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PUBLIC EXPENDITURE ON HEALTHCARE IN POLAND (2010-2020)

WYDATKI PUBLICZNE NA OCHRONĘ ZDROWIA W POLSCE (2010-2020)

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Abstract: Both expenditure on healthcare and the functioning of the entire healthcare system in Poland stir up considerable controversy and are often discussed in the media. Hospital debts, the low quality of services, and the low availability of specialist medical services form the basis for the discussion of the effectiveness of the healthcare system. Statistical data are also bleak. Total health expenditure in Poland in 2019 amounted to 6.3% of GDP (estimated expenditure), whereas the average for health expenditure in the OECD countries was 8.8%. Therefore, Poland is below the average, and is placed last but four in the ranking (stat.oecd.org). The aim of this article is the presentation of public expenditure on healthcare in Poland from 2010 to 2020. In order to achieve this, the following research methods were used: a critical analysis of the literature, an analysis of statistical data, and - to make the research more transparent and the research results clearer - a tabular method was used. Also, widely accepted measurements were used, such as absolute values in domestic and international currencies, values per capita, and values in relation to the Gross Domestic Product (GDP).
Key words: health care, public expenditures, health care systems, health care financing

Streszczenie: Wydatki na ochronę zdrowia oraz funkcjonowanie całego systemu opieki zdrowotnej w Polsce budzą wiele kontrowersji i są częstym tematem poruszanym w mediach. Zadłużenie szpitali, niska jakość usług, niska dostępność świadczeń specjalistycznych stanowią podstawę dla dyskusji na temat wydajności systemu opieki zdrowotnej. Dane statystyczne też nie napawają optymizmem. Całkowite wydatki na zdrowie w Polsce w roku 2019 wyniosły 6,3% PKB (szacowane wydatki), podczas gdy średnia wydatków na zdrowie dla krajów OECD wyniosła 8,8 %. Polska jest zatem poniżej średniej, plasując się w tym rankingu na 5. miejscu od końca (stat.oecd.org). Celem artykułu jest przedstawienie wydatków publicznych ponoszonych na ochronę zdrowia w Polsce w latach 2010–2020. Dla realizacji celu wykorzystano następujące metody badawcze: krytyczną analizę literatury, analizę danych statystycznych, a dla zwiększenia przejrzystości oraz czytelności badań wykorzystano metodę tabelaryczną. Wykorzystano również ogólnie przyjęte mierniki, takie jak: wartości bezwzględne wyrażone w walucie krajowej i międzynarodowej, wartości per capita, wartości w relacji do produktu krajowego brutto (PKB).
Słowa kluczowe: ochrona zdrowia, wydatki publiczne, systemy ochrony zdrowia, finansowanie ochrony zdrowia

Introduction – theoretical background

Healthcare is one of key areas of social activity in the state. Although due to their nature health services may function as private goods, in most countries they are provided to a larger or smaller degree by the public sector and they are used collectively (Ucieklak-Jeż, Bem, 2014, p. 11). A wide range of factors determine health status, including individual factors, living and working conditions, general socio economic, cultural and environmental conditions, and access to healthcare services (www.who.int). Having regard to the above, the health condition of a society does not result solely from accessibility to healthcare services and the quality of provided medical services; but to a large extent it is the consequence of the health policy implemented by a given state which translates indirectly into the strategy for development of the healthcare sector (Wielicka, 2014, pp. 492-493).

The health system comprises all organizations, institutions and resources that produce actions whose primary purpose is to improve health. It also refers to the institutions, people and resources involved in delivering healthcare to individuals (www.who.int). Within this definition, WHO assumes that the health system comprises four sectors: public, legal, traditional and informal ones. In the most general manner, the health system

may be represented as an isolated whole, including numerous components which are interlinked by means of various relations and which realise health-related objectives. The health system may also be described as an organised and equivalent system of actions whose objective is the provision of preventive and curative services, including rehabilitation services, so as to facilitate all amelioration of the health condition of both the individual and the whole of society. M. Kolowitz ascertains that the healthcare system, together with its environment, includes among other things government and local government structures, medical resources and patients, while its main objective is the protection of citizens' health. The concept of the so-called triangle breaks down the health system participants into three groups: beneficiaries (patients), service providers (doctors, healthcare institutions) and the payer (i.e. an insurer financing the services) referred to as the third party (Kolowitz, 2010).

According to the World Health Organization (WHO), each national health system should be directed toward the achievement of three overall goals: good health, responsiveness to the expectations of the population, and fairness of financial contribution (Donev, Kovacic, Laaser, 2013).

