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IMPACT OF AN AGEING POPULATION ON THE INCREASE IN PUBLIC SPENDING ON HEALTHCARE IN POLAND

Abstract:
Europe, including Poland, is ageing at an alarming rate. The decades to come will see above-average dynamics of population ageing paralleled with epidemiological changes, primarily including an increased incidence of chronic diseases. Consequently, an ageing population will increasingly affect the demand and supply of the healthcare system. This article discusses the demographic factors that determine healthcare expenditure in the light of available research together with their potential impact on the public spending on healthcare in the coming decades.

Keywords: demographic factors, healthcare, healthcare system funding

JEL Codes: H51, I15, I18

1. Introduction

Over the last decade, there has been a significant increase in healthcare spending in both developed and developing countries. The average share of public spending in total healthcare expenditure stands at more than 70%, usually representing a dozen or so percent of total public sector expenditure in each country. The above-mentioned share also applies to Poland, which confirms the significance of the public sector as a source of healthcare funding. On the one hand, this means that a negative fiscal position may limit access to healthcare in Poland and, on the other hand, maintaining the current trend of increasing healthcare expenditure against GDP will become increasingly challenging for the state of public finances. Hence the need to analyze the factors determining the level of healthcare spending, espe-

cially one of the most important factors that is of a demographic nature - population ageing.

2. Projections of demographic changes

One of the first studies to analyze the dependencies of the healthcare spending level was an article by Newhouse (1977, p.115-125) that decomposed the dynamics of healthcare spending based on the potential factors determining their growth rate. Apart from non-demographic factors such as technological progress, social prosperity and the change in the prices of medical goods against other goods, the article identified demographic factors such as the structure, the size and the health of a population. It should be noted that the impact of the demographic factors on the level of public expenditure on healthcare per capita was not strong initially. At present, however, in line with the forecasts by the European Commission, there is an increased demand for publicly funded healthcare services, while in countries such as Poland, more than 60% of this increase will be caused by the demographic factors only (European Commission and Economic Policy Committee, 2018).

Europe, including Poland, is ageing at an alarming rate. The decades to come will see above-average dynamics of population ageing (Table 1). Based on the forecasts by Statistics Poland (Główny Urząd Statystyczny) presented in the table, it can be estimated that the old-age dependency ratio, that is, the size of a post-working age population compared to a working age population, will rise from 20% in 2010 to 30% and 38% in 2020 and 2035 respectively. According to the forecasts by the European Commission (European Commission and Economic Policy Committee, 2018), in the case of Poland, this ratio will have reached 68% by 2060 and will be the highest in the whole European Union.

Table 1. Projected population in Poland in 2010, 2020 and 2035

	2010	2020	2035	Change (%)	
				2010-2020	2010-2035

Total, age gro-up bre-akdown:	38 092	37 83 0	35 99 3	-0.7	-5.5
0-17 yo	7 107	6 959	5 632	-2.1	-20.8
18-24 yo	3 873	2 670	2 804	-31.1	-27.6
25-64 yo	21 958	21 249	19 199	-3.2	-12.6
65-79 yo	3 839	5 387	5 784	40.3	50.6

Source: Główny Urząd Statystyczny, *Prognoza ludności na lata 2008-2035,* Warsaw 2009

These negative demographic projections result from the demographic phenomena, including:

- a decrease in the fertility rate of women in Poland from 2.28 in 1980 to 1.47 in 2017(GUS, 2020), and consequently a decrease in the number of births;
- extending life expectancy (for Polish women from 74.4 in 1980 to 81.7 in 2019 and for Polish men from 66 in 1980 to 73.1 in 2019) (GUS, 2020);
- a high negative net migration of young people.

Additionally, according to demographic projections, Poland will face further gradual population decline in the coming years. The data contained in the report by the European Commission estimates Poland's population in 2060 at 32.8 million (European Commission and Economic Policy Committee, 2018).

In conclusion, the fall in the population (decreased fertility rate, negative net migration), the increase in the number of seniors in the population structure are the main indicators of the population ageing process, which, as stated earlier, is projected to gain momentum in all European Union Member States, while in Poland it is accelerating, as the country is forecasted to reach one of the highest shares of seniors in its population in 2060 (Figure 1).

