



European Network of Economic Policy
Research Institutes

HEALTH AND MORBIDITY IN THE ACCESSION COUNTRIES COUNTRY REPORT – POLAND

STANISŁAWA GOLINOWSKA

AND

AGNIESZKA SOWA

ENEPRI RESEARCH REPORT NO. 29

AHEAD WP2

NOVEMBER 2006



ENEPRI Research Reports publish the original research results of projects undertaken in the context of an ENEPRI project. This paper was prepared as part of the **AHEAD project – Ageing, Health Status and the Determinants of Health Expenditure** – which has received financing from the European Commission under the 6th Research Framework Programme (contract no. SP21-CT-2003-502641). The views expressed are attributable only to the authors and not to any institution with which they are associated.

ISBN 92-9079-647-2

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Health and Morbidity in the Accession Countries Country Report – Poland

ENEPRI Research Report No. 29/November 2006

Stanisława Golinowska and Agnieszka Sowa*

Abstract

The objective of this report is to analyse the prevalence of good and poor health in Poland and the impact of self-assessed health on the use of health care services. Special attention is given to the effect of ageing on health status and the utilisation of health care services. In addition, other social and economic factors that underpin health status and drive the demand for health care services are described. The analysis differentiates health care utilisation by type of medical service, including primary care, consultations with specialists and hospital care. The main research question considered is whether the ageing process is leading to a worsening health status of the population or if living longer means living in better health. The answer to this question implies possible changes in the structure of medical care utilisation and ultimately allows for recognition of the impact of population ageing on the level of health care expenditure.

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1. Introduction

The objective of this report is to analyse the prevalence of good and poor health in Poland and the impact of self-assessed health on the use of health care services. Special attention is given to the effect of ageing on health status and the utilisation of medical care. In addition, other social and economic factors that underpin health status and drive the demand for health care services are described. The analysis differentiates health care utilisation by type of medical service, including primary care, consultations with specialists and hospital care. The main research question considered is whether the ageing process is leading to a worsening health status of the population or if living longer means living in better health. The answer to this question implies possible changes in the structure of medical care utilisation and ultimately allows for recognition of the impact of population ageing on the level of health care expenditure.

Health status and its determinants are complex phenomena, represented by various types of indicators. These include the demographic structure of the population and its changes, the main epidemiological indicators, survey-based indicators of reported morbidity and the incidence of medical services utilisation. Thus, numerous data sources are used in this study: population and epidemiological data that have been collected by the Polish Central Statistical Office (GUS) and the State Institute of Hygiene (PZH); survey data on health status and medical services utilisation also collected by the GUS; and finally, administrative data on hospitalisation from the Center of Information Systems in Health Care. Because of the varying degrees of data availability, several reference periods are used. Demographic and epidemiological data and information cover the last five decades. More attention is paid, however, to the process of population ageing, which has been observable since the 1990s. Morbidity is described with reference to a survey analysis conducted in 1996. This survey involved a representative sample fully devoted to a broad description of the health status of the population. Data on medical services utilisation cover the years 1996, 1998–99 and 2003 (survey analysis). Administrative data on hospitalisation are also used, from the year 2000 onwards.

The methodology of the research includes studies of various documents and literature illustrating developments in health status and reforms of the health care system in Poland. These reforms – while not explicitly an explanatory variable – are important factors underlying trends in health status improvements and the use of medical services. The political and economic processes in Poland have been crucial to the improvement of the population's health status in the last decade. Some results concerning the use of medical services should also be assessed in view of the main reform assumptions, e.g. changes in the frequency of use of specific services.

Alongside literature and documentation, the empirical analysis in this study is based on statistical methods. The results of basic statistical research are further used as hypotheses, tested in logistic regressions. Econometric analysis allows for determining the factors influencing improvements in health status and patterns in the utilisation of primary, specialist and hospital care.

The report consists of the following sections:

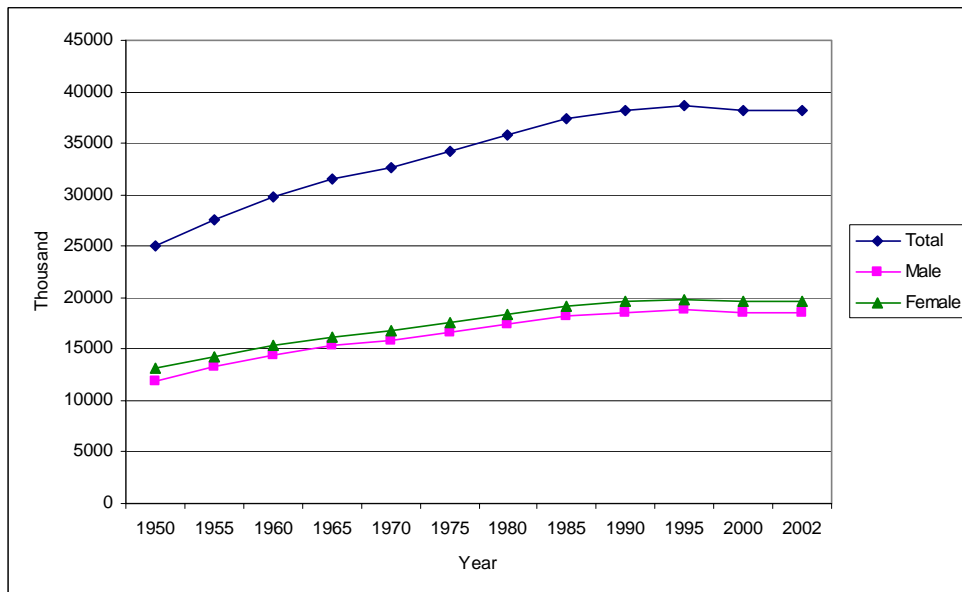
- demographic changes in the population;

- health status of the population;
- morbidity of the population;
- utilisation of medical care services;
- self-assessed health status;
- an econometric analysis of health status and the determinants of health-care service utilisation; and,
- a summary of the results.

2. Demographic changes

The demographic situation in Polish society has changed during the last few decades, and come to face the problems of an ageing population. After the Second World War, there was a period of sharp increase in the population. The first decade after the war is characterised as a “compensation” period, with an increasing fertility rate owing to the postponement of family plans during the war (Okólski, 2004). The compensation period in Poland lasted longer than in other European countries, as population losses during the war were comparatively higher (about 6 million persons) (Szafranski, 1962). During this period around 11 million babies were born. The annual birth rate during that time was close to 800,000 newborns, which means that on average every fifth woman aged 20-29 became a mother every year (Okólski, 2004). Until the 1990s, Poland had a trend of population growth. Overall, between 1946 and 1988 its population grew by around 14 million (from 23.9 to 37.9 million), i.e. by 59%. The average annual population growth amounted to 339,200 persons. But between 1988 and 2002 (the dates of the subsequent national population censuses), the population grew from 37,879,100 to 38,230,100, i.e. by 351,000. Therefore, during the 14 years of the economic transition period the size of the population rose by a number equal to the annual average population growth during the four decades before 1990. As a result, changes in the last decade were characterised by demographic stagnation (Figure 1).

Figure 1. Population: Total, by gender 1950–2002

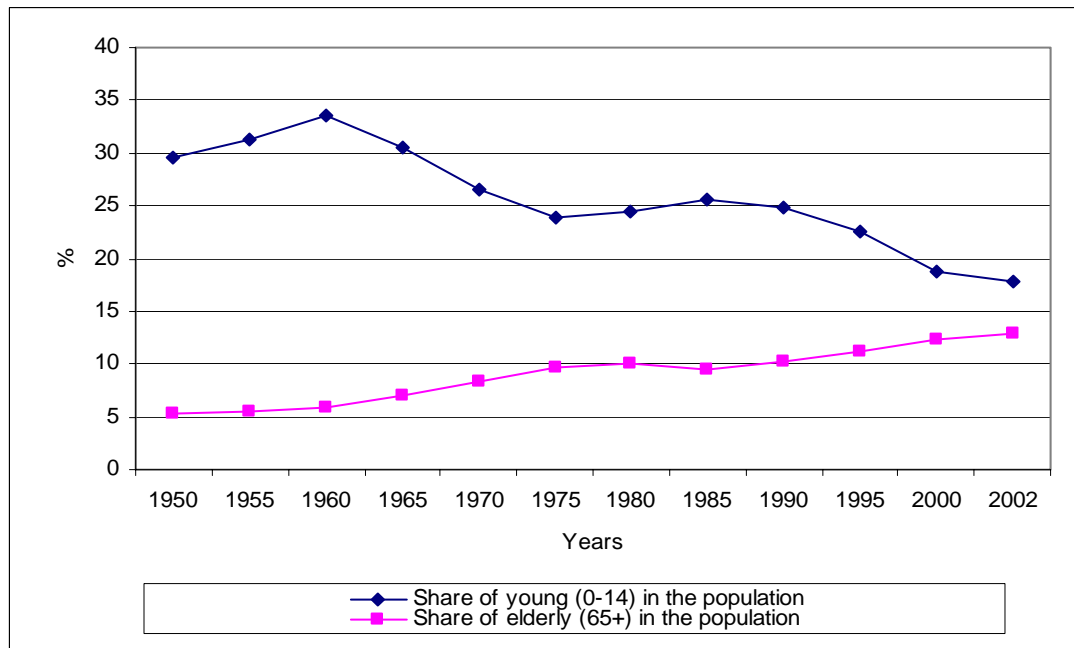


Source: Demographic Yearbook, GUS (2003).

2.1 Population by age structure

The most important demographic changes relate to decreases in fertility and mortality rates, and increases in life expectancy. The age structure of the population has been changing – the share of younger cohorts (aged 0-14) in the population has reduced, while the share of older cohorts (60/65+) in society has grown. In 2002 the share of the elderly in the population was 12.8% (an increase from 5.3% in 1950) and the share of young individuals (below age 14) was 17.8% (Figure 2).

Figure 2. Young and old-age dependency rates 1950–2002



Source: Demographic Yearbook, GUS (2003).

2.2 Total fertility rate

Changes in the fertility rate in Poland show a similar pattern to those in other European countries, although the dynamic of change is higher. Four periods can be distinguished in fertility rate changes (Kędelski, 1993).

The first period is characterised by an increase in fertility after the Second World War. As previously mentioned, the fertility rate in Poland was higher than in other countries and the compensation period lasted longer (Table 1).

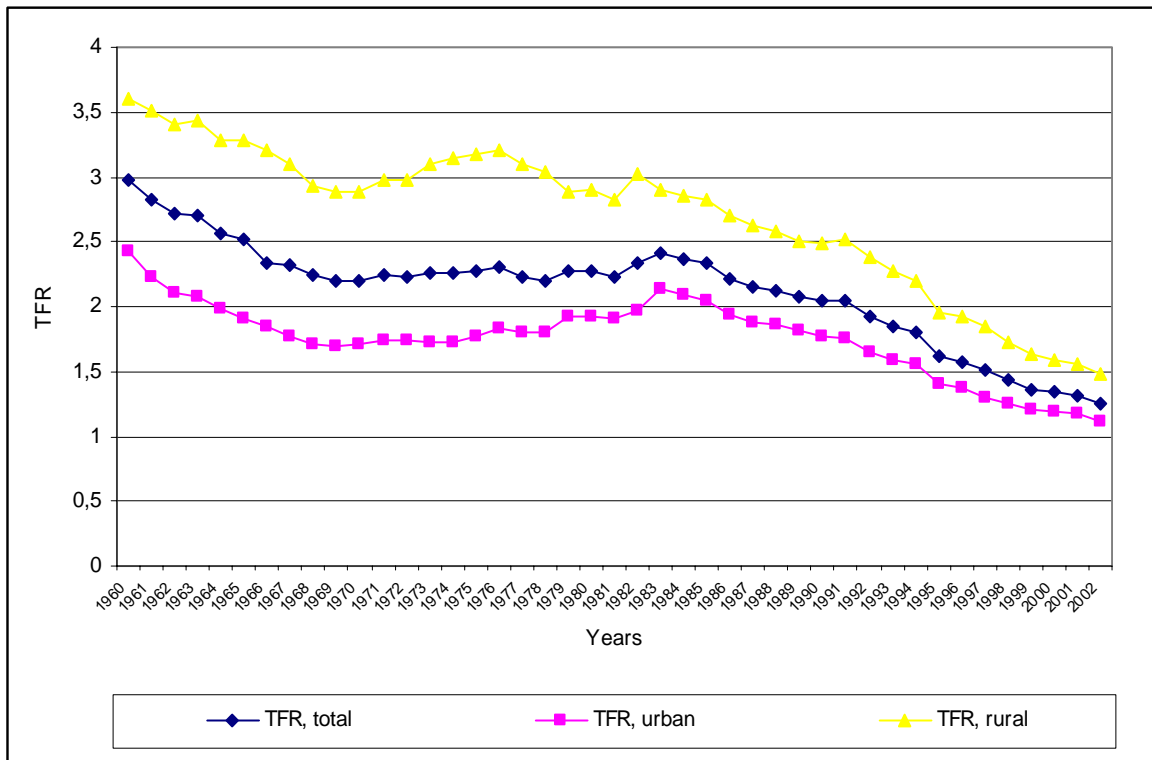
Table 1. Total fertility rate, 1950–2002

	1950	1960	1970	1980	1990	2000	2002
TFR	3.71	2.98	2.20	2.28	2.04	1.34	1.25

Source: Demographic Yearbook, GUS (2003).

In the years that followed (1957–70), the fertility rate systematically dropped (Figure 3). The decline in this second period was related to intensive modernisation and urbanisation. Another factor influencing the birth rate was the implementation of a regulation in 1956 introducing the possibility of legal abortion. Subsequently, the number of abortions was high, and in some years even higher than the number of new births. Abortion became a method of birth control and family planning (Bolesławski, 1993; Okólski, 2002).

Figure 3. Total fertility rate, 1960–2002



Source: Demographic Yearbook, GUS (2003).

In the 1970s and 1980s the total fertility rate (TFR) rose again, but the growth dynamic in the third period was not as strong as in the 1950s. The peak in the number of births was in 1983 (TFR = 2.4).¹ The increase in the number of infants during this period was the result of the baby boom of the 1950s. In addition to this demographic effect, incentives towards increasing fertility were created by national policy. Various institutional instruments of family policy were introduced: maternity leave (at first the maternity leave period was non-paid; however, later on payments were introduced in the form of maternity benefits); up to 60 days per year of leave due to the illness of a child, credits to encourage marriages between younger persons and reimbursements for the costs of goods for children.

The fourth period of changes in the TFR began in 1984. The decrease in fertility has been continuous since then, slipping below reproduction level (TFR = 2.1) in 1989. The most rapid fall began in 1993. In 2002 the TFR was at the level of 1.25 and is projected to drop further

¹ The increase in the fertility rate during the period of martial law has been analysed by many researchers. They explain fertility growth during that time by strong family relations along with a ‘moral awakening’ characterised by a decreased number of abortions.

during the next decade (according to GUS demographic projections). The dynamic of the TFR decrease is significantly stronger than similar trends in Western European countries. The rate of the TFR decline that Poland faced during the 14 years of transition has been observable in Western Europe over the last 27 years (Frątczak, 2003). The main reasons for the declining TFR include the lack of incentives for marriage contracts (in Poland 95% of children are born in marital relationships)² and other changes in the fertility pattern, such as:

- a decrease in the number of births for women of all ages;
- a change in the age at which women are most likely to give birth from 20-24 to 25-29;
- an increase in the average age at which women have their first baby; and
- the diminishing differences in fertility patterns between rural and urban areas.

The birth rate for women of all ages is decreasing, irregardless of where they live. In urban areas the TFR fell from 1.8 in 1990 to 1.1 in 2003, while in rural areas it dropped from 2.5 to 1.4 respectively. This process is accompanied by an increase in the average age at which women give birth. In 1990 the average age of women giving birth was 26.3, while in 2003 it rose to 27.3. The changes in family formation and the fertility rate may be characterised as a second demographic transformation phase.³ Yet the fast pace of these changes indicates that they are also related to the consequences of the socio-economic transition.

The diminishing number of births is reflected in the crude birth rate, which decreased from 19.6 births per 1,000 persons in 1980 to 9.3 in 2002. Despite these factors, the population tended to grow until the late 1990s. In 1999, however, the number of deaths and number of births were almost equal and for the first time the annual population growth was negative. This trend has continued in the years that have followed. These processes are typical for an ageing population. In the period 1990-99, the overall population increased by 500,000, but the number of children below age 15 declined by 2 million, while the number of elderly persons (over retirement age)⁴ grew by 820,000. During the same period, owing to improvements in health status (a decreasing mortality rate, including a rapid fall of infant mortality) average life expectancy increased by 2.5 years (Okólski, 2004).

