EXPENDITURES ON HEALTHCARE VERSUS HEALTH CONDITIONS AMONG NEW MEMBER COUNTRIES OF THE EU

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Abstract The aging population, the increasing number of lifestyle diseases and the increasing proportion of difficult-to-cure illnesses in the EU demands the use of modern medicine and modern medical technology.
Such a situation leads to an increase of funds spent on the health sector. Therefore the question arises as to whether it is possible to find the link between expenditure on health and health conditions among societies in the EU countries. This article shows the relationship between health financing and the condition of health in the societies of the new EU Member States.

JEL Classification: I11, I15, I18
Keywords: healthcare, expenditures, UE, health condition

Received: 10.10.2013 Accepted: 25.02.2014

Introduction

Healthcare is a very important and, at the same time, difficult element of each state's policy. For many countries, the issue of financing the healthcare system is a delicate matter and one of the basic economic and social issues. Nevertheless, decisions concerning the sources and principles of healthcare financing influence the quality of the entire system (Hady & Leśniowska, 2013, p. 1).
The technology currently available, medical supplies and modern medicines provide more effective treatment, and most importantly, they allow patients to return to full health whereas, on the other hand, this situation forces the EU states to systematically increase their expenditure on the healthcare sector in order to meet the growing expectations of their citizens.
This paper presents a comparative analysis of the selected EU countries as far as, first of all, spending on healthcare and, secondly, the assessment of health conditions among the societies in these countries. The 10 Member States which entered into the structure of the European Union in 2004 have been analyzed here, as well as the two newest member states that joined the European Community on 1 January 2007.
The selection of the presented figures is not random –these indicators and countries were deliberately selected for their accession to the EU and the changes this brought about.

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Healthcare expenditure in the new and old member states of the EU

The 10 countries admitted to the EU in 2004 are diverse in terms of economic development, and the spectrum of differences between them is very extensive, ranging from the level of the GDP per capita and ending with the expenditure of funds for healthcare.

The analysis starts with the presentation of the ratio of the Gross Domestic Product (GDP) in the 12 newest EU countries (Table 1).

Table 1: Gross Domestic Product in new member states of EU

Countries admitted to the European Union in 2004		
Country	2000	2010
Cyprus	16 700	23 800
Slovenia	15 300	20 900
Malta	16 200	20 200
Czech Republic	13 500	20 100
Slovakia	9 500	18 100
Estonia	8 600	15 700
Hungary	10 300	15 500
Poland	9 200	15 300
Lithuania	7 500	14 200
Latvia	6 900	12 600
Countries admitted to the European Union in 2007		
Romania	5 000	11 000
Bulgaria	5 400	10 600

Source: Eurostat, National Accounts, 2011

In the countries that joined the EU in 2004 the GDP ranged between 13 000 and 23 000 USD. In Bulgaria and Romania, the newest EU member states, it stood at around
10 00 - 11 000 USD.

The undisputed „leader" in terms of the GDP per capita is Cyprus where the GDP stood at almost 24 000 USD in 2010. Next in order are: Slovenia, Malta and the Czech Republic. In addition, to better observe the existing differences, the countries are listed starting with the highest level of the GDP per capita recorded in the year 2010.

Comparing oldmember states of the EU, we can see the same relationship – GDP is rising through this period (Table 2).

Table 2: Gross Domestic Product in oldmember states of the EU

Country	2000	2010
Luxembourg	46 700	67 000
Netherlands	25 600	32 600
Ireland	25 200	31 100
Austria	25 100	30 800
Denmark	25 100	30 700

Sweden	24 300	30 100
Belgium	24 100	29 000
Germany	22 400	28 700
Finland	22 300	28 300
United Kingdom	22 700	27 900
France	22 000	26 100
Italy	22 400	24 500
Spain	18 500	24 500
Portugal	15 400	19 800
Greece	16 000	21 500

Source: Eurostat, National Accounts, 2011

Knowing the structure of the GDP in the new EU member states, the level of health system funding can be examined, taking into account the following indicators:

1) total expenditure on health per capita(PPP int. $);
2) total expenditure on health as a percentage of the GDP;
3) private expenditureon healthas a percentage of the totalexpenditure on health.

