„Problemy Zarządzania (Management Issues)"
Vol. 18, No. 3(89), p. 29–48, e-ISSN: 2300-8792
https://doi.org/10.7172/1644-9584.89.2

Healthcare Financing Sources in Central Europe[1]

Maciej Mikucki

dr, SWPS University of Social Sciences and Humanities,
Faculty of Arts and Social Sciences in Warsaw, Poland
https://orcid.org/0000-0002-1834-0615

Emilia Piotrowska

mgr, SGH Warsaw School of Economics, Collegium of Socio-Eonomics, Poland
https://orcid.org/0000-0002-8837-6824

Submitted: 28.01.2020 | Accepted: 26.06.2020

Abstract

Purpose: The objective of the paper is to review historical developments and the current setup of healthcare financing models in Central Europe.
Methodology: A systematic narrative approach has been taken with the research emphasis on a critical literature review and analyses of healthcare spending statistical data.
Findings: A comparison between different models currently in place seems to suggest the existence of patterns leading to improved quality of the healthcare service proposition that is critically impacted by a financing model.
Implications: The findings have practical implications since different results have been achieved in countries choosing different models but starting from practically the same point. That realisation should serve as a foundation for further work on this subject, potentially leading to adjustments to financing models chosen by some countries.
Value: The paper offers a comparative analysis of the healthcare system financing evolution in four Central European Countries and an overview of their current state.

Keywords: economic history, health care financing, health expenditure, healthcare, public health insurance.

JEL: H51, I11, I13, I15, I18, N34

Źródła finansowania systemów ochrony zdrowia w Europie Centralnej

Streszczenie

Cel: wiodącym celem artykułu jest prezentacja zarówno historycznej ewolucji systemów, jak i bieżącego stanu finansowania opieki zdrowotnej w krajach Europy Środkowej.

Correspondence address: SWPS University of Social Sciences and Humanities, Faculty of Arts and Social Sciences in Warsaw, Chodakowska 19/31, 03-815 Warsaw, Poland.

Suggested Citation: Mikucki, M. & Piotrowska, E. (2020). Healthcare Financing Sources in Central Europe. *Problemy Zarządzania (Management Issues)*, 18(3), 29–48. https://doi.org/10.7172/1644-9584.89.2.

Metodologia: w badaniu przyjęto systematyczne podejście narracyjne, koncentrujące się na krytycznym przeglądzie literatury oraz analizie wydatków związanych ze służbą zdrowia.
Wyniki: porównanie różnych funkcjonujących obecnie modeli prowadzi do konkluzji, że sposób finansowania opieki zdrowotnej może mieć wpływ na dostępność i jakość obsługi pacjenta.
Implikacje: wnioski mają praktyczne zastosowania, analiza wskazuje bowiem, że w różnych krajach osiągnięto rozbieżne rezultaty na skutek wyboru różnych modeli, pomimo porównywalnego punktu startowego. Ta konstatacja stanowi podstawę do dalszej analizy, która z kolei może prowadzić do propozycji zmian systemowych w finansowaniu ochrony zdrowia w analizowanych krajach.
Wartość: praca wnosi analizę porównawczą systemów finansowania ochrony zdrowia w krajach Europy Centralnej oraz przegląd obecnie funkcjonujących rozwiązań.

Słowa kluczowe: historia ekonomiczna, finansowanie służby zdrowia, służba zdrowia, publiczne ubezpieczenia zdrowotne.

1. Introduction

Managing the level of healthcare funding and its fluctuations in time is a key component of an active healthcare policy. Funding is dependent on the organisational model and the country's economic, demographic and political context (Azar et al., 2018). The analysis of funding flows, from its sources to the final payment, serves the purpose of understanding the implications of various models in this important field of public activity (Marmor & Wendt, 2012).

The purpose of this paper is to compare healthcare funding models in four Central European countries: Poland, Hungary, the Czech Republic and Slovakia. The authors argue that 30 years after the successful transformation from socialist to market-based economies, the analysed countries have developed different healthcare systems and their financing models, even though the starting point was practically the same. As a result, currently each of these countries is in a different position in terms of the ability to service its citizens' healthcare needs. The authors analyse similarities and differences of country healthcare financing systems in order to facilitate discussion on the future of healthcare financing.

2. Methodological Approach

This article is a review with the aim of analysing how the approach to healthcare financing evolved in Central Europe over time and what the current models are. A systematic narrative character has been chosen as the study design, drawing on the available literature and legislative acts, to present historical developments and current solutions.

The critical literature review revealed a research gap being the lack of a systematic review of healthcare financing models in Central Europe, in the historical perspective and made on a comparative basis.

https://doi.org/10.7172/1644-9584.89.2

3. Regional View

Healthcare financing needs increase constantly worldwide as well as in Central Europe. Between 2009 and 2018, total healthcare spending per capita increased by 33.1% on average in the OECD countries; Central Europe outpaced that growth – most significantly in Poland, where it increased by 56.3% in the same period (Table 1).

