

Hady, Joanna; Leśniowska, Małgorzata

**Article**

## Analysis of Polish healthcare system financing in 2000-2009

e-Finanse: Financial Internet Quarterly

**Provided in Cooperation with:**

University of Information Technology and Management, Rzeszów

*Suggested Citation:* Hady, Joanna; Leśniowska, Małgorzata (2013) : Analysis of Polish healthcare system financing in 2000-2009, e-Finanse: Financial Internet Quarterly, ISSN 1734-039X, University of Information Technology and Management, Rzeszów, Vol. 9, Iss. 1, pp. 1-11

This Version is available at:

<https://hdl.handle.net/10419/147058>

**Standard-Nutzungsbedingungen:**

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

**Terms of use:**

*Documents in EconStor may be saved and copied for your personal and scholarly purposes.*

*You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.*

*If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.*

# ANALYSIS OF POLISH HEALTHCARE SYSTEM FINANCING IN 2000-2009

JOANNA HADY\*, MAŁGORZATA LEŚNIEWSKA\*\*

**Abstract** 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, while at the same time 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. This article analyses the expenditure on healthcare in Poland during the last few years. It presents total expenditure on healthcare, its yearly growth rate, as well as other data related to the expenses incurred within the Polish healthcare system in that period.

**JEL Classification:** I11, I15, I18

**Keywords:** Poland, health care, financing system

Received: 10.07.2012

Accepted: 27.03.2013

## INTRODUCTION

It must be stated that the healthcare sector has its own specific character. The decisions and initiatives concerning Polish healthcare (also those concerning its financing), made (or not made) by the government often awaken much controversy. Of course, the peculiar character of the sector should not be an excuse for the ineffectiveness seen in many areas of its functioning. The issue of expenses incurred in healthcare is just one of many elements composing the entire condition of that sector, which is still viewed in a decidedly negative light. Naturally, just increasing expenditures does not guarantee getting a better system. Neither would it settle all problems of the healthcare sector in Poland. Still, in favourable conditions, such a move may facilitate the sector's recovery.

The Polish healthcare system is financed from several sources:

- 1) health insurance premiums (collected by the National Health Fund),
- 2) state budget,

3) local governmental units' budgets,

4) private sources.

The above-mentioned specific character of the sector concerns mostly (public) hospitals, in contrast to private units active in market conditions. It was the market reform that caused changes in the healthcare financing system and consequently, enforced rationalisation of the activity of the service providers – i.e. more economical and effective use of the means they have (Dobska & Rogoziński, 2010, p. 16).

Throughout the world, a systematic growth of expenses on healthcare in various areas of its functioning is observed. The United States was the forerunner of the trend. Later, the practice was “transplanted” onto European grounds.

Numerous prognoses (we can find examples in the following publications: Financing Health Care in Poland. Green Paper, 2008; Szyborski & Marciniak, 2009; Golinowska, Kocot & Sowa, 2006) concerning the future of the healthcare sector show clearly that expenditure on healthcare will continue to increase. Important is also the fact that the sector has to deal with an ageing society. So what have the dynamics

of change within Polish healthcare financing been during the last few years? Are we really witnesses to real growth of expenditure on healthcare? And if it is so, can we talk of treatment quality improvement, and in consequence – of better care for customers-patients?

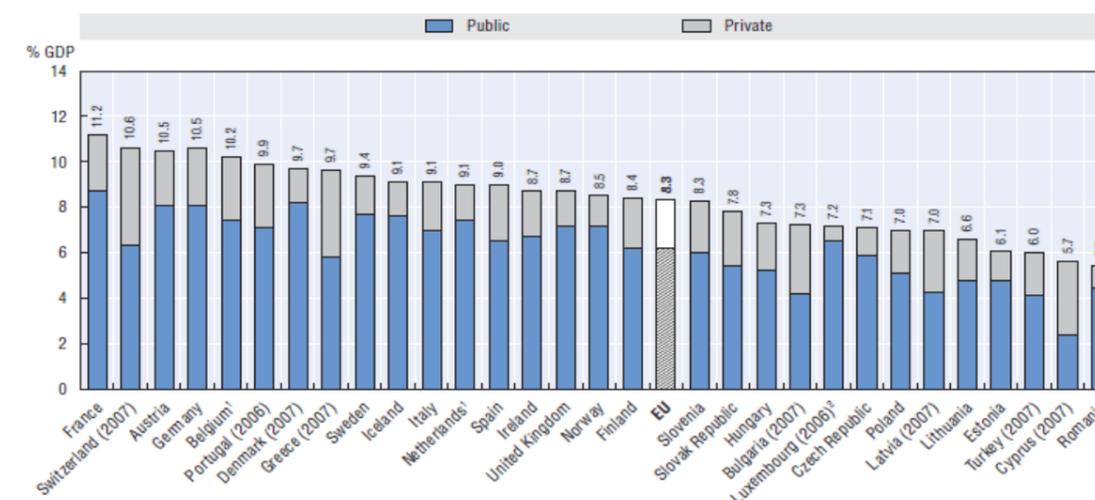
## COMPARING POLISH HEALTHCARE SPENDING WITH OTHER EU COUNTRIES

Health care spending is related in a strong way with economic sustainability. Economic sustainability

relates to growth in health care spending (understood as a proportion of gross domestic product). We should remember that expenditures on healthcare is economically sustainable only to a certain level of where the social cost of healthcare spending will equal the value produced by that spending.

All EU countries financing healthcare use a mix of public and private expenditures. The following chart shows total health expenditure as a share of GDP in 2008 in EU countries.

Chart 1: Total health expenditure as a share of GDP in 2008 in EU countries



Source: OECD Report. Health at Glance. Europe 2010.