In line with the above, we may state that the health system is some sort of a collection of institutions which perform specified actions aimed at achieving a common goal and which are specifically interrelated.

Analysing current healthcare systems, we may distinguish four traditional models, which include (Lewandowski, 2010):

- Bismarck's model (e.g. in Austria, Switzerland, Holland);
- Beveridge's model (e.g. in Denmark, Sweden, Finland);
- the residual model (e.g. more than 50% of residents of the US is covered by this system; it is the only health care system in the country);
- Siemaszko's model (in use until the 1990s in former USSR states).

The main characteristics of the models mentioned above are presented in Table 1.

Table 1. Comparison of selected healthcare systems

	Bismarck's model	**Beveridge's model**	**Residual model**	**Siemaszko's model**
Financing of services	From compulsory health care contribution paid by an employee or an employer, as a percentage of wages	From general taxes and other public sources	From patient's individual payments (out of pocket) and from voluntary insurance policies	Funds acquired from the budget of states
Entity raising funds and paying for services	Public and quasi public, non-profit funds (multiplicity of competing entities offering different rates, which are paid by an insured, for the same scope of services)	Government or local government institutions redistributing a portion of state or territorial government budget allocated to a given year	Individuals, insurance companies operating for profit or non-profit	Government or government representation
Scope of provided services	The basket of refundable services established by elimination (e.g. plastic surgery, dentistry)	The basket of refundable services or the scope limited by public investments	The scope of services limited by funds at the disposal of a patient or a contract concluded with an insurer	The basket of refundable services limited by the scope of public investments. Industry service providers (for the army, police forces) with larger scope of services
Service providers	Market-oriented service providers (open healthcare institutions), public and private hospitals operating not for profit and commercial institutions	Mostly public service providers, but in the recent years more and more private entities	In outpatient and inpatient healthcare there are mostly private both for profit and non-profit entities	Service providers who do not have legal personality and report to government bodies

Financing of service providers	Service providers receive payment based on a contract concluded with one or numerous payers (care funds)	Funds allocation from the central to regional levels, in line with centrally planned rules or based on concluded contracts	Service providers usually receive payment for provided services (fee for service)	Funds allocation from the state budget to regions, in line with centrally planned guidelines
Method of service valuation	Rates negotiated centrally between trade unions representing service providers, payers and professional corporations, e.g. the medical one	Fund allocation including infrastructure and population size. Valuation by government agendas.	Base rates established by professional corporations or established individually with a patient and an insurer	No valuation of specific services. Budget funding dependent on infrastructure indices (e.g. the number of employed personnel)
Beneficiaries	Those making contributions (an employee and his family)	Every citizen	Everyone who has financial resources or a policy, also his family, if that possibility is provided in an insurance contract	Every citizen

Source: R. Lewandowski, Modele systemów opieki zdrowotnej na świecie, https://www.researchgate.net/publication/258221304_Modele_systemow_opieki_zdrowotnej_na_swiecie (17.10.2020).

It should be noted that none of the presented models is used independently, in their pure form. As a result of growing health care needs and changes in the demographic structure of societies, methods of financing, healthcare systems evolve and take the form of mixed - hybrid - concepts. Białynicki-Birula presents two directions of undertaken actions which determine these changes (2010):

- efforts aimed at extending the scope of population's health insurance and improving access to care,
- searching for effective healthcare management so as to increase the efficiency of the healthcare sector and rationalise incurred expenditure.

The method of funding is of key importance for each of the healthcare systems. The Polish healthcare system displays characteristics of the insurance model due to the method of funding services and the rules for service providers operations (the declared equality of public and private entities) and the possibility for a patient to choose a service provider (limited to contracted entities, otherwise the patient must pay for the service). On the other hand, due to solutions referring to a payer, i.e. a monopoly of an insurer deciding on the terms and conditions of a contract and setting rates, the system shows the characteristics of the budget model (Kolowitz, 2010).

The Constitutions of the Republic of Poland of 1997 guarantees to all citizens the right to equal access to healthcare services finances from public sources, i.e. from healthcare contributions as well as from the state budget and territorial government budgets. The central healthcare fund - the National Health Fund (NFZ) - is the main player in the system, responsible for concluding contracts for provision of health care services with public and non-public service providers. Its finances are supervised by the Ministry of Finance, whereas its day-to-day operations are controlled by the Ministry of Health (MH), the creator of the health policy and the regulator of the system (Golinowska, 2011, p. 4).