Table 3: Per capita total expenditure on health (PPP int. $)

Countries admitted to the European Union in 2004		
Country	2000	2010
Cyprus	1107	2218
Slovenia	1451	2429
Malta	1249	2290
Czech Republic	982	1885
Slovakia	604	2097
Estonia	518	1294
Hungary	853	1601
Poland	584	1377
Lithuania	560	1286
Latvia	500	1150
Countries admitted to the European Union in 2007		
Romania	248	881
Bulgaria	385	1057

Source: Own elaboration based on World Health Report, 2013

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The highest health spending per capita in 2010 (Table 3) was recorded in Slovenia (the second largest country in terms of the GDP reached in 2010) whereas Cyprus and Malta, which were at the forefront with their GDP reached in 2010, still remained the leaders of the measured healthcare expenditure per capita. Considering the youngest member countries, healthcare spending per capita is the largest in Bulgaria.

What is important is that in the old member states of the EU we can see the same relationship. The highest healthcare spending per capita in 2010 was recorded in Netherlands (the second largest country in terms of the GDP reached in 2010) – it was two hundred percent (based on OECD Statistics, data extracted on 12 October 2013). Very similar results we can observe in Austria, Denmark, Germany and Luxembourg (based on data from World Health Report, 2013).

Next, spending on healthcare in the form of total expenditure on health as a percentage of the measured Gross Domestic Product (GDP) (Table 4) is presented.

It can be seen that the expenditure incurred on healthcare per capita is quite varied in the EU, especially if we are talking about the group of countries joiningthe EU in 2010. This situation is a derivative of the observed differences on the level of economic development previously illustrated by the GDP per capita.

There is a relationship between a continuous increase in expenditure on healthcare per capita, irrespective of whether we are talking about countries that joined the EU in 2004 or 2007.

Moreover, the expenditure on healthcare in the analyzed period generally increased faster than the economic growth shown by an increase in the GDP.

Table 4: Total expenditure on health as % of GDP

Countries admitted to the European Union in 2004		
Country	2000	2010
Cyprus	5.8	7.4
Slovenia	8.3	9.0
Malta	6.6	8.5
Czech Republic	6.3	7.5
Slovakia	5.5	9.0
Estonia	5.2	6.3
Hungary	7.2	7.8
Poland	5.5	7.0
Lithuania	6.5	7.0
Latvia	6.0	6.7
Countries admitted to the European Union in 2007		
Romania	4.3	5.9
Bulgaria	6.2	7.6

Source: Own elaboration based on World Health Report, 2013

The highest level of c spending measured as a percentage of the GDP was recorded in 2010 in Slovenia (which achieved the second highest score of the GDP in 2010) and Slovakia (which is the fifth country that has achieved a GDP of 18 000 USD). The youngest two EU member states show the growth of healthcare spending measured as a percentage of the GDP, as well as the growth of their health expenditure per capita.

If we talk about old member statesof EU, we can observe that the highest level of healthcare spending measured as a percentage of the GDP was recorded

in 2010 in Netherlands (which achieved the second highest score of the GDP in 2010), based on data from World Health Report, 2013.

The analysis of the ratio of private expenditure on healthcare as a percentage of the total expenditure on healthcare is made below (Table 5).

Table 5: Private expenditure on healthcare as % of total expenditure on healthcare

Countries admitted to the European Union in 2004		
Country	2000	2010
Cyprus	58.3	56.7
Slovenia	26.0	27.2
Malta	27.5	33.3
Czech Republic	9.7	16.2
Slovakia	10.6	35.5
Estonia	22.0	20.3
Hungary	29.3	35.2
Poland	30.0	27.8
Lithuania	30.3	27.1
Latvia	45.6	39.1
Countries admitted to the European Union in 2007		
Romania	18.8	19.6
Bulgaria	39.1	44.3

Source: Own elaboration based on World Health Report, 2013

The smallest share of private expenditure on healthcare among the countries that joined the EU in 2004 was recorded in the Czech Republic, even though the growth was of nearly 10 to 16%, which is the only result protruding from the rest of the data. In five of the EU 10 countries (Latvia, Poland, Lithuania, Estonia and Cyprus) a few percent decline was recorded and in the period 2000 – 2010it stood at 1.2 % in Poland, 1.6 % in Cyprus, 1.7 % in Estonia, 3.2 % in Lithuania and 6.5 % in Latvia.

On the other hand, the most spectacular growth in the same group of countries was recorded in Slovakia with its nearly 25 % increase. Other countries recorded much lower increases: Slovenia 1.2 % , Malta, the Czech Republic and Hungary around 6%.