2.3 Migration

During the period 1950–70, demographic changes were accompanied by high levels of internal migration – from rural to urban areas. Poland has typically been a rural country, which encountered late industrialisation. In the 1950s, 60% of the population lived in rural areas (Figure 4). Another factor affecting the increase in the urban population was the high TFR. Although after the Second World War the fertility rate of the rural population was close to the level before the war, that of the urban population increased by 50% when compared with the level in 1930. The high fertility rate in urban areas began to fall in the 1950s and stabilised at the reproduction level. Despite the processes of industrialisation during the communist regime and migration to towns, a large number of people continue to live in rural areas – representing

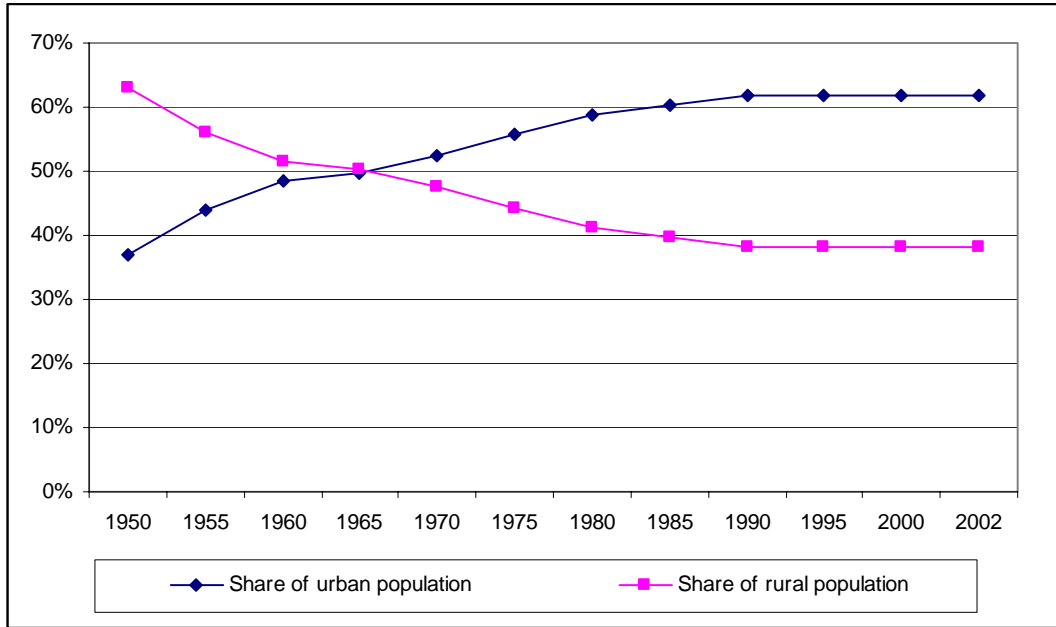
² During the transition period the number of births out of marital relationships rose. At the end of the 1980s they constituted 5% of all new births, while currently they are about 10% (GUS).

³ This refers to a theory explaining the changes in demographic processes characterised by a decline in the TFR below the simple replacement of generations and the stabilisation of the fertility rate on this level. A permanent decline in the TFR below the replacement level stems from, among others, the changed patterns of family formation and breakdown as well as shifts in the fertility pattern.

⁴ The retirement age in Poland is 60 for women and 65 for men.

38% of the population in 2002. Living in rural or urban areas is correlated with the age of the population: young persons tend to migrate to cities searching for employment, while more elderly persons live in rural areas.

Figure 4. Population structure by place of living



Source: Demographic Yearbook, GUS (2003).

From 1970 onwards the level of emigration increased. In the 1980s around 1 million persons emigrated. At the end of the decade the emigration effect could not be mitigated by the natural growth of the population (Okólski, 2002). By the 1990s emigration levels were even higher, although these were mostly temporary migrations to other countries in search of employment. During the transition period Poland also became a place of residence for migrants from Asian (e.g. Vietnam) and African countries.

3. Health status of the population

The health status of the population has improved in the last decades, especially during the transition period of the 1990s. Rapid improvements in health status after 1990 can be explained by psychological factors related to the economic and social transition as well as by health promotion and public health activities (Okólski, 2004). The first factor concerns increasing activities among civil society, including the promotion of healthy lifestyles and improvements in health services. Behavioural factors involved in changing lifestyles include reductions in alcohol and cigarette consumption. Health system factors relate to the implementation of medical service standards and easier access to pharmaceuticals. Another important factor was the environmental changes prompted by raised environmental awareness and reduced levels of pollution. These were followed by the establishment of quality and hygiene standards for products (including food), as variety and availability of different food products grew. Yet, despite improvements to health status, levels in Poland are still significantly below the EU average.

Health status improvement is measured by a number of epidemiological indicators:

- life expectancy,
- infant mortality,
- crude mortality rate, and
- mortality by different causes.

3.1 Life expectancy

Since 1950, life expectancy has risen by 17.1 years for women and 14.3 years for men (Table 2). Three periods of increase in life expectancy can be distinguished (Okólski, 2002). The most rapid growth in life expectancy, for both genders, was between 1950 and 1965. This improvement was connected with public health activities, such as the prevention of infectious diseases (especially tuberculosis) and improvements in medical services for pregnant women and infants.

Table 2. Life expectancy by gender, 1950–2002

	1950	1960	1970	1980	1990	2000	2002	<i>Increase 1950–2002</i>
Men	56.07	64.94	66.62	66.01	66.51	69.74	70.42	14.35 years
Women	61.68	70.60	73.33	74.44	75.49	78.00	78.78	17.10 years

Source: GUS (see <http://www.stat.gov.pl>).

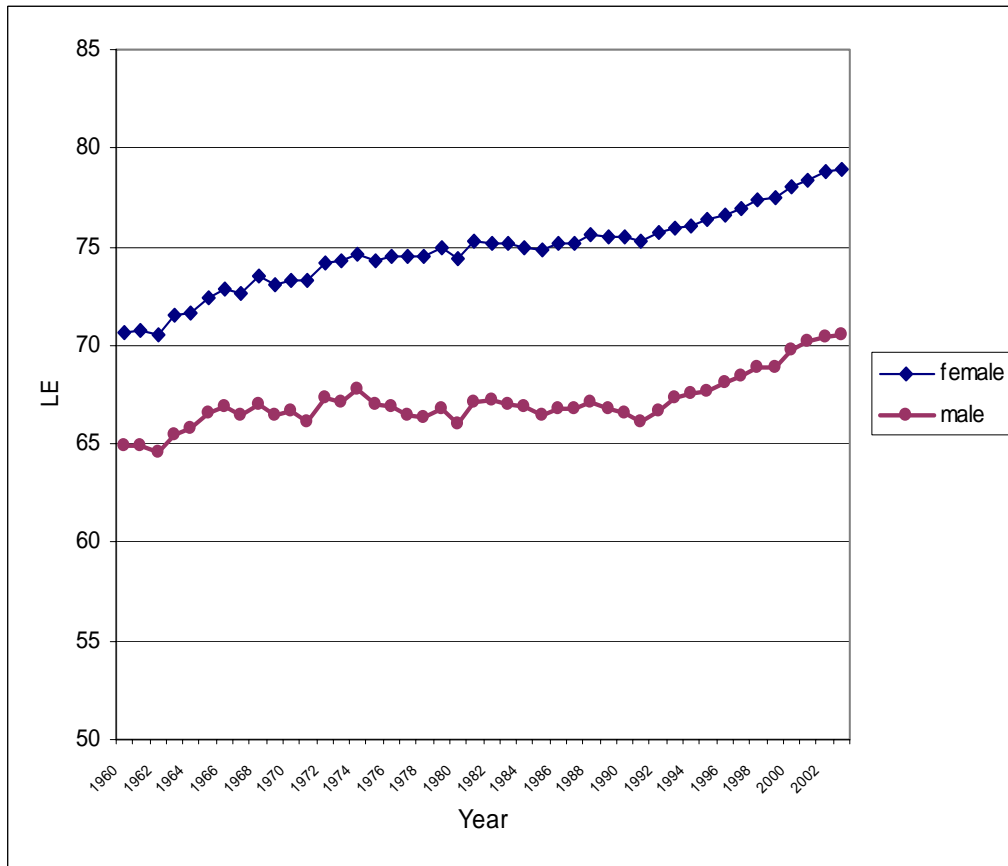
During the next 25 years (to 1992), the expected level of longevity stabilised for women and even worsened for men. This trend was mainly attributed to the growing mortality of men in active ages, high levels of infant mortality, an increase in the number those who were disabled or suffering from chronic diseases, high differences in morbidity and mortality levels between regions and social groups, high morbidity related to external factors such as alcohol and cigarette consumption, and fatal accidents at the workplace (Okólski, 2004). The high mortality rate of men of active age was related to a high incidence of cardiovascular diseases and external causes of death. Further, periods of decline in men's life expectancy were related to economic and political shocks at the beginning of the 1970s, 1980s and 1990s.

The period in which life expectancy began to improve coincided with political and economic transition. A slow increase in life expectancy started in 1992. Between 1990 and 2002, life expectancy grew by 3.2 years for women and 3.9 years for men. The difference in life expectancy between the genders is 8 years. Improvements in life expectancy are related to falls in the rates of mortality related to cardiovascular diseases and fatal accidents at the workplace. Simultaneously, gains in life expectancy were also attributable to improvements in the rate of infant survival.

Figure 5 shows that the growth in women's life expectancy was smoother than that for men, with the differences in the life expectancy of the two genders widening until the beginning of the 1990s. In 1992 this difference was at level of nine years; in 2003 it had lowered to eight years. The growth in the gap between the genders during the period 1960–92 was related to the high mortality rate of young men. Epidemiological and anthropological research indicates that the higher death risk associated with men is related to two factors: the lower educational levels of men as well as to those who live alone (Bielicki, 1996). Late and rapid industrialisation was characterised by a strong demand for men as blue collar labourers. Thus, men ended their

education at lower levels than women and commonly lived – *de facto* single – in worker’s dormitories. This situation resulted in poorer living conditions for workers and their higher mortality levels (Ofer, 1977).

Figure 5. Average life expectancy of women and men



Sources: Based on GUS data, Demographic Yearbook (2002) and OECD (2004).

The present life expectancy of the overall Polish population is 74.3 years, with 78.4 years for women and 70.2 for men. In the 1990s, the indicator improved by almost 3 years: 2.1 for women and 3.5 for men. Smaller increases in women’s life expectancy are related to lack of improvement in the mortality rate arising from tumours. In Poland, the age of 18 years is not reached by 1.4% of boys or 1.1% girls, while 2.8% of men and 1.5% of women do not attain the age of 30, and 43% of men and 40% of women have shorter lives than average.

Average life expectancy in Poland is lower than that of other EU countries. According to OECD figures, the EU average life expectancy is four years greater than the Polish rate for the population as a whole, with a difference of almost three years in case of women and more than five years in the case of men. In 2002, only five of the countries in the enlarged EU recorded a lower figure than Poland, all of which were new member states. According to other sources, however, life expectancy in Poland is greater by more than two years than in other EU countries (Goryński & Wojtyński, 2001).

Yet life expectancy does not give a full picture of the real health condition of the population. An actual increase in life expectancy can be accompanied by an increased burden of diseases,

disability and altogether deterioration in the quality of extended life. Therefore, in line with World Health Organisation (WHO) suggestions, an adjusted life expectancy indicator used, referred to as the 'HALE' (health-adjusted life expectancy), which describes the number of expected years of life in full health. It combines information on life expectancy with that on the quality of health of the population. The HALE indicator for Poland was equal to 65.8 years in 2002, meaning that it was 8.5 years less than the life expectancy indicator. This means that life in full health is notably shorter than overall life. With such a HALE value, Poland ranks low among EU countries. Only Lithuania, Latvia, Estonia and Hungary have poorer ratios. The difference between Poland and the country with the highest HALE value in the EU (Italy – 73.2 years) is more than 7 years. It should be noted, however, that a favourable tendency can be observed in the HALE figure, which over the period 2000–02 rapidly improved by 1.5 years.

3.2 Infant mortality

Infant mortality is an indicator not only sensitive to the health status of a society, but also reflects the living conditions of the population. In the period following the Second World War, the infant mortality rate in Poland was very high – over 110 deaths per 1,000 live births. Since the 1950s, the infant mortality rate has slowly but continuously declined and public health and prevention programmes for mothers and infants have been undertaken. Nevertheless, at some points the falling trend in infant mortality stagnated – which is observable in the late 1970s and early 1980s (Bijak, 1999). The main risk factors associated with infant mortality are low birth weight and premature births. Although in 1970 the share of premature and low-weight births in the total number of births was 7.3%, by 1990 it had increased to 8%. In the late 1980s about 60% of infant deaths were related to these factors (Kędelski, 1993). Research indicates that birth weight and premature births stem from ecological factors (toxins and air, ground and water pollution), the poor health status of pregnant woman and poor living conditions (*ibid*), hard labour during pregnancy and use of cigarettes, alcohol and drugs (Kornafel, 1995). In regions with high degrees of environmental pollution, infant mortality has been higher than the national average.

In the late 1980s, a short period of stagnation in the infant mortality rate is notable again. Since then, however, it has been gradually declining (Table 3). In the 1990s, the infant mortality rate per 1,000 live births dropped from a high level of 20 to a figure well below 10 (Figure 6). This constitutes an improvement of more than 60%. The sharpest decline was between 1990 and 2000. Since the beginning of the new decade, the dynamic of the fall in infant mortality has slowed, but remains continuous.

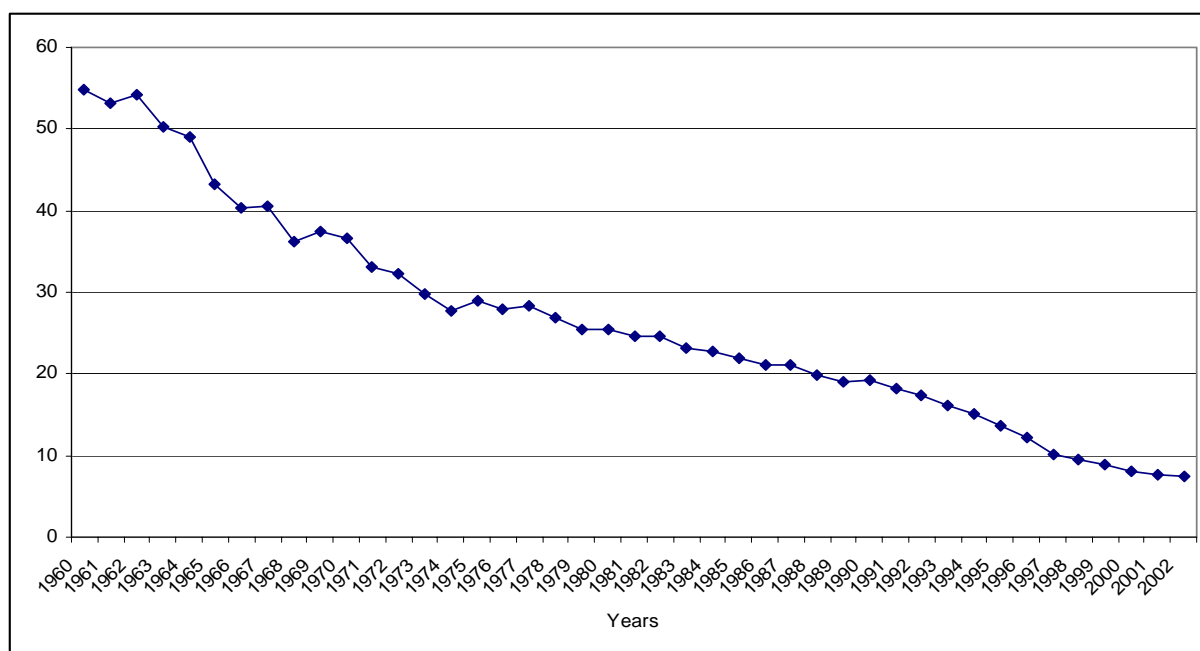
Table 3. Infant mortality rate, 1950–2002

	1950	1960	1970	1980	1990	2000	2002
Infant mortality per 1,000 live births	111.2	54.8	36.7	25.5	19.3	8.1	7.5

Source: Demographic Yearbook, GUS (2003).

The drop in the infant mortality rate during the 1990s was connected with improved living conditions and declines in environmental pollution. An important factor for the latter was the restructuring plan for heavy industry. Activities to improve the care of pregnant women and infants were also undertaken by the health care sector. Additional actions aimed at improving medical services for pregnant women were taken by other organisations and the popular daily newspaper *Gazeta Wyborcza*.

Figure 6. Infant mortality rate (per 1,000 live births) 1960–2002



Source: Based on Demographic Yearbook, GUS (2002).

Despite the decreasing infant mortality rate in the few last decades, compared with the old EU member states this figure still leaves much room for improvement (Goryński & Wojtyniak, 2001), as the EU average is around 5 per 1,000 live births.