The system of mandatory health contributions, which is supplemented by financing from the state and territorial government budgets, dominates in the currently functioning model for financing healthcare in Poland. According to the National Health Bill, the most important source of funding of common public healthcare is the compulsory health contribution paid to the National Health Fund (NFZ), amounting to % of the wages, 9% of personal income (7.75% is deducted from income tax, whereas 1.25% is covered by an insured) and other incomes subject to mandatory contributions (pension transfers, unemployment benefits etc.). In the case of certain social groups, contributions are financed out of taxes. The state budget and special-purpose funds pay contributions for students, farmers and members of their households (The Agricultural Social Insurance Fund - KRUS), employment offices - for the unemployed, social welfare centres – for persons out of work, not registered in employment offices and meeting the income criterion, the state budget via the Church Fund - for the clergy (Libura et al, 2018, p. 29). Non-refundable European funds, which are distributed so as to finance tasks in this scope as part of nationwide and regional

operating programs, also bear some significance (Lenio, 2018, p. 15).

Method and research
– Public expenditure on healthcare

The aim of the conducted analysis was the presentation of public expenditure incurred on healthcare in Poland from 2010 to 2020. In order to achieve this, the following research methods were used: a critical analysis of the literature, secondary questionnaire surveys, and an analysis of statistical data. And so as to make the research more transparent and the research results clearer, a tabular method was used.

Golinowska presents 3 stages of the analysis of financing healthcare, which include (Golinowska, 2014, pp. 205-2017):

- analysis of sources of financing (*revenue collection*),
- analysis of the collection of raised funding in financial institutions and their allocation among healthcare institutions and agencies (*pooling*),
- analysis of financing of service providers (*purchasing*).

The above methodological concept of a stage-by-stage approach to the analysis of the financing of the healthcare system was originally proposed by Joseph Kutzin (2010, p. 3) and described in detail in his works.

In this article, we focus solely on the first stage of the analysis, narrowing it down to the analysis of public sources of the financing of healthcare, using the following measures:

- absolute value expressed in the national currency (PLN),
- absolute values expressed in USD taking into consideration the PPP (*Purchasing Power Parity*), which levels off the differences in prices between countries (and thus, also in the costs of the production of goods and services for healthcare) so as to carry out comparative analyses,
- per capita values,
- values in relation to the gross domestic product (GDP).

Social dissatisfaction regarding the functioning of healthcare in Poland is quite a common phenomenon and for many years it has remained at a high level. As confirmed by the Public Opinion Research Center (CBOS) studies of 2018, 2/3 of society critically evaluates the functions of healthcare in Poland. The poorest rated aspects of the functioning of healthcare included the availability of specialist appointments (83% negative opinions) and an insufficient number of medical personnel in hospitals (70%). A half (49%) of the respondents believe that problems regarding the availability and quality of services acquired as part of public health insurance are the result of caps on healthcare spending, and its inefficient use. Nearly one out of every four respondents (24%) holds the view that these problems stem mostly from inappropriate use of funding, and every sixth (16%) links them mostly to insufficient healthcare spending (Omyła-Rudzka, 2018).

The question of funding healthcare is a constant element of public debates and academic dissertations. High expenditure does not always guarantee that healthcare is delivered appropriately and that society's satisfaction increases. Systemic solutions and healthcare management play an important role here.

Healthcare expenditure in Poland, as compared to other OECD countries, is one of the lowest. In this ranking, Poland comes in fourth from last and its healthcare expenditure (measured as % GDP) reached 6.7% GDP in 2019, whereas the average for OECD countries is 8.8% GDP.

Similar statistics are presented by Eurostat (ec.europa.eu), which also put Poland in one of the furthest positions in terms of healthcare expenditure and its share in GDP. With 6.52% GDP (Data of 2017, as there is no available data of 2018 and 2019), Poland comes ahead of only Romania (4.99% GDP), Latvia (6.21%GDP), Estonia (6.50% GDP), Luxembourg (5.19% GDP) and Lichtenstein (5.85% GDP). The share of healthcare expenditure in GDP does not always translate into small funds allotted to this purpose as is the case of Luxembourg. In this country, healthcare expenditure in relation to GDP is lower than in Poland (Poland - 6.3% GDP, Luxembourg - 5.4% GDP). However, the value of expenditure per capita is twice as much as in Poland (Poland - USD 2,292, Luxembourg - USD 5,558).

Nevertheless, the low share of healthcare expenditure in GDP in developing countries, or those less affluent, is a problem and it points to the losing position of healthcare needs as compared to other needs in the race for the limited resources of a given country.