In the group of countries which joined the EU in 2007, Bulgaria had a 44.3 % share of private spending within the total expenditure allocated to healthcare, while Romania had a much smaller share of private expenditure on healthcare within the total healthcare expenditure, it amountedto just 20%.

In old member states of the EU we can observe the less dynamic change, for instance in Luxembourg (which achieved the highest score of the GDP in 2010) the difference between 2000 and 2010 is only 0,8 percent, based on data from World Health Report, 2013.

The health status of the population in the analyzed new member countries of the EU

After discussing a few selected indicators in terms of both the economic growth and the expenditure on healthcare incurred by the youngest member states, one should analyze the health condition of the youngest populations of the countries that have recently become members of the EU community.

The analysis is started by presenting the basic rate, which is life expectancy for people born in 2011 (Table 6).

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Table 6: Life expectancy at birth (years) for people born in 2011

Countries admitted to the European Union in 2004		
Country	Male	Female
Cyprus	79	84
Slovenia	77	83
Malta	79	82
Czech Republic	75	81
Slovakia	72	80
Estonia	71	81
Hungary	71	79
Poland	72	81
Lithuania	68	79
Latvia	69	78
Countries admitted to the European Union in 2007 year		
Romania	70	78
Bulgaria	71	78

Source: Own elaboration based on World Health Report, 2013

One can see here a noticeable difference between the countries that joined the European Community in 2004 and the two youngest member countries. Large gaps appear in the data available for life expectancy of women where the youngest two Member States recorded the score of 78, while 7 out of the 10 countries which entered the EU structures in 2004 recorded the score of more than 80 yearsof age. Only one country (Latvia) of these 10 reported the result of 78 years for women and 2 other countries (Hungary and Lithuania) 79 years of age.

These disparities are smaller for men whose average age expectancy is 70 – 71years in the youngest EU countries, while among the 10 countries which joined the EU in 2004, Latvia and Lithuania recorded the life expectancy for men at less than 70 years oldrespectively: Latvia 69 years and Lithuania 68 years of age. On the other hand, Estonia and Hungary recorded the result of 71 years, and the remaining six countries recorded male life expectancy of 72 years or more.

In old member states of the EU we can observe that the life expectancy (for both sexes) is rising. Three countries that achieved the highest score of the GDP in 2010 recorded the below results:

1) the life expectancy for both sexes in Luxembourg and Ireland increased by 6 years in the period 2000-2010;
2) the life expectancy for both sexes in Netherlands rose by 3 years in the period 2000-2010.

Those facts are based on data from World Health Report, 2013.

The life expectancy for men and women in good health is also an important indicator and it is presented in Table 7.

Table 7: Expected healthy life years for people born in 2011

Countries admitted to the European Union in 2004	*2011*	*2011*
	female	*male*
Countries admitted to the European Union in 2004		
Czech Republic	63,6	62,2
Estonia	57,9	54,2
Cyprus	61,4	62,4
Latvia	56,7	53,7
Lithuania	62,1	57,1
Hungary	59,1	57,6
Malta	70,7	70,3
Poland	63,3	59,1
Slovenia	53,8	54
Slovakia	52,3	52,1
Countries admitted to the European Union in 2007 year		
Bulgaria	65,9	62,1
Romania	57,1	57,5

Source: Own elaboration based on World Health Report, 2013

Life expectancy in good health for people born in 2011 ranges in countries that joined the EU in 2004 between 52 years and 70 years for both men and women whereas in the countries which entered the EU in 2007 life expectancy for men in good health is 62 years in Bulgaria, 57 years in Romania, and for women 66 years in Bulgaria and 57 years in Romania.

The data on infant mortality (Skrzypczak & Rogoś, 2007, p. 18) are important parameters taken into account both in assessing the condition of the health of societies, as well as the quality of healthcare the societies receive. The analysis of these data is shown in Table 8.

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Table 8: Infant mortality rate (probability of dying by age 1 per 1000 live births) in 2011 year

Countries admitted to the European Union in 2004	
Country	Both sexes
Cyprus	3
Slovenia	2
Malta	5
Czech Republic	3
Slovakia	7
Estonia	3
Hungary	5
Poland	5
Lithuania	5
Latvia	7
Countries admitted to the European Union in 2007	
Romania	11
Bulgaria	11

Source: Own elaboration based on World Health Report, 2013

It can be concluded from the above table that there exist large disparities in infant mortality. Only Latvia and Slovakia, from the EU 10 countries, reported the best results of 7 infant deaths per 1,000 births while in Bulgaria and Romania as many as 11 deaths per 1,000 births were recorded in the same period. Slovenia recorded the best result of only two deaths per 1,000 births in 2011.