3.3 Crude mortality rates by cause

Further analysis of mortality rates in Poland confirms the changes described above, especially in relation to the demographic impact of life expectancy. Stagnation in life expectancy levels in the period 1966–92 and improvements in the last decade were caused by changes in mortality rates and structure, and the periodisation of mortality is similar to changes in life expectancy. In the period following the Second World War (about 20 years) mortality rates declined. This trend is explained by an expansion in public health activities, especially with regard to the prevention of infectious diseases and improved access to public health care. An important factor was population change and an increasing share of children.

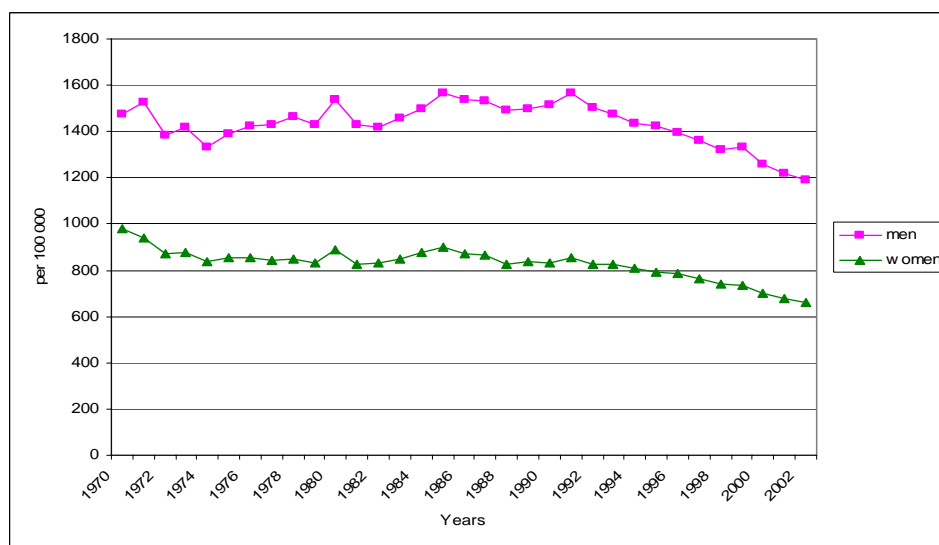
In the mid-1960s, the mortality rates for men began to rise; the same trend started for women a decade later. Overall mortality rates per 1,000 persons dynamically increased until the mid-1980s then stabilised at a high level and rose again at the start of the 1990s (Table 4). The rate stabilised in the mid-1990s, after which a decreasing trend is observable (Figure 7).

Table 4. Crude mortality rates per 10,000, 1970–2001

	1970	1980	1990	2000	2001
Crude mortality rates, all causes	82.6	99.3	102.4	95.2	95.0

Source: Demographic Yearbook, GUS (2003).

Figure 7. Standardised mortality rate per 100,000 (men and women, all ages), 1970–2002



Source: WHO, European database.

Research has been conducted concerning the periods of increasing mortality rates and stagnation in the mid-1980s, around the start of the transition period. The reasons given for rising mortality rates include: the decline in living standards (Holzer, 1994); emigration worsened the population structure as many young and better-educated persons left the country (Okólski, 2002); and standards for safe working conditions and health care were not fulfilled and were accompanied by stress related to institutional changes and assuring safety (during the period of martial law and the beginning of the transition period) (Tabeau, 1996).

Improvements in mortality rates are associated with falls in the number of deaths attributable to circulatory system diseases. These diseases, including ischaemic heart disease, atherosclerosis, hypertension, stroke and other heart diseases, are the main causes of death in Poland. In 1996 half of men's deaths (43%) and half of those for women (53%) were caused by circulatory diseases (Pająk, 2000). Thus, any gains in preventing and curing these diseases correspond to significant decreases in mortality rates: in the 1990s, overall mortality rates fell owing to the drop in the number deaths related to circulatory system diseases. This process indicated that Poland had entered an epidemiological transformation period that is identified by a fall in mortality rates and a declining number of deaths caused by diseases characterised by modern civilisation (so-called 'civilisation' diseases).⁵

For men, after a period of increase between 1974 and 1990, the overall mortality rate (irrespective of cause of death) systematically fell in the last decade until it reached 1,190 per 100,000 in 2002. For women the declining trend was observed over a longer period and reached 684 per 100,000 in 2002. There are no clear reasons for this rapid change. Besides the reduction

⁵ The first epidemiological transformation is characterised by a fall in mortality rates owing to a decline in the number of deaths caused by disease, hunger, ecological disasters and wars. The second transformation is related to a decline in mortality rates related to internal and infectious diseases. Illnesses connected with pregnancy and birth remained a significant cause of death, but their share among all causes of death fell. The third is related to a decrease in deaths linked to circulatory system disease and malignant neoplasms. Further, Olshansky & Ault (1986) distinguish a fourth transformation linked to the incidence of 'civilisation' diseases among the elderly in the ageing population.

of infant mortality rates, contributing factors include: a fall in the prevalence of specific risk-associated behaviours (i.e. cigarette smoking, changes in drinking habits, greater consumption of fruit and vegetables); improvements in health care; and economic and psychosocial changes. It is important to underline the stabilised character of this trend. Nevertheless, the continued high rate of mortality among men less than 64 years old is notable. In 2002, the mortality rate of men (502 per 100,000) was 2.5 times higher than that for women (193 per 100,000). Still, the rate of early mortality for men is reducing faster than that for women – a trend that also looks fixed.

There are significant regional differences in overall mortality rates as well as among rates attributed to specific diseases. Higher rates can be seen in central and western Poland for men and women. The eastern parts of Poland have lower mortality rates (Figures 8a and 8b). This pattern is also true for deaths related to cardiovascular diseases, while standardised mortality rates from neoplasms are higher for north-western parts of country.

Figure 8a. Standardised mortality rate per 100,000 for men

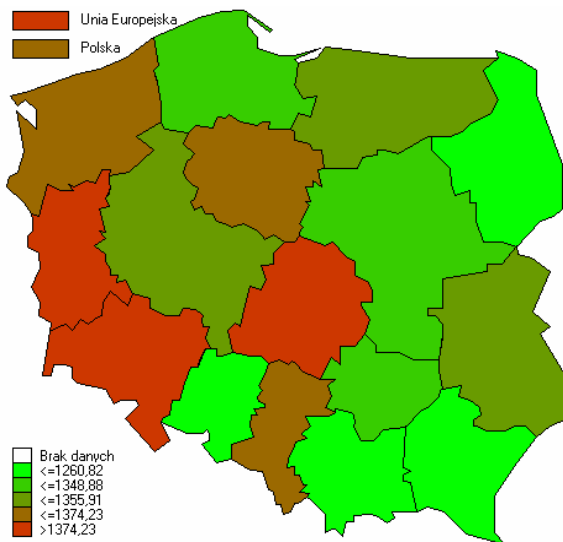
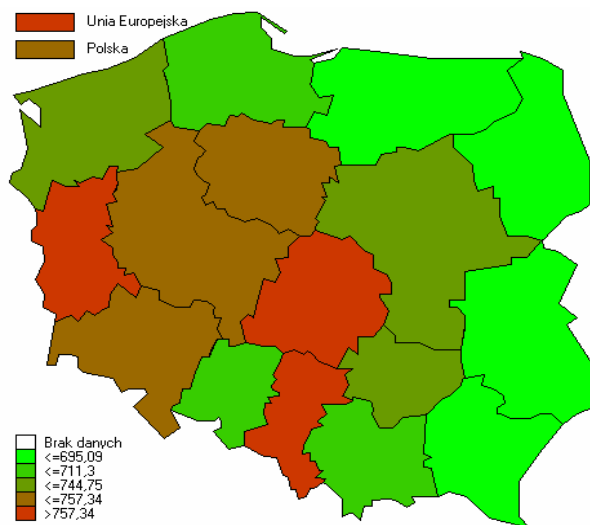


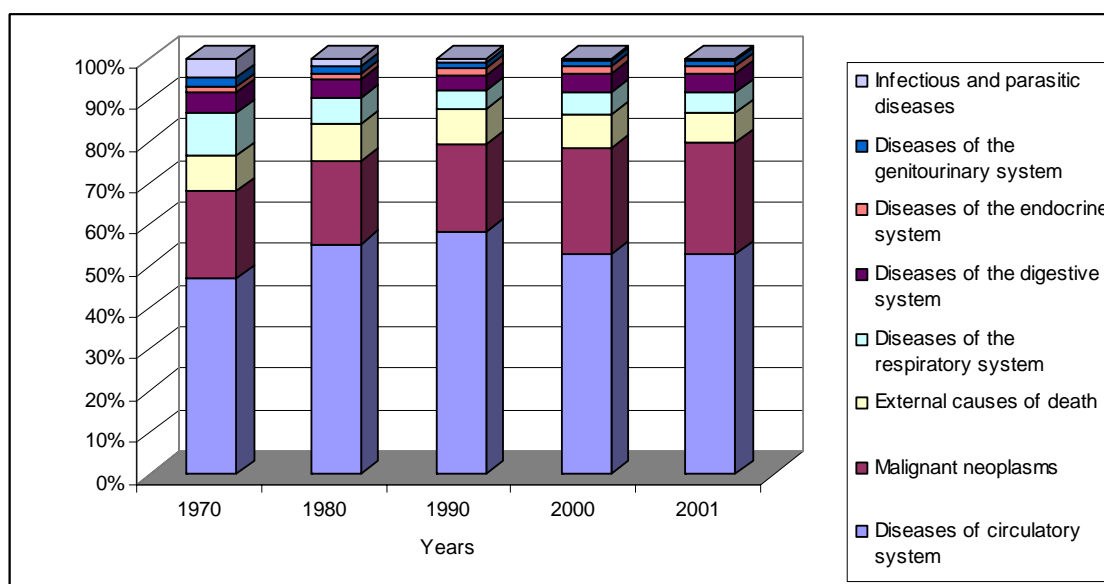
Figure 8b. Standardised mortality rate per 100,000 for women



Source: GUS.

The main causes of death in 2002 were cardiovascular diseases, neoplasms and external causes. The structure of mortality rates by cause of death has also changed over the years with an increasing proportion of cardiovascular diseases until 1990, and likewise the share of neoplasms until 2002 (Figure 9). There are differences between genders as well. In 2002, 43% of men's deaths were caused by cardiovascular diseases, 24% by neoplasms and nearly 10% by external causes. For women, 53% of deaths were from cardiovascular diseases, 20% from neoplasms and 4% from external causes (Figures 10a and 10b). As shown, the share of deaths attributable to cardiovascular diseases is higher for women than men. The key reason for this difference is the longer life expectancy of women, and the fact that the main cause of death in older ages is circulatory disease. As described above, men are more likely to die from tumours than are women, as well as from external causes (Figure 11). The underlying explanation for the latter is the high frequency of transport accidents, especially car accidents among men aged 15-34 (Goryński & Wojtyński, 2001).

Figure 9. Structure of crude mortality rates by selected causes, 1970–2001



Source: Demographic Yearbook, GUS (2003).

Figure 10a. Structure of mortality rates for men by main causes, 2000

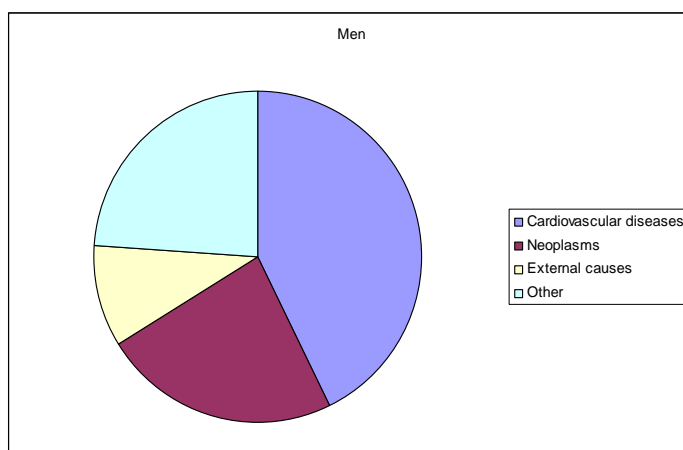
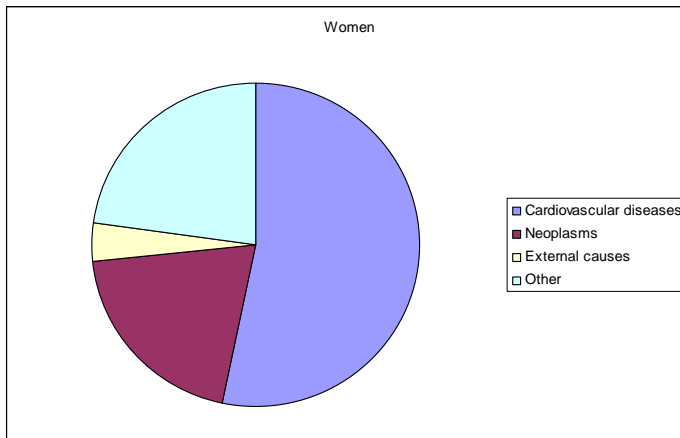
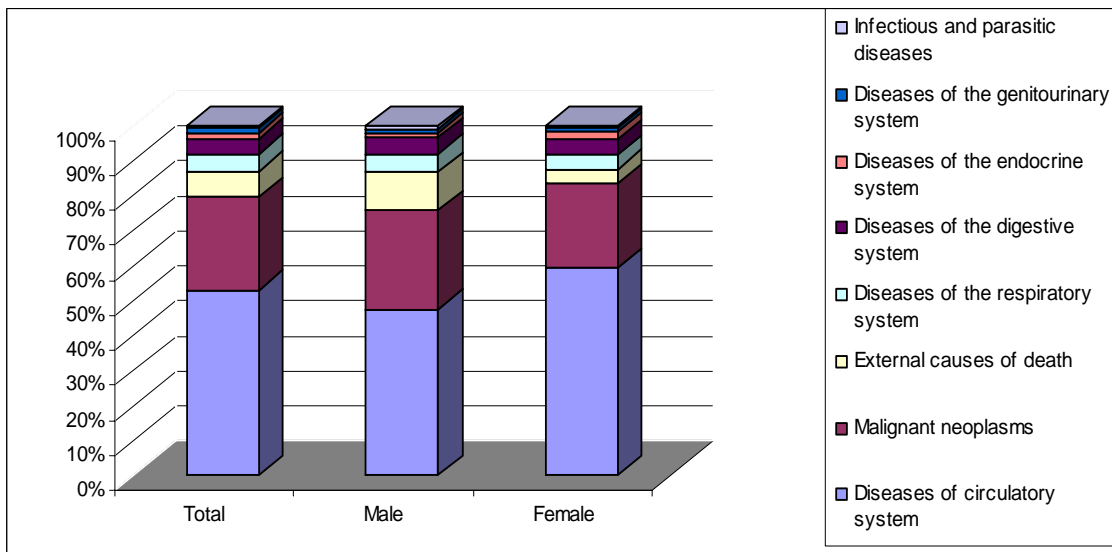


Figure 10b. Structure of mortality rates for women by main causes, 2000



Source: Demographic Yearbook, GUS (2003).

Figure 11. Structure of crude mortality rates by gender (2001)

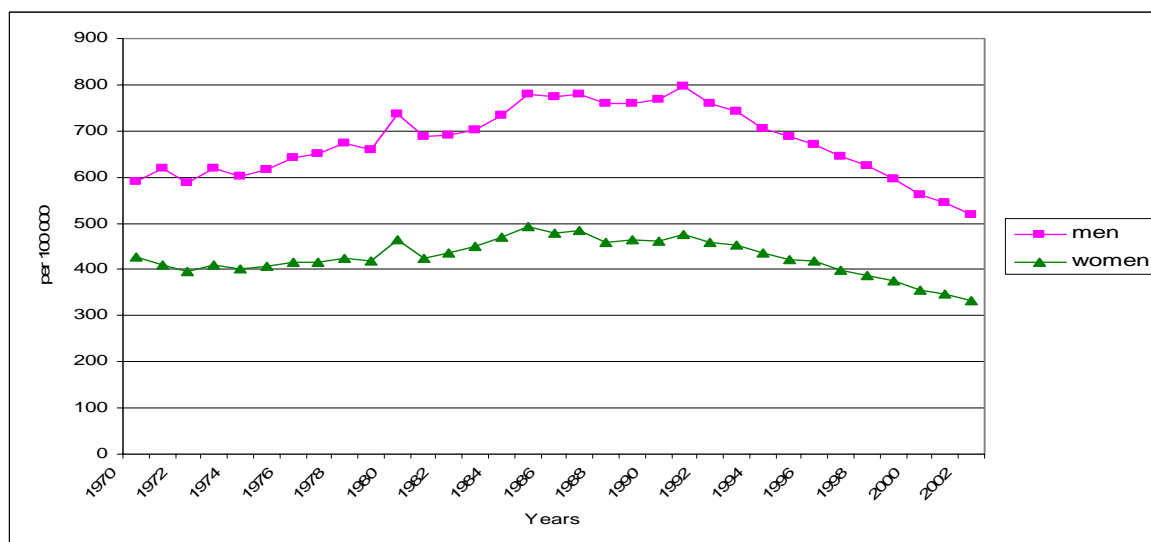


Source: WHO, European database.

