particular by road traffic accidents, has been going down since 1970. In the Netherlands, this trend has been even more marked, especially for men who in 1992 ranked lowest and fourth lowest among the reference countries as regards mortality from all external causes and from road traffic accidents, respectively. The SDRs for women are also below the EU average for both these categories.

Unlike some of the other countries with fairly low death rates from motor vehicle traffic accidents, the Netherlands also has a low rate of injury. Road traffic injuries have declined by 20% since 1980 and in 1992 the injury rate was 318 per 100 000 population, one third below the EU average.

**Psychosocial and mental health**

Although mental and psychosocial wellbeing are important aspects of health-related quality of life, too little information is generally available to allow a reliable description of this very important dimension of the population’s health. Suicide can be used as an indirect measure of mental disorder or lack of psychosocial wellbeing.

As in other countries, while women are more likely to attempt suicide, the rate of men actually committing suicide is higher. In the Netherlands it is twice as high as that of women (13.5 against 6.7 per 100 000). After a period of slight increase until the mid-1980s, especially for men, suicide rates went down again. In 1992, female SDRs were slightly higher and male rates markedly lower than the respective EU averages.

The prevalence of psychiatric and psychosocial problems in the Netherlands was assessed through several surveys carried out during the 1980s. It is estimated that in the course of one year some 16% of the population (2.4 million people) experience a serious psychosocial problem. In about 18% of cases, this type of problem is one and a half times more frequent among people aged 18–24 years than among those aged 45–64 years. But a positive score for psychiatric problems (measured by the General Health Questionnaire) was most often found among the latter group (RIVM 1993: 169ff).

**AIDS**

The acquired immunodeficiency syndrome (AIDS) is essentially a sexually transmitted disease which can also be transmitted through blood (through the transfusion of infected blood or blood products or the use of non-sterile injection equipment). There is a delay of about ten years or more between initial infection with the human immunodeficiency virus (HIV) and development of the clinical illness of AIDS. The number of notified cases of AIDS is rising.
all over western and northern Europe, but annual rates of new cases are highest in the south. Taking into account reporting delays, the Netherlands had an incidence rate of almost 3 cases per 100,000 people in 1994.

By the end of March 1995, a total of roughly 3500 (adult and adolescent) AIDS cases had been reported and it was estimated that there would be some 500 new cases per year after the mid-1990s (European Centre for the Epidemiological Monitoring of AIDS 1994 and 1995). In three out of four cases reported up to the beginning of 1995, transmission was through homo/bisexual contact (75%), followed by injecting drug use and heterosexual contact (10% each). However, the very long incubation period means that these figures do not necessarily reflect the actual extent of the epidemic or the currently prevailing modes of transmission. Furthermore, as no data about the incidence of infections are available, the prevalence of HIV-positive cases can only be estimated. According to recent estimates, there were almost 7000 HIV-positive people in the Netherlands at the end of 1993 (European Centre for the Epidemiological Monitoring of AIDS 1995).

Source: European Centre for the Epidemiological Monitoring of AIDS 1995
A shift in the distribution of HIV cases as to the transmission mode is likely to have occurred across Europe, with the largest proportional increases estimated to be among the heterosexual contact group. Based on back-calculated prevalence estimates, at the end of 1991 homo/bisexual men accounted for 59% of all seropositive cases in the Netherlands, followed by heterosexuals (18%) and injecting drug users. The proportion of women among recorded AIDS cases has risen continuously since the beginning of the epidemic to 7.4% at the beginning of the 1990s (RIVM 1993: 246).

Disability

The prevalence of long-term illness and disability is an important criterion of a population’s health-related quality of life. However, such data are not generally available. A recent comparative study (Eurostat 1995b) estimated, on the basis of the 1986–1988 Dutch health survey, that in 1992 12.2% of the population suffered from disabilities that result in a handicap in social or socioeconomic terms. This is a slightly higher proportion than the average (11.5%) in the EU countries for which these data have been compiled. As can be seen from the age distribution in the chart, the higher proportion of Dutch people applies to those aged up to 65 years; over that age, the EU averages are higher. This may be explained by the atypical observation that in the Netherlands serious disabilities predominate in this age group (Eurostat 1995b: 249) or that there may be underreporting of less serious disabilities. The rate of people aged under 60 years receiving disability benefits is, at 6.2%, one of the highest in the EU and markedly over the EU average of 4.7%.

People with low educational status (primary school only) are twice to three times as likely to suffer from a physical disability than people with a university degree or higher vocational training (CBS 1995b: 133). Similar differences exist between low- and high-income groups (RIVM 1993: 164).

In 1991–1992, 68% of men and 59% of women over all ages were free from long-term (chronic) conditions such as diseases of the respiratory, circulatory or digestive systems, rheumatic affections or diabetes. This proportion varied between 86% in people aged 0–14 years to 33% in people aged over 64 years. Some 15.5% of people aged 15–24 years, 24% of those aged 25–44 years and 28% of those aged 45–64 years suffered from one chronic disease, while 5%, 10% and 24% of the respective age groups suffered from two or more such illnesses (CBS 1995a: 499).
Health of children and adolescents

The first year of life is one of the most critical phases as regards mortality; only after the age of 55 years do death rates return to the same level as in the neonatal (during the first 28 days after birth) and postneonatal (from 28 days to 1 year after birth) periods. Decreasing on average by almost 35% over the last 10 years, infant mortality rates have converged throughout the EU. The rate in the Netherlands fell by nearly 25% during this period to 6.3 per 1000 live births in 1993, about 10% lower than the EU average. Neonatal deaths comprise approximately two thirds of all infant deaths and most often occur in very low-birth-weight babies. In 1991/1993, on average 4.7% of newborn babies in the Netherlands weighed under 2500 g (CBS 1995b), one of the lowest proportions recorded among the reference countries.