What is also important is that one can see some differences between the neighbouring countries: in Estonia, the infant mortality rate is more than twice lower than in Latvia.

In old members of the EU states we can also see significant change during the period 2000-2010 decrease of infant deaths –in Luxembourg and Netherlands a decrease of 2 infant deaths per 1,000 births and decrease of 3 infant deaths per 1,000 births in Ireland (data based on World Health Report, 2013).

Table 9: Neonatal mortality rate (per 1000 live births) in 2011

Countries admitted to the European Union in 2004	
Country	Both sexes
Cyprus	1
Slovenia	2
Malta	4
Czech Republic	2
Slovakia	4
Estonia	2
Hungary	4
Poland	3
Lithuania	3
Latvia	5
Countries admitted to the EuropeanUnion in 2007	
Romania	8
Bulgaria	11

Source: Own elaboration based on World Health Report, 2013

Neonatal mortality, just like the infant mortality rate, shows huge differences between the countries which joined the EU in 2004 and those which joined in 2007. Unfortunately, also in this case we can see that Bulgaria and Romania have a much greater mortality, respectively, 11 and 8 infant deaths per 1,000 births, which is definitely a shameful exception.

The 10 countries which joined the structure of the EU in 2004 have much better records in this respect than the youngest members of the EU. The worst result was recorded in Latvia – 5 deaths per 1,000 births whereas Hungary, Slovakia and Malta reported four deaths per 1,000 births, Poland and Lithuania three cases of neonatal deaths, Estonia, Slovenia and the Czech Republic just two deaths per 1,000 births, while at the same time, Cyprus recorded only one infant death per 1000 births.

In the old member states of the EU we can also observe decreased mortality – in Luxembourg and Ireland there was a decrease of 3 neonatal deaths per 1,000 births (data based on World Health Report, 2013).

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Table 10: Adult mortality rate (probability of dying between 15 and 60 years of age per 1000 population) in 2011

Countries admitted to the European Union in 2004		
Country	Male	Female
Cyprus	79	38
Slovenia	118	51
Malta	77	42
Czech Republic	132	60
Slovakia	170	70
Estonia	207	69
Hungary	208	93
Poland	191	72
Lithuania	267	92
Latvia	237	89
Countries admitted to the European Union in 2007		
Romania	209	84
Bulgaria	194	86

Source: Own elaboration based on World Health Report, 2013

Another indicator reflecting the health of a society is the mortality of adults (between 15 and 60 years of age) per 1,000 people (Table 9). There is a clear disparity between the 10 countries admitted to the EU in 2010. The lowest mortality was observed in Cyprus – 38 deaths per 1,000 people and Malta – 42deaths per 1,000 people. Two Baltic countries – Lithuaniaand Latvia, as well as Hungary, definitely stand out from the leaders. The youngest two EU member states occupy the middle positions when compared to the 10 countries that joined the EU in 2004.

In the old member states of the EU we can observe the mortality of adults (between 15 and 60 years of age) per 1,000 people at level of about 50-53 deaths per 1,000 people.

Table: 11 Causes of death – absolute number

Countries admitted to the European Union in 2004, both sexes, 2010			
Country\Disease	Cancer	Diseases of the circulatory system	Ischaemicheartdiseases
Cyprus	1111	1928	620
Slovenia	5843	7331	2051
Malta	852	1152	647
Czech Republic	27834	53590	25178
Slovakia	12073	28541	16944
Estonia	3550	8750	4323
Hungary	32460	65819	33842
Poland	92610	174003	45832
Lithuania	8110	23627	15 112
Latvia	6039	16279	8591
Countries admitted to the European Union in 2007, both sexes, 2010			
Romania	47307	156 359	53 297
Bulgaria	16562	74392	13 330

Source: Own elaboration based on Eurostat, 2013

Conclusion

The above facts leave no illusions about the phenomenon of the process of the aging population. Europe, including Poland, is aging at an alarming rate: while in 1990 it was noted that 13.9 % of the European population was over 65 yearsold, the CSO estimates clearly show that in 2030 this percentage will still be increasing and will amount to 23.8 %. The situation of Polish society is by no means better: in 2010 approximately 14% of patients were more than 65 years old, and, according to the estimates, this rate will increase twice over the next twenty years. This situation involves huge economic and social consequences for both the pension system and for healthcare, as the growing number of the elderly means that the state has to continuously increase its expenses for these members of the society in order to ensure adequate quality of life and their performance at work. The trend of growth in expenditure on healthcare is evident in the period covered by this analysis, thus from 2000 until 2010.