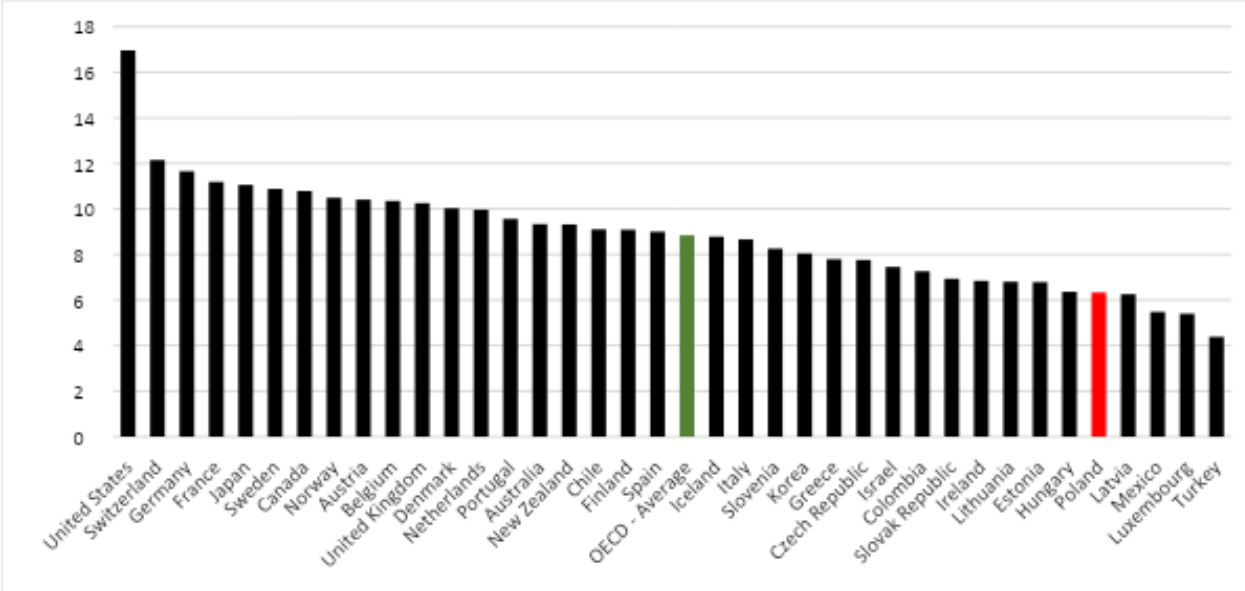

Figure 1. Total expenditure on healthcare in OECD countries (2019, % GDP)
Source: own elaboration based on https://stats.oecd.org/Index.aspx?DataSetCode=SHA (22.09.2020).

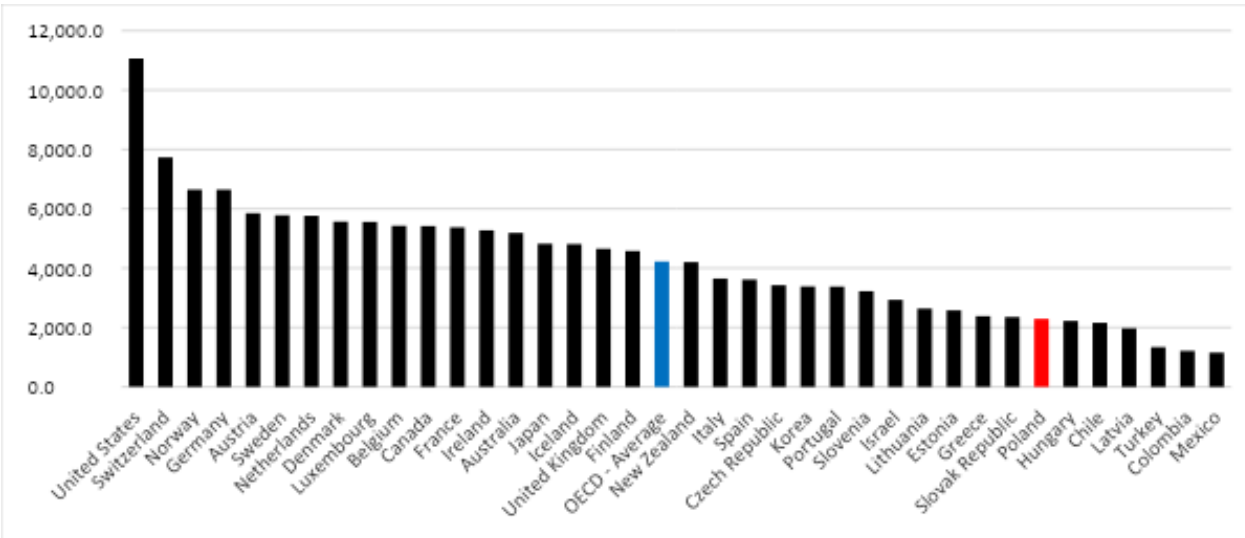

Figure 2. Total expenditure on healthcare per capita in OECD countries (USD, 2019)
Source: own elaboration based on https://stats.oecd.org/ (20.10.2020).