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Poland	1 316	1 423	1 497	1 579	1 671	1 687	1 803	1 915	2 049	2 056
Change vs prior year	n/a	8.1%	5.2%	5.5%	5.8%	1.0%	6.9%	6.2%	7.0%	0.4%
Share of Government/ compulsory	71.7%	71.7%	70.9%	70.0%	70.7%	70.7%	70.0%	69.8%	69.5%	71.8%
Czech Republic	2 054	2 001	2 042	2 091	2 449	2 565	2 546	2 628	2 850	3 033
Change vs prior year	n/a	-2.6%	2.0%	2.4%	17.1%	4.7%	-0.7%	3.2%	8.5%	6.4%
Share of Government/ compulsory	83.3%	83.3%	83.9%	83.7%	83.6%	82.7%	82.4%	82.0%	82.1%	82.5%
Hungary	1 496	1 666	1 756	1 767	1 822	1 864	1 892	1 965	1 996	2 047
Change vs prior year	n/a	11.3%	5.4%	0.6%	3.1%	2.3%	1.5%	3.9%	1.6%	2.5%
Share of Government/ compulsory	68.3%	67.1%	66.5%	65.5%	66.7%	67.1%	68.2%	68.1%	69.2%	70.3%
Slovak Republic	1 814	2 010	1 975	2 097	2 154	2 010	2 060	2 187	2 188	2 290
Change vs prior year	n/a	10.9%	-1.8%	6.2%	2.7%	-6.7%	2.5%	6.2%	0.0%	4.7%
Share of Government/ compulsory	73.5%	71.9%	73.8%	72.2%	74.2%	80.2%	79.7%	80.4%	79.9%	80.1%
OECD – Average	2 999	3 080	3 165	3 283	3 404	3 481	3 586	3 715	3 854	3 992
Change vs prior year	n/a	2.7%	2.8%	3.7%	3.7%	2.3%	3.0%	3.6%	3.7%	3.6%

Tab. 1. 2009–2018 health expenditure as US dollars/capita Source: OECD (2019).

Given a developing nature of Central European markets and their continued Gross Domestic Product (GDP) growth, even though per capita spending is growing, healthcare expenditure as % of GDP remains fairly stable across the region (Table 2). Sources of its financing are both public and private and the share between them does not fluctuate noticeably between the years (Table 2).

		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Poland	Total	6.6%	6.4%	6.2%	6.2%	6.4%	6.2%	6.3%	6.5%	6.5%	6.3%
	Public	4.7%	4.6%	4.4%	4.3%	4.5%	4.4%	4.4%	4.5%	4.6%	4.5%
	Private	1.9%	1.8%	1.8%	1.9%	1.9%	1.8%	1.9%	2.0%	2.0%	1.8%
Czech Republic	Total	7.3%	6.9%	7.0%	7.0%	7.8%	7.7%	7.2%	7.2%	7.2%	7.5%
	Public	6.1%	5.8%	5.9%	5.9%	6.5%	6.3%	6.0%	5.9%	5.9%	6.2%
	Private	1.2%	1.2%	1.1%	1.1%	1.3%	1.3%	1.3%	1.3%	1.3%	1.3%
Hungary	Total	7.2%	7.5%	7.5%	7.5%	7.3%	7.1%	7.0%	7.1%	6.9%	6.6%
	Public	5.0%	5.0%	5.0%	4.9%	4.8%	4.8%	4.8%	4.9%	4.8%	4.6%
	Private	2.3%	2.5%	2.5%	2.6%	2.4%	2.3%	2.2%	2.3%	2.1%	2.0%
Slovak Republic	Total	8.0%	7.8%	7.4%	7.6%	7.5%	6.9%	6.8%	7.0%	6.7%	6.7%
	Public	5.8%	5.6%	5.5%	5.5%	5.6%	5.5%	5.5%	5.6%	5.4%	5.4%
	Private	2.1%	2.2%	1.9%	2.1%	1.9%	1.4%	1.4%	1.4%	1.4%	1.3%
OECD – Average	Total	8.8%	8.7%	8.7%	8.7%	8.8%	8.8%	8.8%	8.9%	8.8%	8.8%

Tab. 2. 2009–2018 health expenditure as % of GDP. Source: OECD (2019).

The share of public spending in total healthcare cost is forecasted to grow from 74.2% in 2015 to 77.4% in 2030 across the OECD countries (Lorenzoni et al., 2019), reflecting growing societal needs. There might, however, be deviations since it is also forecasted that the growth of private funding in Poland (2017–2022) is set to exceed 7% (PMR Industry Report, 2017). Private funding takes different forms: from a direct individual payment for a specific treatment/consultation to healthcare schemes with private providers.

Healthcare expenditure, even though stable as % of GDP, is growing in absolute monetary terms (Table 3).