Retrieved from: [http://www.oecd-ilibrary.org/docserver/download/8110161e.pdf?expires=1364375077&id=id&ac\\_cname=guest&checksum=5139EEB7F1E42FD809585011173882EC](http://www.oecd-ilibrary.org/docserver/download/8110161e.pdf?expires=1364375077&id=id&ac_cname=guest&checksum=5139EEB7F1E42FD809585011173882EC)

We can observe that in countries like Denmark, Austria, Germany or Switzerland there is heavy spending on the health sector. This state of affairs may be linked to the effectiveness of those countries, on the other side we should remember other issues such as: how funds are spent, and how to prevent waste.

What is more, the systematically prepared World Health Organization paper reports that the level of expenditure on healthcare is directly related to the level of health within societies. In these cases (Austria, Switzerland and Germany), we can find some links between expenditures on health care and the level of health in these societies. It follows that the state in constructing a budget, especially in the

case of countries having overall economic growth, may take action to contribute to better health and the standard of living of its citizens.

## EXPENDITURE ON HEALTHCARE IN POLAND

Firstly, we should say that expenditure growth in Poland and EU countries as well is not significant. If we take into account the years 1998–2009 we will observe some differences. The difference between the level of health care spending in the EU and OECD countries and the level of expenditures in Poland expressed in percentage points is respectively during the sample interval 2,56-3,18 times that of the EU

\* M. S. Joanna Hady, Institute for Financial Research and Analyses, University of Information Technology and Management in Rzeszów, ul. Sucharskiego 2, 35-225 Rzeszów, jhady@wsiz.rzeszow.pl.

\*\* M. S. Małgorzata Leśniowska, Institute for Financial Research and Analyses, University of Information Technology and Management in Rzeszów, ul. Sucharskiego 2, 35-225 Rzeszów, jhady@wsiz.rzeszow.pl.

and from 4.01 - 4.73 for the OECD countries. The difference is not significant but steady growth can be seen.

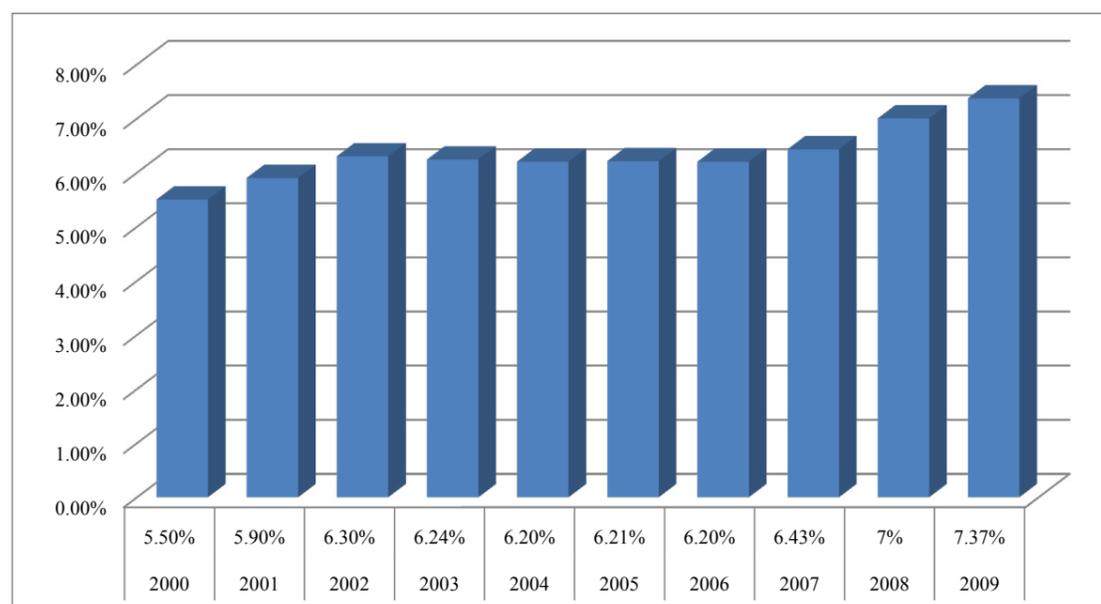
Secondly, it is important to show the econometric model which is appropriate to calculate healthcare spending. This model is the ILO social budget model. It was prepared and implemented in Poland and other Eastern European countries, such as Hungary and Slovakia. The main purpose of implementing the ILO social budget model was to observe long-term social expenditure and revenues as well. The model concentrates on social budget balance. It includes pension scheme, short term benefits, revenues and also expenditure projections. Primarily, this model assumed that it would cover the health care budget as well. Although some data was collected, the task has never been finally completed. For this purpose, the health care budget has never been presented.

Until 1989, Polish society was covered by a social security system which also included free healthcare. However, that system caused many misunderstandings (expenditure on insurance benefits were included in the overall state financial system, ensuring all eligible to receive benefits, regardless of the amount

of revenues generated from the fees – in practice there were some social groups, which didn't receive free health services – for instance – farmers and their families). After the transformation, the situation changed drastically, and Poland as a country became more conscious of the growing needs of society with respect to healthcare.

For some time (exactly from 1991, according to OECD Database Healthcare Statistics), a growth in expenditure on healthcare has been observed in Poland. Total expenditure on healthcare in Poland in 2002-2006 remained stable – at about 6% of GDP. Perceptible growth, resulting e.g. from the state budget taking over the financing of medical care, was observed in 2007 (6.43% of GDP). Total expenditure on healthcare in 2008 made up 7% of GDP – 2 percentage points less than the average in OECD (9% at the time). The EU countries which in that time spent most on healthcare included France (11.2% of GDP), and Austria and Germany (10.5% of GDP each). Successive years brought Poland further growth of expenditure on healthcare, which in 2009 reached the level of 7.37% of GDP (OECD Health Data 2010, Eurostat Statistics Database).