Healthcare expenditure per capita in Poland, presented in Figure 2, also does not represent much cause for optimism. As can be seen from the OECD data, also in this ranking Poland has remained in one of the lowest positions for many years. In 2019, it only stood in front of Hungary, Chile, Latvia, Turkey, Columbia and Mexico. The level of healthcare expenditure in Poland as per capita amounts to USD 2,292, whereas the OECD countries spent USD 4,224 on average. Thus, Poland spends on the healthcare of its citizens two times less than the OECD countries.

Considering monetary terms, in the domestic currency, healthcare expenditure per capita in Poland has been gradually rising in the analysed period, which has been illustrated in Figure 3.

The nominal value of healthcare expenditure increased by 55% in 2019 as compared to 2010, which may be considered as a positive trend (quite apart from the efficiency of this funding). The analysis of the year-to-year growth rate shows an increase of several percentage points, which does not exceed 7% (only in 2015 the growth rate was 7.26% and it was the highest in the analysed period). Taking into consideration inflation rates, the actual growth in healthcare expenditure was lower.

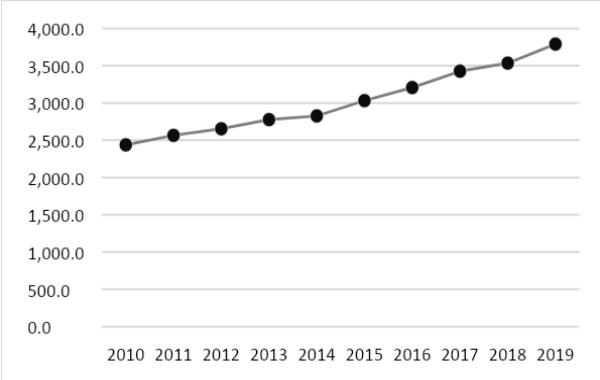

Figure 3. Total expenditure on healthcare per capita in Poland (PLN, 2010-2019)
Source: own elaboration based on https://stats.oecd.org/ (20.10.2020).

Details regarding the annual statistics for current spending on healthcare, broken into: public and private one are published every year by Statistics Poland in a study entitled "Narodowy Rachunek Zdrowia" ("the National Healthcare Bill"). Unfortunately, the data in the form of a thematic publication get into readers' hands with a two-year delay, thus we often lack reliable information on funding allocated to healthcare.

The latest available information presented in the National Healthcare Bill was published in the form of an announcement of the President of Statistics Poland on 30 September 2020 and included data for 2018.

Table 2. National Healthcare Bill for 2018

Expenditure on healthcare	**PLN million**
Current expenditure on healthcare	134,244.40
Public expenditure	95,977.10
Of which:	
Government schemes and compulsory contributory healthcare financing schemes	13,381.80
Governmental scheme	7,891.00
Local governmental scheme	5,490.70
Compulsory contributory health insurance schemes	82,595.30
Private expenditure	38,267.30
Of which:	
Household out-of-pocket payment	27,413.20
Other private expenditure	10854.2

Source: https://stat.gov.pl/sygnalne/komunikaty-i-obwieszczenia/ lista-komunikatow-i-obwieszczen/obwieszczenie-w-sprawie-narodowego-rachunku-zdrowia-za-2018 -rok,283,7.html (23.10.202).

In most countries, especially European countries, healthcare is financed through public institutions. In all OECD countries (except for the USA), public funding is important for financing healthcare.

In Poland, public funds, which are transferred in the form of grants from the state budget and territorial government units, or come from social healthcare contributions, comprise nearly 70% of all healthcare expenditure. Fluctuations, which occur in individual years are only slight and range within cut-off points from 69% to 72%.

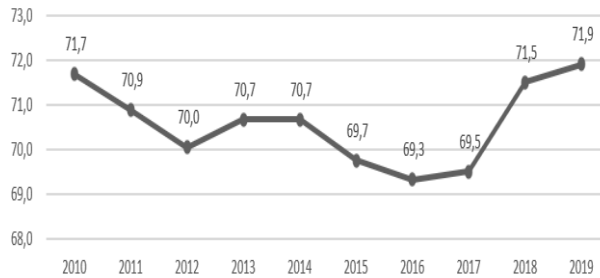

Figure 4. Public expenditure on healthcare (%, 100 – total expenditure on healthcare, Poland, 2010-2019)
Source: own elaboration based on https://stats.oecd.org/ (20.10.2020).