Increasing healthcare spending is predominantly driven by (Chernew, 2010; Laskowska, 2017; OECD, 2014; Smith et al., 2009):

a. Aging society;
b. Development of new medical technology, including raising quality of diagnostics allowing detection and treatment of diseases previously unnoticed;
c. Raising income and insurance coverage leading to improved quality of life and patients' expectations regarding the quality and scope of healthcare services.

https://doi.org/10.7172/1644-9584.89.2

Country		2010	2011	2012	2013	2014	2015	2016	2017	2018
Czech Republic	(mCZK)	274 522	281 431	285 348	319 928	330 138	332 861	340 892	364 985	395 385
	change vs prior year	n/a	2.5%	1.4%	12.1%	3.2%	0.8%	2.4%	7.1%	8.3%
Hungary	(mHUF)	2 047 250	2 135 031	2 148 834	2 195 782	2 311 636	2 396 523	2 531 051	2 638 828	2 774 000
	change vs prior year	n/a	4.3%	0.6%	2.2%	5.3%	3.7%	5.6%	4.3%	5.1%
Poland	(mPLN)	92 775	97 673	101 042	105 635	107 458	114 142	121 107	130 200	133 041
	change vs prior year	n/a	5.3%	3.4%	4.5%	1.7%	6.2%	6.1%	7.5%	2.2%
Slovak Republic	(mEUR)	5 272	5 239	5 550	5 583	5 256	5 418	5 666	5 721	6 069
	change vs prior year	n/a	-0.6%	5.9%	0.6%	-5.9%	3.1%	4.6%	1.0%	6.1%

Tab. 3. 2010–2018 health expenditure in nominal value, local currencies in millions. Source: OECD (2019).

Healthcare expenditure is characterised by its significance and a high portion of fixed costs, especially skilled labour and capital expenses. In order to ensure the availability of financing, a suitable system to collect, and later distribute, the funds is necessary. Appropriately designed and run, the collection system should be one of the cornerstones of each country's healthcare policy (World Health Organization, 2017). Most OECD countries, Central Europe included, run mixed, public and private, healthcare financing systems. Public financing sources are: state budget, local governments' budgets, public insurance funds or special purpose state-run funds. Healthcare spending can also be financed from private sources, like: individual households, enterprises, health funds or charity organisations (Ortiz-Ospina & Roser, 2017).

4. Historical Perspective

Central Europe has gone through major changes in its socio-political structures in the 20th century. The First and Second World Wars brought not only social and property damage but also fundamental changes to the way the nations in the region lived. Those changes severely impacted healthcare and its financing systems.

Early in the 20th century, prior to World War I (1914–1918), Poland, Hungary, the Czech Republic and Slovakia did not exist as independent states. The Austro-Hungarian Empire ruled the latter three while Poland was divided between three then superpowers: Russia, Germany and Austria-Hungary. The war reshaped the landscape in Central Europe and new countries emerged. Following the collapse of the Central Alliance, its main animators, Germany and Austria-Hungary, surrendered and the Treaty of Versailles led to the creation of independent Poland, Hungary and Czechoslovakia. These new countries were immediately faced with the need to establish their healthcare systems, among many other issues and challenges.

The Social Health Insurance concept had been known in the Austro-Hungarian Empire since its Austrian introduction in 1887 and later declaration of its mandatory nature in Hungary in 1891. Clearly, the legislation was an adaptation of "Bismarck healthcare financing model" introduced in Germany in 1883 by chancellor Otto von Bismarck (Sheingold & Hahn, 2014).

The Bismarckian model's main assumption was a mandatory sickness and accident insurance for blue-collar workers. It was built on an idea that a large social group (a lower paid part of the society) needs to have proper protection against major risks – sickness and accidents. Spreading the cost of healthcare onto the whole insured population was a way to manage the individual risk (Białynicki-Birula, 2006; Kulesher & Forrestal, 2014). Financed jointly by workers and their employers, insurance funds were responsible for providing sick pay, disability benefits and medical

https://doi.org/10.7172/1644-9584.89.2

expenses cover. The state was providing regulation and allowed insurers to act independently in a decentralised manner – insured workers could join a fund of their choice (Jaworzyńska, 2016).

Hungary and Czechoslovakia adopted Bismarckian model in the years following the end of the First World War (1918), mainly due to the fact that both states emerged fully from within the territory of Austria-Hungary. It was therefore an evolutionary process that did not require urgent actions.

Poland was in a different situation, its territory was made of three states independent before the war. That urged for immediate attention and two months into the independence, a decree was issued setting the basics of a new financing system. Largely based on the Bismarckian model, the decree established health insurance funds and made the sick and disability insurance mandatory and financed jointly by workers and employers (Lenio, 2018a).

The described solutions remained in force (enhanced and adjusted on multiple occasions but structurally unchanged) in all countries until the Second World War. Following its end in 1945, all Central European countries came under the influence of the Union of Soviet Socialist Republics (USSR) and further developments in the healthcare financing systems became similar. Initially, until 1950/1951 various approaches were taken, largely allowing for the continuation of systems implemented on their territories before the war. Then, in 1950/1951, a series of reforms were introduced in all countries, effectively copying the Soviet system developed by Nicolai Semashko and implemented in the USSR in 1930s. Semashko's model assigned all healthcare financing to the state budget and introduced centralised management. The underlying assumption was equal access to healthcare benefits for all citizens, delivered with no direct patient cost participation (Kulesher & Forrestal, 2014).

Privately owned entities were nationalised and included in the public healthcare system, with some small exceptions, mostly in Poland, where certain services were allowed to be also provided by private entities or doctors, e.g.: stomatology, gynaecology (Kinkorová & Topolčan, 2012).

Healthcare systems during socialism were subject to political intervention serving interests other than quality of the citizen's health. Little or no consideration was given to economically sustainable solutions. As an example, a militaristic approach drove the creation of a large number of hospital beds in Poland, since the country was supposed to be hosting wounded soldiers in case of conflict (Malinowski & Nojszewska, 2017). It is still an issue in Poland that the number of beds per citizen is suboptimal due to the lack of geographical fit. Similar decisions and no regard to optimised investment led to a series of major healthcare system malfunctions in all countries, mainly in the late 1960s and 1970s. Shortly before the collapse of socialism, healthcare systems were in a dysfunctional shape and all countries took decentralised reforming efforts (e.g.: Poland in 1983, Hungary in 1987).

The 1989/1990 social unrest led to major changes and the collapse of socialism. Healthcare systems were all to be restructured due to their inability to properly service patients. Different ways were chosen to address this task.

In early 1990s, in Poland, the major consideration of social-economic reforms was not directed to healthcare and its financing. Attempts to decentralise and move financing decisions from central to local governments were taken as early as in 1990 but it was only in 1997 that a major healthcare reform was agreed and then implemented in 1999 (Hellich & Wierzowiecka, 2017). The major goals of this reform were: introduction of diverse financing solutions provided by differently structured entities (private, public, mixed, etc.), creation of the payer concept (healthcare fund) separated from solution providers, de-bundling of healthcare services (hospital vs. ambulatory), increased role of general practitioners and patient's free selection of their general practitioner (Grześkiewicz, 2015; Nojszewska, 2015). Financing was mostly moved from the central government to healthcare funds with the state remaining to be a payer of highly specialised and expensive procedures (Kowalczyk, 2015).

In 2003/2004, a National Health Fund (NHF) was brought to existence and healthcare funds ceased. The NHF assumed a sole financing role for the mandatory part of the healthcare system. Later in that decade, in 2017, further changes were implemented, with the effect being a slow return to a centrally managed healthcare system. The introduction of 'hospital network' meant further centralisation of decision making and management of the hospitals, achieved also via a division of hospitals into 6 different categories (depending on the complexity of their services). The country is following a path towards increasing the central state's power in healthcare funding by financing mostly public operators, interruption of the process of commercialisation of hospitals and re-nationalisation of emergency medical services (Hall, 2009; Hellich & Wierzowiecka, 2017; Jaworzyńska, 2016; Lenio, 2018b).

Hungary was in a different position from Poland, it started some reforms earlier, already in 1988 due to the system's inability to service the patients and deteriorating public health. Initially, in 1988 and 1989, some restrictions on private healthcare were lifted and in 1988 the Social Insurance Fund, a body to manage contributions and healthcare costs, was created. A profound change of political landscape in 1990 brought more reforms, most to happen between 1990 and 1994. This time the reforming effort was deeper and included detaching primary care from hospitals, creating a concept of a private practice 'family doctor' whom each patient could choose (Ferguson & Irvine, 2003).

Healthcare financing was modernised: a single insurance model was approved for the country with the Social Insurance Fund in charge of its management, initially responsible for both healthcare and pensions, yet

https://doi.org/10.7172/1644-9584.89.2

in 1992 the body was split into two organisations: the Health Insurance Fund (HIF) and the Pension Insurance Fund (PIF). Cost optimisation mechanisms were put in place (fee for service in outpatient care, inpatient per diem caps, etc.) and stayed for years to come. In 1993, voluntary non-profit health insurance funds were admitted right to enter the market and provide extra health insurance coverage, on top of HIF insurance (Baji et al., 2012).

Between 1994 and 2000, no major changes to the financing system were made other than periodic budgetary cuts that increased the cost to be borne by the patient. Some changes to the hospital sector were made, effectively reducing the number of beds and shifting their control to local municipalities. Governments took visible steps to increase the system's performance during that period but did not try to address the financing system overhaul. Commencing in 2001, a more liberal approach was tested towards the healthcare system, following the creation of a 10-year public health action plan. Public providers were encouraged to become corporate entities from 2001, privatisation of facilities was allowed as of 2002, yet these initiatives were later blocked, delivered little change and were finally abandoned in 2008 (Hall, 2009).

In later years, no major changes were seen, rather more emphasis was put on the cost and shift of costs to patients (e.g.: flat co-payment introduced in 2007 for outpatient care). Several plans and initiatives were declared, mostly concentrating on increased budgetary funding, capacity management and increased focus on outpatient care, to name a few (Crespy & Szabó, 2018).

The Velvet Revolution of 1989 in Czechoslovakia had some immediate effect on the organisational design and funding of healthcare in the country, which in 1993 decided to divide itself into the Czech Republic and Slovakia. Firstly, a concept of health care provider competition was introduced to allow patients' free choice and the National Health System in its Semashko style was discontinued. Early in the process, privatisation of primary care and out-of-hospital ambulatory care was implemented and a series of regulatory reforms were put forward reorganising the social health insurance domain (Kinkorová & Topolčan, 2012).

In the Czech Republic, contributions to the system remained mandatory, yet multiple health insurance providers were available for patients from 1992, their number went as high as 27 across 1990s and then dropped to seven in 2014. Initially, health funds contracted services from healthcare providers on a fee-for-service basis but that was revised in 1997 following an uncontrolled increase of cost. That year primary care was moved to capitation fee and hospital care to fixed budgetary systems (Hejdukova, 2016).

2003 was marked by shifting hospital ownership from the central government to regional management. The hospital ownership structure was allowed to change and some hospitals were transformed into joint stock entities.

In later years, several further changes were implemented: in 2005/2006 the contribution paid to funds was re-engineered to reflect the fund's portfolio risk; in 2008 fees were introduced for the use of doctor services, hospital stays or ambulatory services outside of regular working hours; and finally in 2008 the Ministry of Health decided to support training and education of nurses and physicians due to acute resource shortages.

In Slovakia, the National Insurance Fund was established in 1993 with the aim of funding health, social and pension insurance. Similarly to the Czech Republic, a mandatory contribution system was put in place and the distribution of funds was directed to several funds (13 was the highest number in 1997, gone down to three in 2015). General practitioners and non-hospital specialists (also ambulatory care) were pushed to private practice. Just like in other countries in the region, the oversupply of hospital beds and the inability to significantly reduce those due to a social backlash inflated the healthcare cost over the expected levels. Likewise in the Czech Republic, a fee for service introduced as a settlement method between funds and healthcare providers led to a cost increase and system malfunctions. Selected privatisation efforts failed to fix that issue (Nemec et al., 2015).

A 2004 reform arrived to change not only healthcare financing but also taxation, the pension system or education. In healthcare, usage fees for patients were introduced (and later dropped in 2006), along with emergency services restructuring, ownership liberalisation or efficiency measures. After the reform introduction, several changes were withdrawn, like hospital privatisation (Hall, 2009) but most solutions remained in force, including the option to run for-profit healthcare insurance entities.

5. Healthcare Financing Models and Their Structures

Central European countries' healthcare systems display noticeable variances in terms of the overall (both public and out-of-pocket) spending level. Countries being the subject of this analysis belong to the same group when looking at the healthcare spending as % of GDP that ranges from 7.5% in the Czech Republic down to 6.3% in Poland (Table 2). That, however, may be misleading since the purchasing power and GDP levels are different. Assessing the spending level on the per capita basis clearly shows significant variance between Czech 3,033 USD and Hungarian 2,047 USD per citizen (Table 1).

These differences or the spending level itself, irrespectively of their level or visibility, may be deceiving when judging the real accessibility of healthcare in each country. Different healthcare costs, largely driven by labour, in each of the analysed countries, stipulate the level of access to a greater extent than the nominal value of financing. Different decisions regarding financing models greatly impact the healthcare service levels.

https://doi.org/10.7172/1644-9584.89.2

5.1. Poland

Total healthcare funding as % of GDP in Poland remains stable across recent years, with the 6.3% level in 2018 (Table 1). Public spending reached the level of 4.5% in the same year and the government has agreed with healthcare professional bodies (mostly professional unions: doctors, nurses) that it should grow to 6% by 2024 (Sowada et al., 2019).

Healthcare system management is split between the Ministry of Health (including supporting governmental agencies) and three levels of local governments. Given the variety of the bodies involved, their sometimes overlapping competences and suboptimal coordination, managing the system remains a visible challenge.

Poland was the last of the analysed countries to introduce a universal and mandatory healthcare insurance system, it was implemented in 1999. Since that moment, the share of public funding in the overall spending has been slowly decreasing while, in 2017, its level was at approximately 70%. The majority of public spending, approximately 90%, is funded via mandatory participation in the public healthcare insurance scheme that is embedded into the country's fiscal collection system. Currently, participation means a deduction of 9% of the gross (before taxes) salary of each citizen that is later directed to the National Health Fund (NHF) having a monopsony position on an imperfect market as the only buyer of services in the healthcare system.

The remaining 10% of the spending is financed directly from the state and local governments' budgets. Budgetary funding is predominantly used to maintain the functioning of major health institutions and offices, finance highly specialised medical procedures and emergency medical services as well as cover the expenses of selected groups of non-insured individuals. Local government budgetary funding is directed at supporting hospitals (local governments are mostly the owners of hospitals) and financing preventive healthcare programmes that solve public health problems.

Approximately 30% of the healthcare spending in Poland is sourced directly from patients as out-of-pocket expenses and spent predominantly on pharmaceutical products. Despite the fact that the private insurance market exists, its share in overall funding is marginal. Private healthcare programmes are available and growing in size but their nature is rather supplemental to the public system and seen as an employee benefit. Potential growth of that segment has been discussed for many years but no conclusions are drawn due to its controversial (for most voters) nature (Rabiej, 2017).

The NHF acts in a somewhat decentralised way, managing its procurement activities via 16 regional offices reflecting the administrative division of Poland. Funding of each of the regional offices depends on the number of citizens living in its area, their risk profiles and general need to properly allocate available resources. The recently seen shift towards centralisation is

manifested by the introduction of the hospital chain concept that allowed the NHF to conclude contracts without the need to go through a tender (Sześciło, 2017, p. 225). Most private healthcare providers have been eliminated from the system while public hospitals have lost any incentive to look for additional funding, including debt.

NHF funding is mostly directed at hospital treatments, including hospital ambulatories, where approximately 50% of the funding goes. Primary care spending constitutes approximately 13% of the NHF spending and only as little as 7% goes to fund ambulatory special care. Further 10% of the spending is attributable to pharmaceutical purchases since a significant portion of the pharma market is reimbursed. Finally, the remaining 20% is directed to spending on other items, like: psychiatric care, addiction care programmes, long-term care, pilot programmes, etc. In the recent years, pharmaceutical spending has been noticeably limited driven by very restrictive budgetary reimbursement laws as well as increased pressure on the industry to lower the prices.

The Polish healthcare system is facing several challenges, with long waiting times and a shortage of skilled healthcare professionals being on the acute level (Polak et al., 2019). Greatly underpaid, the medical personnel is leaving the country finding attractive offers in other EU countries, especially the UK, Ireland or Germany. The state is not able to keep up with the unfavourable trends and remains actionless in the area of increasing the number of medical/nurse students.

5.2. Hungary

The Hungarian healthcare system is organised with the Hungarian Insurance Fund (HIF) taking the main role, having a monopsony position (just like the Polish NHF) and being highly centralised. The NHF provides healthcare insurance to almost entire Hungarian population but the scope of cover is visibly smaller compared to other EU countries. That may be driven in part by low funding levels that have witnessed decreases in years 1994–1995 and later 2005–2008, a situation not seen in any other analysed countries.

Approximately 66% of the spending is financed from public sources, leaving the rest to be paid by patients on the out-of-pocket basis. Patients' expenses are comprised of visit co-payment, expenses for any treatment not included in the public HIF basket and informal payments of either facilitation or other nature (Baji et al., 2012). Private insurance programmes are not popular.

Public healthcare spending is predominantly funded by social insurance system premiums and the state budget (taxes) that are transferred to the HIF. Central budget funding has been growing in recent years, reaching the level of 8.6% of the overall budget share in 2019. The direct contribution of insured individuals, deducted from their salaries, has been decreasing in recent years, reflecting a dropping contribution level. This has been designed

https://doi.org/10.7172/1644-9584.89.2

by the government as a means to combat grey economy (Gaál et al., 2011). Mandatory healthcare/social insurance contributions are collected as a salary tax with the burden shared between the employee and the employer. The HIF is also financed by payments from pharmaceutical companies and a hypothetical healthcare tax deducted from income that is otherwise not subject to healthcare insurance. The state government is steadily increasing taxes on items perceived as a threat to public health, like alcohol, cigarettes or sugar, claiming that revenues are directed to healthcare. Local taxes also play a vital role in the system financing, especially in the area of capital spending and the use of some expensive medical procedures.

Private healthcare spending is financed via patients' funds, charity organisations, non-mandatory, supplemental insurance and employee-funded programmes.

All regular expenses, of a repetitive nature, are financed by the HIF while the majority of capital expenditure in the ambulatory and hospital care is financed by central and local governments. The central budget is also responsible for financing highly specialised, expensive treatment, emergency medical care and general expenses connected with public health, including awareness publicity. Local governments are also responsible for funding local public hospital and ambulatory care but due to funding shortages, that only inflates their debts and reduces the number of hospital beds (Dózsa et al., 2019).

Similarly to Poland, Hungary has privatised all of its pharmaceutical industry and liberalised the market. The cost of therapies, especially less expensive yet higher-volume ones, has been shifted to patients via co-payment, a decreased number of reimbursed drugs and limits imposed on reimbursements.

Even though Hungary is praised for a successful change of its healthcare financing model, from Semashko to the current one, there are issues that the country is struggling with. Among those, the informal payment system, still in place for more than 20 years after the change, is not adding to system transparency and fairness (Gaál et al., 2011; Stepurko et al., 2015). The official co-payment system has only improved that slightly. Secondly, the level of patients' participation in expenses almost doubled between 1995 and 2000 and stays at the level of 30% (Baji et al., 2012). Most importantly, though, the Hungarian government is stimulating employment by reducing labour costs via a social contribution level decrease. That is not accompanied by an offsetting increase of the central state funding and leaves healthcare quality and scope impaired.

5.3. Czech Republic

A mandatory social and healthcare insurance system forms the basis of the healthcare financing model in the Czech Republic. There are several healthcare providers on the market who act on a quasi-public basis as payers and healthcare services buyers at the same time. All the insured have

the right to choose the fund and there is a limited level of competition between funds to have more members. Driven by a high level of service and affordability, there is only a limited private, supplemental healthcare market in the Czech Republic (Hejdukova, 2016).

Mandatory contributions are paid on the basis of salary or income, depending on the employment form, and their level is currently at 13.5% of salary prior to tax deduction. Those unable to pay the contribution (sick leave, unemployment, etc.) are taken care of by the central government paying the contribution on their behalf.

The revenue from contributions constitute a vast majority of the system financing with some budgetary funding and direct patient contributions filling the gap, yet their level is fairly low (Nemec et al., 2015). Especially patient financing, out-of-pocket, is limited to pharmaceutical products co-payments (if applicable) and dental care.

Contributions collected from insured individuals are distributed among the funds that in turn manage the resources and conclude contracts with service providers. Healthcare services providers are both public and private. A large majority of hospitals are public, mostly managed by local governments, while pharmacies, diagnostic labs and approximately 90% of the ambulatory care are private. It is the local government authority to licence and later control the conduct of healthcare service providers. Emergency medical care is financed by local governments. The central government budget provides financing to the healthcare sector as well via supporting medical personnel training costs coverage, including post-graduate studies of doctors and also through introducing and running specialised health programmes (preventing women breast cancer, etc.). Both public and private providers are contracted by the insurance funds. Family general practitioners are mostly remunerated via per capita payments.

The Czech population's health status is, just like in any other country, largely driven by education and to some extent wealth, both visibly manifested geographically. It seems likely that different needs displayed in different parts of the country are not properly taken into account while allocating funding resources (Birčiaková et al., 2014; de Breij et al., 2020). This may be partially driven by suboptimal cooperation between health funds and local / state governments.

Finally, the healthcare financing model in the Czech Republic is highly dependent on contributions from the working part of the population. By definition, this system is vulnerable to economic cycles and aging population (Alexa et al., 2015).

5.4. Slovakia

The healthcare system in Slovakia is based on universal and mandatory health insurance, basic healthcare services basket and a competitive insurance model allowing the selection of suppliers and flexible health service

https://doi.org/10.7172/1644-9584.89.2

prices. This system was introduced in the early 2000s and shortly brought good financial outcomes to the system (Zajac et al., 2005). However, it still remains controversial as it was a "shock-type" reform (OECD, 2016). Similarly to the Czech Republic, health insurance funds compete for their customers in terms of quality and variety of services provided. Funds are joint stock companies active on the market of managing healthcare services via appropriate agreements with providers. They are free to negotiate quality, volume and prices individually. The funds' revenue is mainly based on contributions from those insured. The contribution is collected, just like in the Czech Republic, via the taxation system and distributed properly to the funds. Central government funding is designed to finance the Ministry of Health and other governmental agencies active in the healthcare field. The state contributes for economically inactive persons. There are some special programmes for the Roma minority (around 10% of the population), which represents poorer health conditions and therefore higher costs of services.

Patient direct payments in Slovakia constitute approximately 30% of the overall spending and are mainly co-payments for pharmaceutical products, dental care, etc.

The state budget owns and operates the largest healthcare services providers, including university hospitals, highly specialised services and almost all psychiatric hospitals and sanatoriums. Most of these providers enjoy the status of budgetary units and therefore do not have to comply with the free market profitability goal. Private hospitals are also present on the market and most of primary care units are privatised.

The Slovakian healthcare system has its challenges (Albreht et al., 2016). As in other Central European countries, hospital indebtedness is an issue and good access to ambulatory special care units is limited. Patients, comparably to Poland, have to queue for the appointment and waiting times can extend to months. The reasons are the same as in other countries and mainly attributable to funding shortages and the lack of labour resources in the system, especially doctors and nurses.

6. Discussion and Conclusions

Several similarities and differences between the analysed healthcare financing models have been noticed.

All Central European countries started with the socialist Semashko model (implemented during the socialist times) being transformed into a Bismarckian type of financing with a social and healthcare insurance model. Yet the insurance-based model is delivered in different forms. In Poland, the majority of healthcare financing is sourced from contributions paid to one insurer, while in the Czech Republic premiums are allocated to a number of funds. A Polish-type monopsony insurer exists also in Hungary

but real financing comes from the state budget due to low contribution levels and tax/contribution evasion.

All countries went through a decentralisation phase and local governments were tasked with managing a great portion of healthcare funding and healthcare providers. In all jurisdictions, a family doctor as a concept emerged past 1990.

It is also a common thread that aging societies, the lack of properly skilled labour and technological development are putting pressure of costs and revenue of the system. All countries address these issues by a dominant fee-for-service method and some early signs of a pay-for-performance approach.

Despite the fact that all countries have public and universal access to healthcare with insurance covering a significant portion of the basket, out-of-pocket patient expenses remain an important funding vehicle. The societies in the analysed countries tend to display different attitudes towards co-financing, something that may be driven by legacy behaviour – as an example, in Poland the co-financing scheme does not exist formally (with the exception of pharmaceutical products), yet approximately 25% of spending is directed via the patient payment channel with limited, if any, social discontent.

The place of private providers in the system is perceived differently. In Hungary, unofficial payments to public doctors in exchange for faster and better service are tolerated. That may have an impact on the need for private services, or rather a lack of that need, even though the level of patient financing is high. In Poland, there is no definition of private healthcare and often patients pay twice for the very same service – once via mandatory contribution to the insurance system and the second time to a private provider who in turn guarantees faster and better access to services. In Hungary and Poland, out-of-pocket expenses are on a similar level, approximately 2%, while in the Czech Republic and Slovakia they constitute only 1.3% (Table 2) due to public disapproval.

Another comparison area is the availability of labour resources. Poland is in the state of an acute shortage of skilled medical personnel, both doctors and nurses. In the Czech Republic, the situation is not critical and the employment levels are close to the EU average (OECD, 2019b).

Both Poland and Slovakia continue facing an issue of excess hospital infrastructure and it is the expensive hospital care that dominates the spending – rather than much cheaper one-day procedures so popular in the Czech Republic.

Some studies argue that the adoption of social health insurance in post-communist countries did not lead to better health outcomes (Wagstaff & Moreno-Serra, 2009). Others believe that there are selected indicators that could be compared to clarify the impact of healthcare financing schemes

https://doi.org/10.7172/1644-9584.89.2

on the ultimate results delivered by the healthcare sectors (Lameire et al., 1999). Such an indicator could be average life expectancy (Table 4) (OECD, 2019a).

	1970	2017	% Change
Poland	70.0	77.9	11%
Czech Republic	69.6	79.1	14%
Hungary	69.2	75.9	10%
Slovak Republic	70.0	77.3	10%
OECD36	70.1	80.7	15%

Tab. 4. Life expectancy 2017 vs 1970. Source: (OECD, 2019a).

There is a clear and visible difference between the Czech Republic (79.1 years), slightly lagging Poland and Slovakia (77.9 and 77.3 years respectively) and Hungary with its 75.9 years of life expectancy. The Hungarian results have been improved since 2000 but it remains five years shorter than the EU average and is the lowest in the Visegrad Group of countries. As described in this paper, there is a visible disparity between the Czech Republic and Hungary in terms of the overall healthcare financing levels and fundamental differences in terms of the healthcare sector management. The monopsony type of the healthcare fund management, also present in Poland with the same issues, seems to be suboptimal vs. the competitive system implemented in the Czech Republic, where several insurance providers need to compete for customers (Roberts, 2009).

Finally, it is important to mention that political influence and direct government intervention, visible in Hungary and Poland, have an adverse effect on the quality of the services delivered by the system. The Hungarian system is under pressure to reduce the insurance premiums (to reduce the cost of labour) while there is no substitute for the lost funds and premiums remain the major funding vehicle. It is argued that the Czech system, with its stability, fairly high premium levels and limited competition among insurance providers, is superior to the systems present in Poland or Hungary.

Acknowledgements

This research received no funds.

Endnote

1 Central Europe consisting of the following countries: Poland, Hungary, the Czech Republic and Slovakia.

References

Antošová, V., Birčiaková, N., & Stávková, J. (2014). The impact of economic development in the Czech Republic on the income inequality between groups of households. *Procedia Economics and Finance*, *12*, 57–65.

Albreht, T., Pribaković Brinovec, R., Jošar, D., Poldrugovac, M., Kostnapfel, T., Zaletel, M., … Maresso, A. (2016). Slovenia: Health system review. *Health Systems in Transition*, *18*(3), 1–207.

Alexa, J., Rečka, L., Votápková, J., van Ginneken, E., Spranger, A., & Wittenbecher, F. (2015). Czech Republic: Health system review. *Health Systems in Transition*, *17*(1), 1–165.

Albreht, T., Pribakovič, R., Jošar, D., Poldrugovac, M., Kostnapfel, T., Zaletel, M., Panteli, D., & Maresso, A. (2016). *Slovenia: Health System Review*. *18(3)*, 1–207.

Alexa, J., Rečka, L., Votápková, J., van Ginneken, E., Spranger, A., & Wittenbecher, F. (2015). *Czech Republic: Health System Review*. *17(1)*, 1–207.

Azar, A., Maldonado, L., Castillo, J. C., & