



THE IMPACT OF POPULATION AGING ON HEALTH NEEDS AND EXPENDITURES IN POLAND

Policy Paper for the World Bank Central Europe and the Baltics
Aging Project (P133203)

The note was drafted by Carmen de Paz with the cooperation of Emily Sinnott based on a background paper entitled "Ageing, Health Expenditure and Health Policy Review for Poland" by Stanisława Golinowska, Ewa Kocot and Agnieszka Sowa (June 2014).

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1. Introduction

Both population aging trends and the epidemiological and life-style changes underway in Poland pose significant challenges for health policy and expenditures in the coming years. Although the impact of population aging on health has not been prioritized in the public and policy debate, which has focused on old-age activation policies and pensions systems so far, the implications of these trends for the health sector will become increasingly important in the near future. The Polish society will gain if the likely impact of the undergoing shift is considered and addressed earlier than later in the process.

One of the key challenges moving forward will be the fulfilment of the health and care needs of the growing group of the elderly, in a context where the younger cohorts of the population will shrink, life spans will increase and non-communicable diseases will become the main source of mortality and morbidity. Chronic conditions and disability or mobility impairments are likely to prevail among an increasingly larger share of the population and for longer periods, resulting in changing demands for health services. In addition, and partly as a consequence of those new demands, health expenditures are expected to increase, while fiscal revenues are bound to diminish given the expected decline in the working age population. These patterns will therefore require relevant adjustments in health policy, financing and service provision.

The overall objective of this study is to serve as the basis for policy recommendations to address the implications of population aging for health from an integrated perspective. With this view, this report aims to: (1) present the ongoing social changes and their consequences with regards to the health and care needs of older people; (2) analyze their impact on health expenditures, through projections up to the year 2050. Section 2 details some of the main demographic and epidemiological trends in Poland and analyses the health status of the elderly in the country and their utilization of care services; section 3 provides an overview of the overall health and long-term care expenditures over the last years; and section 4 presents the results of the projection of future health and long-term care expenditure trends by age groups and categories of services.

2. Demographic and epidemiological trends and health status/health service utilization of the elderly in Poland

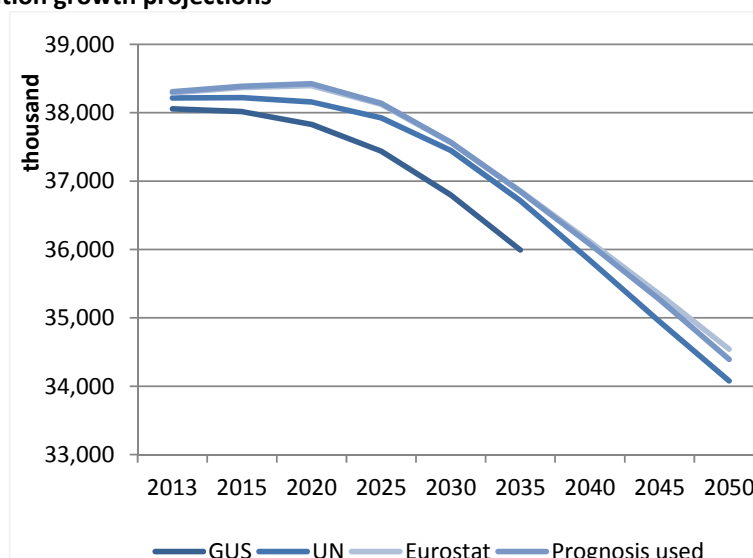
2.1 Demographic and epidemiological trends

Following a period of continued population growth until the 1980s and the stabilization of the population size in recent decades, the Polish population growth rate is projected to turn negative in the coming years...

The Polish population grew steadily over the period following the Second World War and up to the 1950s and again from 1967 until 1983. From then onwards the population size stabilized at the level of 37.8-38.5 million until recent years. These trends have been driven mostly by changes in fertility and mortality rates. The fertility rate in Poland has been decreasing since the 1950s, reaching 1.3 in 2012, way below the average among EU15 countries and new member States. Migration has further contributed to this process, as total net migration was positive for the last time in 1959. In 2002, and for the first time in post-war Polish history, the population growth rate was negative. Population projections indeed show a significant decrease of around 10% in the population size by 2050 (see

Figure 1). At 34 million people, the size of the population in Poland will then be comparable to the levels observed in 1974.¹

Figure 1: Population growth projections



Source: GUS 2009, UN World Population Prospects, Eurostat Database

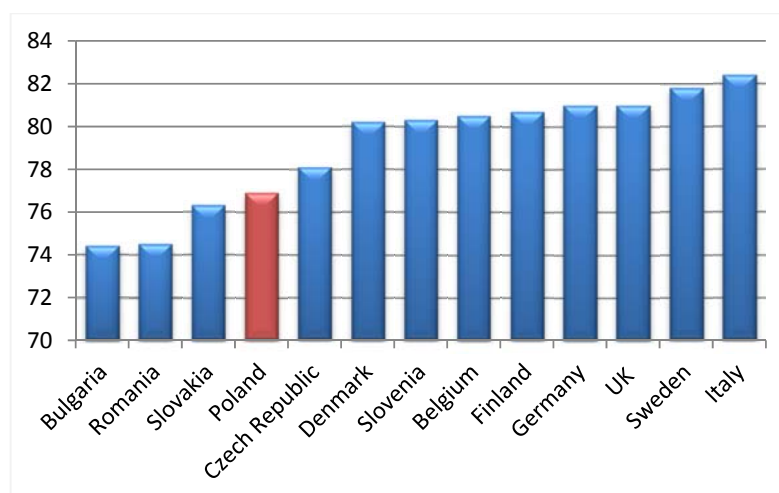
Note: Figure 1 reflects different projections based on three data sources: Eurostat (*Europop2010*), United Nations (*World Population Prospects*), and the Polish Central Statistical Office. The prognosis used is based on the *Europop2010* projection, but including an update of assumptions concerning fertility, life expectancy and migration.

Mortality rates have decreased and their main drivers have changed over time, with cardiovascular diseases and cancer accounting for most of deaths in the country today...

The average life expectancy of male and female newborns has grown by 6.5 years and 5.8 years respectively compared to 1990 levels, although total life expectancy is still low compared to other EU countries (see Figure 2). The total mortality rate in Poland oscillates at the level of 10 deaths per 1000 population annually (crude death rate) or 7.5 per 1000 (age standardized).

¹ The prognosis used was regarded as the most accurate mainly because of the most detailed data availability and longer forecast period, and because the differences between forecast and real data for the base year (2012) are the smallest given that it is relatively recent. The Eurostat projection is almost identical. The UN projection foresees slightly lower population size, but the difference is below 1%. The least favorable is GUS projection. The forecasted horizon is only 2035, but the difference is higher than 2% (approximately 850 thousand people). Differences in projections are most likely attributable to data used, especially to the differences in the base year used: the GUS projection was prepared based on the 2008 data while other projections (i.e. Eurostat) were based on 2010 population data.

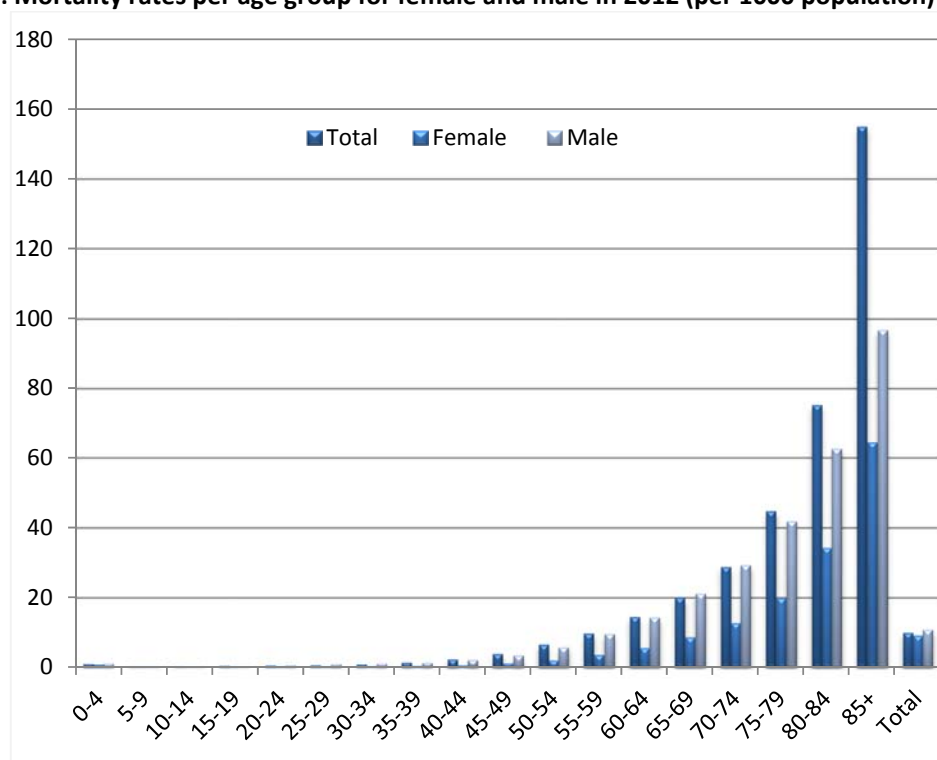
Figure 2: Total life expectancy (less than 1 year old) in EU countries (2012)



Source: Eurostat

Age-standardized mortality rates have decreased across age groups over the last decade, although large differences can be observed by sex: in each age group between 15 and 74 years of age the mortality of males is almost twice that of females and for some older age groups it is even four times higher, leading to marked differences in life expectancy (see Figure 3).

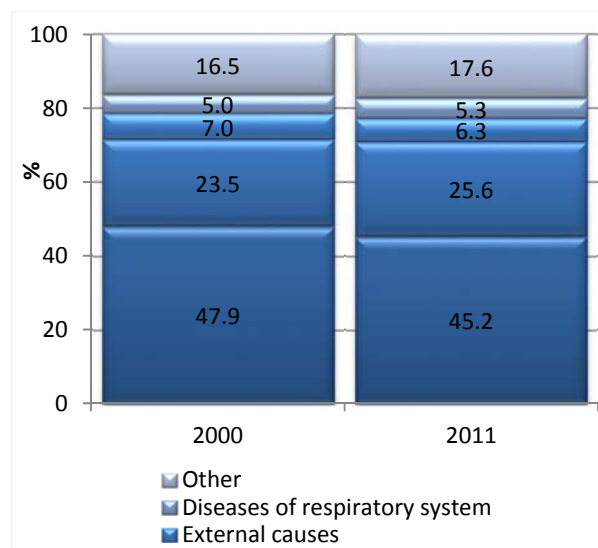
Figure 3: Mortality rates per age group for female and male in 2012 (per 1000 population)



Source: GUS <http://demografia.stat.gov.pl/bazademografia/Tables.aspx>

In the post-World War II era, infectious diseases became the main driver of mortality in Poland, and up to the early 1960s. Different technical and medical advances allowed to gradually overcoming that phase, and coronary heart and other cardiovascular system diseases started to be the main cause of death over the 1990s. Although the proportion of deaths caused by these conditions decreased by 6% between 1999 and 2011, the number of deaths caused by cancer grew by 15%. Together, they were responsible for 70% of the total number of deaths in Poland in 2011, followed by external factors (accidents, poisoning and injuries) and respiratory system diseases, which account for only 12% of the total mortality (see Figure 4).

Figure 4: Mortality causes

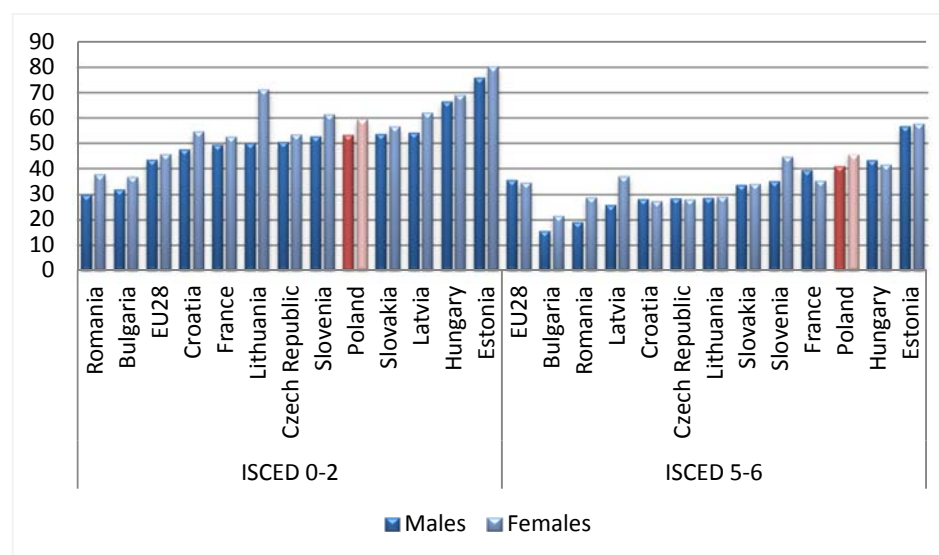


Source: Local Data Bank GUS

Although people have longer lives in Poland today, they are more likely to age in poor health conditions...

Despite the general decrease in mortality rates and the increase in life expectancy, Poland, as other Eastern European countries, is characterized by high morbidity rates among the middle-aged population, which is facing old age with a greater burden of disability than in other regions. The percentage of 55-64 year olds that report having a long-standing illness is larger in Poland than in many other new EU member States (see Figure 5).

Figure 5: Percentage of 55-64 year olds reporting a long-standing illness, 2012 data



Source: Eurostat

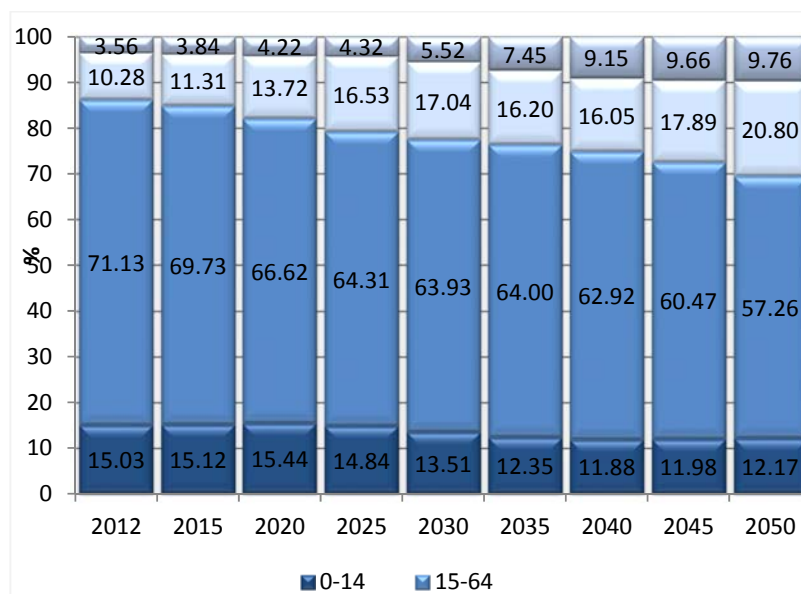
The demographic structure of the population is changing in Poland, and population aging is expected to intensify in the coming years...

Population aging is the inevitable consequence of the observed changes in fertility and mortality in the country. The share of the population 65+ years old was growing over the whole post-war period, while the youngest age group has been decreasing. However, the working age population also increased over the period, and when compared to many EU countries Poland was and still is a relatively young country.

The population aging process is expected to intensify in the next forty years. Based on population projections, the share of 0-15 and of 15-64 years old are expected to decrease by around 27%, especially in the period 2024-2038.. The 15-64 years old group is expected to experience a 14% decline as a share of the total population by 2050, while the proportion represented by the 65+ years old group will grow by over 10% (6% in the case of 80+) (see Figure 5).

It is particularly noteworthy that a rapid increase in the 65-79 cohorts will occur between 2012 and 2026, and therefore in the oldest age group (80+) in following years. The simultaneous aging of this generation of baby-boomers poses significant challenges for the country, especially in terms of health, and given the already high degree of morbidity and disability registered by middle-aged people in the country.

Figure 5: The structure of population by age groups



Source: own calculations

2.2 The health status of the elderly and utilization of care

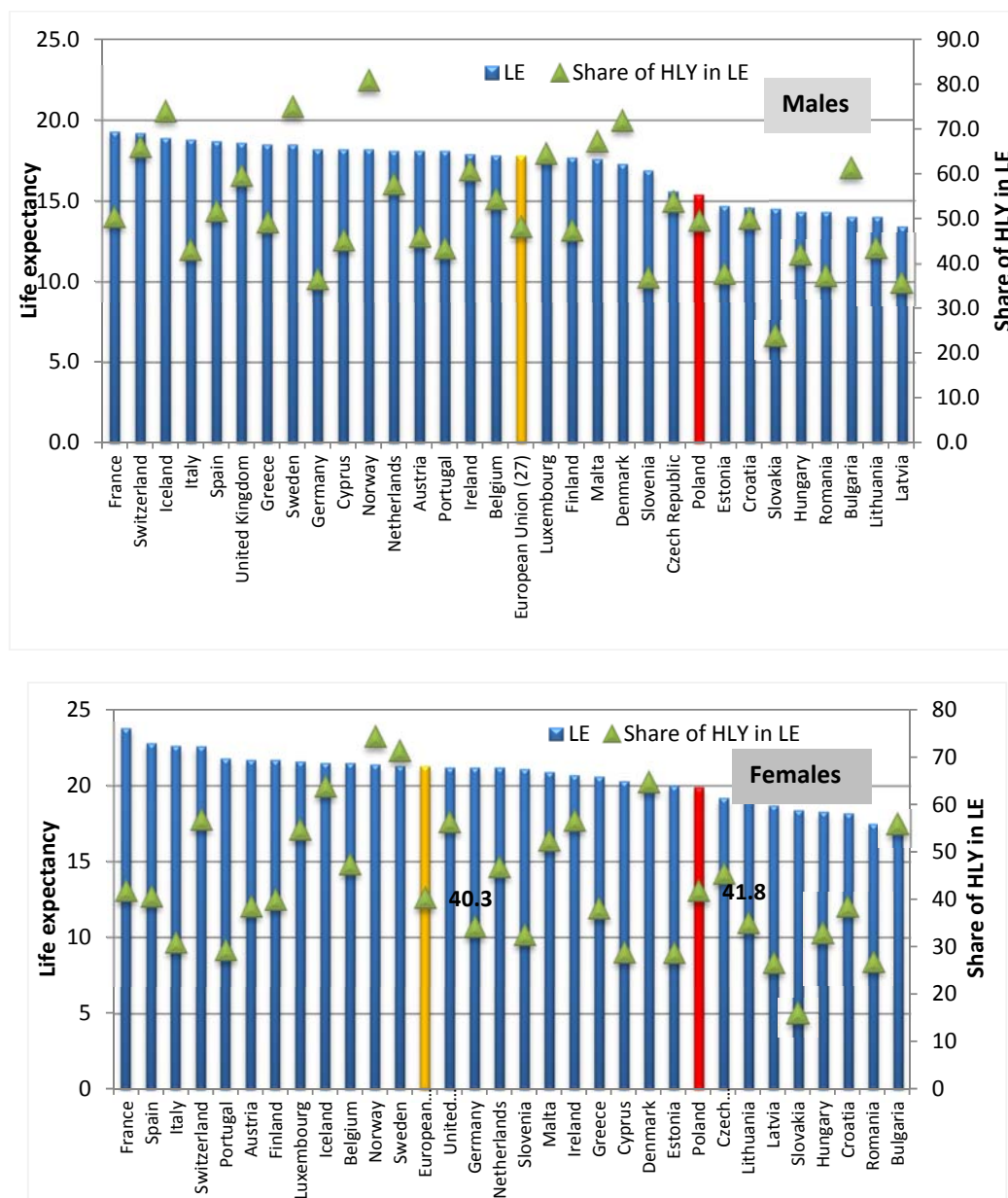
The average longevity of the elderly has increased over the last decades, but the incidence of poor health, functional limitations and disability is high...

Old age is characterized by the coexistence of many diseases at the same time and limitations in functional capacity and especially mobility, often leading to disability. Health status surveys indicate that every third person over 70 years of age states having difficulties in self-service and every second person claims facing difficulties in the performance of household activities (GUS 2011).

The mortality decrease observed in the Polish population in the last decades was accompanied by the improvement in the average life expectancy of the elderly. The average life expectancy of females and males 65+ years old increased by 4.3 and 3.3 years on average respectively.

However, comparative analyses suggest that the level of functional limitations in Poland is much higher than in other European countries (Marcinkowska, Sowa 2011) and will increase in the coming years (Bonneux L. van der Gaag 2012) (see Figure 6). Over 70% of Poles above 65 years of age state that their health status is worse than good and 30% feels it is poor or worse, way above reports in other European countries (White, 2011). As shown in Figure 6, the share of healthy life years in Poland is much lower than overall life expectancy, especially for women, although it remains above the EU27 average.

Figure 6: Life expectancy and healthy life years of males and females at age 65



Source: GUS 2011

Morbidity associated with cardiovascular diseases in the elderly population is still high, with the most common diseases being hypertension (56%), arrhythmia (34%), ischemic heart disease (22%) and heart failure (11%)² (Grodzicki, Mossakowska 2011). Other common conditions include pulmonary system diseases (17%), diabetes (17%), diseases of bones and joints and osteoporosis (15%), and psychiatric disorders and dementia. In fact, European survey research shows a high incidence of depression in the population over 50 years of age compared to other European countries, especially for women (Golinowska, Sowa 2012).

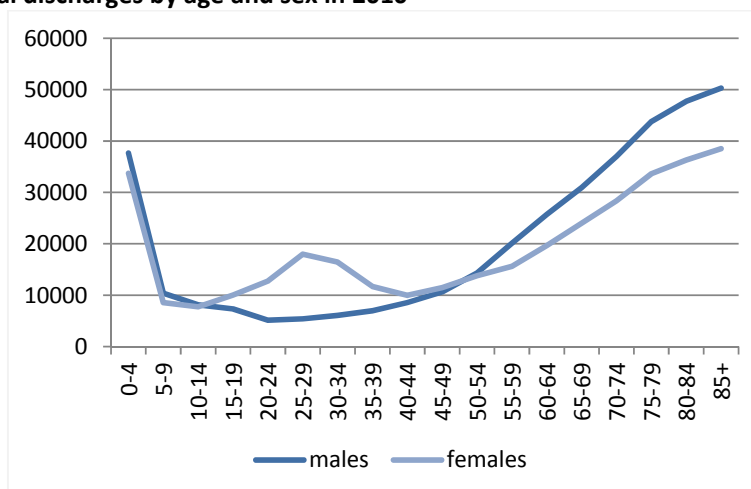
² Data on morbidity in the elderly population are taken from the survey performed in the PolSenior project. The survey was country representative and covered 5695 persons above 55 years of age.

The population over 65 represents the largest share in total patients of medical and care services, including hospitals care and rehabilitation...

The elderly population faces specific health needs, which result in high medical and care services utilization rates. The population over 65 accounts for almost one third of all primary care patients, one fourth of the ambulatory specialist care, over 40% of the patients of cardiologists and over 30% of patients of oncologists and specialists in pulmonary system diseases and ophthalmologists. At the same time, survey results show a relatively high (14-16% of the 65-74 population) proportion of unmet needs for medical examinations due to high costs, lack of geographical availability or waiting times.

Utilization of hospital care has been constantly increasing in Poland due to inadequate health awareness and limitations in access to specialist care, specifically among the elderly rural populations, leading to the use of care in more advanced stages of disease. The population over 65 years old accounts for one third of all hospital patients, especially in the case of men (see Figure 7). Daily or residential medical rehabilitation is often a continuation of the hospital treatment. Utilization of rehabilitation also strongly increases with age, as the largest group of patients is the 50-75 years old group.

Figure 7: Hospital discharges by age and sex in 2010



Source: online data from Eurostat

The elderly make more frequent use of health and social home long-term care...

Despite the domination of informal family care in Poland, to a much higher extent than in other European countries (ANCIEN – Markus, Riedel 2012), the elderly population also uses formal long-term care. Long-term care services are offered both in the health and social sectors. The elderly are offered nursery (health sector) and home care (social assistance) services in their places of living, and residential care services.

Institutions of the health sector include hospitals, Care and Treatment Facilities (Zakład Opiekuńczo-Lecniczy) and Nursing and Care Facilities (Zakład Pielęgnacyjno-Opiekuńczy), while residential care in the social assistance sector is offered in the social assistance homes (Dom Pomocy Społecznej). Almost 60 thousand people used nursing home care services in 2012, 80% of whom were in the 65+ year old age group. Most of the services were provided for the oldest group, 80 years old or more, mainly women.

The low residential care utilization rate is determined not only by scarce supply, but most of all by cultural factors. Only 0.9% of the elderly population (65+) used long-term residential care in 2008, much below the average OECD level (4.2) (WHO 2011). The population above 65 years of age accounts for 84% of residents in stationary long-term care in the health sector. The largest group of patients is women between 80 and 90 years of age. The elderly constitute the largest group of beneficiaries of this type of care in social assistance homes in wards for the elderly and chronically ill (84%) and an important share (50%) in social assistance home of other type³.

³ Central Statistical Office data prepared specifically for this analysis.

3. Trends in health care expenditures

3.1 Health expenditure overall

Although health spending in Poland –mostly public– is low as a share of GDP by European standards, it is at par with other OECD countries when income levels are considered.....

Health spending increased in real terms by 7% per year on average between 2000 and 2009 in Poland (OECD 2013), not only as a result of aging but also in connection with other factors (see box 1). If health related expenditure (investment and training of medical personnel) is taken into account, a three-fold increase in health spending can be observed between 1999 and 2010. Total expenditure currently amounts to 1,452 USD PPP *per capita*, of which 70% is public (OECD 2013).

Box 1: Main drivers of health care expenditure in the EU

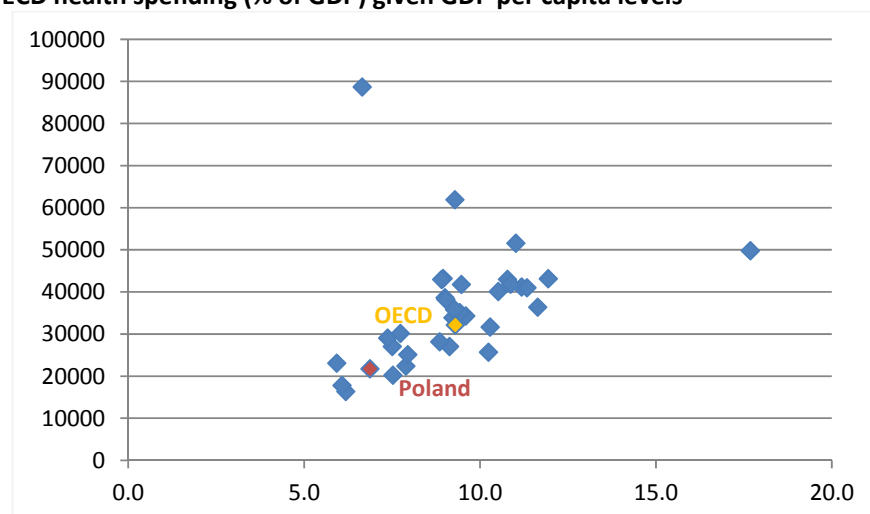
A variety of factors appear to explain changes in health care expenditure, both from the demand and supply side. From the demand side, these include the size of the population, its structure and overall health status, income (individual and country-level), education and cultural aspects, and the regulation of access to health services. From the perspective of the supply, some of the main determinants of expenditure are the availability and accessibility of health services, technological improvements, and the institutional set-up.

Health spending generally increases with age, especially from age 55 for men and 60 for women in the EU countries. Decreases in mortality or increases in longevity, would therefore translate into higher expenditures, in particular if not accompanied by improvements in the health status of the population. However, when the effect of aging is discounted, the “excess cost growth” (the excess of growth in per capita health expenditures over the growth in per capita GDP) appears to be mainly determined by technological change (from 27 to 75% according to different studies).

Source: EU (2014)

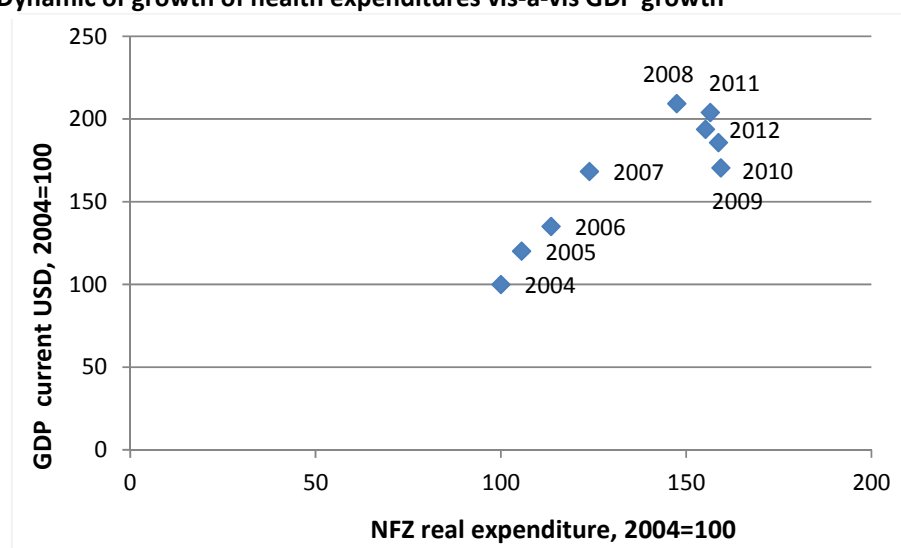
Poland belongs to the group of OECD countries with the lowest total expenditure on health *per capita*. The low share of total health expenditure in GDP partly explains this low level of spending per person. Health expenditure has not yet exceeded 7% of GDP in Poland compared to an average 9.3 on OECD countries (OECD 2013). However, Poland’s spending on health is not significantly different from that of other OECD countries with similar income levels (see Figure 8).

Figure 8: OECD health spending (% of GDP) given GDP per capita levels



The National Health Fund (NFZ) is the main payer in the Polish health care system. Its spending accounted for over 66% of the total and almost for 92% of the public spending in 2011 (GUS 2012). The NFZ expenditure have steadily increased since the creation of the fund, mainly due to the premium growth program (0.25% increase per year) and the raise in salaries of medical personnel introduced by the government in 2008 in order to stop the emigration process. Between 2004 and 2012 health care expenditures increased by 95% in nominal terms (55% in real terms). Total NFZ expenditure on health services amounted to 59.5 billion PLN in 2012 (63.2 billion PLN in 2013). GDP growth and real NFZ expenditures growth over the period appear to be correlated (see Figure 9).

Figure 9: Dynamic of growth of health expenditures vis-à-vis GDP growth

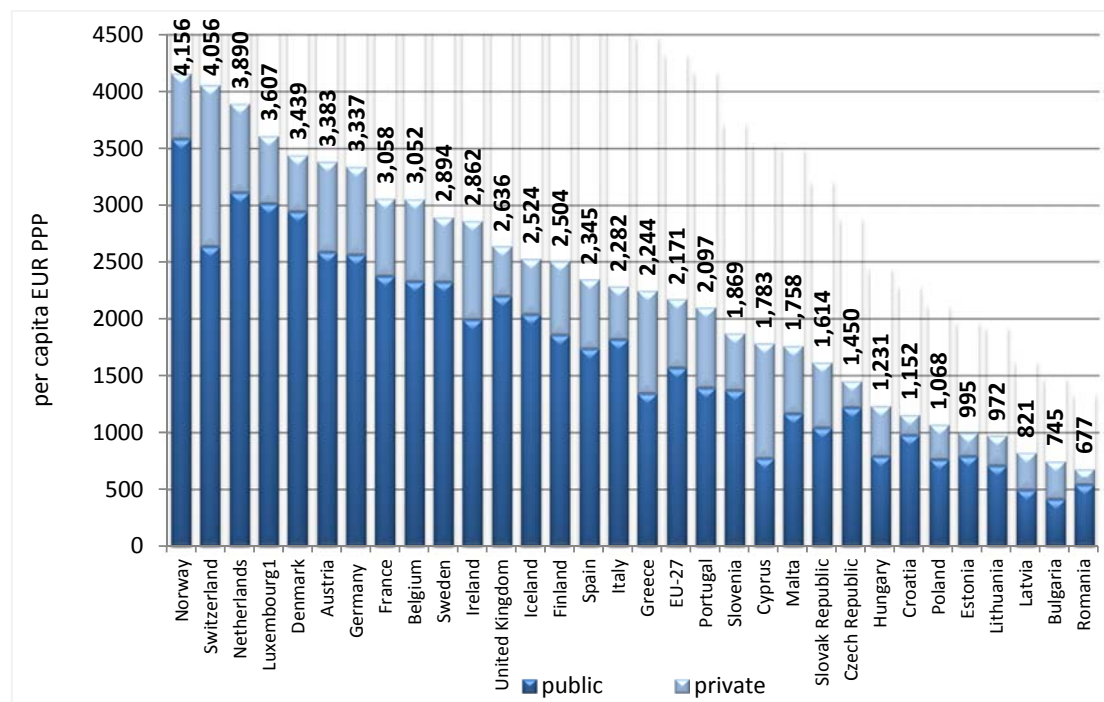


Source: Sprawozdania NFZ z lat 2004-2012; World Bank Development Indicators.

Health expenditures are concentrated on the 0-4 and 75-79 year old age groups with hospital treatment and reimbursement of medicines being the largest categories of expenditure for 65+ people...

Spending on health per capita is low by European standards (EU27) in Poland, which ranks only above Romania, Bulgaria, and the Baltic countries (see Figure 10). Around 70% of the funding comes from public sources, slightly below the OECD average of 72% (OECD, 2013). Out-of-pocket payments as a share of total spending in Poland increased significantly between 1990 and 1991, to then register a slightly upward trend up to the recent economic crisis (2007). OOP spending has decreased as a percentage of the total over the last years, reaching 22.3% in 2011, above the 19.6% OECD average.

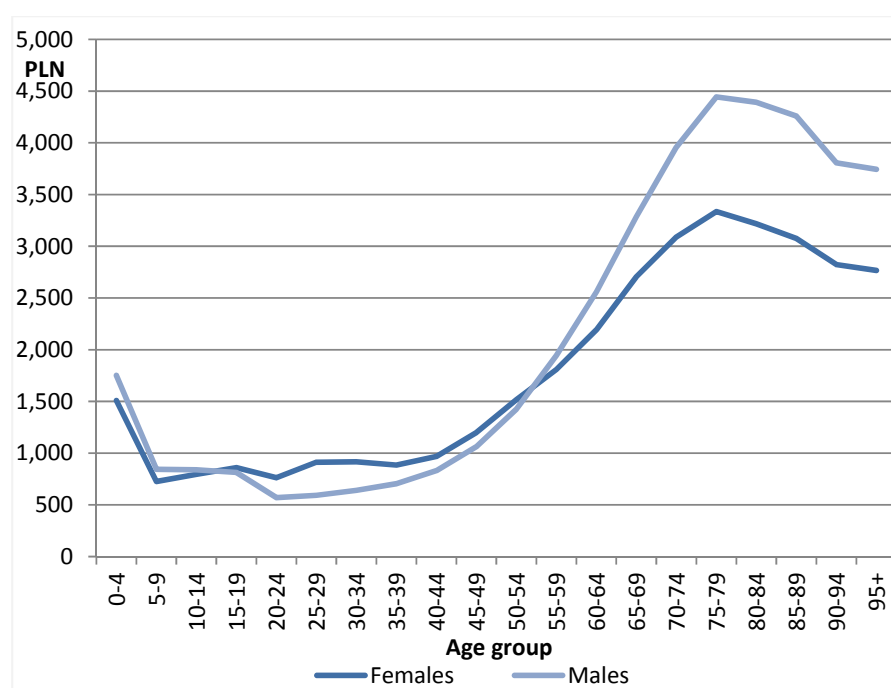
Figure 10: Health expenditures in European countries



The age-specific NFZ (public) expenditures per capita represent the shape of the so-called "J curve", characteristic of this type of expenditure worldwide (OECD 2006, European Commission 2006, Griffin, Golinowska, Kocot 2011). The youngest age group (0-4) shows a relatively high per capita expenditure, both for girls and boys, due to the intensive use of the prevention procedures, frequent treatment/monitoring visits in the first years of life, childhood diseases and expensive neonatal care. Between the ages of 5 and 50, expenditures are almost stable and the lowest in the lifecycle.

After 50 years of age there is a rapid increase in expenditure due to the growing incidence of various health problems, which is more intense for men than for women. The maximum level of expenditure per capita occurs in the age group 75-79 while in older age health expenditures decrease slowly, most likely in connection with the rationing of treatment due to the patient's age (see Figure 11). Hospital treatment, primary health care and the reimbursement of medicines account for three-quarters of total expenditure, with hospital treatment alone representing half of the total NFZ expenditure.

Figure 11: Health expenditure per capita by age group



Source: own calculations based on NHF data 2012

NFZ expenditures on the population 65+ represent 30% of total spending (60% when the age group 50-64 is added). There are significant differences in spending *per capita* across age groups. Table 1 below presents the different spending age profiles across a sample of countries. In the case of Poland, it is clear that spending per capita is concentrated in the middle-aged population (50-64) and the 80+ years old, while in the rest of countries expenditure per capita becomes significantly higher for the 65+ years old than the rest of age groups.

Table 1: Relative per capita health spending, by age cohort

	0-14	15-19	20-49	50-64	65-69	70-74	75-79	80 +
Australia	0.6	0.57	0.64	1	1.81	2.16	3.9	4.23
Austria	0.28	0.28	0.46	1	1.42	1.75	1.98	2.17
Canada	0.43	0.61	0.65	1	2.45	2.44	4.97	7.54
Germany	0.48	0.43	0.58	1	1.52	1.8	2.11	2.48
Japan	0.44	0.22	0.43	1	1.7	2.2	2.76	3.53
Norway	0.57	0.34	0.52	1	1.7	2.21	2.69	3.41
Spain	0.57	0.39	0.48	1	1.46	1.73	1.97	2.11
Sweden	0.43	0.43	0.63	1	1.5	1.5	1.96	1.99
UK	1.08	0.65	0.76	1	2.07	2.07	3.67	4.65
USA	0.88	0.82	0.77	1	5.01	5.02	8.52	11.53
Poland	0.56	0.14	0.88	1	0.52	0.61	0.68	2.45

Source: Hagist, C. and Kotlikoff, L.J. (2005); own calculations based on NHF data 2012

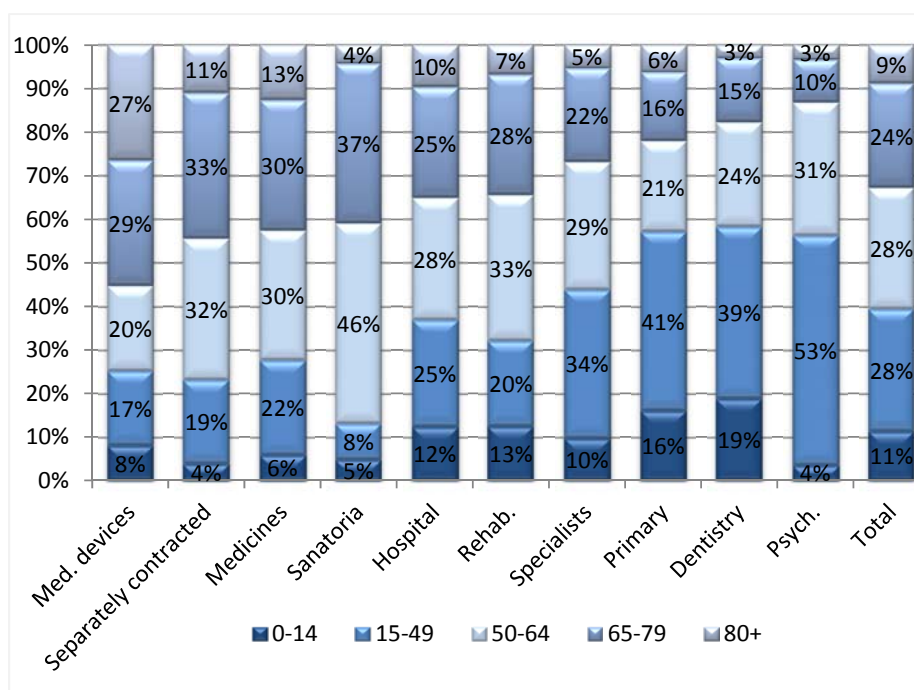
Notes: Data for Australia, Canada, Germany, the UK, and the U.S. come from the following respective government agencies: the Australian Institute of Health and Welfare (2004), the Minister of Public Works and Government Services Canada (2001), the German Federal Insurance Authority (2003), the United Kingdom Department of

Health (2002) and the Centers for Medicaid and Medicare Services (2003). Austria's profile comes from Hofmarcher and Riedel (2002). Japan's profile comes from Fukawa and Izumida (2004). Norway's profile comes from Fetzer, Grasdahl, and Raffelhüschen (2005) who analyze the Norwegian health sector within a Generational Accounting framework. Profiles for Spain and Sweden are based on the work of Catalán, et. al. (2005) and Ekman (2002), respectively. The shape of the age-government healthcare expenditure profile for the U.S. reflects, to a large extent, the fact that Medicaid covers a relatively small fraction of the population at any age, and certainly under 65, whereas Medicare covers everyone 65 and over. Exchange rates PLD-USD are from World Bank, 2013; exchange rates UDS-Euro are from IMF, 15 Dec 2013.

The largest overall spending is observed on the supply of medical products (55%), and then for separately contracted services (45%), medicines reimbursement (43%), sanatoria (41%) and rehabilitation (35%). However, except for the reimbursement of medicines, the above mentioned types of service account for only about 5 % of the total expenditure, so they are not likely to have a significant impact on the total amount of projected spending.

Around 35% of total hospital expenditure is generated by the 65+ population (for the 50+ group as much as 63%), while people aged 65 + only represent about 14% of the population. As the hospital expenditures are half of the total expenditures, a large influence of the aging population for this type of expenditure can be expected. The share of spending on primary care treatment for the elderly, which represents 13% of the total expenditure, is relatively low: 22% for the population 65+ and 43% for the population 50+, mainly due to the capitation method⁴ of financing of primary health care in Poland.

Figure 12: The structure of total expenditures by age for different types of care*



*Data ordered by the values for the age group 65+

Source: own calculation based on NFZ data

⁴ The spending does not depend on the frequency of services use, but mainly on the number of persons registered on the physicians' list.

The *per capita* health care spending for the population 65+ is higher than average for all types of health expenditures in Poland, except for psychiatry and dentistry where differences are almost unnoticeable. A particularly large difference between the value for the elderly and the average value for the whole population can be observed for hospital treatment; *per capita* expenditure for the older group is almost 2.5 times higher than for the general population and more than three-times higher than for the 0-64 group (see Figure 12).

3.2 Long-term care expenditures

Formal public expenditure on long-term care has been increasing over the last decade for all categories...

Poland is among the countries with an exceptionally high importance of family in provision of care for dependent elderly. As a result, resources devoted to funding long-term care and family support in care for the dependent family members come from numerous sources, both public and private. The total long-term care expenditures (public and private) would have the following components: (1) expenditures on residential care services in the health care sector (in hospital and separate care facilities); expenditures on home nursing care, provided and financed within the health sector; expenditures on residential care in the social sector; expenditures on home care provided and financed within the social sector; expenditures on residential and home care run by the NGOs (including public subventions); co-payment of recipients and their families; expenditures from individual incomes on long-term care services provided informally (by nurses and carers at home) and on residential commercial facilities.

Whilst public long-term care expenditures can be identified and/or estimated (with some approximation as expenditures targeted at the older dependent population are not known for all types of services), private expenditures are not monitored and therefore cannot be calculated. As portrayed in the table below, overall formal expenditure on long term care has been strongly increasing in the years 2004-2012 and amounted to almost 14 billion PLN in 2012, in connection with various factors (see box 2). Cash benefits account for almost half of the total, followed by social assistance residential care as the second largest group of expenditures. Total long-term care expenditures have been growing in nominal terms, whilst in real terms a significant growth was observable only in the period of 2004-2006. After that period it stabilized at the level of 11 billion PLN.

Health sector expenditures - residential, nursing care and palliative care and hospices – mostly concentrate on the elderly...

The health care sector dominates publicly funded long-term care, covering nursing care provided to a lesser extent in hospitals and to a much larger extent in Care and Treatment Facilities and Care and Nursing Facilities (Zakłady Opiekuńczo-Lecznicze and Zakłady Pielęgnacyjno-Opiekuńcze), and palliative care (in the last months of life). Overall, the NFZ spends almost 559 million PLN annually (years 2011-2012) on long-term care, and 80% and 51% of this amount concentrate on the 65+ years old and 80+ years old groups respectively. Expenditures on nursing home care amounted to 298.6 million PLN in 2011 and around 85% and 55% of this amount was devoted to the elderly above 65 and 80 years of age, respectively. The total expenditures related to palliative services, also funded by NFZ, amounted to 326 million PLN in 2012 and 60% and 20% of that expenditure was related to care for persons 65+ and 80+ years old, respectively.

Table 2: Estimation of public expenditures on LTC by type of care in million PLN, 2012

Type of benefit	Source of funding	2004	2005	2006	2007	2008	2009	2010	2011	2012
<i>Health sector – services, including:</i>		467	516	578	702	912	1029	1164	1242	1352
Care and nursing home and residential services	NFZ	467	516	578	702	912	769	888	947	1021
Palliative care and hospices							260	275	295	331
<i>Social sector – services, including:</i>		3309	3395	3554	3736	4268	4136	4239	4335	4503
Care services	Central budget and territorial self-government s' budgets	268	287	316	360	420	461	478	493	507
Residential care (DPS)		3042	3108	3237	3376	3848	3675	3761	3842	3997
<i>Cash benefits, including:</i>		4234	5431	5818	6083	6479	6949	7351	7669	8056
Nursing allowance	Central budget and territorial self-government s' budgets		1112	1210	1336	1416	1535	1603	1649	1685
Care allowance (ZUS, KRUS)	Social insurance	4234	4319	4609	4746	5063	5415	5748	6021	6371
Razem (total?)		8010	9342	9950	10521	11659	12114	12753	13247	13911

Sources: NFZ 2004-2013 data, GUS 2005-2013 (requested data), ZUS 2004-2013 (requested data), KRUS 2004-2013 (requested data)

Box 2: What determines long term health care spending?

Long term health care expenditure (LTCE) rises with age, and therefore consensus exists on the relevant role that demographic change plays in explaining increases in this type of spending. Agreement has emerged in the literature on the relevance of "time-to-death" and the prevalence of disability rather than age as determinants of LTCE. However, a recent study using data from the Netherlands found in this regard that the influence of time to death in LTCE appears to be confounded not only by co-residence status and cause of death, but also by disability status, and that it is dependent on variables such as sex. Indeed, the study concludes that time to death acts as a proxy for disability, while age remains a relevant determinant of LTCE. The authors additionally found that co-residence status (and therefore the availability of informal care) and cause of death can have a significant impact on LTCE. Individuals living alone and those dying from diabetes, mental illness, cerebro-vascular accident and respiratory or digestive disease show significantly higher average monthly LTCE. This indicates that not only demographic but also epidemiological changes will affect the overall level of spending.

Source: de Meijera et al. 2011

Social sector expenditures – residential, social assistance benefits and services and other cash benefits...

Expenditures on social assistance residential homes (DPS) providing residential long-term care in the social assistance sector amounted to almost 4 million PLN in 2012. Although available data does not allow estimating the level of expenditures devoted to the elderly alone, the 61+ years old group accounts for 54% of all residents (80% in wards for the elderly and chronically ill). The increase in public expenditures on residential social assistance services between 2004 and 2014 was much lower than that registered in the health sector, likely due to the introduction of co-payment in 2004 and the freezing of the income threshold value. Expenditures on social assistance residential homes increased by 0.9 million PLN (29%) in nominal terms and by only 0.2 million (5%) in real terms between 2004 and 2012.

Data on total social assistance expenditures reaching dependent elderly, either in cash benefits or services, is not available, given that these are granted depending on income levels and due to the high degree of autonomy of territorial self-governments in this respect. Research on social assistance utilization however indicates that the elderly represent most of the care and specialist care services users. The total expenditures on care services amounted to over half a billion PLN in 2012, and the nominal level of expenditures has almost doubled between 2004 and 2012 (50% increase in real terms).

The basic instrument of direct financial support to those who are older and potentially dependent are universal care allowances for the elderly 75+ paid as a pension supplement under the social insurance. In 2011, over 2 million people were entitled to receive benefits from the Social Insurance Institution (ZUS) and 600 thousand people from the Agricultural Social Insurance Fund (KRUS). The total value of benefits paid was slightly above 6 billion PLN in the last years (2011-2012). In total, the expenditures on cash benefits grew by 50% in nominal terms and by 20% in real terms between 2004 and 2012.

An additional financial support instrument is the nursing allowance, paid from the family benefits budget, aimed to support among others elderly pensioners (above 75 years of age) who are not eligible for the care allowance. Out of the 889.1 thousand benefits paid on average in 2011, only 3.3% was paid to the elderly, amounting to 54.7 million PLN (MPiPS 2012). The number of benefits grew in 2012 (to over 917 thousand) while the number of benefits paid to the elderly 75+ decreased to 28.3 thousand. As a result the expenditures for the elderly decreased to 52 million in 2012 (MPiPS 2013).

4. Health care expenditure projections by 2050

The projection exercise covered the period 2012-2050, and was based on the historic and structural statistical information about NFZ expenditures and on Eurostat EuroPop2010 population projections, but with updated assumptions concerning fertility, life expectancy and migration.⁵ A cohort-based (cell-based) model was chosen for the study.⁶ Expenditure estimation was based on health care expenditures *per capita* by age and gender. The results of the projection are presented in real terms. Four different scenarios were used:

⁵ Two other population projections were considered - United Nations (*World Population Prospects*), the Polish Central Statistical Office – but the adjusted EuroPop was regarded as the most adequate because of the availability of detailed data and long forecast period, and the fact that it was the most recent projection, and therefore differences between forecast and real data for the base year (2012) are the smallest.

⁶ Microsimulation models, component-based models and macro-level models were considered, but cell-based models (a sub-category within component-based models) were deemed to be the most appropriate given the goals and data availability of the study.

- **Scenario 1: Pure demographics.** This scenario focuses on the impact of demographic changes on expenditure. The main assumption is that no other policy, institutional, technical or health related developments will affect expenditure over the period, and therefore that health expenditure *per capita* will remain constant for each sex/age-group.
- **Scenario 2: Expenditure per capita growth based on historical data.** This scenario not only analyzes the impact of demographic changes on overall health expenditure but also considers the potential influence of other factors with regards to health expenditure *per capita*. Historical trends of changes in expenditure *per capita* (2004-2012) are used as the best predictor of how these different aspects would interact in the future (Getzen 2000).⁷
- **Scenario 3: Expenditure per capita growth based on historical data, but with gradually decreasing growth rates.** Scenario 3 also accounts for changes in *per capita* expenditures, based on historical data, but it additionally assumes that the large observed increases in health expenditures in the last years in Poland as it transited from the former regime will not be sustainable in the future, and therefore that yearly growth rates will be gradually decreasing.
- **Scenario 4 - Expenditure per capita growth based on historical data, but different for each age group.** The fourth scenario is also based on historical changes of expenditures *per capita*, but it additionally assumes that changes in average spending differ by age and gender groups, for which data for each age group in the period 2004-2012 was used.

The following subsections detail the results of the different projections, comparing them with those of the recent estimation of health expenditure changes in EU countries up to 2060 by the EC (ECFIN) when relevant.

4.1 Projections for health spending

As presented in table 3 below, the results of the projection exercise under the four scenarios vary greatly. Under all four scenarios health expenditure are estimated to grow in absolute terms over the period, but significantly more so under both scenarios 2 and 4. Growth rates are additionally projected to be way higher than GDP growth rates, leading to continued increases in expenditures as a share of GDP under most scenarios (but the purely demographic one). Overall, it can be concluded that it is most likely factors other than demographic changes that will have a decisive impact on the level of expenditure. Although changes in the age structure of the population will intensify in the future, an additional significant demographic change cannot be ignored: the change in population size. While aging will actually entail an increase in spending, an overall decreasing population could partly counteract that effect through a "shift" of funds from younger to older age groups.

Table 3: Total health expenditures level and growth

		Total expenditures (million PLN)							
		2015	2020	2025	2030	2035	2040	2045	2050
Scenario 1	Total	57 522	59 801	61 724	63 087	64 306	65 402	66 135	66 564
	% GDP	3.07%	2.84%	2.69%	2.55%	2.42%	2.31%	2.23%	2.18%
Scenario 2	Total	67 814	93 602	128 924	176 978	243 161	334 863	461 238	634 947
	% GDP	3.62%	4.45%	5.62%	7.15%	9.13%	11.81%	15.55%	20.75%
Scenario 3	Total	67 313	87 336	107 234	125 635	142 234	156 877	169 079	178 700

⁷ The assumptions concerning health spending growth based on historical data should be adopted with caution. It can be seen that some projections of health care expenditures prepared 5-10 years ago show overstated results. The main possible reasons, beyond the recession in general, include the slower development of imaging technology and new pharmaceuticals, the increased patient cost sharing and the greater provider efficiency (Cutler, Sahni 2013).

	% GDP	3.59%	4.15%	4.67%	5.07%	5.34%	5.53%	5.7%	5.84%
Scenario 4	Total	65 247	86 767	118 408	163 496	227 664	320 087	458 984	669 587
	% GDP	3.48%	4.13%	5.16%	6.6%	8.55%	11.29%	15.47%	21.88%
GDP growth		3.3%	2%	1.6%	1.5%	1.4%	1.2%	0.8%	0.5%
Average yearly change (%)									
	2012-15	2015-20	2020-25	2025-30	2030-35	2035-40	2040-45	2045-50	
Scenario 1	1.02	0.79	0.64	0.44	0.39	0.34	0.22	0.13	
Scenario 2	6.70	6.66	6.61	6.54	6.56	6.61	6.61	6.60	
Scenario 3	6.44	5.35	4.19	3.22	2.51	1.98	1.51	1.11	
Scenario 4	6.42	6.67	6.85	7.05	7.47	7.85	6.42	6.67	
European Commission projections									
Scenarios	2015	2020	2025	2030	2035	2040	2045	2050	
AWG reference	5.2	5.4	5.6	5.8	6	6.2	6.4	6.5	
Demographic	5.2	5.4	5.6	5.8	6.1	6.3	6.5	6.7	
High life expectancy	5.2	5.4	5.6	5.8	6.1	6.4	6.6	6.8	
Constant health	5.0	5.1	5.2	5.3	5.5	5.6	5.7	5.8	
Death related cost	5.1	5.3	5.5	5.7	6.0	6.2	6.4	6.5	
Income elasticity	5.2	5.5	5.8	6.0	6.3	6.6	6.9	7.1	
EU27 Cost convergence	5.2	5.5	5.8	6.0	6.3	6.6	6.9	7.1	
Labour intensity	5.0	5.3	5.6	5.9	6.3	6.7	7.1	7.6	
Sector-specific composite indexation	5.2	5.4	5.6	5.8	6.1	6.3	6.6	6.7	
Non-demographic determinants	5.5	5.9	6.3	6.7	7.2	7.6	8.0	8.3	
AWG risk	5.4	5.7	6.0	6.3	6.6	6.8	7.1	7.2	

Source: own calculations.

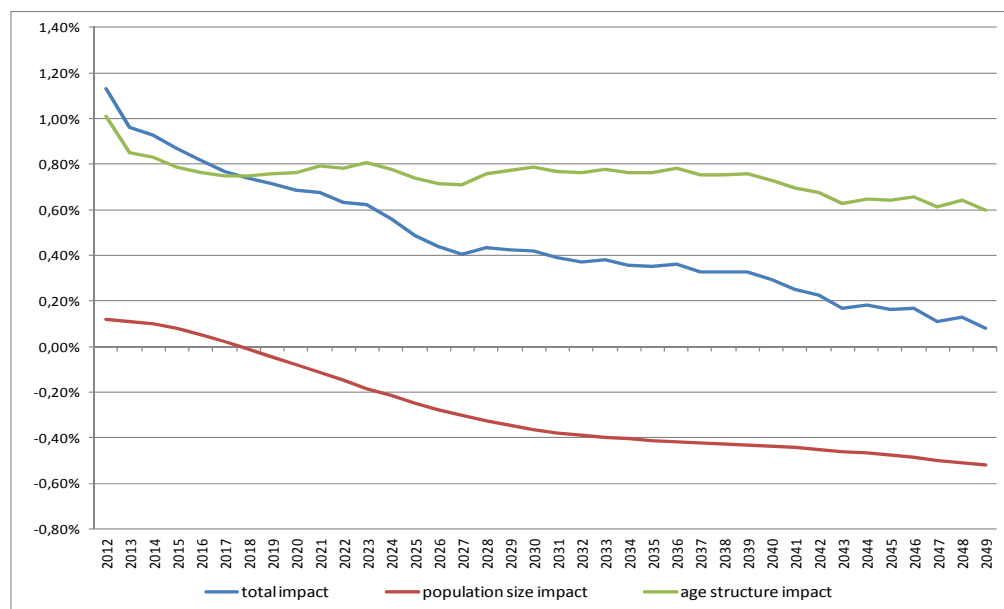
Note: GDP projections come from European Commission (2012). Exchange rates applied are from IMF (15 December 2013) for USD-Euro, and from World Bank (2013) for USD-PLN. The EC projections use different scenarios: (1) the "demographic scenario" aims to identify the effect of aging on health care spending, assuming that health status over the final years of life deteriorates; (2) the "high life expectancy" scenario is based on (1), but assuming a life expectancy at birth one year higher in 2060; (3) the "constant health scenario" assumes that morbidity at the end of life remains constant over the period; (4) the "death-related cost" scenario considers the potential decrease in spending stemming from the improvement of mortality rates across age cohorts; (5) the "income elasticity scenario" incorporates the effect of increases in income (income elasticity of demand is 1.1 and converges to 1 in 2060); (6) the EU-27 cost convergence scenario assumes that all EU-27 countries below the average of per capita public expenditure relative to GDP will converge towards the average; (7) the "labor intensity" scenario assumes that unit changes in cost are driven by changes in labor productivity rather than income; (8) the "sector-specific composite indexation scenario" estimates the growth rate of each driver of health expenditure separately, based on past trends (e.g., wages, pharmaceuticals, therapeutic appliances, capital investment, prevention related health care services, and a residual factor); (9) the "non-demographic determinants scenario" estimates the change in expenditure excluding the influence of demographic factors; and (10) the "AWG reference scenario" is a combination of the assumptions of the demographic, the constant health and the income elasticity scenarios.

The results of the first scenario – pure demographic – show that changes in age structure compensate the impact of decreasing population size and drive expenditures up especially among the elderly (65+), for hospital treatment and medicines reimbursement...

The size of the population is estimated to slightly increase by the year 2018 within the limits of 0.02%-0.12% per annum and then decrease from 2019 onwards, translating into declining health

expenditures. However, when the strong impact of changes in the age structure is considered, this factor not only compensates the effect of a smaller population size but drives health expenditures up by around 19% overall (see Table 3 and Figure 13). In the base year total spending is higher for women, but their treatment expenses grow less rapidly than for male, and therefore in the last years of the projection expenditures for both sexes are almost equalized. The results of this projection are significantly lower (by between 4% and 6% at the end of the period) than those of the demographic scenarios used by the European Commission.

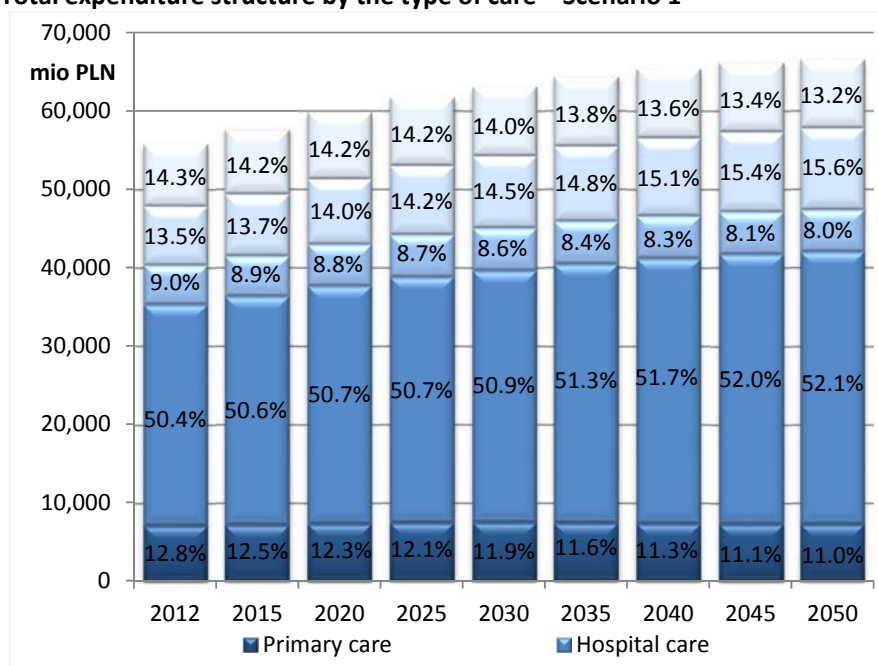
Figure 13: The impact of population size and population aging on expenditures – Scenario 1



Source: own calculations

Expenditure is projected to grow for all categories of care, although at a declining rate. In fact a decrease in the expenditures over the entire period is noted for dentistry and psychiatry, which are not so frequently used by the growing oldest population groups. The most relevant increases are observed for hospital treatment expenditures (more than 6.5 billion PLN) and the reimbursement of medicines (over 2 billion PLN). As a result of these projected trends, the structure of expenditure by type of care is expected to evolve, although changes in the share that different categories represent are not particularly large (see Figure 14).

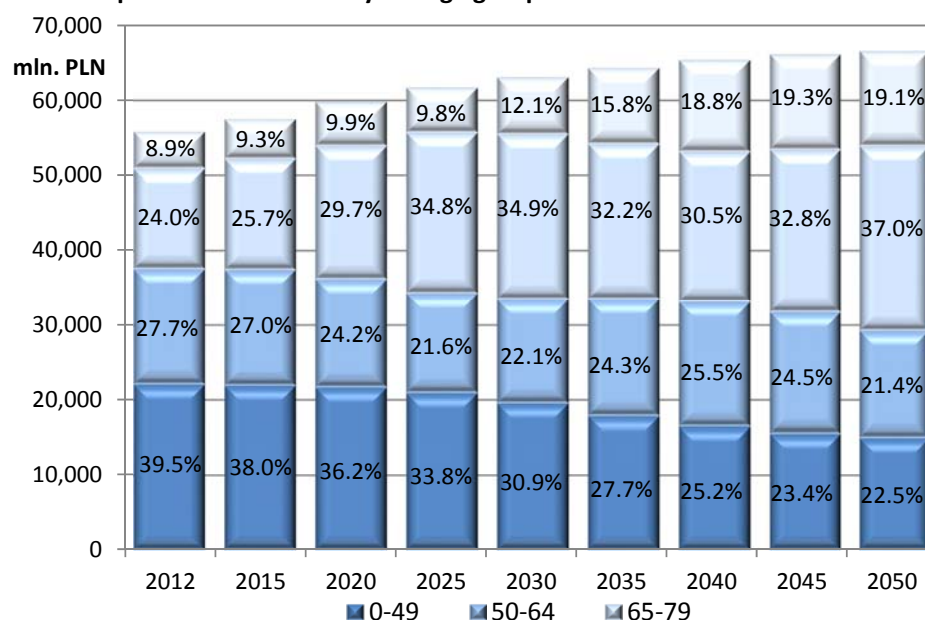
Figure 14: Total expenditure structure by the type of care – Scenario 1



Source: own calculations

Major changes will however take place in the structure of expenditure by age according to the projection. As the share that the 65+ years old group represents in the total population moves from the current 14% to 30% by 2050, the proportion of expenditure allocated to older people (65+) is projected to grow from 32% to 47% in 2030 and to 56% in 2050. Spending on people aged 80 + is also projected to double as a share of the total by the year 2050 (see Figure 15).

Figure 15: Total expenditure structure by the age groups – Scenario 1

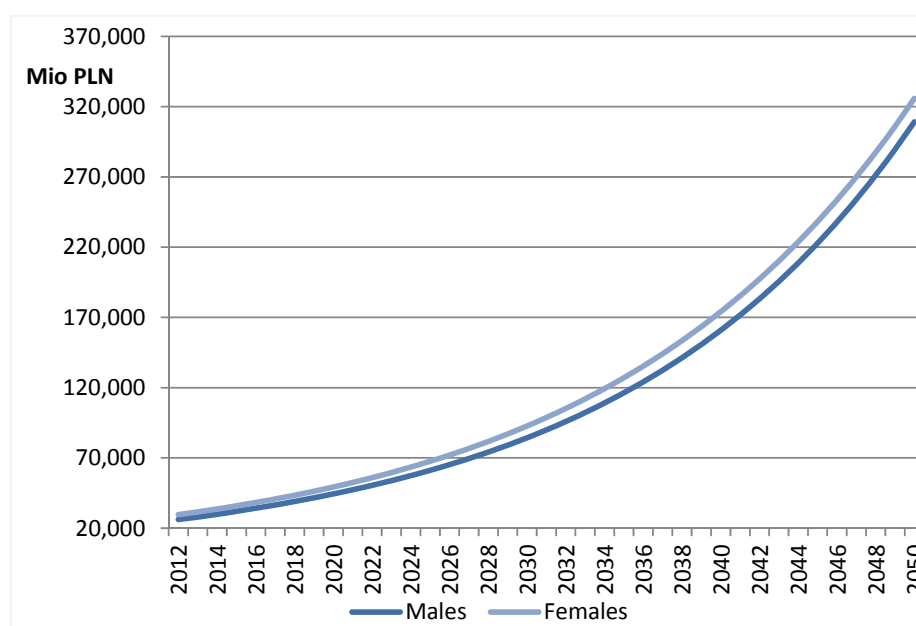


Source: own calculations

The results of the second scenario – with expenditure per capita changes – indicate an eleven-fold increase in expenditure over the period...

The second scenario is based on the additional assumption that for each type of care the level of expenditure per person is increasing each year due to factors other than demography. According to these estimations, the demographic changes resulted in an average annual increase in spending of 0.51%, while “other” factors increased expenditure by an average 4.34% per year. As a result, a sharp rise in overall expenditure is projected, which in the last year of the forecast period amounts to almost 635 billion (20.75% of GDP) – 11 times higher than in the base year. In this case no major differences are observed between men and women (see Figure 16). The results of this projection also differ substantially from those of the EC exercise, particularly towards the second half of the period, where expenditures are estimated to be in the range of 10-20% of GDP compared to 6 to 8% according to the EC.

Figure 16: Total expenditures for females and males – Scenario 2

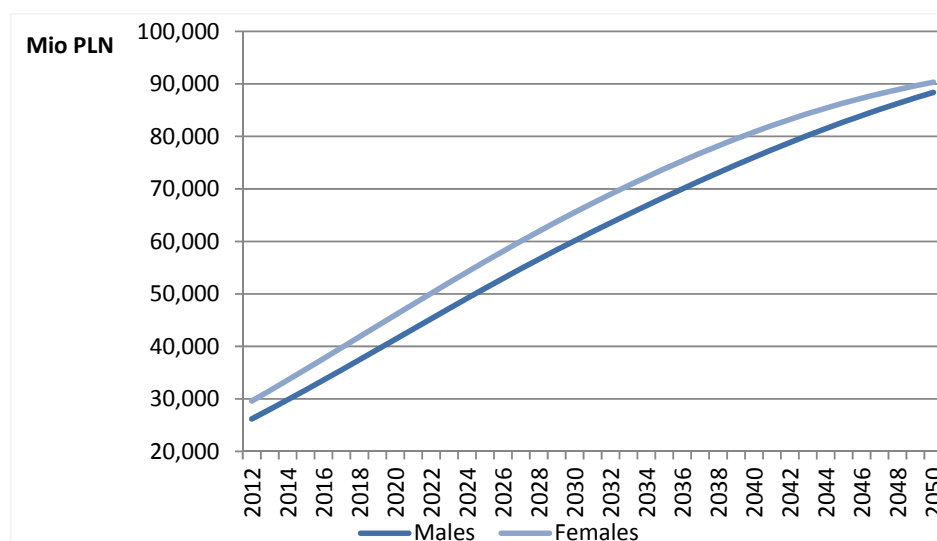


Source: own calculations

The results of the third scenario - with declining expenditure per capita increases – show a three-fold increase in expenditure over the period...

Since it is not very likely that the previous (2004-2012) high rates of annual increase in spending hold, the third scenario introduces an additional assumption of gradual reduction in per capita spending growth by 5% per year. This leads to a lower annual increase in expenditures compared to the second scenario, in the range of 0.13-1.3% per annum in the last years of the projection period, depending on the type of care. According to this third projection, total expenditure is expected to amount to 178.7 billion PLN by 2050, and therefore expenditures would triple over the projection period. Expenditure for men and women run almost parallel (see Figure 17). The results under this scenario are much closer to those of the EU using the different assumptions described in table 3, but in particular for the constant health scenario.

Figure 17: Total expenditures for females and males – Scenario 3

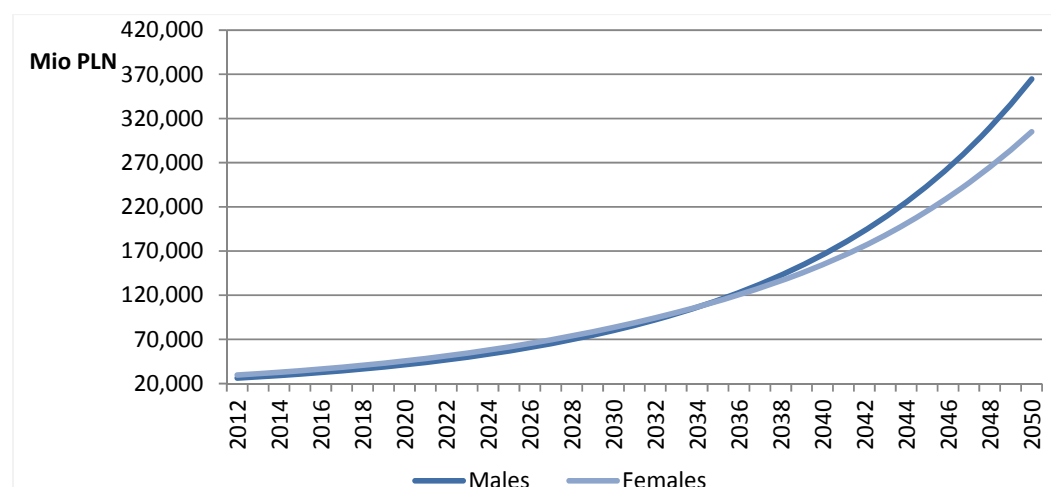


Source: own calculations

The results of the fourth scenario – annual change in expenditure per capita depends on age and sex – show the largest overall increase in health expenditure – by 12 times – over the period...

The last scenario assumes that the annual change in expenditure per capita depends on age and sex. The growth rates for each age and sex group are determined based on information about expenditure *per capita* in the period 2004-2012. Nominal expenditures *per capita* for all ages increased over that period and in some cases even doubled, whereas spending for the population in the 20-34 year old group decreased in real terms. The youngest age groups (infants and young children) and the group of 60-80 years old show the highest per capita expenditure. The results of this projection indicate a very significant increase in spending, which reaches nearly 670 billion PLN in 2050 (21.88% of GDP) – 12 times more than in 2012. Until 2034 the expenditures are slightly larger for women, but they rapidly grow for men later on (see Figure 18). Once again, these results are largely different from those of the EC projection, in particular towards the second half of the period.

Figure 18: Total expenditures for females and males – Scenario 4



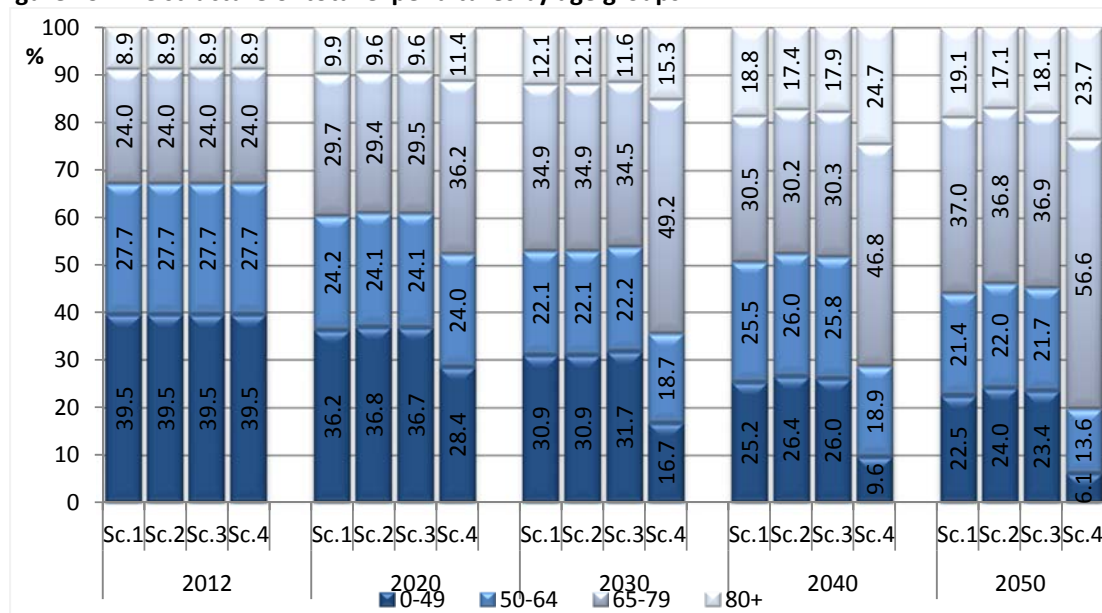
Source: own calculations

The analysis of the results of all scenarios by age groups confirms that spending will grow among the elderly groups, and will decrease for other age groups, and that hospital care expenditures will increase...

Although the second and fourth scenarios provide similar results in terms of the total expenditure, the age-specific fourth scenario shows a relatively smaller increase in the 0-49 age group, while growth is stronger and faster for the 50-64 age group. The assumption concerning the gradual reduction of the increase in spending per person (the third scenario) resulted in a significant decrease in the projected amounts, and in much more similar results to those of the EC projection exercise. This may indicate that this scenario is more realistic than the other three.

In the first three scenarios, the projected structure of expenditure by age is similar in the last year of the projection: for the population in the age range 0-49 the share of total expenditure is between 22.5% and 24% of the total expenditure, for those in the age group 50-64 it is between 21.4% and 22% and for those aged 65 years and above it represents between 54% - 56.1% (see Figure 19).⁸ While the share of spending on primary care and hospital treatment is similar in all four scenarios, in the case of specialist care the assumptions adopted in Scenario 2 and 3 (concerning different annual growth rates depending on different types of care) led to increases in the share that this category represents in overall spending, at the expense of medicines and medical devices⁹ (see Figure 20).

Figure 19: The structure of total expenditures by age groups

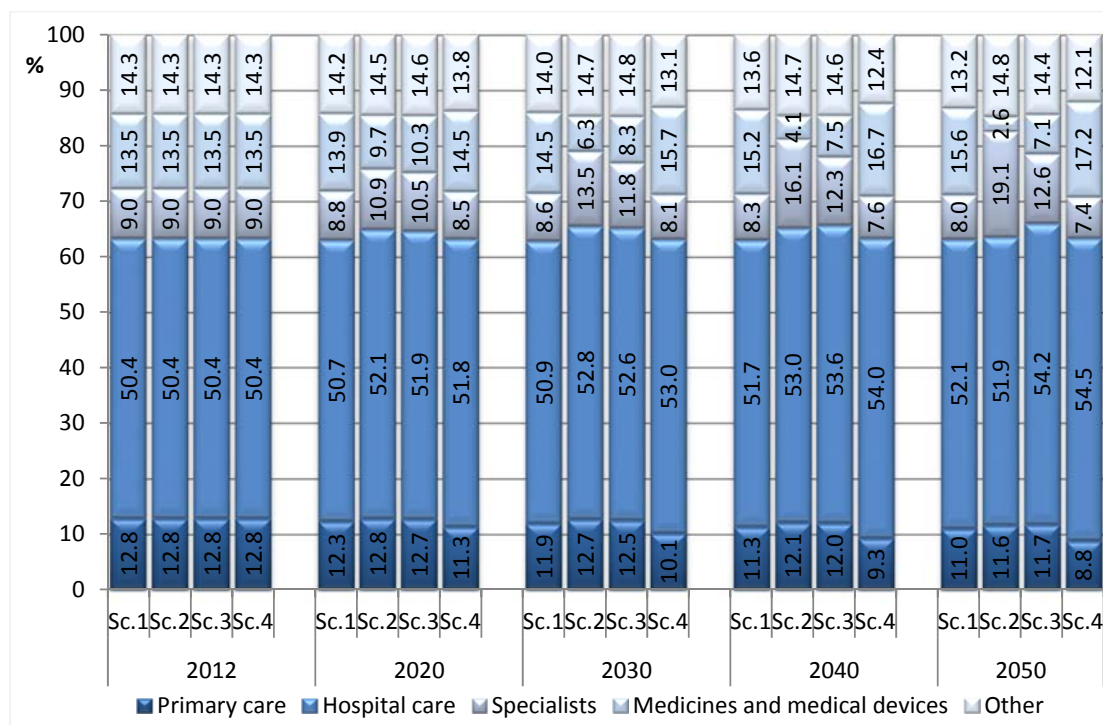


Source: own calculations

⁸ The situation is quite different in the case of scenario 4. Maintaining the historic trend of changes in *per capita* expenditure in different age groups would lead not only to the dramatic increase in spending, but would cause a distorted funds distribution: a group representing more than 48% population (0-49) would receive only about 6% of the funds. Looking at the previous spending patterns this kind of expenditure development seems to be however unlikely.

⁹ This is confirmed by the historical trends based on which assumptions are made: outpatient specialist care in recent years was characterized by the largest increase in spending, while medicines reimbursement, contrary to popular opinion, is the item with a relatively smaller growth rate.

Figure 20: The structure of total expenditures by the type of care



Source: own calculations

4.2 Projection of long-term care expenditures

Projections for long-term care expenditures (including home nursing care and residential care in ZOL, ZPO and hospitals as well as palliative and hospices) are based on the NFZ data on age and sex specific expenditures for different types of care in 2012. Projections on expenditures on services in the social sector cover home care services and residential care in the social assistance homes,¹⁰ while projections of expenditures on cash benefits cover the universal care allowance paid to the individuals of more than 75 years old (social insurance) as well as the nursing allowance (family benefits).

In the health care sector, where detailed information on expenditures incurred by age was available, three scenarios were analyzed, similar to those used for health expenditures:¹¹ scenario 1, pure demographic; scenario 2, accounting for other factors through expenditure *per capita* growth; and scenario 3, or cost-containment scenario where the growth rate of expenditure *per capita* declines over the period. However, the projection for the social sector expenditures includes only one scenario, taking into account the demographic changes in the next decades.¹² Different base years were assumed for projections of the various types of care¹³. Forecasts have been made in real terms, excluding the impact of price changes.

¹⁰ Projections of expenditures on services provided in social assistance homes are based on the information on the total expenditures on social assistance homes and the utilization structure by age in 2011. The assumption of the stable level of expenditures per beneficiary, despite of age, was made due to the lack of information on the changes of the level of average expenditures by age.

¹¹ A scenario taking into account changes of per capita expenditures in different age groups in the last years of life was not prepared as such data were not available for the long-term care expenditures.

¹² With respect to the care and specialist care services, where there was no information on their distribution by age, a similar structure of expenditures by age to that observed in the nursing care in the health sector was assumed.

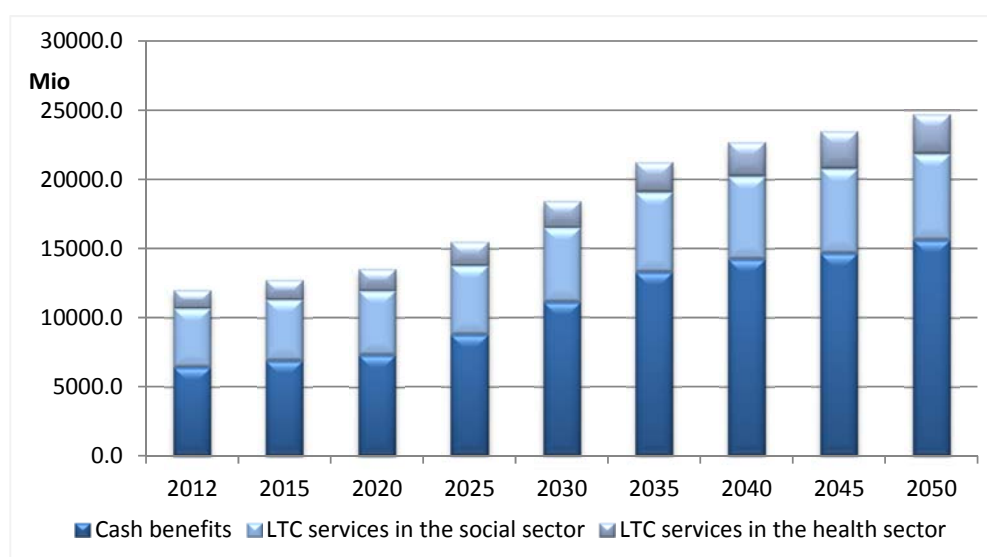
¹³ In the health sector long-term care expenditures' projection 2012 was the base year, while in the social sector it was 2011 (for the social assistance homes) or 2012 (for the care services). Cash benefits projection was based on 2011 (for the social insurance expenditures) and 2012 (for the family benefits).

The projection of long-term care expenditures accounts for the impact of changes in the size and structure of the population until 2050, but not for the decrease of the still strong role of the family in the care of dependents in Poland. This process has already begun and is likely to intensify with the raise in retirement ages and women's further integration into the labor market. Therefore, these projections should be considered as the lower bound of future potential spending, despite the significant scale of the projected increase.

Total long-term care expenditures in both the health and social sectors will double by 2050...

Based on the projection exercise, and as detailed in the next sub-sections, total long-term care expenditures both in the health and in the social sector (social assistance, social insurance and family benefits) are expected to double by 2050. The strongest increase is observed for cash benefits, followed by services in the health sector (see Figure 21). These changes can have significant implications for the elderly, since expenditures on services reach those who are dependent and face nursing needs while expenditures on cash benefits are not targeted and would not be sufficient to cover nursing services.

Figure 21: Total projected long-term care expenditures

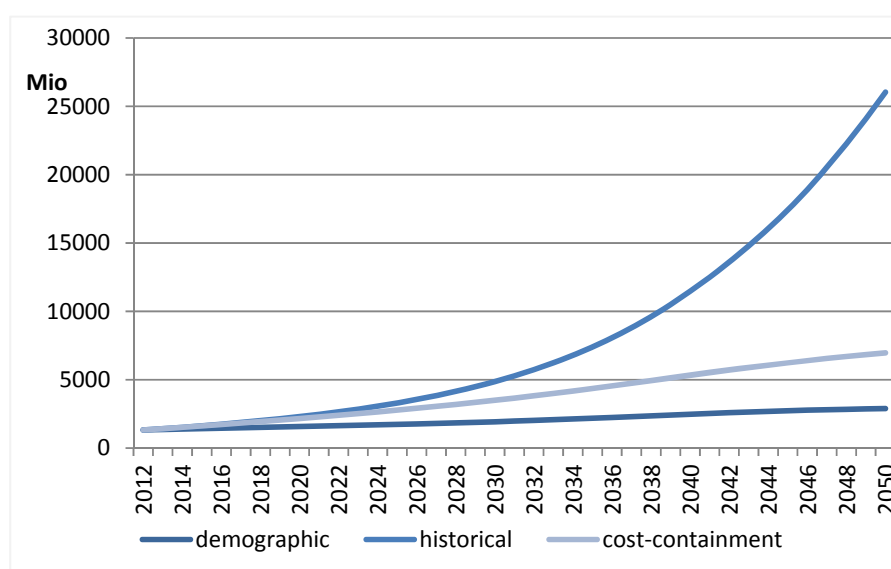


Source: own calculations

Projections of long-term care expenditures in the health sector show that these will increase by between 2 and as much as 19 times over the period, concentrating on the oldest cohorts...

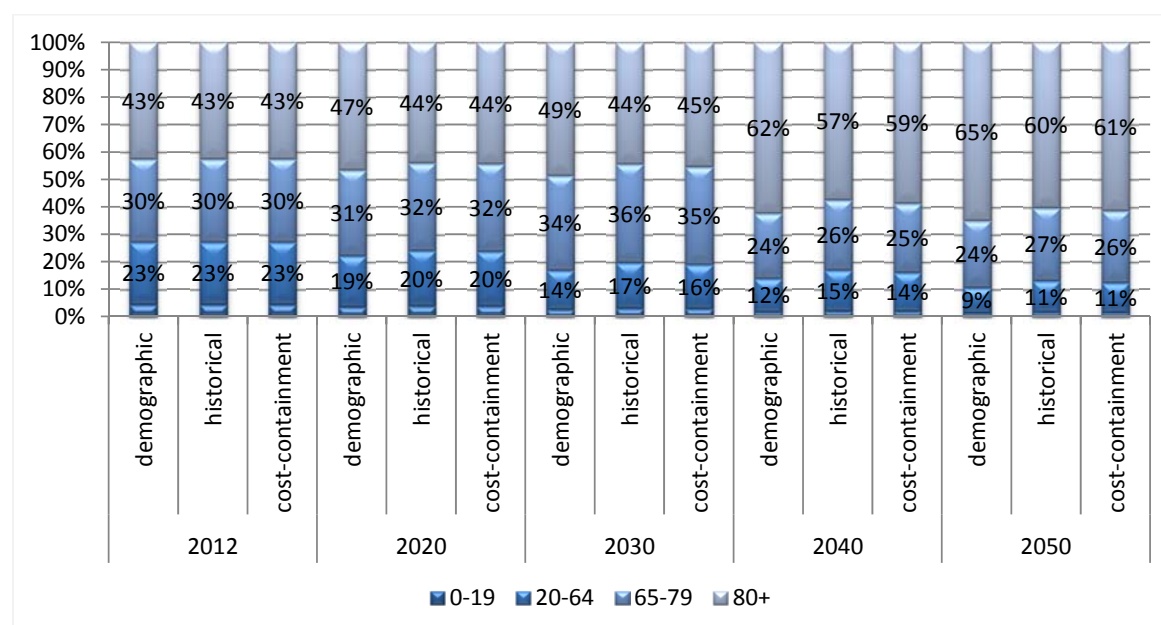
According to the projection exercise, NFZ expenditures on long-term care will double by 2050 due to demographic pressures. However, when historical trends in the growth of the average LTC expenditures *per capita* are taken into account, total expenditure increases by 19 times between 2012 and 2050. The cost-containment scenario shows more moderate changes, as it estimates expenditure to increase by 5 times over the period (see Figure 22). Most of public long-term care expenditures will concentrate on the population 65+ years old (about 90%). Expenditures on the oldest group (80+) will increase by half, with the share that this group represents in total expenditure growing from 43% to 60-65% over the period (see Figure 23).

Figure 22: Projection of the total NFZ expenditures on long-term care



Source: own calculations

Figure 23: Projection of the change in the structure of the total NFZ expenditures on the long-term care by age



Source: own calculations

Long-term care expenditures in the social sector – social assistance homes, care services and cash benefits – will significantly increase over the period, but not as much as those in the health sector...

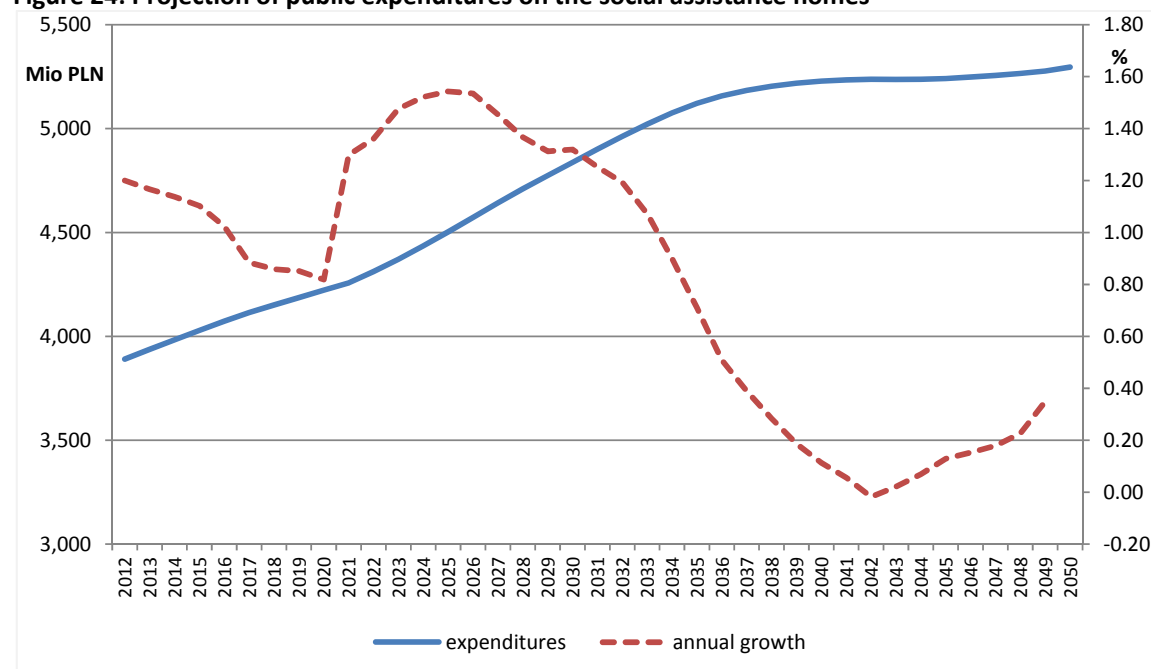
Projections of public expenditure on long-term care do not show such a significant increase in the social sector as that observed for the health sector. This is likely to be related to the restrictions in

spending introduced over the past decade, such as the introduction of co-payment and supply restrictions imposed by the local authorities in residential care. Additionally, the number of home care services is still too small to have a significant impact on changes in the level of expenditure. However, the demand for these services is likely to increase due to population aging, lower ability to provide informal care and higher disability incidence among the elderly as their lives become longer.

Based on this exercise, expenditures on social assistance homes will increase during the projection period by approximately 35%, from less than 4 billion to over 5 billion PLN (see Figure 24). Significant changes in the age structure of users are foreseen between 2020 and 2035, as the share of the younger residents (19-60 years old) decreases, while the share of the residents 61+ years old raises. As a result, the expenditure on services for residents above 61 years of age will constitute 75% of the total by 2050, while almost half of this amount will be spent on residents 75+ years old.

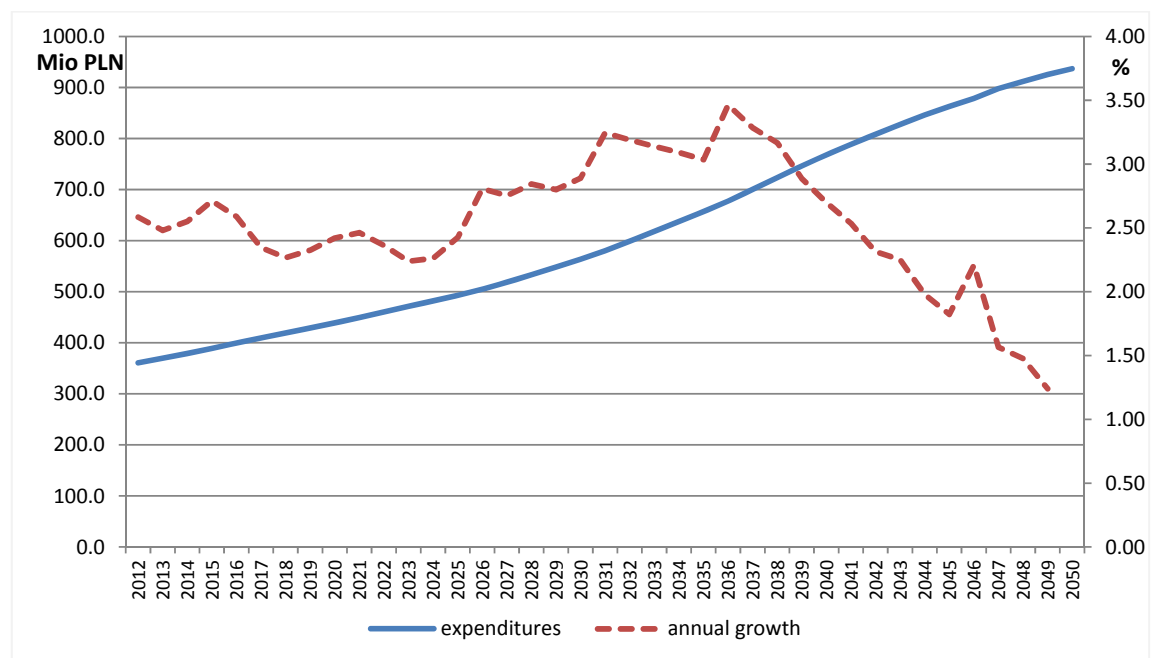
The results of the projection indicate that the expenditure on care services would additionally triple as a result of demographic pressure (see Figure 25), while expenditures on long-term care related cash benefits (care allowance and nursing allowance) are expected to more than double given the growing number of the elderly (see Figure 26). For these two categories, the highest growth rates are foreseen for the period 2020-2040. Over 90% of cash benefits target individuals 65+ and almost 50% of the benefits concentrate on the population above 80 years of age, with the proportion of expenditures on the population 80+ years old projected to increase to 60% of the total expenditures in 2050.

Figure 24: Projection of public expenditures on the social assistance homes



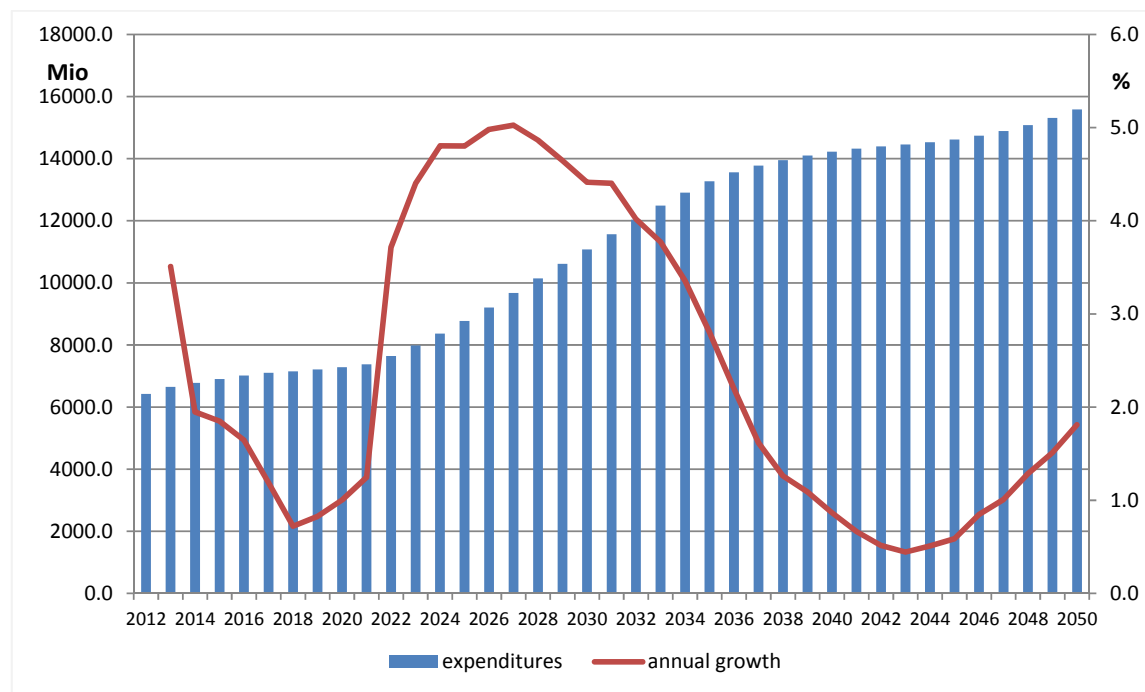
Source: own calculations

Figure 25: Projection of expenditures on care services



Source: own calculations

Figure 26: Projection of expenditures on long-term care cash benefits

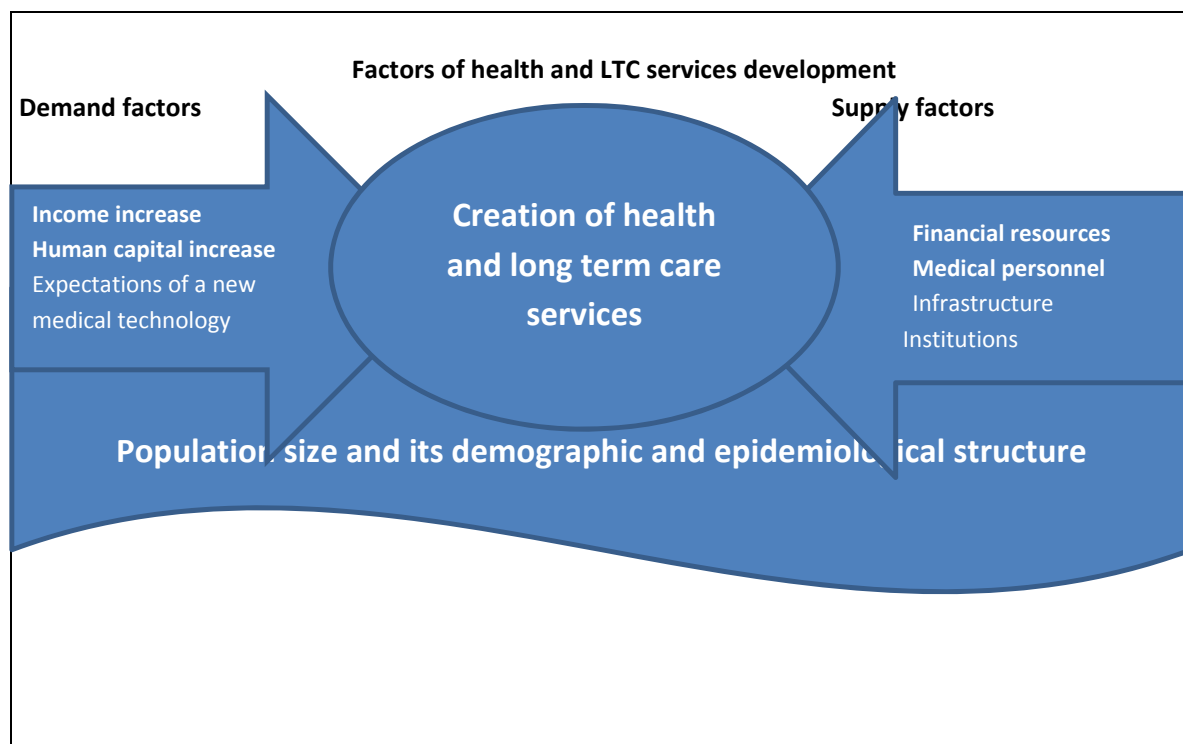


Source: own calculations

5. Conclusions

The ageing the population in Poland has been accompanied by a change in the epidemiological profile, that is, an increase in chronic and degenerative illnesses, to which the Polish healthcare system needs to adjust. Some progress has been made in the 1990s in treating cardiovascular diseases, primarily coronary heart disease. The health care system now faces a new challenge: the treatment of cancer, diabetes and mental disorders. The demographic shift will affect both the supply and the demand side of health services provision (see Figure 26).

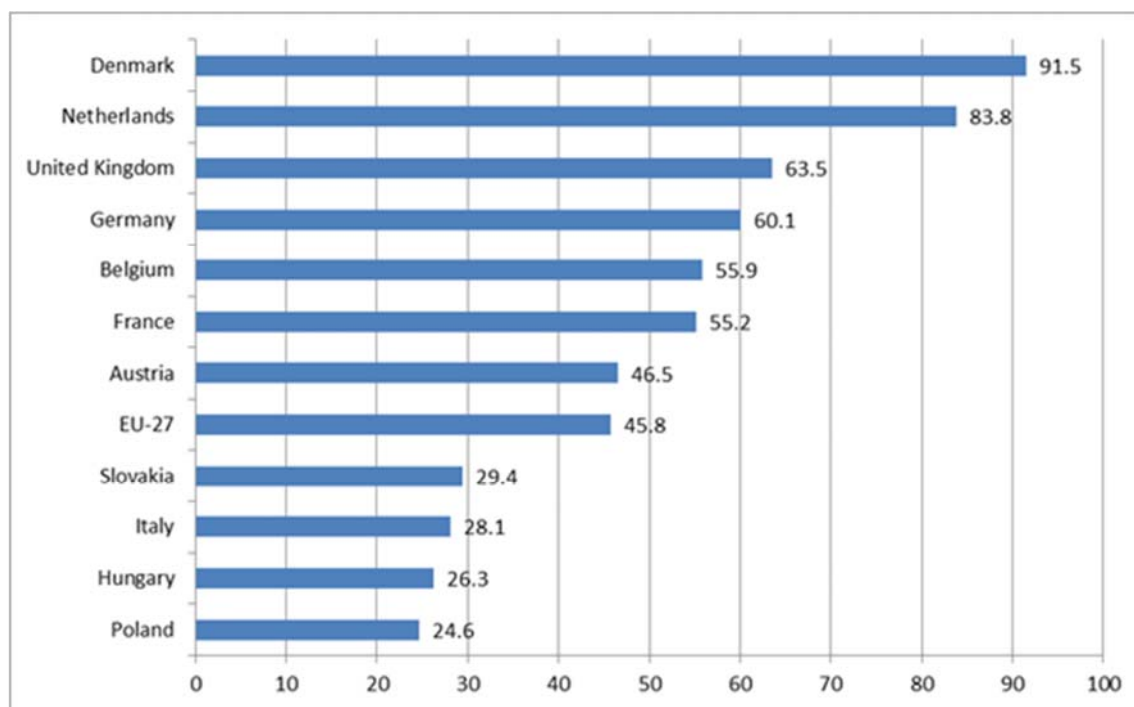
Figure 26: Factors of health and long-term care services development



In order to prepare for aging, it would be helpful to have long-term strategies with clearly defined goals directed at ensuring that the basic needs of the growing numbers of the elderly are satisfied. The strategy developed should define the regulatory, institutional and financial conditions for its implementation, comprehensively covering issues of different areas (including housing and infrastructure as well as healthcare and social insurance). In terms of spending, as the country ages and the economy grows, there is likely to be increased demand for health and long-term care services.

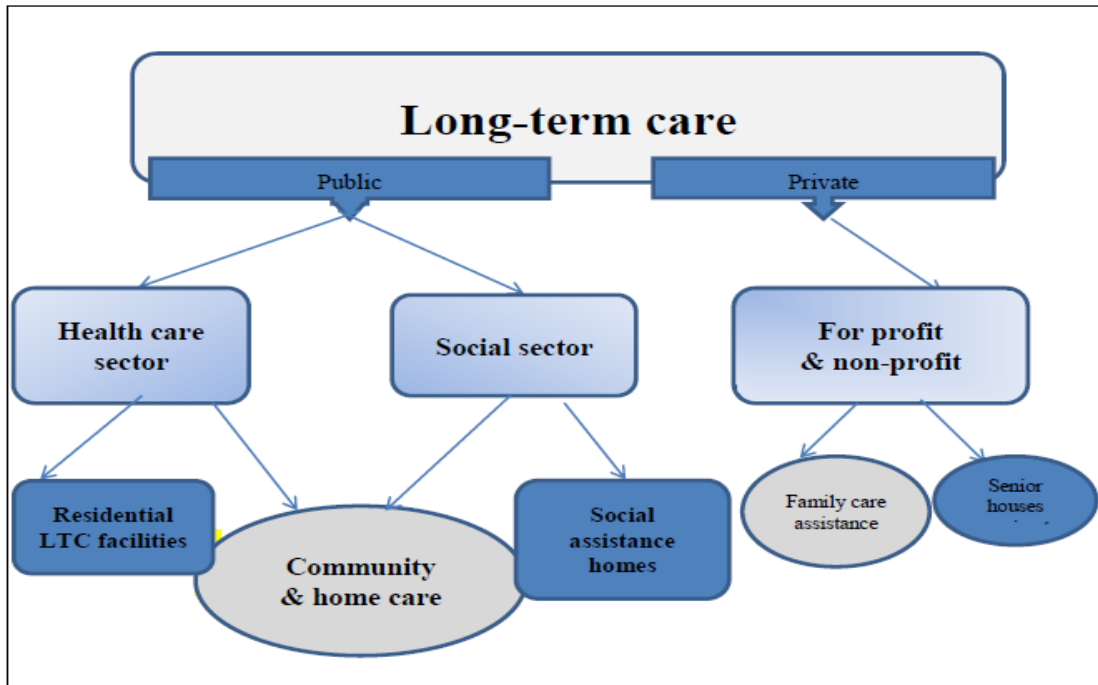
The relatively low healthcare funding in Poland coincides with a period of rapid ageing of the Polish population. This sudden change in the demographic structure in future decades will increase the public health expenditure needs for the population. At present, one-third of total health insurance expenditure is spent on people aged 65 or over. In three more decades, according to our projections this figure will be at 50% to 60%, depending on the prognosis. Meeting the healthcare needs of the population aged over 65 will require a shift in the allocation of expenditure to the treatment of chronic diseases and rehabilitation services. Spending on medical equipment and medicines is also expected to grow. There has been a major outflow of the medical personnel to other sectors of employment and abroad. As a result, the workforce in the sector is one of the smallest in the EU (Figure 27).

Figure 27: Number of employees in the "Human Health" and "Social Work" sectors in 1,000 people (in 2011)



Long-term care services are already in high demand - and the demand is only likely to grow. Poland has no specialised state-run entity responsible for providing long-term care. Although it is usually caused by illness or disability, it is not clear to whom the burden of providing long-term care will fall. The responsibility for long-term care services is only assumed by the state for specific social groups (i.e. the people most in need of help and disadvantaged in terms of welfare). In general, such care needs are identified and implemented independently across the health care system and social sectors (see Figure 28). With regard to expenditure on formal and public long-term care services, the biggest share is on the universal nursing allowances for pensioners and annuity beneficiaries aged 75 and over. The state allowances are meant to pay for the care services for the elderly at market prices. However, the nursing allowances are in fact meagre and, though they constitute the bulk of total spending on long-term care (and will continue to do so in future), they do not serve their intended purpose of financially securing the care needs of elderly people. Most long-term care is still provided within the family for which people do not get support, often assisted by hiring caregivers (private solutions), who are often undeclared workers who don't pay tax.

Figure 28: Provision of long-term care services



For the efficient funding of healthcare, an adequate allocation of resources is as vital as their size, especially when resources are limited. The factors that should influence the allocation of expenditure are: (i) the epidemiological adequacy of spending allocations given the population characteristics, i.e. are the necessary skills and resources being directed to treat diseases that are prevalent in the population; (ii) territorial adequacy/spatial equity, i.e. the equal access to service; (iii) functional adequacy to ensure integration and the continuity and efficiency of treatment across different levels of the health service; and (iv) administrative efficiency, ensuring coordination and efficient management of the health sector.

Historically, Polish health policy can be divided into periods depending on the priority attached to different epidemiological challenges. Following World War II, in late 1940s and 1950s, the primary concern was the containment of tuberculosis and sexually-transmitted diseases. The preventive measures undertaken for the latter were particularly conspicuous, even violent (see "Akcja W" / "W Action") but considered effective (Baranski in: Marcin Kula ed. 2012). In the 1990s, cardiovascular diseases and their prevention came to the fore, with special concern for the coronary heart disease, which has been the leading cause of mortality of our time. There are positive effects of adopting these priorities: the mortality rates from those causes as well as total mortality rates have gone down after years of stagnation. In 2014, a change of priority was announced that establishes the fighting of cancer as the primary concern. This may not translate directly to a rapid development of oncology and introducing measures for the reduction of cancer-related mortality rates, but it does bring a promise of a change in treatment plans, with the potential for progress toward establishing cancer treatment as a priority in the allocation of resources. The shift of priorities was inspired by the need for the shortening of healthcare queue time, which in the case of cancer patients effectively reduces their life expectancy. However, the announcement stressed the fact that the change in priorities will not be followed by an increase in general healthcare funding.

The fight against cancer will certainly hold a central position in the strategy for healthy ageing. Nevertheless, it does not exhaust the subject: it only exemplifies a strictly medical approach from the point of view of restorative medicine. In the concept of healthy ageing, measures of public health service (prophylaxis and health promotion) are essential, and should be given due attention in the organisational structure of healthcare. New solutions are required in the ambulatory geriatric care: developing a network of “senior health centres” and maintaining specialised hospitals (or clinical hospitals) and geriatric wards as the basis for nurturing expertise in geriatrics.

Adequate territorial allocation is a prerequisite condition for geographical accessibility of healthcare services. It requires local and regional epidemiological data, information on existing territorial resources and proper algorithms of resource allocation. The main obstacle in this respect is the scarcity of instruments for the division of specialised and hospital care (e.g. hospital networks). The rise in hospital investments (partially inspired by privatisation) leads to a highly uneven distribution of facilities, with a high concentration of facilities in one place and “white areas” elsewhere. Private institutions are lining up to NFZ to secure public procurements in accordance with the principle of equality of entities in the ideological sense (i.e. public and private), when the insurance payer has not yet devised the appropriate allocation instruments in the criteria of territorial accessibility, quality and efficiency. As a result, deadlines of new tenders are frequently extended, causing tensions and provoking disputes in the health sector.

In the 1990s, Polish healthcare system underwent many divisions, which were occasioned by the general decentralising reform that also created three separate levels of government: communal (gmina), county (powiat) and regional. This in turn caused a complete disintegration of the health system and made the central management of the sector a very difficult task. Each healthcare division is financed and managed separately. The basic healthcare programme is the charge of local authority and paid for by capitation. The specialist care, outpatient and fixed hospital care were all placed under the responsibility of the provincial (powiat) and district (voivodeship) level, and they function independently of one another and are financed from separate sources. Specialist outpatient care operates on the “fee for service” basis (i.e. paying for the service or in fact, the visit), while the hospitals receive their funding based on the DRG method, which has been adjusted for Polish realia as the HPG (Homogenous Patient Group) method. At the same time, the ownership properties of the three disjunctive levels of territorial government authority are managed without any clearly defined procedures for the cooperation with the central sector payer, that is, the NFZ.

The policy makers and expert circles are becoming increasingly aware of the need for the system integration. Efforts are being made to devise an integral system that would be geared towards a coordinated care system (i.e. managed care). The idea of coordinated care came from the US and was the subject of small-scope pilot implementations in the years 2000 to 2002 (Kowalska 2009), and ten years later, it played into the objectives formulated in the “Efficient State” framework prepared by Ernst & Young (Kowalska, Kalbarczyk 2013).

The effective management of healthcare system requires solutions on the institutional level, both in the specific scope of the sector and in terms of defining (or creating) a government institution whose responsibility would be the preparation and implementation of the “Health in All Policies” strategy.

The concept of healthy ageing is part and parcel of just that kind of integrated concept, which requires a cross-sectoral approach.

With regard to the implementation of the overall concept of healthy ageing, it is particularly important to highlight the promotional and preventive measures implemented within the framework of public health, and traditionally formulated by the National Health Programmes in the prospect of the next 15 years. The last of those programmes, developed by experts from the PZH (National Institute of Hygiene) in 2007, was accepted for implementation within the Ministry of Health, which resulted in its shelving. As a central sector institution, the Ministry of Health has no means of directly influencing the local governments in their implementation of public health programmes. These programs are formulated in an arbitrary manner, with the concept of public health often not defined clearly. The issue still lacks a knowledge base and, as a result, a legal foundation. The draft of the Public Health Act, which has been under debate for years, is important in this regard.

Medical staff training and treatment methods and care of the elderly people require a host of new solutions, among which the geriatric expertise plays a crucial role. For years now, the specialists in the field have been postulating the need for a comprehensive geriatric assessment in providing healthcare for the elderly. This would require the basic care GPs to improve their knowledge of geriatric issues and the creation of a network of specialised 'senior health centres' for the older generations on the local level (e.g. in poviats or on the sub-regional level - NUTS 3). The concept of these centres, covering health services, rehabilitation, nutritional and information, has been designed within the framework of the development strategy for the Małopolskie Voivodeship (Department of Regional Policy. Marshal Office of the Małopolska Region 2011).

Long-term care is going to be one of the most important social and health issue in the years to come. The approach to this issue necessitates a debate on the fundamental transformation of the structure and functioning of a family, particularly in the context of changes in the labour market. This debate should result in the legal (statutory) definition of the scope of responsibility of the state towards its older, dependent citizens: should the care of such people become a public concern or remain in the private sphere?

Another desirable outcome of such constructive debate would be defining separate sources of funding of long-term care, such as a care insurance plan or earmarked tax money (a special-purpose care subsidy), or other measures implemented by local government authorities. This would relieve the health insurance funds and create opportunities for coordinated care and nursing measures. It would also free resources for nursing allowances (for the dependent person) and care allowances (for the care provider) as well as for the required nursing and rehabilitation services. The project of a separate long-term funding scheme has already been discussed (Augustyn et al. 2010); unfortunately, it has eventually been dropped from the parliamentary debates.

Long-term care also requires investments, not only on the development of nursing facilities and day care centres but also on the repairs and redevelopment of the elderly people's residences so as to adapt them for the proper provision of care. Poland already has a number of high-end 'luxury' nursing facilities and the demand for such facilities that would be available to a moderately well-to-do senior citizen is on the rise (Golinowska, Kocot Sowa 2013). However, as long as the financing of such facilities

is not supported with public funds, their supply will remain limited. The research carried out in other European countries (e.g. ANCIEN as part of FP 7) shows that semi-fixed care facilities known as 'senior nurseries' are especially popular. Developing such facilities in Poland would require convincing, motivating and supporting the local governments in their creation.

Integrating nursing services and care for the dependent elderly people on the local government level is not an easy task. This level reflects the sectoral structure of responsibility: the department of the health resort only finances their own facilities and nurses, as does the social sector with theirs. The qualitative empirical studies on the subject carried out in several lowest-level territorial units of the Małopolskie and Masovian Voivodeship (Golinowska, Sowa 2010) have concluded that the full integration of nursing and care services is only possible within its own sector, with its own regulations and identified sources of funding. The report of the study also suggests a broader-scope regulation: a social services act, modelled on similar legal regulations in other countries of the region (most notably Czech Republic). Those laws emphasise the importance of the local government as fundamental in the provision of social services but do not leave said local government on its own in providing for the oldest people. Such regulation should consider the following crucial points:

- Supporting the establishment of stationary and semi-stationary and Semi-fixed within a defined their network, which also includes private providers; as a non-profit and for-profit
- Defining and monitoring requirements for the location, appropriate quality standards for the equipment and services provided
- Supporting home care by facilitating house repairs and redevelopment for people in need of care
- The training of caregivers within the new framework for training and hiring of caregivers

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