Graph 1: Expenditure on healthcare in Poland as GDP percentage in 2000-2009



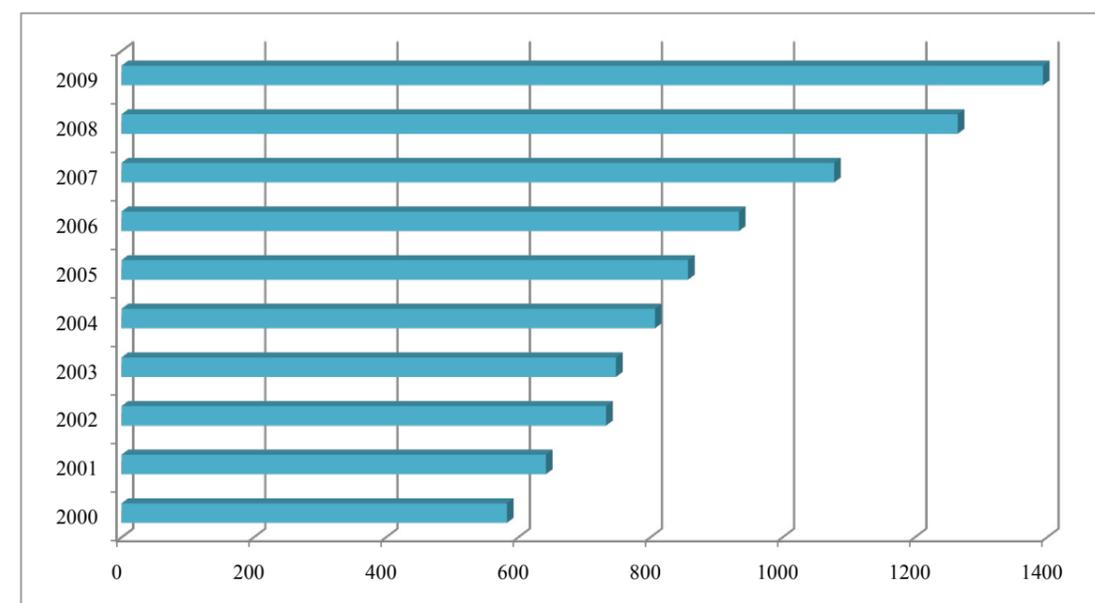
Source: Own study based on: OECD Health Data 2010, Eurostat Statistics Database

Analysis of per capita expenses (US\$ PPP) on healthcare in Poland between 2000 and 2009 also shows their systematic growth. It is worth mentioning that in the mid-90s the expenses were about 380 US\$ PPP, and in 2000, nearly 600 dollars per person. To compare, in the last year of the analysed period (2009) the same index was nearly 1400 (US\$ PPP).

The exact amounts in the particular years are presented in Graph 2. Despite the observed growth,

with its per capita expenses of 1394 US\$ PPP, Poland spends on healthcare half the sum of other EU countries. We spend much less than such Central European countries as Slovakia, the Czech Republic or Hungary. The difference stems mainly from lower public financing of healthcare than in the other countries.

Graph 2: Expenditure on healthcare in Poland per capita (US\$ PPP) in 2000-2009

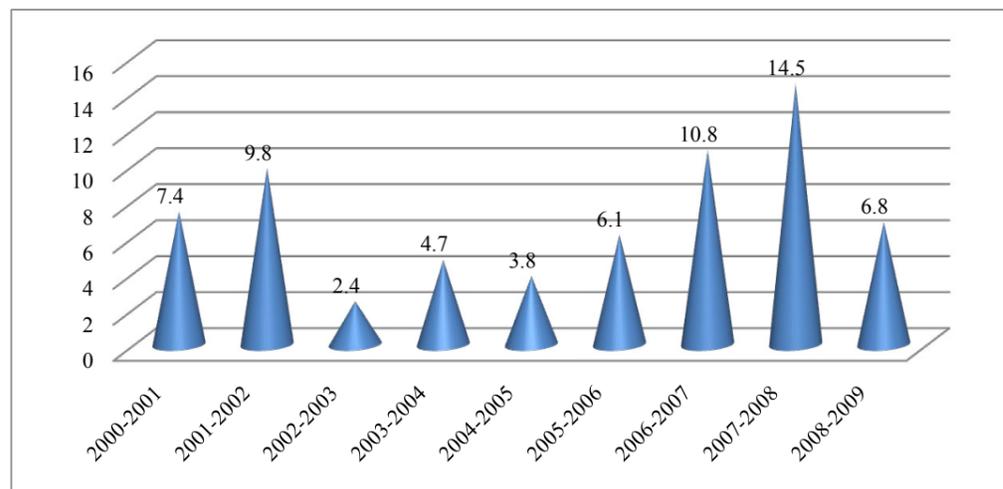


Source: Own study based on: OECD Health Data, November 2011

Total real per capita expenses on healthcare in Poland in 2000-2009 grew by 7.4% annually on average. Despite the fact that Poland still lags behind other EU countries as concerns spending on healthcare, the observed growth considerably exceeded the average

for OECD countries, which was 4.2% annually in the analysed period. The highest growth rate of total (real) per capita expenditure on healthcare was noted in 2007, and the lowest – five years earlier, in 2002 (OECD Health Data, 2011).