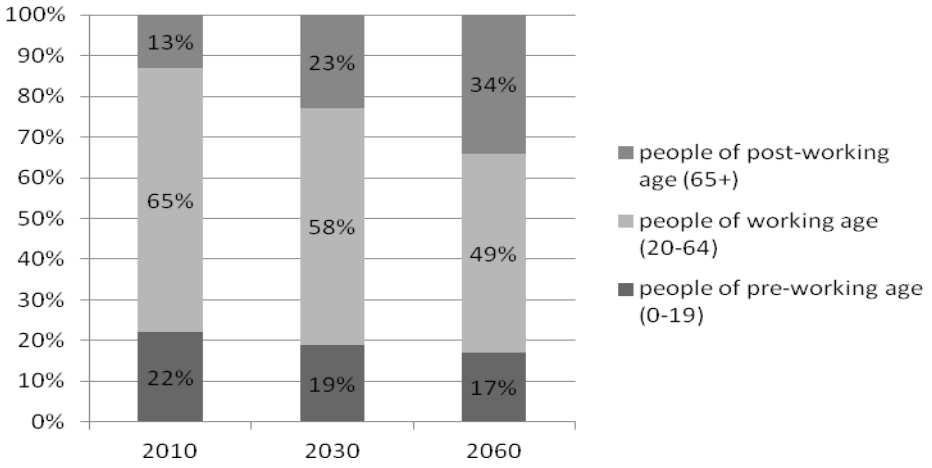

Figure 1. Population structure of Poland - share of economic age groups (%)
Source: own study based on *Rola i funkcje dodatkowych ubezpieczeń zdrowotnych we współczesnych systemach ochrony zdrowia – analiza i rekomendacje dla Polski* by Polska Izba Ubezpieczeń in cooperation with Ernst & Young, 2015

The projected population ageing processes cause multi-directional cultural, social and economic changes in the demographic structure. These changes are inevitable, as evidenced by objective data and projections, and, therefore, must be taken into account in all the measures implemented under the health policy.

3. Impact of demographic factors on the demand and supply of the healthcare system

The demographic structure affects both the supply and demand of the healthcare system. On the demand side, it determines the demand for healthcare, which varies considerably between specific age groups. The general trend indicates that average healthcare costs increase with age. Numerous studies indicate that the rising unit cost of treatment contributes more to the increase in healthcare expenditure than the ageing population itself (Breyer et al., 2010; Zweifel et al., 2009; Polder et al., 2006; Steinmann et al., 2007). Currently, in the developed OECD countries, the average public expenditure on healthcare per person aged 5-45 is around

3% of GDP, compared to around 13% of GDP for people aged above 65 (European Commission and Economic Policy Committee, 2009). In Poland, the 2009 average cost of hospital treatment covered by the National Health Fund (Narodowy Fundusz Zdrowia) amounted to about PLN 2.5 thousand for patients under 45 years of age and over PLN 4.5 thousand for patients aged 60-78 (NFZ, 2009). On the other hand, the expenditure of the public funds at the disposal of the National Health Fund on all healthcare services per patient aged 60 and over amounted to about PLN 3 350 in 2011, and more than PLN 3 860 in 2018 (GUS, 2020).

The future age structure of European countries, including Poland, will have serious economic and social consequence. The fact that the elderly, in the case of which the average cost of treating a single patient is higher, are more likely to rely on social benefits, will result in financial pressure on the healthcare system.

Demographic changes, primarily including the above-mentioned ever-increasing ageing population, are associated with the increased incidence of the diseases that are more common among the elderly. The typical old-age diseases such as Alzheimer's disease, Parkinson's disease and glaucoma as well as chronic diseases such as rheumatoid arthritis, obstructive pulmonary disease, diabetes and stress-related diseases will pose a particular challenge. This list should be extended to include cancer, which, according to numerous experts, is also a chronic disease. It should be emphasized that chronic diseases are of increasing prevalence already at a young age. The increasing incidence of chronic diseases is strongly correlated with the level of a country’s economic development. If Poland, in accordance with most macroeconomic forecasts, keeps reducing the economic gap between itself and developed countries, the trends of increased incidence of chronic diseases will intensify.

The hypotheses regarding the possible scenarios of health changes resulting from a changing demographic structure were formulated as early as the 1980s. The most popular ones include morbidity expansion, morbidity compression and dynamic equilibrium. According to the hypothesis of the expansion of morbidity, a longer life is paralleled

with an increase in the proportion of life spent in poor health (Olshansky et al., 1991). The hypothesis of the compression of morbidity assumes that poor health accumulates over ever-shorter periods as life gets longer (Fries, 1989). According to the last of these hypotheses, the dynamic equilibrium, extending life results in an increase in the proportion of life spent in good health by the same value (Manton, 1982). Although empirical studies have not explicitly rejected any of these hypotheses, in the light of epidemiological trends, the first hypothesis seems to be most accurate in the context of Poland now.