The relationships between the amount of expenditure on healthcare and the health condition of European society are therefore clearly visible:

1) Taking into account the countries that joined the EU in 2004, adult mortality between 15 and 60 years of age is the lowest in Cyprus, Malta and Slovenia. These countries are among the 10 that entered into the structure of the EU in 2004, and are characterized by the highest level of spending on healthcare. Other countries with worse outcomes remain far behind, especially Romania and Bulgaria which have far worse results in terms of their expenseson healthcare and have a higher percentage of adult mortality in this age group.
2) The smallest percentage of infant and neonatal mortality rates were recorded in Slovenia and Cyprus – thecountries with the highest spending on healthcare from the EU 10, and again, as in the previous case, Romania and Bulgaria are the countries which have the worst records in this respect.
3) As the presented statistics show, the largest number of deaths was related to cardiovascular diseases, regardless of whether we are talking about countries that joined the EU in 2004 or in 2007.
4) We can observe a very similar trend between old and new EU countries – rising GDP and rising healthcare expenditure.

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Table 12: Summary ta

Indicator	*GDP*		*Per capita total expenditure on health (PPP int. $)*		*Total expenditure on health as % of GDP*		*Private expenditure on health as % of total expenditure on health*		*Life expectancy at birth (years) for people born in 2011*	
Country	2000	2010	2000	2010	2000	2010	2000	2010	male	female
Countries admitted to the E										
Cyprus	16 700	23 800	1107	2218	5.8	7.4	58.3	56.7	79	84
Slovenia	15 300	20 900	1451	2429	8.3	9.0	26.0	27.2	77	83
Malta	16 200	20 200	1249	2290	6.6	8.5	27.5	33.3	79	82
Czech Republic	13 500	20 100	982	1885	6.3	7.5	9.7	16.2	75	81
Slovakia	9 500	18 100	604	2097	5.5	9.0	10.6	35.5	72	80
Estonia	8 600	15 700	518	1294	5.2	6.3	22.0	20.3	71	81
Hungary	10 300	15 500	853	1601	7.2	7.8	29.3	35.2	71	79
Poland	9 200	15 300	584	1377	5.5	7.0	30.0	27.8	72	81
Lithuania	7 500	14 200	560	1286	6.5	7.0	30.3	27.1	68	79
Latvia	6 900	12 600	500	1150	6.0	6.7	45.6	39.1	69	78
Countries admitted to the E										
Romania	5 000	11 000	248	881	4.3	5.9	18.8	19.6	70	78
Bulgaria	5 400	10 600	385	1057	6.2	7.6	39.1	44.3	71	78

Source: Own elaboration based

able including all data

Expected healthy life years for people born in 2011		*Infant mortality rate (probability of dying by age 1 per 1000 live births) in 2011*	*Neonatal mortality rate (per 1000 live births) in 2011*	*Adult mortality rate (probability of dying between 15 and 60 years of age per 1000 population) in 2011*		*Causes of death both sexes, 2010 absolute number*		
female	male	bothsexes	bothsexes	male	female	cancer	diseases of the circulatory system	ischaemiche-artdiseases
uropean Union in 2004								
61,4	62,4	3	1	79	38	1111	1928	620
53,8	54	2	2	118	51	5843	7331	2051
70,7	70,3	5	4	77	42	852	1152	647
63,6	62,2	3	2	132	60	27834	53590	25178
52,3	52,1	7	4	170	70	12073	28541	16944
57,9	54,2	3	2	207	69	3550	8750	4323
59,1	57,6	5	4	208	93	32460	65819	33842
63,3	59,1	5	3	191	72	92610	174003	45832
62,1	57,1	5	3	267	92	8110	23627	15 112
56,7	53,7	7	5	237	89	6039	16279	8591
uropean Union in 2007								
57,1	57,5	11	8	209	84	47307	156 359	53 297
65,9	62,1	11	11	194	86	16562	74392	13 330

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