Public spending on healthcare ensures the proper functioning of hospitals, specialist clinics and primary care clinics, drug reimbursement, implementation of health programs and other medical services which are provided to citizens. From the patient's perspective, the three key healthcare institutions are hospitals, clinics (specialist and primary care ones) and pharmacies, as they provide direct care for the patient. In the areas where the public system does not cover 100% of residents' healthcare needs, patients' private expenditure comprise a significant contribution (www.infarma.pl, 2018).

The analysis of data presented in Table 3 and Figure 5 allowed us to examine the structure and nominal value of public healthcare expenditure. As it was mentioned before, financing healthcare from public funds comes from three sources: the state budget, the budgets of the territorial government units and from the National Health Fund. Significant responsibility for financing healthcare should be attributed to the last institution mentioned in the list. The analysis of expenditure coming from compulsory healthcare contributions shows that there is a constant growth in its nominal value. The year-on-year growth rate ranges from 1.63% (in 2013) to 7.36% (in 2018) and results from steady increase in revenue from healthcare contributions. The revenue mostly depends on the number of working persons, the level of remuneration and the level of healthcare

contributions. The years 2010-2018 may be regarded as the time of economic prosperity and low unemployment, and the year 2018 showed an exceptionally fast increase in remuneration. According to Statistics Poland, the average remuneration in Poland amounted to PLN 4,585.03 and was by PLN 313.52 higher than that reported in 2017, which translates into an increase of 7.34%. Therefore, an increase in the nominal value of healthcare expenditure does not come as a surprise. Taking into consideration the annual inflation rate, the real increase in expenditure starting from 2015 amounts 4%-5%, reaching 5.76% in 2018, and 4.18% in 2017.

Table 3. Structure of public expenditures on health (PLN million, 2010-2018)

	2010	2011	2012	2013	2014	2015	2016	2017	2018
Government exp.	1,885	1,973	2,384	6,102	5,936	6,290	7,333	8,352	7,891
Local government exp.	3,547	4,220	4,097	4,432	4,060	4,617	4,807	5,164	5,491
Compulsory contributory health insurance	61,074	63,031	64,290	65,340	67,191	69,334	72,452	76,930	82,595
Total	**66,506**	**69,224**	**70,771**	**75,873**	**77,187**	**80,241**	**84,592**	**90,446**	**95,977**

Source: own elaboration based on Narodowy Rachunek Zdrowia (the National Health Bill) – reports by Statistics Poland.

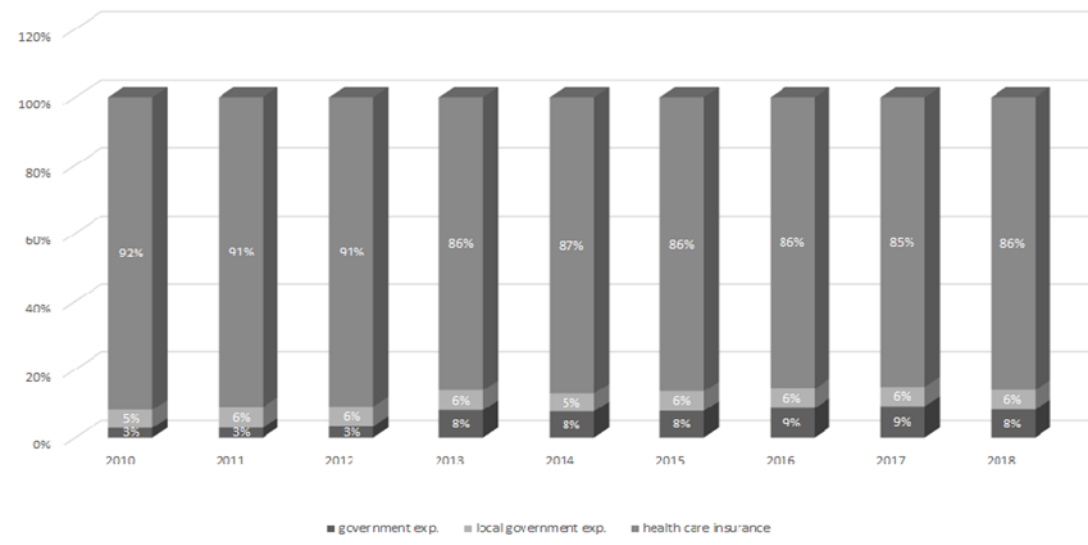

Figure 5. The structure of public healthcare expenditure (%, 2010-2018)
Source: own elaboration based on data in Table 3.