Graph 3: Annual growth rate of total real per capita expenses on healthcare (2000-2009)

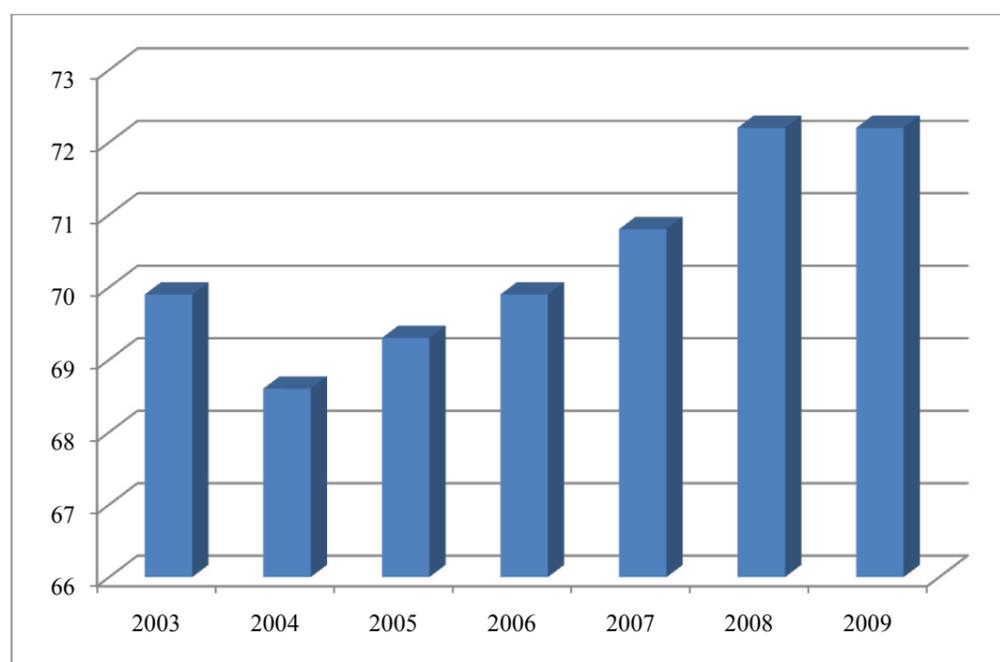


Source: Own study based on: OECD Health Data 2011;  
Retrieved from: <http://stats.oecd.org/Index.aspx?DataSetCode=SHA>

In 2000, public expenses on healthcare in Poland (measured as percentage (%) of all expenses on healthcare) amounted to 70% (National Health Account for 2009, p. 7). In the following years, a certain stagnation could be observed at the level

of 69%. Starting with 2007, the 70% threshold was exceeded, the number reaching as much as 72.2% in 2009. Details of the analysis concerning the share of public expenses on healthcare in Poland in 2000-2009 are presented in Graph 4.

Graph 4: Public expenditure on healthcare in Poland as % of total expenses on healthcare in 2000-2009

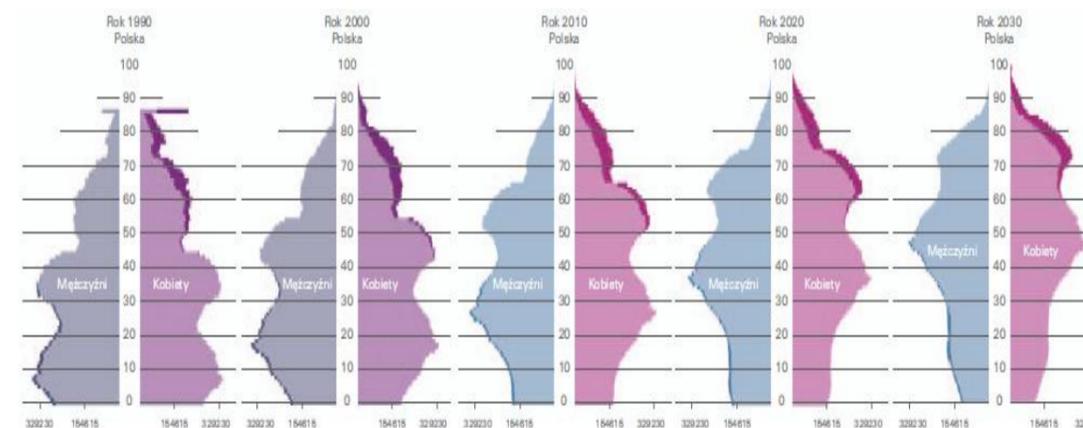


Source: Own study based on: OECD Health Data, November 2011

The above indicated data clearly indicate growing public expenditure on healthcare as measured against total expenditure on the sector. It must be stated, moreover, that this growth tendency will most likely continue due to changes occurring in the age structure of the Polish population. It means that within the next 20 years, the population of women and men of working age will decrease significantly. The age structure is presented below in Figure 1. The years: 1990, 2000, 2010, 2020 and 2030 were taken

as observation points. Particularly the prognoses for 2020 and 2030 leave little room for doubt. Both female and male production resources will decrease greatly. That, in turn, leads to the spectre of an ageing society which will inevitably require medical care. That is one more argument to confirm the thesis of increasing expenditure on the healthcare sector. The expenses will grow not only within financing, but also as concerns needs for highly specialist equipment, with emphasis on its quantity.