Concerning cardiovascular diseases, ischaemic heart disease and cerebrovascular disease are the leading causes of death, in that order. As cardiovascular mortality accounts for the major share of all deaths, the trend of cardiovascular mortality is similar to the general trend. Mortality through circulatory disease grew rapidly between 1970 and 1980. After reaching a peak in 1990, the number of deaths owing to this health issue has been decreasing (Figure 12). Despite this trend, the mortality rate related to cardiovascular diseases in Poland is much higher than in the EU – and according to estimates Polish indicators would approach current EU levels no sooner than in 17 years. In 2001, ischaemic heart disease led to 31% of deaths among all cardiovascular diseases, while 24% were caused by cerebrovascular disease and 17% by atherosclerosis. Mortality rates from ischaemic heart disease rose until 1991 and started to decline only after

then. After several years of decline, mortality rates from strokes have levelled off in recent years. In 2002 the standardised mortality rate was 518 per 100,000 men and 331 per 100,000 women.

Figure 12. Standardised mortality rate from cardiovascular diseases per 100,000, 1970–2002



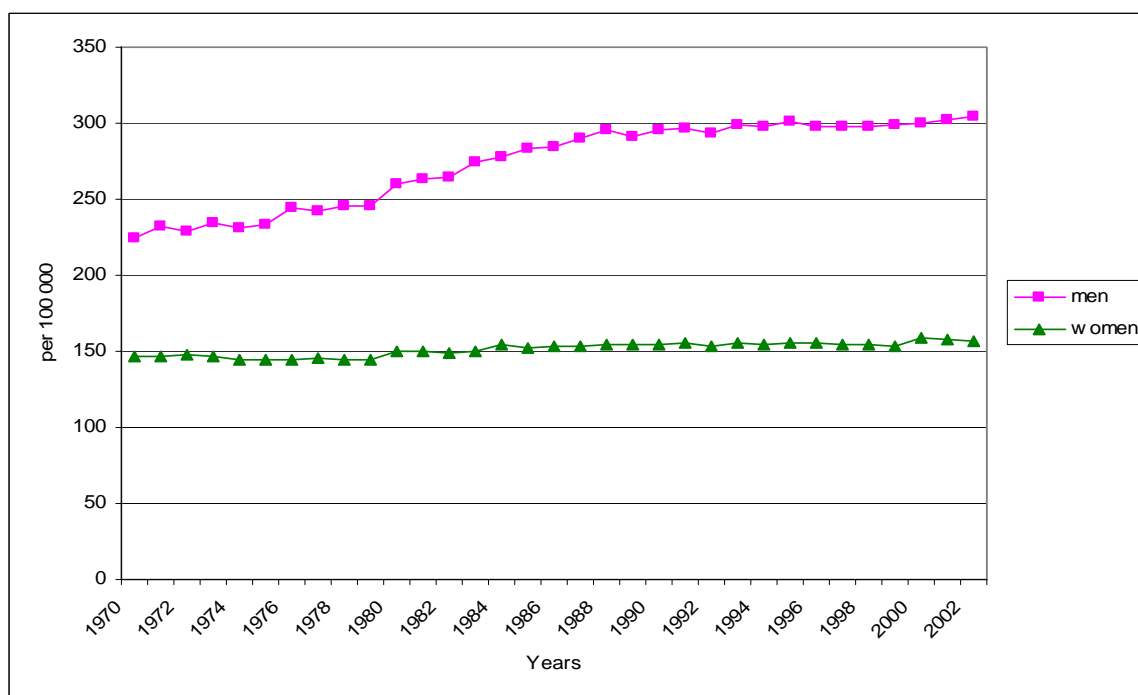
Source: WHO, European database.

The second leading cause of death is malignant neoplasms. In the period under research, the number of deaths caused by cancer increased significantly (Figure 13). Neoplasms in Poland pose a higher risk for men than for women. The standardised mortality rate in 2002 amounted to 157 per 100,000 women and almost twice as much for men, i.e. 304 per 100,000. The most frequently problem cited for men concerns lung cancer (which accounted for almost 30% of all men's deaths caused by tumours), followed by cancer of the stomach and large intestine (each at nearly 10%). For women, deaths are most often attributed to breast tumours (13% of all women's deaths caused by cancer), lung and cervical cancer. Risk factors affecting the high mortality rate from cancer include the high number of smokers, a lack of awareness of cancer and its early symptoms, the low rate of screenings and poor levels of participation in them, and differences in therapeutic treatment (mainly the poorer access to high-tech cameras). Further, it is important to stress that the mortality rates from lung cancer for men and breast cancer for women are still rising.

The third major category of deaths – those owing to external causes – is mainly related to transport accidents. The mortality rate linked to external causes has increased from the level of the 1970s with many fluctuations (Figure 14) and a sharp rise being observable in the late 1980s. Since 1991, however, there has been a reverse trend, reaching 101 per 100,000 men and 28 per 100,000 women (2002).

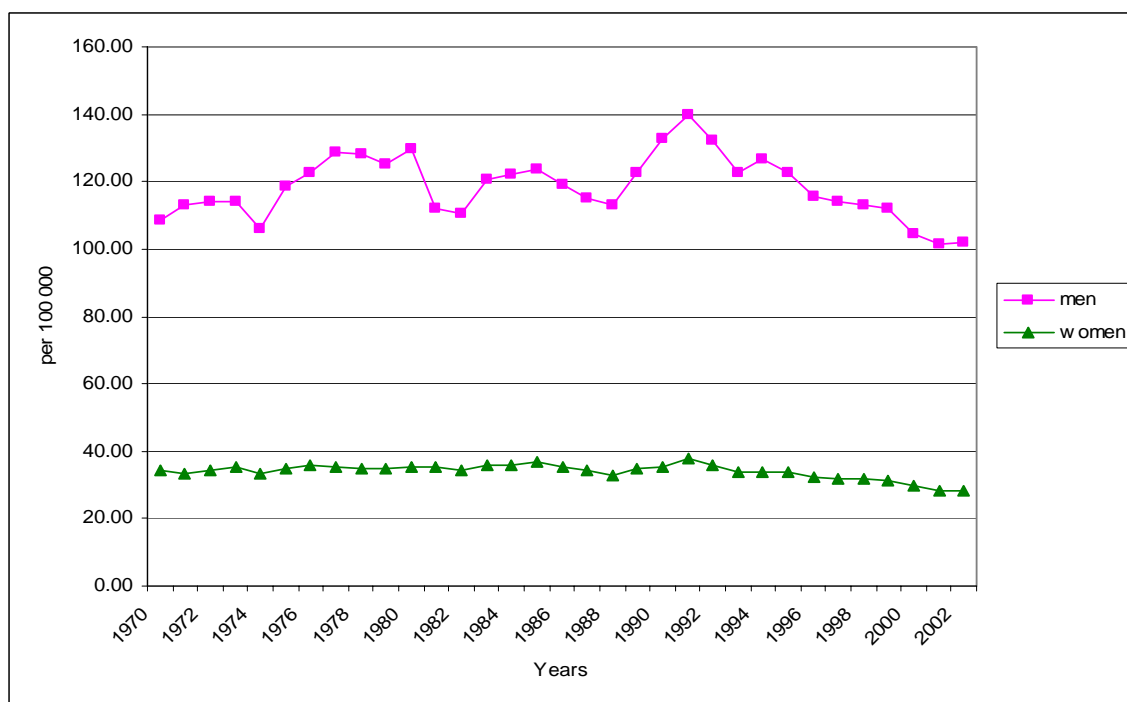
Finally, mortality rates connected with diseases of the pulmonary and urinary systems are not high in Poland and are falling. Similarly, the incidence of death from infectious diseases is declining, which is a natural trend for an industrialised society.

Figure 13. Standardised mortality rate from neoplasms per 100,000, 1970–2002



Source: WHO, European database.

Figure 14. Standardised mortality rate from external causes per 100,000, 1970–2002



Source: WHO, European database.

4. Morbidity

While there has been much epidemiological research conducted in recent years on mortality trends, there is little information on morbidity. There are no available administrative data on hospitalised or ambulatory care by morbidity. Thus the most reliable information on morbidity structure is given by representative surveys. In April 1996 a survey on the health status of the Polish population was conducted by the GUS. The next survey, based on the same methodology, was conducted in autumn 2004; however, data and results have not yet been made available. The objective of the 1996 survey was to provide comprehensive and comparable information (according to WHO standards) on the health status of the Polish population. The survey covered a representative sample of 20,182 households and around 73,000 individuals. The non-response rate differed by *voivodship* (province), but was 11% on average. The results are weighted (with weights estimated by the GUS) to the whole population.

The results indicate that 62% of the population suffers from some sort of disease, with 37.9% suffering from chronic diseases. The most common health problems include rheumatism, problems with physical mobility, hypertension and various heart diseases, and neurotic disorders (Table 5). On the survey, these were the health concerns indicated by respondents, which were not confirmed by a physician's diagnosis. The most frequently reported diseases included illnesses that influence mobility. Other common health disorders are circulatory system diseases. These results are in line with mortality results, which indicate that ischaemic heart disease and hypertension are the most common causes of death. Less common diseases include allergies, genitourinary system diseases, hearing and vision problems. The second leading cause of death – malignant neoplasms – was rarely reported. This could be explained by the late diagnosis of tumours along with the social stigma that is still attached to some types of cancer.

Table 5. Frequency of reporting selected diseases (%)

Type of illness	Frequency
Bone (backbone) diseases	20.8
Rheumatism	17.8
Hypertension	16.4
Mobility problems	15.2
Neurotic disorders	13.7
Ischaemic heart disease	10.5
Vision problems	9.7
Allergies	9.1
Other heart diseases	7.7
Digestive system diseases	7.6
Atherosclerosis	7.1
Respiratory system diseases	6.8
Endocrine system diseases	5.2
Post-accident complications	5.2
Kidney diseases	4.4
Malignant neoplasms	0.5

Source: Own calculations based on the 1996 GUS population health survey.

Table 6. Frequency of reporting selected diseases by social and economic factors, 1996 (%)

	Bone (backbone) diseases	Rheumatism	Hypertension	Ischaemic heart disease	Neurotic disorders	Allergies
<i>Gender:</i>						
Male	18.0	12.7	13.5	8.8	9.4	6.9
Female	23.4	22.4	20.6	12.1	17.6	11.2
<i>Age:</i>						
15-24	4.7	2.1	1.0	0.3	4.0	10.5
25-34	8.1	4.3	3.8	1.1	7.9	7.8
35-44	18.6	11.9	8.7	3.5	15.5	8.3
45-60	33.3	27.4	27.3	17.4	20.8	10.2
61-74	37.4	41.4	39.6	29.7	19.9	9.2
75+	33.0	39.8	36.9	26.3	13.1	5.9
<i>Place of living:</i>						
Urban	20.9	17.1	16.3	11.1	14.0	11.0
Rural	20.7	19.0	16.6	9.6	13.3	6.0
<i>Marital status:</i>						
Single	7.3	4.7	3.5	1.6	6.1	10.0
Married	23.1	19.0	18.0	11.4	14.9	8.7
Widowed	37.2	41.3	38.7	27.2	20.9	8.8
Separated/divorced	28.2	23.3	16.2	12.0	26.3	12.7
<i>Number of persons in the household:</i>						
1 person	35.2	36.8	32.7	25.0	21.1	11.5
2-3 persons	25.6	22.5	21.7	15.0	16.0	10.9
4-5 persons	15.6	11.8	10.5	5.4	11.2	8.4
6+ persons	16.5	14.0	11.9	6.7	11.5	5.7
<i>Education level:</i>						
University	19.2	12.4	13.7	9.8	10.6	14.5
Post-secondary	17.2	12.2	8.5	5.9	12.4	14.6
Secondary	19.6	15.0	13.5	11.0	13.9	12.0
Secondary technical	18.3	13.5	12.9	8.2	12.3	10.8
Vocational	17.5	13.0	11.4	5.6	12.3	7.1
Primary	24.3	23.8	21.8	14.1	15.7	8.5
No formal education	24.4	23.0	27.9	18.4	29.8	5.0
<i>Labour market activity:</i>						
Employed	16.9	11.9	10.6	5.1	11.4	8.5
Unemployed	13.2	9.4	6.1	3.0	13.2	7.7
Inactive	26.7	26.1	26.1	18.1	16.5	10.1
<i>Income in categories, per capita in household (in Polish zloty – PLN):</i>						
I (up to 200 PLN)	17.8	15.2	13.0	7.4	14.5	6.6
II (200-299 PLN)	21.8	18.4	17.5	11.0	14.1	9.0
III (300-399 PLN)	22.4	19.9	18.5	12.6	12.8	10.4
IV (400-499 PLN)	24.0	20.2	18.6	13.1	12.8	13.7
V (500-599 PLN)	21.0	19.8	20.9	14.5	11.3	12.6
VI (600 PLN and more)	23.6	17.2	17.0	13.8	12.2	12.4

Source: Own calculations.

The frequency with which the reported diseases occur is affected by demographic and economic factors. The factors most strongly affecting disease occurrence are gender, age, education and labour market activity. Women report that they are suffering from a disease more frequently than men – a finding that holds for every disease in the selected group (Table 6) and is coherent with the results presented below for self-assessed health status. Women not only report illnesses more often than men, they are more likely to evaluate their health status as poor or very poor as well.

Apart from allergies and neurotic disorders, the occurrence of other selected diseases differs significantly by age. The relation is close to linear, where the elderly more often suffer from rheumatism, bone diseases that lead to mobility problems and cardiovascular diseases. The incidence of the latter is rare among individuals in their 20s and 30s. Neurotic disorders are found more often among individuals in their most active ages – those being in the age group of 45–60. The frequency with which allergies are cited does not differ strongly by age. Here, factors such as education and income level matter. Individuals with higher education and incomes have a greater tendency to indicate that they suffer from allergies. This finding is most likely related to a greater awareness of the kinds of problems that might stem from allergies. Another factor could be the difficulties associated with the diagnoses of allergies and expensive treatment.

Age and marital status are closely correlated to the reporting of diseases. Single individuals, who generally tend to be younger, are less prone to illnesses. By contrast, widowed persons, who are most likely to be in the elderly age groups, more often report that they are suffering from health problems.

With the exception of allergies, individuals with lower levels of education (especially those who lack formal education or who only have primary schooling) tend to report health disorders more frequently. This trend is not reflected in income, as individuals in lower income categories do not report the occurrence of health problems more often than their counterparts in higher income strata.

Concerning area of residence, there is not a large difference between urban and rural areas in the prevalence of specific health disorders. Again, allergies are exceptional in this regard as they are reported twice as often in towns as in villages. This finding could be associated with access to medical care along with the other problems previously mentioned: difficulties in diagnosis, the need for specific ambulatory tests and expensive treatment. Pollution in urban areas could be another explanatory factor.

Finally, the occurrence of diseases can be seen to be related to labour market activity. Those persons who are most prone to health disorders are inactive – by virtue of being retired, disabled or suffering from a long-term illness. Unemployed persons seem to be healthier than their employed counterparts; however, they are also more likely to suffer from stress and neurotic disorders.

5. Basic information on Poland's health care system

5.1 Description of the health care system and its reforms

Over the years of economic transition, the health care system has twice been subjected to radical changes: in 1999 and in 2003. In 1999 health insurance was introduced in place of budgetary financing (general taxation), complemented by a system of regional health funds and so-called 'internal market principles'. For four years (1999–2002), the health care system functioned according to these principles. The health care reform met with widespread criticism by medical communities, patients and opposition politicians, with the latter declaring as early as 2000 that

the system would be changed (which did occur after they assumed power). Although problems were gradually being overcome and the new organisational system was slowly falling into place, in 2003 health funds were abolished and payment functions centralised, with the creation of a central fund – the National Health Fund (NFZ) and its 16 regional branches in respective *voivodships*.

The NFZ was set up outside the budget of the central government. Such extra budgetary units are vulnerable to criticism in Poland, as they are not subject to the same principles of financial management as the central budget. The management of these funds frequently lacks transparency. The handing over of supervision of such funds to the ministries responsible leads to ‘hand-controlled’ management⁶ and poor efficiency. Such criticism could also fall on the NFZ, although the Law on Health Care Services Financed with Public Funds of 27 August 2004⁷ established finance and health ministers as supervisors of the fund, with clearly defined competences and responsibility. Yet their relations with the NFZ remain quite tense.