Nevertheless, at present (2020) this positive trend has been drastically hindered and as forecasts show the revenue of the National Health Fund coming from contributions; and at the same time expenditure financed directly out of it, may shrink by PLN 4.9m - in the best-case scenario or by PLN 19.4m in the worst-case scenario. The reason for this is the COVID-19 pandemic and its economic impact including the lockdown, or freezing several industries for as long as several months (Kurowska 2020).

The second significant source of financing healthcare is funding from the state budget. This constitutes a considerably smaller share in the structure of healthcare expenditure (as compared to the one discussed above), as its value does not exceed 8% of the total public expenditure, and in years 2010-2012 this share was much lower, amounting to just 3%. A sudden increase, starting in 2013, was the consequence of changes in the methodology of calculating the expenditure and the inclusion of funding from the EU. Another reason for the increase, according to the INFARMA report, might be special purpose grants, such as funding allotted to the 75+ drug program, which were aimed at improving the situation in selected areas or populations (www.infarma.pl, 2018).

Local government healthcare expenditure is the lowest among public expenditure in this area. The share of territorial government units in financing healthcare amounts to 5%-6% and actually has not changed considerably since the very beginning. Analyses conducted on a nationwide scale show that out of all territorial government units the largest healthcare expenditure is incurred by poviats (27% of healthcare expenditure incurred by all territorial government units) and poviat cities (30%), then voivodeships (26%), and the smallest expenditure is made by municipalities (17%).

In the final years of the analyses (2017 and 2018) poviats and city poviats directed the largest portion of funding to healthcare contributions and benefits for persons not covered by the compulsory health insurance and general hospitals. Voivodeships spend the most on general hospitals, whereas municipalities' funding goes mostly to counteracting alcoholism and outpatient healthcare. Apart from that, territorial government units also performed other tasks in the area of healthcare, e.g. counteracting drug addiction, mental health treatment, running sobering stations or emergency medical services (Statistics Poland, 2020).

Conclusions

The Polish healthcare system, due to the pandemic situation, is at the point forcing further systemic reforms in the organisation of healthcare. These in turn will inevitably affect the sources and structure of public healthcare expenditure. The optimisation of healthcare expenditure, taking into account economic and social aspects such as demographic changes or economic activity of the population, seems to be a key measure so as to improve the healthcare system.

The conducted analysis allows us to formulate a number of important findings.

Firstly, healthcare expenditure in Poland is one of the lowest among the EU states and the OECD states, whether expressed as % GDP or as per capita. It is worth remembering that high expenditure does not always guarantee that the tasks are performed appropriately and the society's satisfaction increases. Systemic solutions and healthcare management play an important role here.

Secondly, as we may conclude from the conducted analysis, public healthcare expenditure is increasing; however, it is mostly of a nominal growth; and additionally, its pace is too slow for us to catch up with other EU states.

Thirdly, the National Health Fund plays the most important role in the public sources of healthcare financing and its share in total public healthcare expenditure is 85%. Expenditure incurred by this institution comes from healthcare contributions, which in turn depend to a large extent on the economic situation of the country (remuneration levels and the number of employed persons).

The presented analysis may be a starting point for more detailed studies regarding public and private expenditure on individual healthcare services, or the efficiency of public funds use. It is also worth noting the proposed changes in the healthcare system, e.g. the implementation of coordinated healthcare, which could result in a significant reduction of healthcare expenditure and at the same time in the improvement of the quality of patient care.

References

Białynicki-Birula, P. (2010). Wielowymiarowe porównania systemów zdrowotnych w krajach OECD w kontekście realizowanych modeli ochrony zdrowia [Multidimensional comparisons of health systems in OECD countries in the context of implemented health care models], *Prace Naukowe UE we Wrocławiu, PN Finanse Publiczne,* 112, 1-15, https://depot.ceon.pl/bitstream/handle/123456789/3729/Wielowymiarowe%20por%C3%B3wnania%20system%C3%B3w%20zdrowotnych%20w%20krajach%20OECD-1.pdf?sequence=4 (17.10.2020).

Donev, D., Kovacic, L., Laaser, U. (2020). The Role and Organization of Health Systems, https://www.researchgate.net/publication/257830385_The_Role_and_Organization_of_Health_Care_Systems (17.10.2020).

Finansowanie ochrony zdrowia w kontekście efektów społeczno-gospodarczych [Financing healthcare in the context of socio-economic effects], Warsaw: INFARMA, IQVIA, 2018, https://www.infarma.pl/assets/files/raporty/Raport_Finansowanie_Ochrony_Zdrowia_v.5.0_19.09. 2018.pdf (20.10.2020).

General healthcare, https://www.who.int/disabilities/world_report/2011/chapter3.pdf (17.10.2020).

Golinowska, S., Tambor, M. (2014). Źródła finansowania opieki zdrowotnej [Healthcare financing sources], Zdrowie Publiczne i Zarządzanie 12 (3), 205–217. https://www.ejournals.eu/sj/index.php/ZNOZ/article/view/5841/5761 (28.10.2020).

Golinowska, S., (2011). Zarys systemu ochrony zdrowia [Outline of the healthcare system], World Health Organization 2011.

Health Systems: principled integrated care, https://www.who.int/whr/2003/en/Chapter7.pdf?ua=1 (17.10.2020).

https://cowzdrowiu.pl/aktualnosci/post/nfz-moze-stracic-nawet-kilkanascie-mld-zl-powod-nizsze-skladki (28.10.2020).

https://ec.europa.eu/eurostat/tgm/refreshTableAction.do;jsessionid=kxPVUuPL1KM0MVf3_qGLqdsIdQdRG9eiwRLXDPt-waqLwLTeJ43D!-1033115467?tab=table&plugin=1&pcode=tps00207&language=en (28.09.2020).

https://stats.oecd.org/Index.aspx?DataSetCode=SHA (22.09.2020).

https://www.pum.edu.pl/__data/assets/pdf_file/0015/165102/Kolwitz-M.-Polski-system-ochrony-zdrowia.pdf (17.10.2020)

Kolowitz, M., Polski system ochrony zdrowia – perspektywy i możliwości zastosowania systemów ochrony zdrowia innych państw Unii Europejskiej [The Polish Healthcare System - perspectives and possibilities for using the healthcare systems of other European Union countries], https://www.pum.edu.pl/__data/assets/pdf_file/0015/165102/Kolwitz-M.-Polski-system-ochrony-zdrowia.pdf.

Kurowska, A. (2020). NFZ może stracić nawet kilkanaście mld zł. Powód: niższe składki [The National Health Fund may lose several billion zlotys as a result of lower premiums] https://cowzdrowiu.pl/aktualnosci/post/nfz-moze-stracic-nawet-kilkanascie-mld-zl-powod-nizsze-skladki.

Kutzin, J. (2010). Conceptual framework for analysing health financing systems and the effects of reforms, in: (eds. Kutzin J., Cashin C., Jakab M.) *Implementing Health Financing Reform*, European Observatory on Health Systems and Policies, WHO Regional Office for Europe, Copenhagen.

Lenio, P. (2018). Publicznoprawne źródła finansowania ochrony zdrowia [Public law sources for financing healthcare], Warsaw: Wolters Kluwer.

Lewandowski, R. (2020). Modele systemów opieki zdrowotnej na świecie [Models of Healthcare Systems in the World], https://www.researchgate.net/publication/258221304_Modele_systemow_opieki_zdrowotnej_na_swiecie (17.10.2020).

Libura, M., Greser, J., Borek, E., Perendyk, T., Sitek, A., Wojtaszczyk, K. (2018). Finansowanie i organizacja systemu ochrony zdrowia w oczach pacjentów [Financing and organization of the Healthcare system in the eyes of patients], https://mypacjenci.org/wp-content/uploads/2018/08/Finansowanie-i-organizacja-systemu-ochrony-zdrowia-w-oczach-pacjentw.pdf.

Omyła-Rudzka, M. (2020). Opinie na temat funkcjonowania opieki zdrowotnej [Opinions on the functioning of healthcare], https://www.cbos.pl/SPISKOM. POL/2018/K_089_18.PDF (20.10.2020).

Ucieklak-Jeż, P., Bem, A., (2014). System ochrony zdrowia-finansowanie, efektywność, restrukturyzacja [Healthcare system - financing, efficiency, restructuring], Częstochowa: Akademia Imienia Jana Długosza.

Wielicka, K., (2014). Zarys funkcjonowania systemów opieki zdrowotnej w wybranych krajach Unii Europejskiej [Outline of the functioning of healthcare systems in selected European Union countries], *Zeszyty naukowe Politechniki Śląskie*j, (70): 492-493, http://yadda.icm.edu.pl/ yadda/element/bwmeta1.element.baztech-6b2ddcba-fc31-458e-86de-6527cfdb11a1.

Zdrowie i ochrona zdrowia w 2018 r. [Health and Healthcare in 2018], Warsaw-Kraków: Analizy statystyczne GUS, 2019, https://stat.gov.pl/obszary-tematyczne/zdrowie/zdrowie/zdrowie-i-ochrona-zdrowia-w-2018-roku,1,9.html (28.10.2020).