Figure 1: Age structure of Polish women and men in 1990-2030

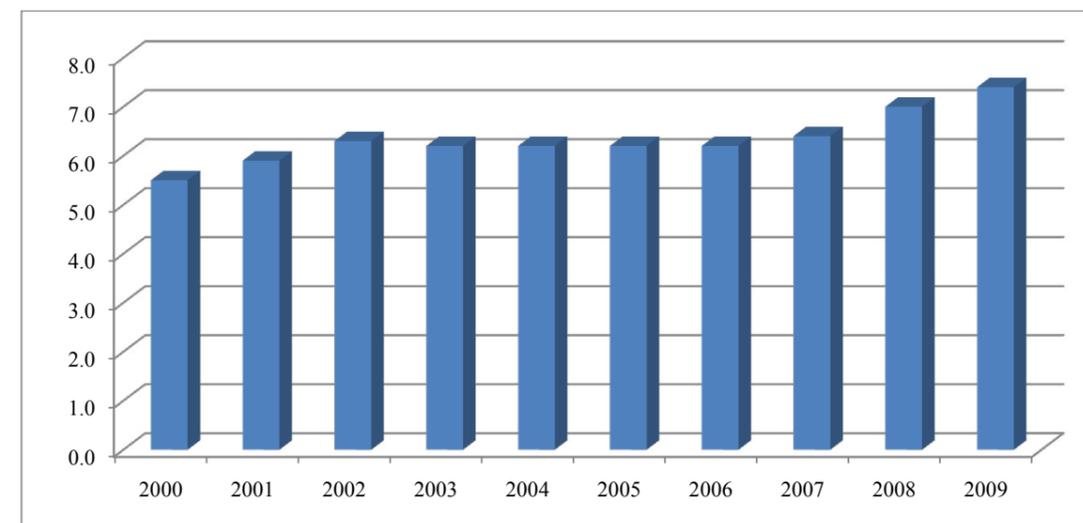


Source: Report Poland 2030. Developmental Challenges, Retrieved from: [http://zds.kprm.gov.pl/sites/default/files/pliki/pl\\_2030\\_wyzwania\\_rozwojowe.pdf](http://zds.kprm.gov.pl/sites/default/files/pliki/pl_2030_wyzwania_rozwojowe.pdf). [Men – blue; women – pink colour]

Next to public expenditure on healthcare in Poland as % of all expenses on healthcare, it is important to

consider public expenditure on healthcare measured as % of GDP, as shown in Graph 5.

Graph 5: Public expenditure on healthcare in Poland as % of GDP in 2000-2009



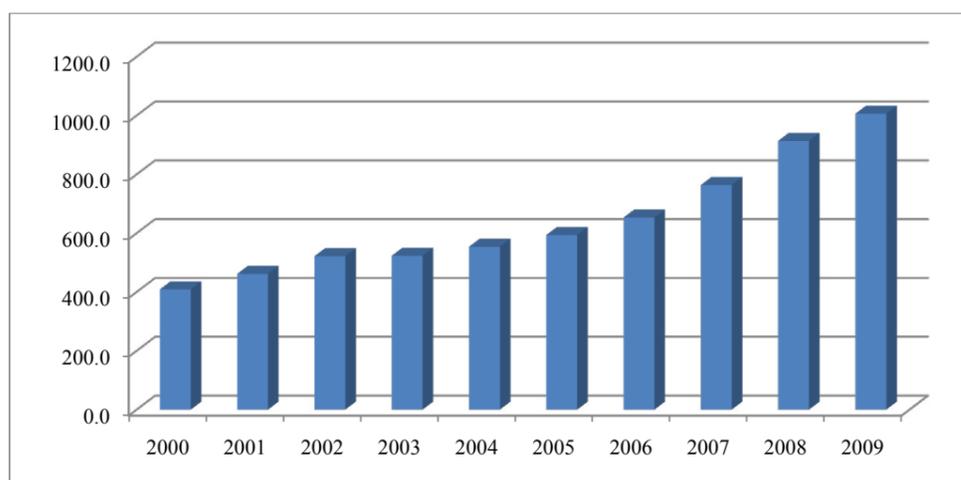
Source: Own study based on: OECD Health Data, November 2011

As concerns public spending rankings, the leaders are among the world's richest countries, such as the United States, Germany, Switzerland or France. The average public expenditure on healthcare in those countries is 10% as measured in relation to GDP. In that area, Poland clearly lags and is ranked much lower. It is optimistic, however, that slow but stable growth is observed in that area. The numbers speak for themselves. In the beginning of the examined period, public expenditure on healthcare was little over 5% of GDP. To compare, in 2009 it was already 7.2%. Thus a clear and systematic growth of public

expenditure on healthcare in relation to GDP is observed.

An equally important index of this analysis are public expenditures on healthcare measured per capita (in US\$ PPP). The data presented below indicate a slow change and increasing share of public expenditure on healthcare. In 2002-2003, a brief stabilisation was observed, then the growth tendency continued. To better assess the dynamics of that growth, Poland has been compared with the United States (Graphs 6 and 7, respectively).

Graph 6: Public expenditure on healthcare in Poland measured per capita (US\$ PPP) in 2000-2009

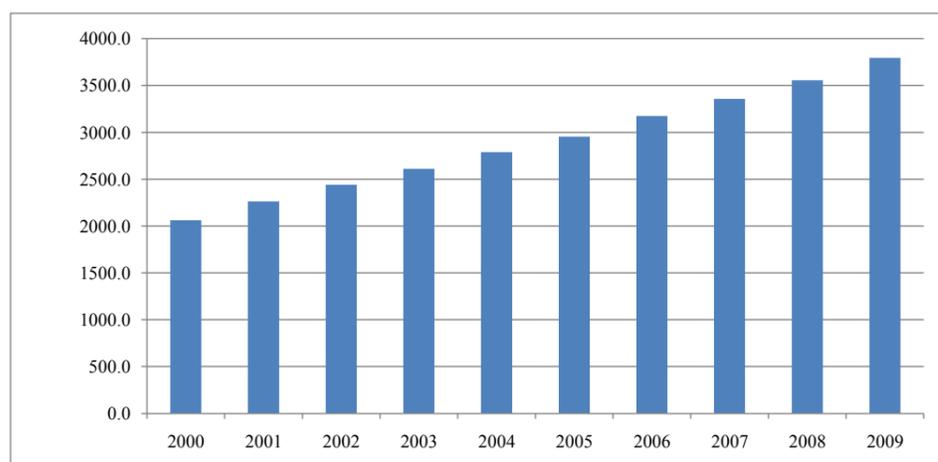


Source: Own study based on: OECD Health Data, November 2011

In the case of the USA, one can clearly see much greater dynamics, and stable growth. In the area of the share of public expenditures on healthcare,

Poland still has much to do and to improve, as most "old EU" countries such as France, Germany and Belgium outclass Poland, which ranks much lower.