On the supply side, an ageing population can affect a healthcare system through at least two mechanisms. Firstly, it may lead to a reduction in the human resources with adequate qualifications by reducing the shares of the populations at the working age and the traditional student age (Ciżkowicz, 2011). One of the most important challenges facing the European health care systems today is to ensure a sufficient number of people providing care for patients, especially senior patients. The number of geriatricians per 10 000 seniors indicates considerable diversification between European countries (Figure 2). However, numerous studies show that only investing in the development of geriatric care is the way to optimize the expenditure on healthcare for the elderly. It has been proven that, among other things, not only do geriatric standards reduce healthcare costs, but also extend life, improve functional abilities, postpone disability and improve quality of life (Grodzicki, 2007).

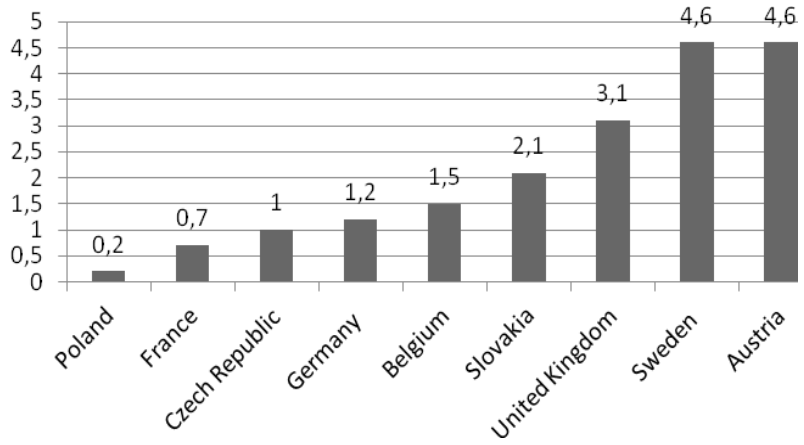

Figure 2. Number of geriatricians per 10 000 people aged 65+ in Poland and selected European countries
Source: own study based on Eurostat data

Secondly, as the share of the elderly population expands, the pressure to increase public expenditure on age-related care is bound to intensify. In the healthcare are, this means increasing spending on those in need of intensive and long-term care. This phenomenon can be already observed in European countries, whereas in Poland this expenditure has so far been of marginal significance in the healthcare expenditure structure (Figure 3).

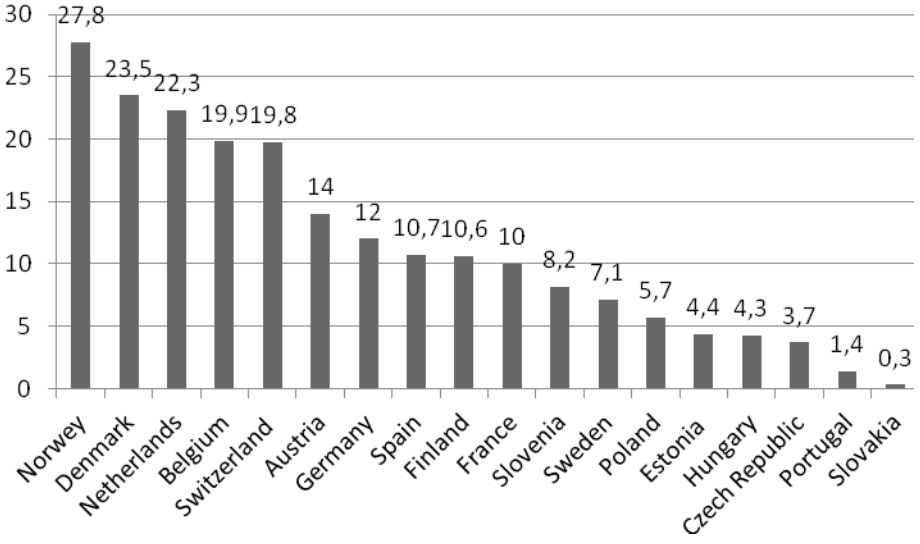

Figure 3. Expenditure on long-term care as % of healthcare expenditure
Source: own study based on WHO and European Health for All data, 2013

Despite the lack of broad demographic and epidemiological analyses in the article, it is important to emphasize their significance for the country's rational health policy. Monitoring demographic and epidemiological changes is primarily about assessing health problems, their trends and identifying the areas of priority for public health, which should be the basis for taking appropriate action taking into account the growing number of senior citizens.

4. Forecasts for the increase in public spending on healthcare in Poland

The main objective of the European Union is to ensure the sustainability of public finances, also in a medium-term and long-term perspective. For many countries, the risks associated with the sustainability of public finances are linked to a projected significant impact of the public expenditure related to an ageing population on healthcare and long-term

care. As indicated by numerous forecasts, the demographic factors discussed earlier, as well as non-demographic factors, which are not covered by the article, will have a strong impact on healthcare spending across Europe in the coming decades, including Poland.

The 2015 report by the European Ageing Working Group on population ageing projects a further increase in the share of public spending on healthcare in GDP until 2060, primarily caused by:

- rising incomes and expectations for high-quality health services;
- ageing populations;
- technological progress.

The report estimates that public expenditure on healthcare in the European Union will have risen, on average, by 0.9-1.6% of GDP by 2060, depending on the scenario adopted. This increase will vary between the Member States. In Poland, the expenditure will have increased by 1.3% of GDP by 2060.

According to the 2018 report by the Economic and Financial Affairs Council (ECOFIN), public spending on healthcare and long-term care in the EU will increase by 2% of GDP and will reach 10.4% of GDP in 2070, which will mainly reflect the changes in the population structure. Taking into account possible future changes in non-demographic cost drivers in healthcare and long-term care spending, the projected increase in care-related expenditure could reach 4% of GDP between 2016 and 2070.

According to the 2015 report by Ernst & Young, an additional 3.11% of GDP will be needed in 2060 to maintain the current level of funding and to ensure health needs are met. In 2018, public funds equal to 4.8% of GDP were spent on healthcare in Poland. This is one of the lowest rates in the European Union, with an average of 7.1% of GDP. Similarly, the per capita expenditure in Poland is not high either. According to the Eurostat data, with a score of around EUR 700 per capita, Poland ranks third from the bottom in terms of healthcare expenditure in the European Union, ahead only of Romania and Bulgaria.

The currently planned increase of 6% of GDP in public spending on healthcare, to be implemented by 2025, is a re-

sponse to the current shortcomings of the system. This assumption might be difficult to implement due to the epidemic and economic situation. The possibilities to further increase healthcare expenditure may be limited, including the years directly following the pandemic, which will be marked by a reduction in the public finance deficit and public debt. One should also emphasize the change in the age structure of the Polish population towards the increase in the number and share of those reaching the end working life paralleled with the decrease in the number of people of working age (from 65% in 2010 to 49% in 2060), that is, the group financially supporting the healthcare system. However, taking into account the long-term demographic trends identified earlier and, consequently, the growing health needs of the elderly, it should be stressed that the planned increase in funding is minimal and should be a starting point for a further systematic increase in public spending on healthcare.

Linking the multiple shortcomings of the healthcare system in Poland to only one factor - the level of health sector funding as a share GDP is an oversimplification. The healthcare system requires, firstly, adequate resources that, secondly, must be used effectively. The ongoing dilemma of the healthcare system, which in the context of population ageing is becoming even more significant, is the question of how to provide the best treatment given that resources are limited.

5. Conclusion

The impact of demographic changes on the increase in healthcare spending is a complex problem, as demographic factors determine both the above-mentioned increase in expenditure as well as the changes in its structure.

As the elderly, in the case of which the average cost of treating a single patient is higher, are more likely to rely on social benefits, an ageing population will result in financial pressure on the healthcare system. It will be extremely important to use funds more effectively. The Polish healthcare system as it stands is completely unsuited to the needs of the population, because it is based on disintegrated, dispersed and inconsistent benefits. The necessary systemic

changes related to an ageing population should be linked, in particular, to the reorientation of the broadly-defined ways of delivering healthcare and the actions resulting from changing the health needs of specific senior age groups. So far, the health needs of the elderly have not been reflected in how the health system is organized. For example, the health policymakers have not assimilated the knowledge that comprehensive geriatric care is cheaper, more effective and more senior-friendly. Older patients require holistic treatment, nursing and long-term care, which is still overlooked in the healthcare system.

The forecasts for Poland presented in the article show that population ageing will contribute to a significant increase in public spending on healthcare in the future only as a result of demographic changes. Nevertheless, it should be noted that these analyses do not take into account a number of factors that also determine the volume of these expenditures.

In conclusion, the future age structure of European countries, including Poland, will have serious economic and social consequence. Demographic projections must be taken into account by policymakers when implementing changes in health policy and healthcare system strategies that should evolve in line with the needs of an ageing population.

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