The activities of the NFZ have caused numerous problems since its inception, such as conflicts over responsibilities, a shortage of appropriate management tools and above all, limits on funding. As a result, the NFZ has been subject to no less criticism than the earlier health funds. The heads of the institution were appointed and dismissed at an exceptionally fast rate.⁸ The election platform of the largest opposition party currently envisages such far-reaching measures as the abolition of the NFZ. If this proposal were to be treated seriously, there would be reason to fear yet another organisational revolution in health care. This is not a good idea – the NFZ should rather be supplemented with instruments of effective management over the funds it has at its disposal and gradually decentralised to the regional branch level, but not abolished. Such an institution is necessary to perform funding allocation and coordination functions.⁹

Figure 15 presents the organisational picture of the health care system in Poland. The main managers in the system are the Health Ministry – a body responsible for health care policy, the coordination of activities and medical supervision – and the NFZ, the so-called ‘payer body’, which has its regional branches.

The position of local governments in the health care system deserves some attention, as they play the role of ‘founding bodies’ for around 85% of health care centres in the country. This function implies responsibility for the creation and liquidation of units and for the development of its assets (investments). In addition, local governments have been assigned the responsibility for catering to the health care needs of their communities, a task that is too tall an order, considering their potential (limited funds and lack of competent staff).¹⁰ Municipalities are responsible for basic health care, districts for third-reference-tier hospital care (district hospitals) and the *voivodships* for second-tier hospital care. The Health Ministry is the founding body for national units and institutes (such as the Mother and Child Institute, Oncology Institute, and Food and Nourishment Institute).

⁶ The term ‘hand-controlled’ management refers to the situation in which underdeveloped norms and administrative procedures, result in civil servants and policy-makers taking decisions based on their previous experiences and routines, and with the entire decision-making process not being transparent.

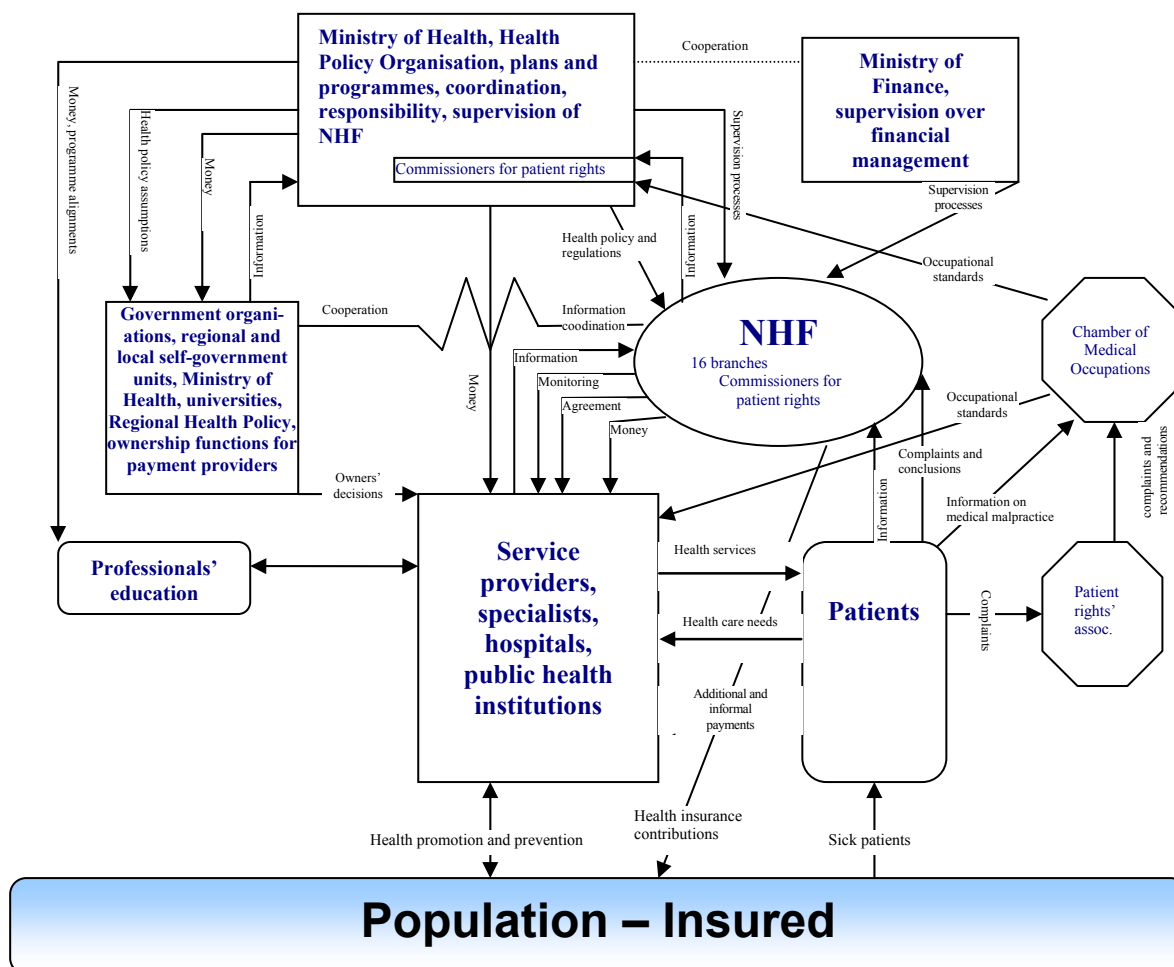
⁷ More specifically, Law Dz.U. (2004) No. 210, para. 2135.

⁸ Over a period of two years the institution had five different heads.

⁹ Various group funds for patients felt the need for an institution that would coordinate functions, and on their own initiative they created the National Union of Patients’ Funds (KZKCh), which was supposed to support them with regard to information and tools. This need was underrated at the time.

¹⁰ These problems are pointed out in other research studies – see for example Golinowska et al. (2002).

Figure 15. Organisation of the Polish health care system



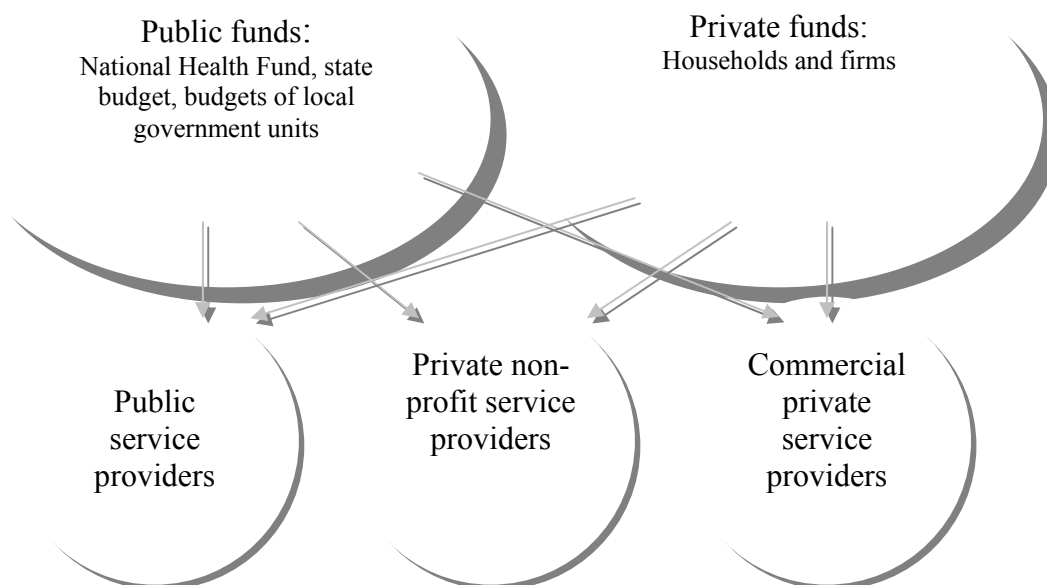
5.2 Organisation of health care services

Another notable organisational feature of the current system, introduced prior to 1999, is the independence of health care units. These units, called '*sp zoz*' (independent, public health-care units), obtained significant independence in decisions concerning financial management of NFZ funding obtained through contracts signed with the NFZ for the provision of health care services. In a situation of limited standardisation of health care services, lack of medical treatment guidelines and a very low level of financing, the independence of health care units tends to lead to discretion in decision-making and rising indebtedness, rather than rational management.

5.3 Ownership of the system: Public and private sector

The health care sector is also differentiated in terms of ownership. The ownership problem has two dimensions. The sources of financing may be both private (arising from households and firms) and public (stemming from health insurance contributions and budgeted funds from general taxes and charges). At the same time, the ownership title, i.e. the status of medical centres, may also be public and non-public.

Figure 16. Relation between public and private funding and providers



Currently, in Poland there is well-developed scope for private ownership in the domain of basic health-care services and outpatient clinic specialisation. Approximately 80% of outpatient units (together with individual doctor practices) have the status of private centres, and 60% of outpatient unit treatment was carried out in such places (data for 2003 was derived from GUS, 2004). Meanwhile, hospital care is dominated by public units.

Private medical centres are financed not only from personal incomes. These centres also enter into contracts with the NFZ. Based on data collected during work on the Ministry of Health's *Green Book of Health Care Financing*, it has been estimated that the value of contracts entered into with non-public medical centres exceeded 20%, and in the Wielkopolski *voivodship* (the best in terms of the privatisation of public medical centres) this figure was over 30% (Ministry of Health, 2004).

5.4 Funding of the health care system

In Poland, unlike other post-communist countries, the health care system was not fully financed by the state. Social groups deriving their main income from private-market activities (e.g. farmers and craftsmen) were not covered by public health care.¹¹ Services for these groups were provided by the private sector.¹² The private sector was small, however, and under state control. Instruments used to regulate and monitor private-sector health care included criteria for the qualifications of doctors (specialisation and scientific degree). In addition to farmers and craftsmen, other groups also tended to pay out-of-pocket for health care services. This was related to a tradition of private payments to doctors and nurses in hospitals. Typically, medical staff did not earn high wages and patient's payments compensated the low incomes of medical

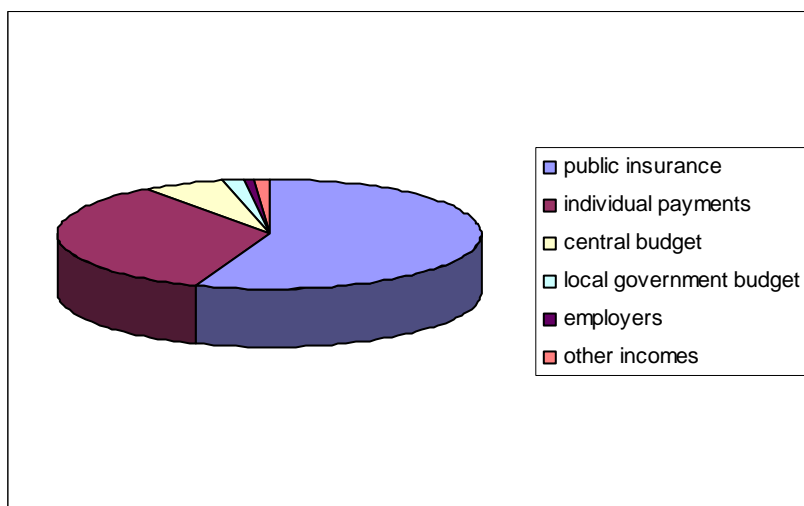
¹¹ Craftsmen obtained the right to use the public health-care system at the start of the 1960s and farmers were able to do so at the beginning of the 1970s.

¹² Such services were provided by physician's cooperative units financed by the state, which were later privatised.

staff. In the 1990s, the proportion of expenditure on private health care increased. The reasons behind this increase are complex. First, expenditures rose as a result of greater access to expensive pharmaceuticals that entered the Polish market. Second, private-sector medical institutions offered more luxurious and expensive treatment to those persons in the higher income strata. Finally, private payments for services provided in the public sector have continued. These include not only direct payments to medical staff, but also (mainly) funding for medical institutions (through foundations and gifts). Further, employers co-finance medical treatment for their employees by assuring a basic basket of services provided by a public or private institution. The scale of these trends has risen in recent years.

Meanwhile, expenditure on health care stemming from the private sector, from both households and companies, has increased. Based on data from a so-called ‘modular household survey’, GUS estimates that households are already financing 35% of the health care system in Poland (GUS, 2003). This is a substantial figure, ranking Poland high among EU countries in this regard. Figure 17 depicts the structure of spending on health care. One quite surprising feature of this structure is the low share of local governments, which perform the function of founding bodies for health care units and bear the responsibility for financing development. But the resources of local governments, particularly at the district level, are insufficient for such a responsible task, and health care is not a priority in their spending decisions.

Figure 17. Structure of health care funding in 2003



Source: Based on data from the Ministry of Health (2004).

Overall, the main reason behind the low level of expenditure on health care in Poland is the low level of public funding. Public expenditure has not grown in real terms since 1996. The only exception is 1998, when funds increased slightly owing to the anticipated significant reform of the system (introduced in 1999). Health care units’ debts were therefore written off, investment purchases were made ‘in advance’ and so forth.

If we evaluate the real growth of public expenditure based on an index of prices in health care, which in the analysed period was higher than the consumer price index, we see that there was no increase in real terms. This means that the amount of funds in the public health-care sector did not rise. Meanwhile, if we look at the structure of expenditure, there is a clear upward trend in spending on medicines, which began in 1998 (Table 7). Spending on outpatient care also grew faster than overall expenditure. Meanwhile, real spending on hospital care did not increase, despite the significant rise in hospital stays since 1999.

Table 7. Public health care expenditure, in million Polish zloty (PLN)

	1994	1995	1996	1997	1998	1999	2000	2001	2002
Health care total	10,171	13,977	18,802	21,134	23,574	26,682	29,104	30,993	32,776
% PKB	4.8	4.8	4.9	4.4	4.3	4.3	4.25	4.16	4.29
Hospitals	5,028	6,651	8,409	10,208	11,418	12,597	13,133	14,410	15,819
%	49.4	47.6	44.7	48.3	48.4	47.2	45.1	46.5	48.3
Primary & ambulatory care	1,805	2,454	3,221	3,920	4,454	5,256	5,790	6,393	7,836
%	17.7	17.6	17.1	18.5	18.9	19.7	19.9	20.6	23.9
Pharmaceuticals	1,153	2,042	1,485	1,750	2,057	3,527	4,507	5,177	5,801
%	11.3	14.6	7.9	8.3	8.7	13.2	15.5	16.7	17.7

Sources: Ministry of Finance and Ministry of Health (2004).

A significant feature of the difficult financial situation is the imbalance of the system. The costs are notably higher than the revenues, as a result of which health care units are constantly accumulating debt. The indebtedness of the health care system has already exceeded 10% of its total revenues. The costs of debt-servicing grew significantly in 2004.

Health care units are providing more health care services than the value stipulated in their contracts with the NFZ. This is because the Polish constitution still guarantees unconditional access to health care services in case of a threat to health and life, while at the same time these services are being limited and those performed above the plan, i.e. the contract with the NFZ, are not being paid for. Simultaneously, there is a sizeable discrepancy between the rates (prices) for contracted services and the actual costs of providing these services. In addition, in a situation where health care units are to a large extent independent and where supervisory bodies have been abolished with the closing of patients' funds, the systems in place for controlling costs are insufficient.

The results of the imbalance are also reflected in the deterioration of the sector's overall infrastructure, as well as technical and medical equipment. A significant consequence of the imbalance is also the underpaying of medical staff. This pushes medical employees to obtain incomes from several jobs (on average doctors have two jobs) at the expense of the quality of medical services and significant effort, resulting in lack of time to improve their professional skills and entrepreneurial activity for the benefit of 'their own health care unit'. A doctor working several jobs often treats his primary employer in an exploitative manner and does not identify him/herself with the employer's interests. Further, poor pay for medical staff leads to corruptive behaviour.

6. Health-care services utilisation

The utilisation of health care services reflects demand for medical care driven by morbidity. There is a broad range of information in Poland regarding services utilisation; however, it is difficult to relate this information to data on morbidity. Little information is given on the type of diseases that are treated in primary, secondary and tertiary health-care institutions. There are three main data sources on health-care services utilisation:

- 1) administrative data on health services collected from private doctors, ambulatory care institutions and hospitals. These are collected on an annual basis (since 2000) by *voivodship* health-evaluation centres and submitted to the Ministry of Health. The main

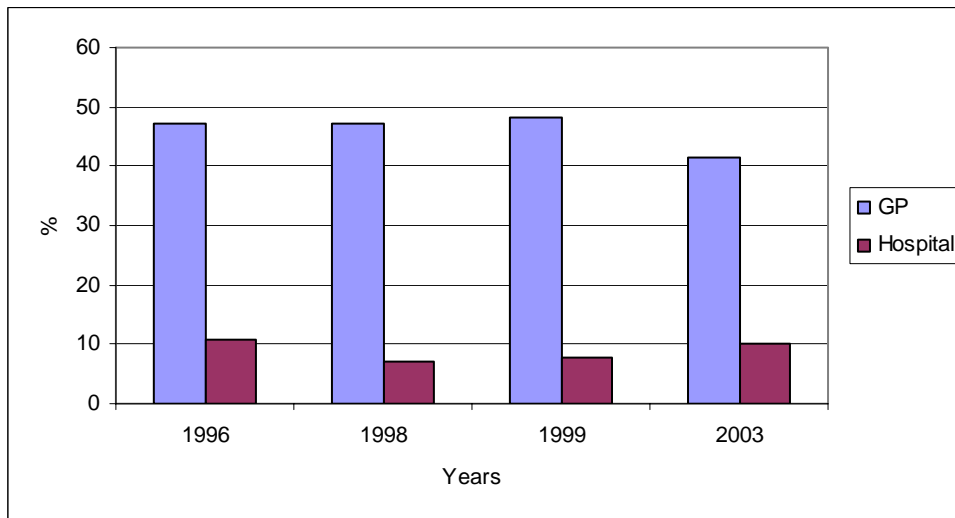
disadvantage of the data is lack of information on types of services provided and clients' characteristics, especially for primary and ambulatory care. More accurate are data on hospitalisation;

- 2) survey data, including –
 - the Health Status Population Survey (*Stan zdrowia ludności Polski*), conducted by the GUS in 1996 using the methodology described above;
 - the Health Care in Households surveys (*Ochrona zdrowia w gospodarstwach domowych*) conducted in 1998, 1999 and 2004. These are repetitive representative surveys supervised by the GUS. Their objectives are describing health-care services utilisation in Poland and providing basic information on self-assessed health status. The 1998 survey covered a sample of 3,916 households and 11,983 individuals; the 1999 survey involved a sample of 5,796 households and 17,816 individuals; and in 2003 the survey sampled 4,073 households and 12,337 individuals; and
- 3) existing reports and publications, including annual GUS reports on the Polish health care system (*Podstawowe dane z zakresu ochrony zdrowia*). These reports are based on health-care system administrative data and provide a set of basic performance indicators.

6.1 Basic indicators

Survey data indicate the basic structure of health-care services utilisation. Despite the reform of 1999, the frequency of services utilisation almost did not change. About 40–50% of the population reported visiting a general practitioner (GP) during the three-month period before the survey was taken. During the same time around 10% of the population spent at least one night in a hospital. Data regarding 1996 and 1998 include in GP visit column for specialist consultations, as until 1999 access to specialists was not restricted (Figure 18). Since that time, GPs have taken on a gatekeeper function, thus every publicly-provided specialist consultation has to be first approved by a GP. One of the objectives of the 1999 health care reform was to constrain the high number of hospitalisations. Yet survey data indicate that this objective has not been reached, as the frequency of hospitalisation increased in the period 1998–2003, reaching the level of 1996. This could be the result of a hospital policy after 1999 aimed at effectiveness, which was measured by increasing the acute-care turnover rate (number of patients admitted per bed).

Figure 18. Frequency of GP consultations and hospitalisation, 1996, 1998, 1999 and 2003



Sources: Own calculations based on the 1996 GUS Health Status Population Survey and for 1998, 1999, 2003 based on data from Health Care in Households surveys (GUS).

Among those who reported that they had visited a hospital, only 2.3% stated that they had done so more than one time. Conversely, for GP consultations it is common to go the doctor for another check-up within a short period (Table 8).

Table 8. Number of GP and hospital visits

	Percentage of:	
	GP consultations	Hospital visits
None	52.9	89.3
1 visit	19.9	8.4
2 visits	10.4	1.6
3 visits and more	16.8	0.7

Source: Own calculations based on the 1996 GUS Health Status Population Survey.

6.2 General practitioners, specialists and ambulatory care

Administrative data on medical services give an indication of the structure of doctors' consultations outside hospitals (Table 9). The structure shows the dominance of GP consultations; but in 2002 the share of specialist consultations increased significantly (by 10%). This stemmed from changes in the legal framework to introduce less-restricted access to specialists. These changes included the resignation of fund-holding GPs and a broadening of the list of specialties for which GPs do not have a gatekeeping role.

Table 9. Structure of doctor consultations, 2001–03

	Total number of consultations	GP consultations	Specialist consultations	Admission room
2001	234,820,282 100%	149,771,682 63.8%	81,486,193 34.7%	3,562,407 1.5%
2002	238,932,830 100%	129,380,866 54%	105,452,837 44%	4,099,127 1.7%
2003	251,683,136 100%	148,091,435 59%	98,864,847 39%	4,726,854 1.9%

Sources: GUS annual health reports (2001, 2002 and 2003).

The structure of consultations suggests that – besides GPs – medical services are most frequently provided by dentists, gynaecologists, surgeons, opticians and laryngologists. The structure is stable when compared with the results of 1996 survey data (Table 10).

Table 10. Structure of doctor consultations by main specialties, 2003 (%)

	GP	Dentist	Gynaecologist	Surgeon	Optician	Laryngologist	Psychiatrist
1996 (survey data)	68.0	n.a.	7.3	4.6	2.2	2.1	1.2
2002 (administrative data)	60.7	5.3	5.2	4.6	3.6	2.4	1.7

Sources: Own calculations based on the 1996 GUS Health Status Population Survey and the GUS annual health report (2003).

The reform of 1999 introduced the possibility for non-public practitioners and ambulatory care centres to provide services contracted by the NFZ. Data on the structure of medical services indicate that in the period 2002–03 half of the services provided were done so by non-public practitioners and ambulatory care centres. Rarely were consultations given by the private sector, with less than 10% of all consultations provided by private practices (Table 11).

Table 11. Structure of doctor consultations by sector, 2002–03

	Total number of consultations	Public ambulatory care centres	Non-public ambulatory care centres	Private practices
2002	238,932.8 100%	105,356.3 44.1%	112,156.8 46.9%	21,419.7 9.0%
2003	251,683.2 100%	101,138.1 40.2%	126,994.2 50.5%	23,550.9 9.4%

Sources: GUS annual health reports (2002 and 2003).

6.3 Hospitalisation

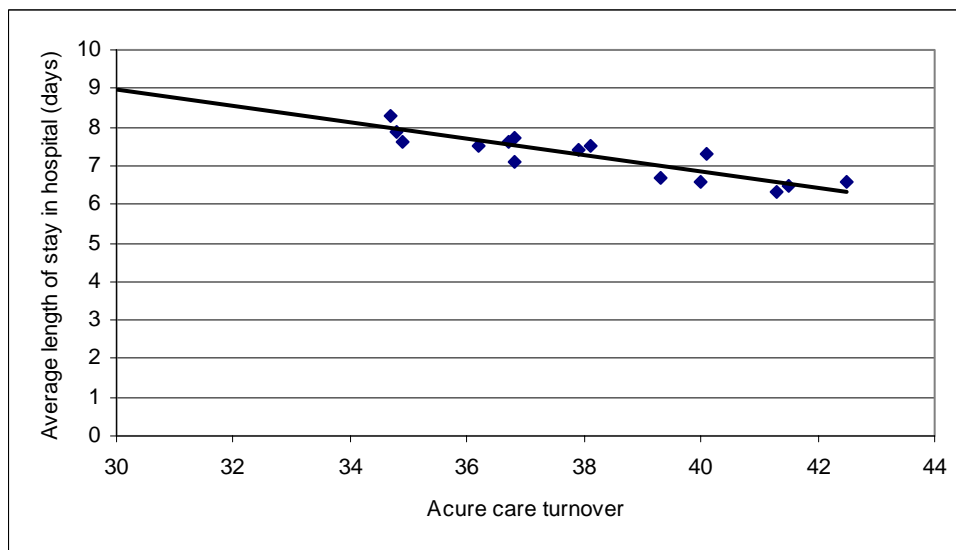
Administrative data on hospital services utilisation have been collected on an annual basis by the Health Care Information Systems Centre (*Centrum Systemów Informacyjnych w Ochronie Zdrowia*) and by the Ministry of Health. Administrative data confirm survey findings on the growing frequency of hospitalisation in recent years. Between 2000 and 2003, the number of hospitalisations increased by 200 per 10,000 population (Table 12). At the same time, acute care turnover increased. This suggests that the rise in the number of hospitalisations is not caused by an improvement in the hospital infrastructure in terms of the number of available beds, but is related to improved hospital effectiveness, which translates into a higher turnover of clients per bed (Figure 19). It is difficult to state how it influences patients' health status.

Table 12. Basic hospitalisation indicators, 2000–03

	2000	2001	2002	2003
Number of patients during the year (per 10,000 population)	1,624.2	1,729.1	1,819.4	1,801.8
Acute care turnover	32.6	33.7	34.9	36.7
Average length of stay	8.5	8.4	8.0	7.5

Sources: Ministry of Health annual statistical reports (2001, 2002, 2003 and 2004).

Figure 19. Relation between length of stay and acute care turnover



Source: Own calculations based on the Ministry of Health annual statistical report (2004).

Hospital policy targeted at increasing efficiency and the number of persons admitted is confirmed by regression, indicating that a short length of stay in a hospital is correlated to a higher number of admitted patients per bed.

6.4 Social and economic factors behind the utilisation of health care services

A preliminary analysis of factors influencing the utilisation of health care services shows that gender, age, education and health status are correlated to the use of specific services (Table 13). Women tend to use health care services more often than men. Similar results are depicted in other Eastern European countries under study by the AHEAD research project.

Table 13. Frequency of health-care services utilisation by social and economic factor, 1996 (%)

	GP	Specialist	Hospital
Total	32.0	15.0	10.7
<i>Gender:</i>			
Male	28.6	12.3	8.8
Female	35.1	17.6	12.4
<i>Age:</i>			
15-24	25.2	12.8	7.3
25-34	22.3	14.5	9.2
35-44	26.6	15.4	8.4
45-60	37.4	18.5	12.2
61-74	46.6	15.0	15.9
75+	47.5	7.7	16.9
<i>Place of living:</i>			
Urban	32.2	16.5	10.7
Rural	31.7	12.5	10.6
<i>Marital status:</i>			
Single	26.2	11.0	5.6
Married	31.8	16.9	11.7
Widowed	47.2	13.3	16.1
Separated/divorced	33.6	14.9	11.9
<i>Number of persons in the household:</i>			
1 person	43.6	15.6	14.8
2-3 persons	34.8	17.0	12.2
4-5 persons	28.8	14.0	8.8
6+ persons	28.2	12.5	10.2
<i>Education level:</i>			
University	31.3	19.6	8.8
Post-secondary	24.4	19.3	9.6
Secondary	30.5	17.8	11.6
Secondary technical	31.3	16.4	10.3
Vocational	27.1	14.5	10.2
Primary	35.9	13.7	10.9
No formal education	40.7	17.6	13.3
<i>Labour market activity:</i>			
Employed	28.3	13.8	7.8
Unemployed	19.7	10.5	8.4
Inactive	38.3	17.2	14.3

Table 13. Continued

<i>Income in categories, per capita in household (in Polish zloty – PLN):</i>			
I (up to 200 PLN)	28.9	12.9	10.3
II (200-299 PLN)	33.3	14.5	11.3
III (300-399 PLN)	34.7	15.7	10.7
IV (400-499 PLN)	33.8	18.1	9.7
V (500-599 PLN)	30.7	22.0	9.6
VI (600 PLN and more)	30.7	21.5	11.7
<i>Self-assessed health status:</i>			
Very good	19.1	9.5	5.6
Good	22.4	12.5	6.7
Average	36.3	16.5	10.0
Poor	51.0	22.8	20.9
Very poor	50.0	24.7	30.3

Source: Own calculations based on the 1996 GUS Health Status Population Survey.

Health-care services utilisation is correlated with age. The relation is almost linear – elderly persons use medical services more often than younger cohorts. Only the adult population (age 14+) is the subject of study, however. If the total population were to be analysed, then children in the first years of their lives would be seen to be treated more often by GPs or at the hospital than the middle-aged adult population. Typically, the utilisation curve for health-care services takes a U shape. The increase in the use of health-care services for older cohorts holds for both GP and hospital services.

Another factor differentiating the frequency of use of medical services is education. Population groups with no formal education or lower education levels tend to use GP and hospital services more often than those with higher education. The latter consult specialists more frequently. This could partly be the result of early diagnosis among the better-educated cohorts and the higher costs related to specialist consultations, often provided in the private sector. This hypothesis is confirmed by the utilisation structure by age – persons in the higher income strata use services provided by specialists more than those with lower incomes.

Not surprisingly, the use of health-care services is related to labour market activity, such that inactive individuals report using medical services more often than employed or unemployed persons. This finding is linked to age and the presence of disabilities that prevent labour market activity.

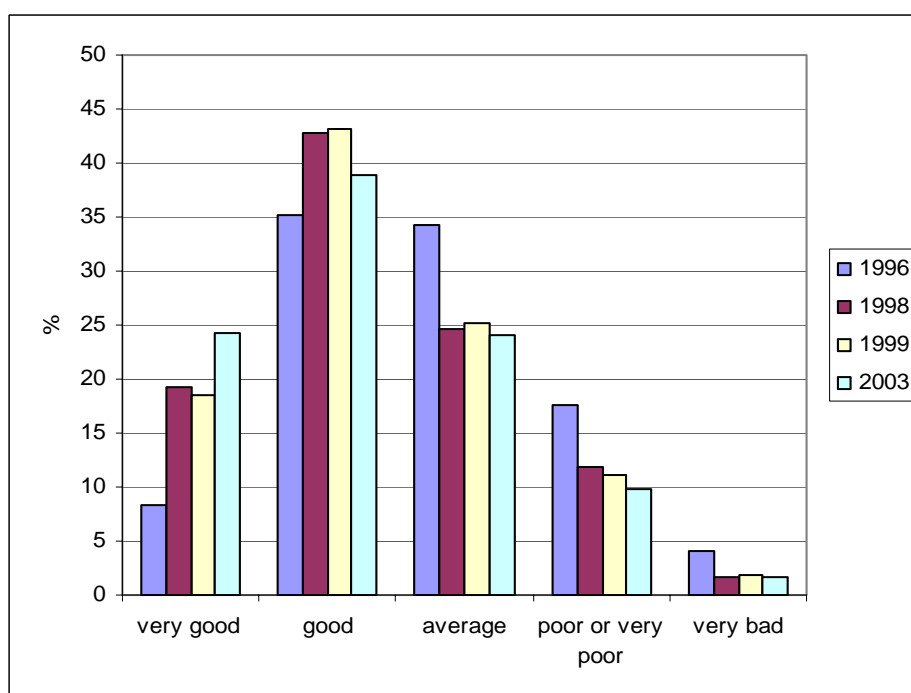
The use of medical services is not significantly differentiated by place of living. This suggests that access to services is equal in rural and urban areas. This point especially holds for primary and hospital care.

A very important factor behind the utilisation of health care services is the health status of the individual as measured by self-assessment. This measure is very subjective, but close to actual health status. Finally, nothing other than subjective health-status assessment is a decisive factor for contacting a doctor. Descriptive analysis shows that self-assessed health status is strongly correlated to services utilisation. Use of GP services increases by 150% when the populations in very good and very bad health are compared; for hospital services the increase ratio is 600%.

7. Self-assessed health status

The above analysis illustrates the importance of self-assessed health status for health-care services utilisation, and finally for the total costs of health care services. There have been numerous research surveys in Poland on self-assessed health. The first – and the broadest – was the 1996 GUS Health Status Population Survey. Latter data are from the GUS Health Care in Households surveys from 1998, 1999 and 2003 (Figure 20). Since the survey methodology is different between 1996 and later years, the results of self-assessed health status vary. This could be explained by the size of the samples (in 1996 the sample was larger than in other years) and concentration on different factors. The 1996 survey focused on health status, and thus there were a number of detailed questions on health status and the main diseases from which respondents may have been suffering. As a result, self-assessed health could be biased by these detailed questions. Yet an advantage of such a bias is a more accurate assessment of health status, which better reflects the actual situation. Therefore, the more detailed analysis of health status assessment is based on the results for 1996.

Figure 20. Self-assessed health status, 1996, 1998, 1999 and 2003



Sources: Own calculations based on the 1996 GUS Health Status Population Survey and for 1998, 1999 and 2003 based on data from the GUS Health Care in Households surveys.

Most persons evaluated their health status as average or good. There seems to be a slight improvement in health status over time, however this result should be confirmed either by panel data or by data on the health status of the population from 2004.

Table 14. Self-assessed health status by social and economic factors, 1996 (%)

	Self-assessed health status				
	Very good	Good	Average	Poor	Very Poor
Total	8.4	35.2	34.2	17.6	4.1
<i>Gender:</i>					
Male	10.3	37.9	32.0	16.1	3.4
Female	7.0	33.2	36.0	18.8	4.6
<i>Age:</i>					
15-24	25.2	58.1	14.2	1.7	0.2
25-34	11.9	58.4	25.1	3.3	0.7
35-44	5.5	42.4	40.8	9.8	1.3
45-60	2.5	20.2	45.6	26.6	4.8
61-74	1.7	8.1	39.5	39.4	11.0
75+	1.6	7.9	32.6	41.5	15.9
<i>Place of living:</i>					
Urban	8.8	36.6	35.3	15.3	3.7
Rural	7.8	33.0	32.3	21.7	4.7
<i>Marital status:</i>					
Single	22.1	52.4	18.5	5.0	1.3
Married	5.4	34.1	38.4	18.1	3.7
Widowed	2.0	10.2	38.4	37.9	11.2
Separated/divorced	5.0	29.9	36.4	21.5	6.9
<i>Number of persons in the household:</i>					
1 person	4.9	15.3	36.8	31.6	11.0
2-3 persons	6.9	27.9	36.2	22.7	5.8
4-5 persons	10.3	44.3	32.4	11.0	1.5
6+ persons	9.2	41.4	34.2	14.2	2.5
<i>Education level:</i>					
University	10.7	47.2	33.5	6.9	1.2
Post-secondary	12.7	46.4	31.2	8.5	1.0
Secondary	11.0	38.9	34.3	12.5	3.0
Secondary technical	8.3	42.2	36.2	10.8	2.0
Vocational	7.9	41.9	34.9	12.9	2.1
Primary	7.8	25.5	34.4	25.6	6.2
No formal education	6.4	13.1	26.8	39.5	13.5
<i>Labour market activity:</i>					
Employed	8.3	44.8	36.7	8.9	0.8
Unemployed	10.4	45.4	34.6	7.8	1.1
Inactive	8.2	22.9	31.4	29.0	8.2
<i>Income in categories, per capita in household (in Polish zloty):</i>					
I (up to 200 PLN)	7.9	37.5	33.7	16.5	3.9
II (200-299 PLN)	8.4	34.3	34.1	18.6	4.3
III (300-399 PLN)	8.0	33.3	34.0	20.0	4.3
IV (400-499 PLN)	9.1	32.2	37.3	17.0	4.1
V (500-599 PLN)	10.7	37.5	34.2	13.5	3.5
VI (600 PLN more)	10.7	40.5	34.3	10.7	3.2

Source: Own calculations based on the 1996 GUS Health Status Population Survey.

A descriptive analysis of factors behind self-assessed health status shows that use of medical care by gender is coherent with how individuals describe their health status. The more frequent use of health care services by women can be explained by their worse health-status assessment. Women evaluate their health status as poor or very poor more frequently than men, while the latter seem to view their health status more optimistically. This outcome may be related to the higher life expectancy of women – they live longer and at older ages have a greater tendency to perceive their health status as poor.

Another strong factor linked to self-assessed health status is age. Younger cohorts more frequently evaluate their health status as good or very good. As cohorts grow older, self-assessed health worsens. Again, this result is consistent with findings on health-care services utilisation, which shows that older cohorts use services more often.

The structure of self-assessed health status by place of living and marital status may be strongly correlated to the age structure of the population. The population in rural areas is older than that in urban areas and as such there are more assessments of poor health status, while younger and healthier cohorts who tend to live in cities include students and young persons who have migrated to towns searching for employment. Similarly, single persons, who also tend to be rather young, are the healthiest. Widowed persons, who more frequently evaluate their health status as poor or very poor, usually belong to older cohorts. This clear picture is disrupted, however, when household size is analysed. Individuals living in larger households evaluate their health status better than those in single households. This finding is in conflict with those associated with health and marital status and is later considered in more detail.

Self-assessed health status is also related to education and labour market activity, but it is not strongly differentiated by income level. Generally, better-educated persons assess their health status more positively. This could mean that individuals with higher human capital and higher education have healthier lifestyles. They have more nutritional diets, smoke less, drink less alcohol and generally enjoy better health. Those who lack formal education or only have primary schooling evaluate their health status much worse. Yet the unemployed seem to assess their health status as good more frequently than other groups. This relation is difficult to explain – thus it is interesting to see whether it is confirmed by more detailed, econometric analysis. A worse health status is reported by the inactive population – which would include elderly and disabled persons.

This descriptive analysis of health status is preliminary in nature, presenting possible explanations for differences in the health status of the population. To explain these differences in more detail and understand the relations between the various health statuses, demographic and economic factors need to be considered in a fuller econometric analysis, as discussed below.

8. Econometric analysis of health status and determinants of health-care services utilisation

The objective of econometric analysis is to reveal significant demographic, social and economic factors that explain the health status of the population and use of health care services. For this purpose four logit models are used. In the first model, the relations between self-assessed health status and demographic, social and economic factors are analysed. In the second model, a dependent variable is the utilisation of primary care services. In the third model, use of specialist services is studied, while the fourth model examines use of hospital services. The logit model allows projections of the probability of having specific characteristics through the influence of separate factors, such as gender, age, education, income and others. The analysis is

based on individual data from the 1996 GUS Health Status Population Survey. The study is conducted on a representative sample survey and the results are weighted to the whole population. Explanatory variables include:

- gender
- age
- household size (number of individuals in the household)
- place of living
- marital status
- education level
- labour market status, and
- income in categories.

Each of these variables is transformed into a set of dichotomous variables. In each primary variable, one category is not included in the model and serves as a reference. This allows the analysis to avoid collinearity. For each variable the first category is taken as a reference. This approach assures comparability of the results with other AHEAD WPII country reports.

8.1 Health status determinants

For the purpose of this analysis, the self-assessed health status variable is transformed into a dichotomous variable, where the categories of poor and very poor are combined into one category of ‘poor’ (0) and the categories of average, good and very good are combined into one category of ‘good’ (1).

The results of the logit analysis confirm preliminary findings on gender and age as significant determinants of self-assessed health status (Table 15). Women tend to evaluate their health status worse than men. When analysing the influence of age on health status it is important to state that – when unaffected by other factors – the probability of being in poor health is lower for younger cohorts than for older ones.

An interesting result is the better self-assessed health status of individuals living in large households. The probability of reporting good health status increases with the size of household. When contrasting this result with health status depending on marital status it seems that young, single individuals, who are still living in households with their parents have the highest probability of being in good health. Compared with this group of individuals, married, widowed and divorced persons have a lower probability of evaluating their health status as good.

Analysis confirms the significance of the relation between self-assessed health status and level of education. Having a university degree especially raises the probability of being in good health. Every other group diversified by education level has a lower probability of reporting good health than the better-educated cohorts. The correlation indicates that the lower the level of education, the lower the probability of being in good health. Contrary to the descriptive analysis, here income plays a significant role in self-assessed health status. The probability of being in good health rises steeply for the higher income groups. Again, compared with the lowest income group, the higher the income, the higher is the probability of being in good health. Also, being unemployed lowers the probability of being in good health in comparison with being economically active. As has already been shown by the descriptive analysis, individuals who are inactive in the labour market have less likelihood of being in good health.

Table 15. Results of the logit model of health status determinants

Variable	Odds ratio	Standard error	Significance	Confidence interval	
<i>Gender, reference – Male:</i>					
Female	0.968	0.001	0.000	0.967	0.970
<i>Age, no reference:</i>					
Age	0.947	0.000	0.000	0.947	0.947
<i>Number of individuals in household, no reference:</i>					
HH size	1.122	0.000	0.000	1.121	1.123
<i>Place of living, reference – urban:</i>					
Rural	0.760	0.001	0.000	0.758	0.762
<i>Marital status, reference – Single:</i>					
Married	0.587	0.001	0.000	0.584	0.590
Widowed	0.840	0.002	0.000	0.835	0.845
Separated/divorced	0.409	0.001	0.000	0.406	0.412
<i>Education level, reference – Higher education:</i>					
Post-secondary	0.655	0.004	0.000	0.648	0.663
Secondary	0.582	0.002	0.000	0.578	0.586
Vocational	0.446	0.001	0.000	0.443	0.449
Primary	0.388	0.001	0.000	0.385	0.390
No formal education	0.377	0.001	0.000	0.375	0.380
<i>Labour market status, reference – Employed:</i>					
Unemployed	0.964	0.003	0.000	0.959	0.970
Inactive	0.373	0.000	0.000	0.372	0.374
<i>Income in categories, reference – I category:</i>					
II category	1.352	0.002	0.000	1.348	1.356
III category	1.549	0.003	0.000	1.544	1.555
IV category	1.967	0.005	0.000	1.958	1.976
V category	2.419	0.008	0.000	2.403	2.436
VI category	2.548	0.010	0.000	2.528	2.568
Number of observations: 24053083					
Pseudo R ² = 0.2589					
Log likelihood = -9344386.2					

Notes: The dependent variable is self-assessed health status (poor=0/good=1).

Source: Own calculations based on the 1996 GUS Health Status Population Survey.

8.2 Determinants of primary care utilisation

With an awareness of the self-assessed health status of the population and factors influencing better or worse health assessment, it is interesting to see what factors affect the utilisation of health care services, especially whether specific states of health increase or decrease the probability of using medical care. First, the utilisation of GP services is analysed (Table 16).

Table 16. Results of the logit model of determinants of primary care services utilisation

Variable	Odds ratio	Standard error	Significance	Confidence interval	
<i>Gender, reference – Male:</i>					
Female	1.119	0.001	0.000	1.189	1.193
<i>Age, no reference:</i>					
Age	1.008	0.000	0.000	1.008	1.008
<i>Number of individuals in household, no reference:</i>					
HH size	1.000	0.000	0.568	0.999	1.000
<i>Place of living, reference – Urban:</i>					
Rural	0.916	0.000	0.000	0.915	0.918
<i>Marital status, reference – Single:</i>					
Married	0.771	0.001	0.000	0.769	0.773
Widowed	0.848	0.002	0.000	0.844	0.852
Separated/divorced	0.752	0.002	0.000	0.748	0.756
<i>Education level, reference – Higher education:</i>					
Post-secondary	0.710	0.002	0.000	0.705	0.715
Secondary	0.916	0.001	0.000	0.912	0.919
Vocational	0.803	0.002	0.000	0.800	0.806
Primary	0.901	0.002	0.000	0.897	0.904
No formal education	0.768	0.002	0.000	0.764	0.773
<i>Labour market status, reference – Employed:</i>					
Unemployed	0.627	0.001	0.000	0.625	0.630
Inactive	1.034	0.001	0.000	1.032	1.036
<i>Income in categories, reference – I category:</i>					
II category	1.113	0.001	0.000	1.110	1.115
III category	1.088	0.001	0.000	1.085	1.091
IV category	1.050	0.002	0.000	1.047	1.054
V category	0.920	0.002	0.000	0.915	0.925
VI category	0.968	0.003	0.000	0.963	0.973
<i>Self-assessed health status, reference – Very good:</i>					
Good	1.214	0.002	0.000	1.209	1.218
Average	2.194	0.004	0.000	2.186	2.203
Bad	3.654	0.008	0.000	3.639	3.670
Very bad	3.300	0.010	0.000	3.281	3.319
Number of observations: 24151272					
Pseudo R ² = 0.055					
Log likelihood = -14486421					

Note: The dependent variable is GP services utilisation in the three months before the survey was taken (no GP consultation=0/at least 1 GP consultation=1).

Source: Own calculations based on the 1996 GUS Health Status Population Survey.

The results of the model aimed at distinguishing the factors influencing the utilisation of primary medical care enrich the picture of individual behaviour depending on health status. Women are more likely to undertake a doctor's consultation than men. Similarly, elderly persons, who have a higher probability of being in poor health, are more likely to use primary health-care services than younger persons. Household size, although having a significant influence on self-assessed health status, does not influence the probability of consulting a doctor. An important and significant factor is that the likelihood of visiting a GP is less for individuals living in rural areas than for those living in cities.

Surprisingly, although married or divorced persons are more likely to be in worse health than their single counterparts, they are also less likely to visit a primary care doctor. Yet overall, marital status does not strongly affect the probability of having a GP consultation.

A similar trend is depicted for education. While individuals with less than university education are more likely to be in worse health, they are also less likely to use primary care services. But again, the probability of using primary care services does not differ strongly by level of education.

Unemployed persons have significantly less probability of using primary care services than those in employment. This outcome is partly a result of the relatively good health status of the latter as well as the problems of the former associated with having health insurance or income sources for private health care. Naturally, inactive individuals have a higher probability of using primary health care than their employed counterparts.

Income is negatively correlated to primary care utilisation. Individuals in the higher income strata are less likely to use GP services than individuals with lower incomes.

One factor strongly influencing use of primary care services is self-assessed health status. Here, the correlation is obvious: a poor health-status assessment significantly increases the probability of using primary care services.

8.3 Determinants of specialist care utilisation

Some determinants of specialist consultations are similar to those for primary care utilisation (Table 17). Thus, only the factors that are different are discussed in more detail here.

Contrary to primary care, the probability of using specialist services declines with age. Individuals in younger cohorts are more likely to go to specialists. It would be interesting to analyse the structure of the services they would be likely to use; however, this is out of the scope of this research.

Although household size does not influence primary care utilisation, it is an explanatory factor for use of specialist services. Individuals living in smaller households are less likely to visit a specialist than individuals living in larger families. This result is consistent with the results indicating that married, widowed or divorced persons are also more likely to visit a specialist than those living in single households.

The probability of consulting a specialist rises in the higher income levels. This result confirms findings from the descriptive analysis and could be explained by the costs associated with specialist visits.

Again, health status is an important explanatory factor of health services utilisation. The likelihood of visiting a specialist steeply rises for individuals who assess their health status as poor or very poor.

Table 17. Results of the logit model of determinants of specialist care utilisation

Variable	Odds ratio	Standard error	Significance	Confidence interval	
<i>Gender, reference – Male:</i>					
Female	1.344	0.002	0.000	1.341	1.348
<i>Age, no reference:</i>					
Age	0.971	0.000	0.000	0.970	0.971
<i>Number of individuals in household, no reference:</i>					
HH size	0.961	0.000	0.000	0.960	0.962
<i>Place of living, reference – Urban:</i>					
Rural	0.856	0.001	0.000	0.863	0.867
<i>Marital status, reference – Single:</i>					
Married	1.886	0.004	0.000	1.878	1.893
Widowed	1.481	0.004	0.000	1.472	1.490
Separated/divorced	1.351	0.004	0.000	1.341	1.360
<i>Education level, reference – Higher education:</i>					
Post-secondary	0.916	0.003	0.000	0.909	0.923
Secondary	0.815	0.002	0.000	0.812	0.819
Vocational	0.740	0.002	0.000	0.737	0.744
Primary	0.618	0.001	0.000	0.615	0.621
No formal education	0.462	0.002	0.000	0.459	0.466
<i>Labour market status, reference – Employed:</i>					
Unemployed	0.793	0.002	0.000	0.789	0.797
Inactive	1.443	0.002	0.000	1.440	1.448
<i>Income in categories, reference – I category:</i>					
II category	1.178	0.002	0.000	1.175	1.182
III category	1.266	0.002	0.000	1.261	1.270
IV category	1.446	0.003	0.000	1.440	1.453
V category	1.990	0.006	0.000	1.978	2.001
VI category	1.847	0.006	0.000	1.835	1.858
<i>Self-assessed health status, reference – Very good:</i>					
Good	1.373	0.003	0.000	1.366	1.380
Average	2.467	0.006	0.000	2.454	2.480
Bad	4.935	0.014	0.000	4.907	4.963
Very bad	6.066	0.022	0.000	6.022	6.110
Number of observations: 24151272					
Pseudo R ² = 0.053					
Log likelihood = -10034503					

Note: The dependent variable is specialist services utilisation in the three months before the survey was taken (no specialist consultation=0/at least 1 specialist consultation=1).

Source: Own calculations based on the 1996 GUS Health Status Population Survey.

8.4 Determinants of hospital care utilisation

The probability of using hospital care does increase with age, although the influence is not very strong. The probability of hospital services utilisation is slightly higher for households characterised by a smaller number of inhabitants. Individuals living in rural households are less likely to stay overnight in a hospital, which could be the result of greater distance and less access to hospital care. Similar to specialist care, married, widowed and divorced individuals are more likely to use hospital services than those who are single (Table 18).

Table 18. Results of the logit model of the determinants of hospital services utilisation

Variable	Odds ratio	Standard error	Significance	Confidence interval
<i>Gender, reference – Male:</i>				
Female	1.345	0.002	0.000	1.341 1.348
<i>Age, no reference:</i>				
Age	0.971	0.000	0.000	0.971 0.971
<i>Number of individuals in household, no reference:</i>				
HH size	0.961	0.000	0.000	0.960 0.962
<i>Place of living, reference – Urban:</i>				
Rural	0.865	0.001	0.000	0.863 0.867
<i>Marital status, reference – Single:</i>				
Married	1.886	0.004	0.000	1.878 1.893
Widowed	1.481	0.005	0.000	1.473 1.490
Separated/divorced	1.351	0.005	0.000	1.341 1.361
<i>Education level, reference – Higher education:</i>				
Post-secondary	0.916	0.004	0.000	0.909 0.923
Secondary	0.815	0.002	0.000	0.812 0.819
Vocational	0.740	0.002	0.000	0.737 0.744
Primary	0.618	0.002	0.000	0.615 0.621
No formal education	0.463	0.002	0.000	0.459 0.466
<i>Labour market status, reference – Employed:</i>				
Unemployed	0.793	0.002	0.000	0.789 0.797
Inactive	1.444	0.002	0.000	1.440 1.448
<i>Income in categories, reference – I category:</i>				
II category	1.178	0.002	0.000	1.175 1.182
III category	1.266	0.002	0.000	1.261 1.270
IV category	1.446	0.003	0.000	1.440 1.453
V category	1.990	0.006	0.000	1.978 2.001
VI category	1.847	0.006	0.000	1.836 1.858
<i>Self-assessed health status, reference – Very good:</i>				
Good	1.373	0.004	0.000	1.366 1.380
Average	2.467	0.007	0.000	2.454 2.480
Bad	4.935	0.140	0.000	4.907 4.963
Very bad	6.066	0.220	0.000	6.022 6.110

Number of observations: 23716620; Pseudo R² = 0.069; Log likelihood = -7749463

Note: The dependent variable is hospital services utilisation in the three months before the survey was taken (no hospital consultation=0/at least 1 hospital consultation=1).

Source: Own calculations based on the 1996 GUS Health Status Population Survey.

The probability of having hospital care is strongly related to the level of education. Individuals with a lower level of education are less likely to use hospital services than those having a university degree. The structure of hospital services utilisation by the level of education reflects the structure for the use of specialist care. Since education is typically highly correlated with income level, a higher income increases the likelihood of an individual having used hospital services during the three months prior to the survey. Finally, health status strongly influences individual behaviour and decisions on visiting a hospital. The relation is similar to the utilisation of primary health care and specialist consultations: the worse the self-assessed health status, the higher the probability that health services will have been used.

8.5 Determinants of health status and medical services utilisation – Summary

Econometric analysis aims at identifying the factors that underlie self-assessed health status and drive the utilisation of medical care, along with testing hypotheses based on descriptive research. The results (Table 19) indicate that health status is related to gender, age, education and place of living. Women have a higher probability of reporting a worse health status and using medical services more intensively than men. Levels of education and income are also significant factors explaining health status. Better-educated individuals, who often receive higher incomes, are more likely to be in better health than those with lower levels of education and income.

The outcomes for the utilisation of medical services are not that consistent. Only the hypothesis suggesting that better-educated individuals are more likely to use specialist care is confirmed. This could be related to a more frequent utilisation of specialists, which are accessible through expensive, private-sector services. The most significant factor explaining the use of health care utilisation is definitely self-assessed health status. The relation is obvious: the worse the health status, the higher the probability of using any type of medical service. The utilisation of primary care services is also correlated with age (positively) and income (negatively), while the use of specialist and hospital services is negatively correlated with age and positively correlated with living in urban areas, education and income. A significant factor for services utilisation is the place of living. The population in rural areas tends to use any type of medical service less frequently than those living in urban areas. This result implies poorer access to medical services in rural areas.

An important question is whether the ageing of the population will precipitate a poorer health status and therefore a greater demand for medical services. Naturally, more frequent use does not necessarily indicate significantly higher costs, as it does not reflect the severity of disease or intensity of consultation. The results show a significant relation between health status and ageing. Older cohorts report a much worse health status than younger cohorts. Thus, Polish society can enjoy major improvements in health status (at least self-assessed health status) as long as the population is rather young. This assessment, however, does not clarify the frequency of services utilisation – with the exception of primary care. The results of the econometric analysis indicate that the elderly tend to use primary care services more often than other age groups. This finding could be related to the ease of access to primary care, less severe health problems, and the fact that some GPs fulfil roles beyond purely medical ones (e.g. they could serve as counsellors for older, single or lonely individuals). Older age is also correlated to the use of hospital services, although the relation is not strong.

Table 19. Summary of results – Econometric analysis

	Self-assessed health status	Medical services utilisation		
		GP	Specialist	Hospital
Gender	<i>Descriptive analysis</i>			
	Women evaluate their health status worse than men.	Women use every type of service more often than men.		
	<i>Econometric analysis</i>			
	Confirmed	Confirmed		
Age	<i>Descriptive analysis</i>			
	Strong relation: frequency of poor health status increases with age.	Elderly persons (age 60+) use GP and hospital services more often.	Persons in active ages (35-60) use specialist care more often.	Elderly persons (60+) use GP and hospital services more often.
	<i>Econometric analysis</i>			
	Confirmed	Confirmed	Confirmed	Not confirmed → younger persons are more likely to use hospital services.
Place of living	<i>Descriptive analysis</i>			
	Place of living does not strongly affect health status.	Persons living in urban areas use GP and specialist services more often.	Place of living does not strongly affect hospital utilisation.	
	<i>Econometric analysis</i>			
	Not confirmed → the probability of a good health status is lower for rural areas.	Not confirmed → persons in rural areas are less likely to use any type of service.		
Marital status	<i>Descriptive analysis</i>			
	Widowed persons have poor health; singles have good health (most likely related to age)	Widowed persons use GP and hospital services more often.	Married persons use specialist care more often.	Widowed persons use GP and hospital services more often.
	<i>Econometric analysis</i>			
	Not confirmed → widowed persons are less likely to be in poor health than others	Confirmed	Confirmed	Not confirmed → married persons are more likely to use specialist care.

Table 19. Continued

Number of persons in the household (HH)	<i>Descriptive analysis</i>			
	Persons in single HHs are in poor health more often than persons in large HHs.	Persons in smaller HHs (up to three persons) more often use any type of service than those in large HHs.		
	<i>Econometric analysis</i>			
	Not confirmed → the larger the HH, the better the health status.	Not confirmed → HH size does not affect primary care utilisation, while smaller HHs are less likely to use specialist and hospital care.		
Education level	<i>Descriptive analysis</i>			
	Persons with higher education are in good health more often.	Persons with no formal education or only primary schooling use GP services more often.	Persons with higher education use specialist services more often.	The lower the level of education, the more frequent is the use of hospital services.
	<i>Econometric analysis</i>			
	Confirmed	Not confirmed → the probability of using GP services is not strongly affected by education.	Confirmed	Not confirmed → the probability of using hospital care decreases with education.
Labour market activity	<i>Descriptive analysis</i>			
	Inactive persons are in poor health more often (most likely related to disability).	Inactive persons most frequently use any type of service. Employed persons use GP and specialist services more often than the unemployed.		
	<i>Econometric analysis</i>			
	Confirmed	Confirmed		
Income in categories	<i>Descriptive analysis</i>			
	Those in the higher income strata are more often in good health.	Those in the middle income strata more often use GP services.	Those in the higher income strata more often use specialist care.	Income does not strongly affect use of hospitals.
	<i>Econometric analysis</i>			
	Confirmed	Confirmed		
Self-assessed health status	<i>Descriptive analysis</i>			
	–	The worse the health status, the more frequent is the use of any type of health care service.		
	<i>Econometric analysis</i>			
	Confirmed			

Source: Authors' data.

Summary and conclusions

The analysis presented in this report is an overview of research in several scientific and policy areas: demography, epidemiology and statistical analysis of morbidity, health status and health-care services utilisation. The main findings reflect the demographic and epidemiological development of Polish society in the last few decades. A subject of particular interest is the influence of demographic and health status factors on the use of medical care services and the resulting costs to the health care system incurred by a changing pattern of services utilisation. Naturally, the factors assessed here are strongly interrelated: demographic changes influence the health status of society and together they affect the pattern of utilisation. The period under study covers the last five decades, yet more specific attention has been given to the transition period Poland experienced in the 1990s.

During the 20 years following the Second World War, the demographic processes in Poland showed a dynamic increase and health status improvements were impressive. Yet the starting point for the indicators assessed was very low owing to damage from the war and the poor economic performance of the country. By the middle 1960s, the demographic changes slowed, but remained high compared with other European countries. Around this time the first symptoms of the health crisis affecting men of active age became observable. Epidemiological stagnation and lack of health status improvements continued in the late 1980s and beginning of the 1990s. These trends were especially strong during a short period of social shocks associated with Poland's political and economic transition.

During the 1990s the rate of population increase slowed and finally stopped in 1999. Simultaneously, population ageing began – a trend that has grown stronger in the early years of the new century. This phase of population ageing is characterised by a low fertility rate, increasing life expectancy and falling rates for youth dependency while those for older ages are rising.

Meanwhile, epidemiological research shows that significant improvements have taken place in the health status of the population. In the 1990s, life expectancy rose and mortality owing to circulatory system diseases – the diseases of modern civilisation and the main causes of early deaths – declined. Factors that explain improved health status include behavioural changes, such as reductions in alcohol consumption and smoking, declines in environmental pollution and changes to the health care system, with more attention focused on prevention and health promotion.

Morbidity data reflect the significance of circulatory system diseases – every tenth individual reportedly suffers from some kind of cerebrovascular disease. Yet when concentrating on the effects of ageing on health status and use of health care services, even more important is morbidity related to age. Survey data indicate the importance of diseases related to ageing such as rheumatic and bone diseases, which restrict individual mobility. One of the effects of population ageing on the health care system could be an increased demand for rehabilitation and nursing services for those who face various mobility problems. This point is an early warning of possible future trends.

Improvements in the health status of the population in the 1990s have also been confirmed by an analysis of survey data. Between 1998 and 2003, the share of the population who reported that they were in very good health rose by 5%. Simultaneously, the share of the population in very poor and poor health declined, but remained at a high level of over 10%. Descriptive analysis suggests that the reporting of good health is strongly correlated with age. The elderly more frequently view their health as poor or very poor. These findings were confirmed by the econometric analysis, where poor health status is shown to be linked to old age as well as gender (being a woman). Education and labour market activity are also significant determinants

of health status. A lower level of education is an important factor determining poor health status. More well-educated and wealthier individuals report a better health status, which could be explained by better living conditions, healthier lifestyles and the improved working conditions of the higher economic strata. Another factor explaining good health status is living in urban areas. Again, the lifestyles of the rural population and access to medical services could determine this finding. An interesting result is that good health is correlated with not living alone. This finding is related to the importance of psychological factors associated with good health, such as social networks based on family and friends.

Similar factors are linked to medical services utilisation, where individuals and groups with a higher probability of having a poorer health status are also more likely to use medical services. This finding suggests that factors such as gender (being a woman), living alone, residing in rural areas and having lower education and income levels increase the likelihood of utilising health care services. The impact of ageing on services utilisation is not that strong, as only primary care utilisation is affected by old age. Specialist services are more frequently used by the middle-aged population and hospital services by the younger cohorts. These results could be biased to some extent by the institutional arrangements of the health care system in Poland and the high costs of specialist services or restricted access to hospitals for the elderly population.

In summary, it should be pointed out that while Poland is facing problems related to population ageing, it is still too early to state clearly what the impact of this process will be on medical services utilisation or health care costs. Improvements in the health status of Polish society over the last decade are serving as a counterweight to population ageing. This conclusion suggests that an epidemiological transformation is underway, characterised by a fall in mortality rates from diseases of modern civilisation, especially those of the circulatory system. Nevertheless, the high impact of population ageing will lead Polish society to enter a new epidemiological phase in the near future. Health status will be determined by illnesses and disabilities related to old age and the incidence of 'civilisation' diseases will be greater. This view indicates that the costs of the health care system will rise greatly in the future.

References

- Bielicki, T. (1996), "O niektórych uwarunkowaniach nadumieralności mężczyzn w Polsce" [On selected causes of high male mortality in Poland], in Biuro Spraw Społecznych Kancelarii Prezydenta RP i Fundacja im. F. Eberta, *Dlaczego polscy mężczyźni umierają tak wcześnie?* [Why do Polish men die so early?], Rządowa rada Ludnościowa, Rządowe Centrum Studiów Strategicznych, Warszawa.
- Bijak, J. (1999), "Umieralność" [Mortality], in I. Kotowska (ed.) *Przemiany demograficzne w Polsce w latach 90. w świetle koncepcji drugiego przejścia demograficznego* [Demographic changes in Poland in the 1990s, context of the second demographic transition], SGH, Warszawa, pp. 180–92.
- Boleslawski, L. (1993), *Polskie tablice dzietności kobiet 1971–1992* [Female fertility tables in Poland, 1971–1992], GUS, Warszawa.
- Centrum Systemów Informacyjnych w Ochronie Zdrowia (2004), *Biuletyn statystyczny Ministerstwa Zdrowia 2004* [Statistical Bulletin of the Ministry of Health 2004], Warszawa.
- (2003), *Biuletyn statystyczny Ministerstwa Zdrowia 2003* [Statistical Bulletin of the Ministry of Health 2003], Warszawa.
- (2002), *Biuletyn statystyczny Ministerstwa Zdrowia 2002* [Statistical Bulletin of the Ministry of Health 2002], Warszawa.
- (2001), *Biuletyn statystyczny Ministerstwa Zdrowia 2001* [Statistical Bulletin of the Ministry of Health 2001], Warszawa.
- Fratczak, E. (2003), "Przemiany płodności i rodziny w Polsce i Europie: Oceny – interpretacje – teorie – polityka rodzinna" [Fertility and family changes in Poland and in Europe: Evaluation – interpretation – hypothesis – family policy], in Z. Strzelecki (ed.), *Procesy demograficzne u progu XXI w, Polska a Europa* [Demographic processes at the beginning of the 21st century, Poland and Europe], Warszawa.
- Golinowska, S., Z. Czepulis-Rutkowska, M. Sitek, A Sowa, C. Sowada and C. Włodarczyk (2002), *Opieka zdrowotna w Polsce po reformie* [Health Care in Poland after the reform], Raporty CASE No. 53/2002, Centrum Analiz Społeczno-Ekonomicznych, Warszawa.
- Goryński, P. and B. Wojtyniak (2001), *Highlights on Health in Poland*, PZH, Warszawa.
- Central Statistical Office (GUS) (2004), *Prognoza demograficzna na lata 2003–2030* [Demographic projections for the period 2003–2030], Warszawa (retrieved from <http://www.stat.gov.pl>).
- (2004), *Ochrona zdrowia w gospodarstwach domowych w 2003 r.* [Health care in Households in 2003], Warszawa.
- (2000), *Ochrona zdrowia w gospodarstwach domowych w 1999 r.* [Health care in Households in 1999], Warszawa.
- (1999), *Ochrona zdrowia w gospodarstwach domowych w 1998 r.* [Health care in Households in 1998], Warszawa.
- (2003), *Podstawowe dane z zakresu ochrony zdrowia w 2002 r.* [Basic health care data in 2002], Warszawa.
- (2002), *Podstawowe dane z zakresu ochrony zdrowia w 2001 r.* [Basic health care data in 2001], Warszawa.

- (2001), *Podstawowe dane z zakresu ochrony zdrowia w 2000 r.* [Basic health care data in 2000], Warszawa.
- (2000), *Podstawowe dane z zakresu ochrony zdrowia w 1999 r.* [Basic health care data in 1999], Warszawa.
- Holzer, J.Z. (1994), *Demografia* [Demography], PWE, Warszawa.
- Kędelski, M. (1993), “Regres demograficzny w Polsce” (1981–1992) [Demographic regress in Poland, 1981–1992], *Studia demograficzne* [Demographic studies], No. 2, p. 112.
- Kornafel, D. (1995), *Czynniki determinujące urodzeniową masę ciała człowieka* [Determinants of human birth weight], Wydawnictwo Uniwersytetu Wrocławskiego, Wrocław.
- Ministry of Health (2004), *Green Book of Health Care Financing*, Warszawa.
- OECD (2004), *OECD Health Data (2004): A comparative analysis of 30 countries*, OECD, Paris.
- Ofer, G. (1977), “Economizing on urbanisation in socialist countries: Historical necessity or socialist strategy”, in A. Brown and E. Neuberger (eds), *Internal migration: A Comparative Perspective*, New York: Academic Press.
- Olhansky, S.J. and A.B. Ault (1986), “The fourth stage of the epidemiology transition: The age of delayed degenerative diseases”, *The Milbank Memorial Fund Quarterly*, Vol. 64, No. 3.
- Okólski, M. (2004), *Demografia zmiany społecznej* [Demography of social change], Scholar, Warszawa.
- (2002), “Przemiany ludnościowe we współczesnej Polsce w perspektywie minionego stulecia” [Population changes in contemporary Poland from the previous century perspective], in M. Marody (ed.), *Wymiary życia społecznego* [Social life dimensions], Scholar, Warszawa.
- Pająk, A. (2000), “Zagrożenie choroba niedokrwioną serca w populacji polskiej. Czy nastąpił przełom?” [The threat of ischaemic heart disease in Poland: Is the peak over?], *Medipress Kardiologia*, Supp. No. 5, pp. 3–9.
- Paradysz, J. (1992), *Dzietność kobiet w Polsce* [Female fertility in Poland], GUS, Warszawa.
- Szafrński, J. (1962), “Straty biologiczne i gospodarcze” [Biological and economic losses], in *Straty wojenne Polski* [Costs of war in Poland], Wydawnictwo Zachodnie, Poznań.
- Tabeau, E. (1996), “Mortality in Poland in 1989–1993: A response to economic reforms?”, *Studia Demograficzne*, 1-2, pp. 123-24.

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