The sudden infant death syndrome is the main cause of death in the postneonatal period. Between 1986 and 1991 the incidence of these deaths in the Netherlands decreased by approximately half, largely attributed to discontinuing the practice of placing infants face downwards to sleep (de Jong et al. 1993).

The policy of woman-centred care, which critically examines previous norms and values concerning women’s health and integrates alternative care practices, officially supports home deliveries although this practice has declined everywhere else in Europe (Ministry of Welfare, Health and Cultural Affairs 1994). One third of births take place at home with the assistance of private midwives and the support of an extensive referral network. Postnatal home visiting is a central tenet of maternity care (Kerssens 1994).

Immunization coverage of children against most childhood communicable diseases has been consistently high over the past ten years. In 1993, coverage for most childhood and communicable diseases such as diphtheria, tetanus, pertussis, measles and poliomyelitis reached 95–97%. In addition, relatively few cases of rubella or mumps have been reported during the same period compared to many other EU countries.

Children’s oral health has also improved significantly over the past decade, contributing to long-term benefits for general health, particularly for the functioning of the digestive system. In 1990, Dutch children aged 12 years had an average of 1.7 decayed, missing or filled teeth, the third best among the reference countries.

Adolescence is characterized by efforts to take on adult roles. This transition involves experimentation and imitation, which can make young people vulnerable to damage to their health. Acute health problems can result from accidents, experiments with drugs, unsafe sex or unwanted pregnancies. In the longer run, the adoption of specific lifestyle patterns...
can lead to chronic degenerative diseases. This is also the phase when social insecurity can be compounded by, for example, unemployment. In 1993 one in three unemployed people were aged under 25 years (Eurostat 1995a).

One of the few routinely available indicators of adolescents’ sexual health and behaviour is the frequency of teenage pregnancies, which can reflect social factors as well as access to and use of contraceptive methods. The number of births to young women aged 15–19 years has been falling in almost all the reference countries since 1980. In 1993, the Netherlands had the second lowest age-specific fertility rate (5.4 per 1000) among the reference countries for women aged under 20 years (Council of Europe 1995) and less than 2% of all live births were to mothers in that age group, the lowest proportion reported in the EU.

Successful strategies for the prevention of teenage pregnancy based on sex education, open discussions on sexuality in the mass media, educational campaigns and low barriers to contraceptive methods and services are associated with a low teenage abortion rate and a reduction in unwanted pregnancies (Ketting/Visser 1994). Even with the lowest teenage pregnancy rate in the west and a generally high quality antenatal care system, teenage pregnancies have less favourable outcomes than those in older women, including a higher likelihood of premature babies and intrauterine death (Buitendijk et al. 1993).

Teenage pregnancy rates also shed light on the availability and correct use of condoms, which must also be considered with respect to the risk of contracting sexually transmitted diseases, including HIV. In western Europe, more than two thirds of all reported cases of gonorrhoea occur among people aged under 25 years (WHO 1992). A decreasing trend in pelvic inflammatory disease incidence in Amsterdam between 1983 and 1990 was noted for women over the age of 20 years, but not among teenagers (Coutinho et al. 1992).

**Women’s health**

After age, the second strongest correlate of mortality is gender. Women generally live longer than men and have lower mortality rates for all causes of death in the EU. However, women have higher reported rates of morbidity and utilization of health care services (especially around childbirth) and can be indirectly more affected by population and other social welfare policies.

Until 1992, Dutch women still had a higher life expectancy both at birth (below EU average in 1993) and at age 65 than the EU average. However, although between 1982 and 1992 the mortality from all causes for women aged under 65 years had decreased, in 1992 it was around the EU average whereas in 1982 it had been approximately 20% lower. As pointed out earlier, it is this relatively small improvement (compared to the reference countries) that has resulted in the life expectancy of Dutch women not having the same relatively high rank as in 1980 (when it was the highest in the EU).

The decreasing trend of the 1970s in female mortality from all cancers was reversed in 1980. The Netherlands is now the only country in the EU in which an increase (albeit slight) has been observed over the past 10 years. In the case of female mortality from lung cancer there has been almost a 90% increase over the past 10 years, and the SDR for women aged under 65 years is currently the third highest in the EU. Furthermore, mortality from breast cancer has remained virtually unchanged since 1970 and was nearly 25% higher than the EU average in 1992. However, mortality from cervical cancer has decreased significantly and is now below the EU average. Breast cancer is the most common female cancer; it accounts for 30% of total cancer incidence, with the roughly 9000 new cases diagnosed each year.
accounting for 20% of cancer mortality, and some 3500 deaths in 1993 (CBS 1995b).

The Netherlands has a widespread mass screening programme for breast and cervical cancer. In the case of breast cancer it is less widespread in the northern provinces, where it began relatively later than in the southern provinces (de Koning et al. 1995). In the case of cervical cancer, mass screening was extended between 1988 and 1993 from 22 to 44 of the 45 sentinel stations that continuously register morbidity throughout the country (Bartels 1995).