Graph 7: Public expenditure on healthcare in the United States measured per capita (US\$ PPP) in 2000-2009



Source: Own study based on: OECD Health Data, November 2011

## MEDICAL EQUIPMENT AS A SIGNIFICANT ELEMENT OF HEALTHCARE

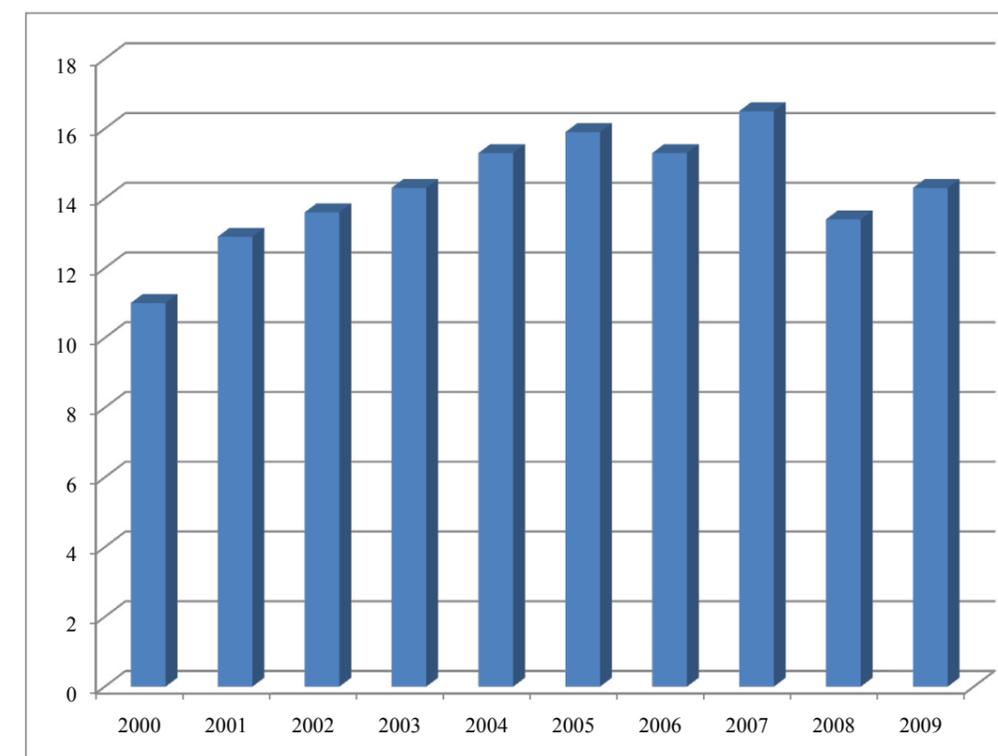
The dominating feature of 21st-century medicine is its growing technological advancement. Modern medical equipment guarantees effective treatment, and foremost helps to make an accurate diagnosis.

Numerous reports (for instance, we can quote two selected reports as a confirmation of the thesis: Desirable Directions of Change Health Care System in Poland. Between Rationing and Rationalization. Report retrieved from: [http://www.case.research.eu/upload/publikacja\\_plik/3758301\\_goli1.pdf](http://www.case.research.eu/upload/publikacja_plik/3758301_goli1.pdf) and Report of the Medical Innovation in Poland in 2012, Retrieved from: [http://issuu.com/inapan/docs/raport\\_medyczny\\_pl\\_netto\\_jpg#embed](http://issuu.com/inapan/docs/raport_medyczny_pl_netto_jpg#embed)) expose Poland's shortcomings concerning out-dated

equipment, and what follows, insufficient funding for that area of healthcare. In short, spending in that area is still too little, and the time period in which highly specialised equipment is used is definitely lengthening. The situation has an adverse effect on patients, whose diagnoses take longer, and in effect, the treatments might be less effective.

An example of such equipment are mammograph machines. Their numbers in the examined period are shown in Graph 9. In the first phase of the examined time period, a systematic growth in the number of mammograph machines per one million inhabitants can be observed. In 2008-2009, the number of the devices slightly falls. The presented data considerably differ from those for OECD countries. To compare, Luxembourg had 21.9 mammograph machines per one million people in the examined period, and in Finland the ratio was as high as 37.9.

Graph 9: Number of mammograph machines per 1 million inhabitants in Poland in 2000-2009

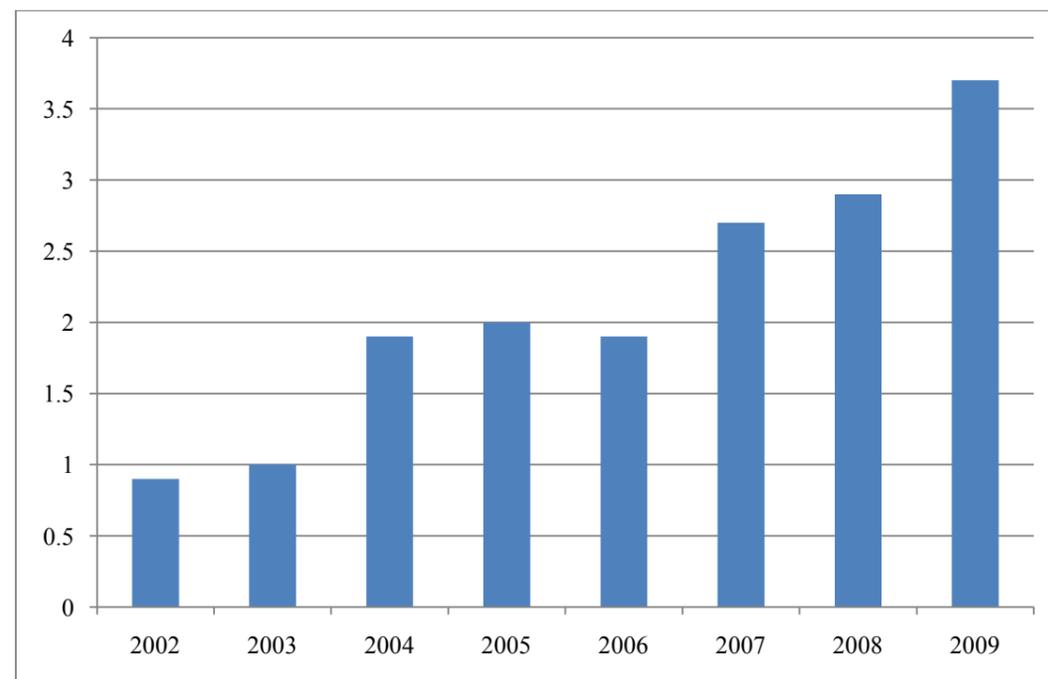


Source: Own study based on: OECD Health Data, November 2011

Beside mammograph machines as an example of highly specialised medical equipment, it is worth making a similar analysis of magnetic resonance (MRI) instruments. In the period of 2002-2009, there were just 2.1 magnetic resonance instruments per one million inhabitants in Poland. The dynamics of changes during the years is presented in graph 10.

The result places Poland far down in the ranking. To compare, in that same period in Luxembourg the number of MRI instruments per 1 million inhabitants was 10.6, and in Austria – 16.2.

Graph 10: Number of MRI instruments per 1 million people in Poland in 2002-2009

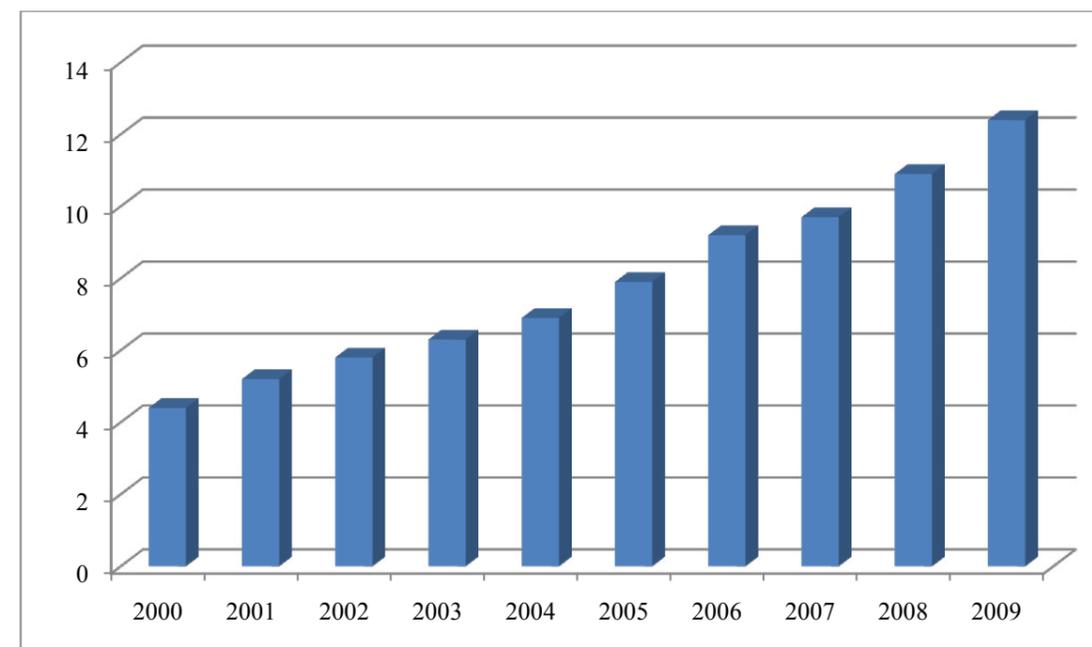


Source: Own study based on: OECD Health Data, November 2011

Besides MRI and mammography equipment, it is worth mentioning also CT scanners, which are an indicator of medical technology advancement. In 2000-2009, a systematic growth of tomographs per

one million inhabitants can be observed. However, the results again diverge considerably from the results for other European countries in that area.

Graph 11: Number of CT scanners per 1 million people in Poland in 2000-2009



Source: Own study based on: OECD Health Data, November 2011

While in 2009 Poland had 12.4 CT units per one million inhabitants, countries such as Germany or Luxembourg could boast of having 23 CT scanners per one million inhabitants.

It is quite noticeable that the technological advancement and inventory of highly specialised medical equipment in Polish healthcare require far higher funding. Spending seems necessary in that area in order to improve both diagnostics and the applied therapies aimed at improving the quality of the services rendered.