In contrast to the overall relatively low female mortality levels, the country had the fourth highest maternal mortality rate recorded in the EU in the early 1990s. Based on three-year moving averages, there were in 1991 6.9 maternal deaths per 100 000 live births (12 deaths). This rate had stayed constant for the previous 10 years, with almost all deaths due to

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**Standardized death rates, cancer of the breast, females aged 0–64**

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**Standardized death rates, cancer of the cervix, females aged 0–64**

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direct obstetrical causes. It has been noted that in approximately 60% of cases substandard care factors could be identified, suggesting that improvements in preventing maternal mortality are possible (Schuitemaker 1991).

Abortions and unplanned pregnancies were reported less frequently during the decade 1982–1992: in 1992, the ratio of abortions to 1000 live births was 98, a 20% decrease since 1982. A national survey shows that Dutch women are well informed about all aspects of contraception as a result of information from formal and informal education at school, the family, through the media and from general practitioners, who are considered the most important and reliable source of information (van Lunsen et al. 1994).

For women, most cases of pelvic inflammatory disease are caused by a sexually transmitted agent, and may have a number of consequences requiring attention, such as infertility, ectopic pregnancy and chronic abdominal complaints. The incidence of pelvic inflammatory disease registered in Amsterdam is three times higher than the national incidence, 240 against 70 per 100 000 women, respectively; in 1993 it was highest in the groups aged 20–24 years and 40–44 years (Bartels 1995). A study investigating risk factors for STDs and sexual behaviour found risky sexual contact was an important independent determinant of subsequent STD prevalence (Hooykaas et al. 1991).

Other female health problems are not limited to women’s reproductive function or their reproductive age. The cessation of ovarian function at menopause also puts women at special risks, notably of osteoporosis due to bone loss. Osteoporosis-related morbidity, including pain, loss of mobility, periodontal disease and tooth loss, and fractures of the hip, vertebrae and wrist, is affecting increasing numbers of people, in particular women (von Wowern et al. 1994). In western Europe hip fractures are common in elderly people, affecting one in four women up to the age of 90 years, twice the rate for men (Armstrong/Wallace 1994).

Violence against women has in general received limited attention as a public health issue. Data on the occurrence and type of such violence are lacking but female SDRs for homicide and intentional injury have been rising in the Netherlands since 1970, with an increase of over 20% during the last decade. Recent World Bank estimates indicate that in established market economies gender-based victimization is responsible for one out of every five healthy days of life lost to women of reproductive age (Heise 1994). A recent study investigating the relationship between suicide attempts and a history of sexual abuse concluded that among Dutch women who attempt suicide, those with a history of sexual abuse (approximately 50%) are disproportionately vulnerable to repeat suicide behaviour (van Egmond et al. 1993). Female mortality due to homicide and intentional injury has increased by over 20% during the past decade.

Sexually transmitted diseases (STDs) are more difficult to diagnose in women (many STDs occur without recognizable symptoms in women) and they suffer more severe sequelae than men (Fathalla 1994). While the occurrence of traditional STDs (gonorrhoea, syphilis and chancroid) has declined, new bacterial and viral syndromes associated with Chlamydia trachomatis, the human herpes virus, the human papilloma virus (HPV) and HIV have become prominent in western Europe. These agents are often more difficult to identify, treat and control and can cause serious complications often resulting in chronic ill health, disability, infertility or death.
LIFESTYLE

Among the wide variety of factors influencing health (genetic disposition, the physical and social environment, etc.), behaviour has a major impact on each individual’s and the population’s health and wellbeing. Lifestyle patterns such as nutritional habits, lack of physical activity, and smoking or heavy drinking of alcohol, play an important role in premature mortality, mainly from CVDs and cancers. These diseases alone are responsible for the largest share of deaths under the age of 65 years. Unhealthy behaviour also contributes to a wide range of chronic illnesses and thus affects the quality of life in general and especially in older age. Lifestyle, however, is also influenced by collective behavioural patterns common to a person’s social group and by more general socioeconomic conditions. In most European countries, improvements in lifestyles have largely been confined to the more socially and economically privileged middle classes who are better placed to live healthy lives (WHO 1993).

Somatic risk factors

The extent to which lifestyle is likely to influence morbidity and mortality in a population can be approximated by the prevalence of well known medical risk factors such as raised blood pressure, high cholesterol level or overweight. These are some of the most common determinants associated with CVDs.

In 1987–1991 the prevalence of hypertension (a systolic blood pressure of 160 mm Hg, or diastolic blood pressure of 95 mm Hg, or the use of antihypertensives) by the age of 40 years was about 8% in men and 4% in women; however, 20% of both sexes aged 60 years met at least one of the criteria for hypertension (RIVM 1993: 65). Hypertension is less frequent in people with higher education, and is statistically associated with increasing age, obesity, elevated cholesterol and, at least for men, with higher levels of alcohol-drinking.

Higher levels of serum cholesterol are also known to increase the risk of CVDs. Population monitoring data show that by the age of 30 years, 10% of men and 5% of women have a moderately or severely raised level of total cholesterol (higher than 6.5 mmol/l). The prevalence rates increase in men to 20% at 40 years and 30% after the age of 55 years; in women they increase to 10% at 40 years, 25% at 50 years and close to 45% at 60 years, indicating a marked increase between the ages of 50 to 60 years (RIVM 1993: 65). For both sexes, higher cholesterol levels are associated with obesity and, particularly among older men, heavy smoking.

Overweight and obesity are commonly assessed by the body mass index (BMI), which is calculated as weight (kg) divided by height (m)². In 1991/1993, Dutch men were most frequently overweight at 40–70 years (approximately 20% had a BMI of 27–29.9) and some additional 7% were obese (a BMI equal to or more than 30). At the ages of 40, 50 and...
60 years, some 10%, 15% and 20% of women were overweight and 6%, 9% and 12.5%, respectively, were obese (CBS 1995b: 118). For both sexes, obesity varies widely with socioeconomic status, with three to four times more obese people among those with lower rather than higher education. This reflects the fact that combinations of several risk factors occur more frequently both with increasing age and also with lower levels of education (RIVM 1993: 87).

**Physical activity**

As physical activity in daily life and at work has declined, exercise in leisure time has become more important in order to maintain an activity level beneficial to health. Physical inactivity, defined as not participating in sports or some other form of physical exercise or heavy exertion in the course of daily activities, increases for both sexes fairly steadily between the ages of 20 to 60 years and more sharply thereafter. Data from the 1990 Health Interview Survey indicate that approximately 20% of both men and women aged 30 years and 30% of men and 40% of women aged 60 years are physically inactive (RIVM 1993: 65).

**Nutrition**

Nutritional habits are deeply rooted in cultural traditions and agricultural production. Nevertheless, in recent decades changes have occurred as food markets have opened up, transport has become more rapid and new and efficient techniques of food conservation have been developed. As a result the highly different nutrition patterns of northern and southern Europe are tending to converge. The Netherlands follows the northern trends for sugar consumption. However, the intakes of animal fats and cereals are considerably lower and the vegetable and fruit intakes are significantly higher than in other northern countries.

**Alcohol consumption**

In the EU as a whole, the consumption of alcoholic beverages has steadily declined since 1980 following an increase in the 1970s. There is also a tendency towards “homogenization” of drinking patterns and diversification of beverages throughout Europe. In the Netherlands the consumption of traditional beverages (mainly distilled spirits) has fallen by approximately two thirds over the past decade to the
lowest level in the EU while wine consumption has moderately increased during the same period. In 1992, the total consumption of alcoholic beverages measured by pure alcohol intake was 7.9 litres per person compared to 8.8 litres in 1980, indicating a 10% decrease (Produktschap voor Gedistilleerde Dranken 1994).

According to the 1992/1993 national health survey, 1 in 8 men and 1 in 4 women never drink alcoholic beverages, while 14.4% of men and 3.2% of women drink heavily (CBS 1995b: 88). For both sexes, heavy drinking is most frequent among people aged 45–54 years, unemployed people, men living in the south and women living in the three largest cities (Ministry of Welfare, Health and Cultural Affairs 1994). National estimates indicate that well over 600 000 people are problem drinkers, consuming more than eight glasses of alcohol daily (RIVM 1994: 92). The Netherlands has one of the lowest death rates among the reference countries from cirrhosis and other liver diseases, approximately one third of the EU average.

**Tobacco consumption**

Cigarette consumption per head in people aged over 15 years fluctuated between 1985 and 1993 (BASP 1994). The prevalence of smoking – monitored by periodic Eurobarometer surveys – remained almost stable after 1987–1988 and in 1994 was 48% for men (the highest rate in the EU) and 37% for women (the second highest rate in the EU after Denmark) aged 15 years and older (BASP 1994). According to the 1992/93 national health survey, the rate of smokers in the population aged 16 years and over was 43% among men and 31% among women, and of heavy smokers 15% and 11%, respectively (CBS 1995b: 87).

Mortality from tobacco-related cancers, including lung cancer, is the third highest in the EU. Over the past decade it has decreased by 19% for men but increased by 87% for women, the greatest proportion in the EU. Tobacco-related deaths were estimated at 30 000 in 1995 against 24 300 in 1990 (BASP 1994).

Occasional or daily smoking prevalence among children aged 10–14 years increased in the early
1990s and decreased again slightly in 1994 to 10% for boys and 9% for girls (BASP 1994). In 1994, the prevalence among 15–19-year-olds was 47% for boys and 45% for girls. Between the ages of 14–15 years, the prevalence of daily smoking triples to 9% for both boys and girls (Van Reek/Adriaanse 1995).

Source: BASP 1994
Illicit drug use

Unlike most other countries, the Netherlands has extensive information on the consumption of illicit drugs and treatment for drug abuse. In 1993, alcohol and drugs counselling centres registered 22,500 people seeking services for drug abuse, of whom 9000 were new registrations (i.e. not having sought treatment during the previous six months). The Netherlands Institute for Alcohol and Drugs estimates that 70–80% of people who use heavy drugs are in contact with treatment services, whereas relatively few of the estimated 600,000 cannabis users use such services (de Zwart 1995). In Amsterdam alone, 7500 people are estimated to be dependent on hard drugs. A 1990 survey in Amsterdam covering the population over 12 years of age (WHO 1995b) found the prevalence of drug use as follows:

- cannabis, lifetime use at 28.5% and use in past month at 6.4%
- sedatives, 20.5% and 6.1%, respectively
- hypnotics, 19.0% and 6.4%, respectively
- opiates, 8.5% and 0.7% (including heroin 1% and 0%, respectively)
- cocaine, 5.5% and 0.4%, respectively
- amphetamines, 4.1% and 0.2%, respectively.

In conclusion, the data do not indicate an increase in cannabis use in the Netherlands, and use of cocaine and opiates also seems stable.

The primary cause of death for most people with drug addictions is not overdose but suicide, traffic accidents, psychiatric illnesses or infectious diseases such as hepatitis C and B and HIV, due to the use of contaminated syringes. Drug-related deaths are not registered nationally: local data indicate an increase in Rotterdam and a decrease in Amsterdam since the beginning of the 1990s (de Zwart 1995). Some 13% of AIDS cases diagnosed by 1993 were related to drug use. The national proportion of intravenous drug users among the estimated 8000–12,000 HIV-positive people is unknown. The number of HIV-infected drug users in Amsterdam is approximately 1050, thought to represent 20–40% of intravenous drug users, most of whom were infected during the first half of the 1980s (WHO 1995b). On average, only 25–30% of hard drug users inject heroin; this trend is considered to be the result of a pragmatic drug policy which maintains a stable market in heroin pure enough for smoking at a reasonable price (WHO 1995b). Also, the health situation of addicted people is supposed to be better than in other countries. The Netherlands’ drug policy is aimed at protecting the health situation of addicted people.

The age of first consumption of drugs among people entering drug treatment centres appears to be rising (apart from that for cannabis, which seems to be falling). Approximately 75% of hard drug users are men. Drug use in general has increased among groups in a relatively disadvantaged social and economic position, particularly among ethnic minorities from the Antilles and Molluecan Islands, Morocco, Surinam and Turkey (WHO 1995b).

A survey in 1992 found that the rate of drug use among adolescents aged 12–18 years during the previous year had been 11.6% using cannabis, 2.4% for ecstasy, 1.6% using amphetamines, 0.9% using cocaine and 0.3% using heroin (de Zwart 1995, Council of Europe 1994). The dominant pattern of cannabis use is incidental and recreational, with the lifetime prevalence at all ages higher for men than for women. Close to half of men aged 18 or older have used cannabis occasionally, while less than a quarter of women have done so. The age at first use appears to be falling (de Zwart 1995).
ENVIRONMENT AND HEALTH

Environmental conditions affect humans through acute, short-term and long-term exposure to noxious factors. In the long run the main concern is to promote sustainable development compatible with good health and, in particular, to preserve the food chain (water, agricultural production) from contamination by hazardous substances. Short-term environmental protection means avoiding or at least reducing potentially harmful situations, bearing in mind that people are not exposed equally to adverse environmental conditions and not all people and social groups are equally vulnerable to them. Thus, children, pregnant women, and elderly or ill people are more likely to be affected by polluted air or contaminated food. Also, adverse environmental conditions tend to accumulate for specific segments of the population. Low income, for instance, is often associated with exposure to environmental hazards at work (noxious substances, risk of accidents) and poor housing conditions (crowding, air pollution, noise, etc.). These situations may affect health and wellbeing either directly or indirectly by causing discomfort and stress, giving rise to unhealthy coping behaviour such as the use of medical drugs or heavy drinking.

Air quality

Carbon dioxide emissions per head remained relatively high at 20% above the EU average between 1980 and the early 1990s. The efficiency of measures aimed at limiting and reducing atmospheric pollution is reflected in the fact that, despite a high level of fossil fuel combustion, emissions of some air pollutants such as sulfur dioxide, carbon monoxide or volatile organic compounds have declined steadily over the last ten years and are now comparatively low. Emissions of nitrogen oxides, however, have remained fairly stable at somewhat above the EU average (CBS 1993: 119ff, Eurostat 1995d: 186ff).

Water and sanitation

Groundwater is the source for drinking-water for 70% of the Dutch population and its quality is systematically monitored for acidity, concentrations of nutrients and heavy metals. The same applies to surface water, which is subject to specific sets of parameters and standards according to use or function, for instance bathing, fishing or for the drinking-water supply (CBS 1993). Considerable efforts have been made in the treatment of wastewater and in 1990, some 93% of the population were served by a sewage treatment plant (Eurostat 1994: 349).
Waste

Increasing quantities of waste are being generated in almost all countries, with serious implications for health from the resulting pollution of the air, water, and soil. The average amount of municipal waste generated in the EU during the 1980s went up by 20% to reach 350 kg per head in 1990. In the Netherlands, the amount of household waste remained stable over that period, but in 1990 it was the second highest among the EU countries, and with some 500 kg per head it was more than 40% above the EU average. The reuse of some raw materials is fairly well developed: the recovery rates of paper (66%) and glass (50%) are the highest among the reference countries (Eurostat 1995d: 194).

Housing

Housing conditions generally have an impact on people’s health and wellbeing, but the health situation of homeless people is particularly critical: they often suffer from health problems typically associated with poverty (malnutrition, infectious diseases, psychosocial stress caused by solitude and insecurity, etc.), and they may be more vulnerable to health problems than the rest of the population owing to traumatic events or personality traits which may play a part in their becoming homeless. The National Health Council estimated that there were some 30,000 homeless people (2 per 1000 population) in the Netherlands in 1990 (Ministry of Welfare, Health and Cultural Affairs 1994). Another survey, which only took account of people who were possibly dependent on sheltered accommodation and public or voluntary services, estimated that some 7000 people were homeless on an average day of the year and some 12,000 over the course of a year, i.e. less than 1 per 1000 population (Avramov 1995: 92).

At the beginning of the 1990s, some 20% of the housing stock did not meet national criteria of good housing, but in the mid-1980s only 2% of dwellings, or about 350,000 people, had no bathroom or shower (Avramov 1995: 113, WHO 1995a: 378).

Increasing urbanization and road and air traffic has brought to the fore the issue of noise and its effects on health. High levels of noise from car traffic at home affect more than half the urban Dutch population: in 1991, 39% reported that they were seriously disturbed and another 14% found the noise level at home even unbearable.

Comparative information about safety at home and during leisure-time activities, sports, etc., and on the incidence of such accidents and their consequences for health is generally lacking. A study in the EU countries comparing cases treated by health services...
between 1990 and 1992 showed that the frequency of this type of accident in the Dutch population aged 15–44 years is above the EU average mainly as a result of sports (EHLASS 1995, CBS 1995a: 501).

A national survey carried out in 1992/1993 showed that in the course of one year 1.6 million Dutch people (one in ten) undergo some medical treatment for injuries due to home and leisure accidents and another 1.1 million are treated for injuries resulting from sports accidents (Mulder et al. 1995).

**Occupational health and safety**

Exposure to health risks at the workplace is still an important cause of ill health and death. However, there is little information about exposure in terms of type, frequency, intensity of hazardous conditions and the number of workplaces or people affected. The number of cases of recognized occupational diseases attracting disablement benefit awards provide an estimate of risk levels, although such figures are generally lower than the actual number of cases. Usually, only a small proportion of reported cases are recognized, and delays between reporting and recognition may be considerable. According to studies, about 40% of Dutch employees with a long-lasting disability had an illness or disorder caused by work (Ministry of Welfare, Health and Cultural Affairs 1994).

The situation is likely to have improved as far as exposure to adverse conditions at the workplace is concerned (noise, vibrations, dirt or accident risks), but worsened as regards such factors as frequency of psychosocial stress from either work underload (e.g. monotony) or overload (quantitative and qualitative) (RIVM 1994: 96). In 1990, as many as one in three employees perceived their work as physically demanding and the same proportion were exposed to high noise levels, while the tasks of one in four were reportedly dangerous. Around 50% experienced stress owing to work pressure and speed, 30% from irregular working hours and 18% as a result of shift work (SZW 1991: 38).

Some 63,000 people were injured in a work-related accident in 1991 and 43 were killed. Since 1980 the incidence of deaths has dropped by 20% to the lowest rate among the reference countries, and that of injuries by almost one third to one of the lowest rates.
HEALTH SYSTEM

Institutional structures and resources

The health care system is based on a system of public and private insurance schemes. A distinction is made between what is seen as normal medical care and the exceptional costs associated with long-term care or high-cost treatment, where the risk is such that it cannot be borne by individuals or adequately covered by private insurance.

Firstly, everyone resident in the Netherlands is covered by a compulsory national insurance scheme for chronic health care risks and for catastrophic health expenditure under the Exceptional Medical Expenses Act.

Secondly, those people on an annual income below a yearly adjusted specific level (60% of the population) are compulsorily ensured under the Health Insurance Act for normal medical risks such as general practitioner services, dental care, specialized medical care, maternity services, hospital services and transport. There are about 30 non-profit sickness funds, which nearly all operate nationwide. The insured are charged both a percentage contribution, a part of which is payable by the employer, and a flat-rate contribution, set by the sickness funds. Furthermore, the scheme is funded by an annually determined government grant. There is also a statutory medical insurance scheme for local and regional civil servants (5% of the population), but not for national civil servants.

Thirdly, people with an income over a certain level (35% of the population) can take out private insurance for acute health care risks. Private insurers are required under the Medical Insurance Act to offer a standard insurance package with statutory regulations partly governing acceptance, the extent of the risk insured and the maximum premium to be charged.

To obtain care under the Exceptional Medical Expenses Act insured persons must apply to a health practitioner or institution of their choice. The Health Insurance Act provides for a system of benefits in kind. To this end the sickness funds enter into contracts with health care providers, who are paid directly by the funds without any financial involvement on the part of the patient. Privately insured patients have to seek reimbursement from their insurers. General practitioners (GPs) provide most primary medical care and act as gatekeepers to specialist services. People insured under the Health Insurance Act must register with a GP.

The Government has responsibility for and financial control of most aspects of the health services. The Central Agency for Health Care Tariffs, established in 1982, exercises strong control over the fees and charges set by providers for both public and private patients and oversees the setting of hospital budgets. It also tries to regulate doctors’ incomes by defining so-called “target incomes”. In 1992, the different funds covered 81% of the total health care bill, government subsidies amounted to 10%, and patients...
paid 8% (Ministry of Welfare 1993a).

The number of doctors per thousand population is slightly below the EU average (there is a numerus clausus for medical students in the first year of study). On the other hand, there are large numbers of nurses, reflecting the country’s commitment to nursing. At 9 nurses per 1000 population this is the second highest rate in the EU, and the nurse/doctor ratio of 3.6 is also high (WHO 1995c).

Primary health care

Primary health care is regarded as an important priority and is constructed around different facilities. General practitioners, the public health services, district nursing, home help and social work can be regarded as the central provisions which are accessible to everybody across the country (Ministry of Welfare 1993a).

Owing to the aging of the population there is an increasing demand for care in the home which is much preferred by patients to care in institutions. Since 1989, home help and district nursing have been jointly financed to increase cooperation between the two services and thereby avoid duplicating care (Kerkstra/Verheij 1989).

Patient groups are encouraged to participate in all bodies coordinating primary health care.

In general, services dealing with sexuality, contraception and STDs are an integral part of primary health care.

General practitioners

General practitioners play a key role since they provide most of the primary medical care and act as gatekeepers to specialist services. Some GPs have licensed dispensaries and a few will deliver babies, especially in the rural areas (van Dam et al. 1989). GPs are accessible 24 hours a day and they arrange out-of-hours services among themselves. Most GPs are independent contractors; 54% work in single practices, 31% have partnerships and 16% are in group practices. Sickness fund patients must register with a GP contracted to the fund, and cannot change or register with another GP inside a year. The sickness fund pays the GP on a capitation basis and the GP provides free care to the patient.

Recent reforms of the insurance system mean that private patients as well as public employees also have to register with a GP. However, in this case the patients pay for the services they receive and then claim reimbursement from their insurance fund.

With the trend towards more primary care, the role and functions of GPs, especially their gatekeeping role, are expected to increase. GPs’ professional groups have therefore developed a quality control policy with standards for good GP care as the central point, and efforts will be made for better cooperation between GPs and specialists. Hospital diagnostics facilities have been made available to GPs.

Primary dental care

Almost all dental care is provided from a general dental practice setting. All dentists are private practitioners who have, in most cases, a contract with the public health care system. Since 1 January 1995 dental cover under the Health Insurance Act has been limited to dental care for children and preventive dental care for adults, plus specialist surgical treatment and, in certain cases, the fitting of dental implants and related X-rays. This step was taken because it was felt that the Dutch public had become much more aware of the importance of good oral hygiene and of individuals’ responsibility for the state of their teeth and gums. Regular visits to the dentist have become such a normal thing in the Netherlands that the average person’s teeth are well cared for and the cost of dental treatment to the individual is generally affordable. Dental care for children includes preventive maintenance work, fluoride applications, sealing, restorative care (excluding crowns and bridges), periodontic care and surgical treatment. At the age of two years children receive a dental card which is valid for one year at a time. Children over 13 years who have no dental card have to pay 50% of the cost of treatment up to a maximum of 500 guilders a year. Adults are entitled to preventive care, provided they go for a check-up at least once a year.

Besides the general dental practices, special care for the handicapped is delivered from specialized outpatient institutions and hospitals. In some ten municipalities care for young people is organized by specialized group practices.

Municipalities have a legal obligation to provide dental health education as well as other public health measures directed towards prevention, such as fluoride rinsing programmes, or to enhance regular visits to dentists by the so-called high-risk groups,
which include those in the lowest socioeconomic class and immigrants.

Compared to other European countries, the oral health of the Dutch population in general can be considered as very good, and the costs for the provision of dental care are rather low. Currently need and demand for care and its supply are balanced. In addition to dentists, care is provided by dental hygienists and clinical dental technicians (denturists). A national institute provides support for oral health education programmes.

**Primary health care nurses, midwives**

Community nurses have to undertake specialist training. They are employed by 60 “Cross Associations”, which are independent foundations set up by private initiative but financed mainly through taxes. There is no distinction between a district nurse and a health visitor. Community nurses:

- assess patients’ care needs;
- nurse patients at home (50% of the nurses’ time);
- visit mothers with babies and young children as well as elderly people, with a special concern for health prevention and education;
- hold health education sessions for specific groups;
- hold open surgery/office hours;
- keep patients’ records and coordinate activities with other health professionals (Kerkstra/Verheij 1989).

As stated above, there has been an important effort to substitute home care for hospital care and to integrate the provision of home care services (Kerkstra/Verheij 1989).

Occupational health nurses’ duties involve health education, counselling, first aid and conditions at the workplace (WHO 1995c).

Most midwives working in independent practices are in partnerships (van Dam et al. 1989). Some 72% have their own practices while 28% work in institutions (WHO 1995c). More than 30% of births take place at home. In 1984, 42% of babies were delivered by midwives, 42% by obstetricians and 16% by GPs.

**Primary physiotherapy**

In 1995, 14% of the population consulted physiotherapists. At the beginning of the same year, 70% of the 11 700 physiotherapists working in primary care were in private practice. The remainder were in paid employment with other physiotherapists or health centres. Some 40% of the 4578 practices were individual; the rest were group.

Since 1 January 1996, cover for physiotherapy under the Health Insurance Act and the Medical Insurance (Access) Act has been limited to a maximum of nine sessions per indication per year. However, a list of complaints with indications for which a longer course of physiotherapy is necessary has been drawn up, and insured people diagnosed by a doctor or a physiotherapist as suffering from one of these complaints are entitled to the appropriate number of sessions. The insurers’ authorization for these treatments must be given in writing. Many health insurance funds are also offering a complementary policy to cover forms of physiotherapy which have not been reimbursed since 1 January 1996.

Physiotherapists are paid a fee per session for patients with statutory health insurance. Other people pay a fee for each treatment according to an agreed schedule. Preventive and patient education activities are supposed to form part of therapy, but they are not valued separately in the schedule of payments.

**Community pharmacists**

Pharmacies do not have a monopoly of drugs. Most drugstores can sell general products and have an 85% share of this market.

Drug prices are not controlled when the drugs first go on sale but subsequent prices are regulated (Berthod-Wurmser 1994). Pharmacists’ profit margins are controlled and their dispensing fees are set through negotiation between representatives of the insurers and the pharmacists and are approved by the Central Agency for Health Care Tariffs (OECD 1994).

Drugs dispensed by prescribing GPs or by pharmacies are free to all sickness fund patients. Privately insured patients have to pay and claim reimbursement. The drug reimbursement system aims to replace expensive new drugs with cheaper existing generic alternatives, through reimbursements up to the level of the cheaper but equally effective generic alternative. This system applies to everybody.
**Hospital care**

Hospitals are maintained by associations or organizations, municipalities or provinces. Local and regional authorities are responsible for ensuring that the health services they provide comply with national standards (HOPE 1993). Most hospitals are private institutions. The hospital system is well developed comprising a network of general, single specialty and university hospitals (Verheij/Kerkstra 1992). Psychiatric hospitals are in a category of their own and are complemented by a wide range of extramural facilities and community services (Ministry of Welfare 1993b).

All hospitals are non-profit organizations with budgets fixed by the Government through negotiations with local insurers and approved by the Central Agency for Health Care Tariffs. Initially global budgets were based on past performance, which penalized efficient institutions. Now they are based on a formula which includes the catchment population, the number of specialties and beds (deferred by planning), and the expected volume of services in various categories and prices per item of service (OECD 1994).

**Private sector**

Most health care institutions in the Netherlands are private and non-profit and the public and private sectors are fully integrated. Recent years have seen the development of the private insurance sector.

**Health expenditure**

International comparisons of health care indicators are extremely difficult because the definitions underlying statistics of the health services as well as accounting practices vary from one country to another. A recent comprehensive study (Schneider et al. 1995) tried to improve comparability by presenting a set of indicators based on adjusted national data. According to this survey, the Netherlands spent 8.35% of its GDP on health in 1992 (8.5% according to OECD). The share of GDP on total health expenditure remained fairly stable since 1980, as did the share on hospital care and on ambulatory medical care. Furthermore, this latter is still comparatively low. A relatively low proportion of GDP is also spent on medication, but this share went up over the reference period while that of nursing care dropped.

When total health care expenditure is broken down by the different categories of services and goods, the most striking feature is the relatively higher share of the budget spent on nursing, which is in line with the high number of nursing professionals. On the other hand, a relatively lower share of the total expenditure is spent on medications and ambulatory medical care as well as on dental care.

**Health care reforms**

It is the Government’s aim to gradually bring the health insurance schemes (i.e. the scheme under the Health Insurance Act, the health insurance schemes for public servants and private medical insurance) closer together. The objective is to create a system
that will continue to guarantee a high standard of accessible and affordable medical care for all. Priority will be given to keeping costs of health care down to an acceptable level.

Three components of care have been distinguished:

- uninsurable risks and long-term care
- ordinary medical care
- supplementary medical care.

Uninsurable risks and long-term care

Source: Schneider et al. 1995

*Data for Finland not available
The first component is the group of uninsurable risks, which constitutes mainly long-term care, residential care, or high-cost care in various types of institution. This type of care falls within the scope of the Exceptional Medical Expenses Act. Care under the Exceptional Medical Expenses Act that cannot be defined as such will be transferred to one of the other two components.

**Ordinary medical care**
The second component is a statutorily defined package of ordinary medical care. This component will be the same as those under the Health Insurance scheme, the health insurance schemes for public servants, the cover provided under the Medical Insurance Access Act, and the private health insurance.

**Supplementary medical care**
The third component is the medical care that falls outside the statutorily defined package. It will be covered by a supplementary private insurance, which people may take out if they wish to do so.
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Cardiovascular diseases (CVDs): all diseases of the circulatory system, including coronary heart disease and cerebrovascular diseases.

Dependency ratio: The ratio of the population defined as dependent (those under 15 and those over 64 years of life) to the working-age population, aged 15-64 years.

Incidence rate: the number of new cases of a disease occurring in a population during a specified period (usually a year) per 100 000 of that population.

Infant mortality rate (IMR): the yearly number of deaths of children aged less than one year per 1000 live births.

Life expectancy at birth: An estimate of the average number of years a newborn can expect to live provided that the prevailing age-specific patterns of mortality at the time of birth were to stay the same throughout the child’s life.

Loss of life expectancy due to deaths before the age of 65 years: describes the effect of premature death on life expectancy, and it measures the potential number of years that could be added to life expectancy at birth if all deaths before the age of 65 were eliminated.

Prevalence rate: the total number of people in a population who have a disease or any other attribute at a given time or during a specified period per 100 000 of that population.

Purchasing power parity (PPP): a “standardized” measure of the purchasing power of a country’s currency, based on a comparison of the number of units of that currency required to purchase the same representative basket of goods and services in a reference country and its currency (usually US$). The EU unit of PPP is PPS (purchasing power standard).

Standardized death rate (SDR): a death rate (usually per 100 000 population) adjusted to the age structure of a standard European population.

Total fertility rate (TFR): the average number of children that would be born alive per woman during her lifetime, if she were to bear children at each age in accord with prevailing age-specific birth rates.