## CONCLUSIONS

The issue of healthcare financing is in every nation an immensely important element of the policy of managing the healthcare sector. Decisions connected with the sources and principles of financing healthcare influence the quality of the entire system.

Of course, just increasing expenditure on healthcare will not guarantee success or solve all the problems related to the sector. Yet certainly attempts to find the golden mean here may in future contribute to creating a suitable, effective system which would change society's opinion as concerns healthcare sector functioning in Poland from negative to positive.

What is more, expenditures on health equipment will have influence on the population and the level of health within societies (as well as the spending on healthcare, as mentioned in the paragraph above).

In 2010 we can observe systematic increase in total expenditure (public and private as well) compared to 2009 (National Health Account for 2010). Unfortunately, there is no data available for the years 2011 and 2012, so we cannot make any short term analyses for this period.

## REFERENCES

Desirable Directions of Change Health Care System in Poland. Between Rationing and Rationalization. Report retrieved from: [http://issuu.com/inepan/docs/raport\\_medyczny\\_pl\\_netto\\_jpg#embed](http://issuu.com/inepan/docs/raport_medyczny_pl_netto_jpg#embed).

Statistical Bulletin of the Ministry of Health 2012. Full text retrieved from: <http://www.csioz.gov.pl/publikacja.php?id=6>.

Dobska, M., Rogoziński, K. (2008). Podstawy zarządzania zakładem opieki zdrowotnej (Fundamentals of Managing a Healthcare Centre). Warszawa: PWN.

Dziubińska-Michalewicz, M. (2000). Systemy ubezpieczeń zdrowotnych w wybranych krajach UE (Health Insurance System in Selected European Union Countries). Raport nr 168. Warszawa: Kancelaria Sejmu, Biuro Studiów i Ekspertyz.

Financing Health Care in Poland. Green Paper (2004). Warszawa: Ministerstwo Zdrowia.

Full text retrieved from: [http://www.mz.gov.pl/wwwfiles/ma\\_struktura/docs/raport\\_zk\\_211204.pdf](http://www.mz.gov.pl/wwwfiles/ma_struktura/docs/raport_zk_211204.pdf).

Financing Health Care in Poland. Green Paper (2008). Full text retrieved from: [http://www.mz.gov.pl/wwwfiles/ma\\_struktura/docs/zielona\\_ksiega\\_06012009.pdf](http://www.mz.gov.pl/wwwfiles/ma_struktura/docs/zielona_ksiega_06012009.pdf).

Golinowska S., Kocot E., Sowa A. (2007), Development of Scenarios for Health Expenditure in the Accession Economies. Country Report: Poland, AHEAD, WP IX. Retrieved from: <http://www.enepri.org/files/members/OngoingProjects/AHEAD/feb2007/presentations/Poland-WPIX.doc>

Kautsch, M., Whitfield, M., Klich, J. (2001). Zarządzanie w opiece zdrowotnej (Management in Healthcare). Kraków: Wyd. Uniwersytetu Jagiellońskiego.

Malinowska-Misiąg, E., Misiąg, W., Tomalak, M. (2008). Centralne finansowanie ochrony zdrowia i edukacji w Polsce. Analiza regionalna (Central Funding for Health and Education in Poland. A Regional Analysis. Warszawa: IBnGR.

Report Poland 2030. Developmental Challenges. Retrieved from: [http://zds.kprm.gov.pl/sites/default/files/pliki/pl\\_2030\\_wyzwania\\_rozwojowe.pdf](http://zds.kprm.gov.pl/sites/default/files/pliki/pl_2030_wyzwania_rozwojowe.pdf).

National Health Account for 2009. Retrieved from: [http://www.stat.gov.pl/gus/5840\\_4459\\_PLK\\_HTML.htm](http://www.stat.gov.pl/gus/5840_4459_PLK_HTML.htm).

National Health Account for 2010. Retrieved from: [http://www.stat.gov.pl/cps/rde/xbcr/gus/ZO\\_narodowy\\_rachunek\\_zdrowia\\_2010.pdf](http://www.stat.gov.pl/cps/rde/xbcr/gus/ZO_narodowy_rachunek_zdrowia_2010.pdf)

EUROSTAT Statistics Database. Retrieved from: <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>.

Kautsch, M., Whitfield, M., Klich, J. (2001). Zarządzanie w opiece zdrowotnej (Management in Healthcare). Kraków: Wyd. Uniwersytetu Jagiellońskiego.

OECD Health Data, November 2011.

OECD Report. Health at Glance. Europe 2010. Retrieved from: <http://www.oecd-ilibrary.org/docserver/download/8110161e.pdf?expires=1364375077&id=id&acname=guest&checksum=5139EEB7F1E42FD80958501173882EC>.

Paszkowska, M. (2006). Finansowanie systemu opieki zdrowotnej w wybranych państwach UE (Financing Health Care in Selected European Countries). Kwartalnik internetowy E – Finanse, Nr 1/2006.

Report of the Medical Innovation in Poland in 2012. Retrieved from: [http://www.case-research.eu/upload/publikacja\\_plik/3758301\\_goli1.pdf](http://www.case-research.eu/upload/publikacja_plik/3758301_goli1.pdf).

Szymborski, J., Marciniak, G. (2009). The Future demographic and Health. Presentation for Science Conference which took place 25 czerwca 2009 r.

World Health Organization Report. Full text retrieved from: [http://www.who.int/whosis/whostat/EN\\_WHS10\\_Full.pdf](http://www.who.int/whosis/whostat/EN_WHS10_Full.pdf).

World Health Organization Report. Full text retrieved from: [http://www.who.int/whr/2010/whr10\\_en.pdf](http://www.who.int/whr/2010/whr10_en.pdf).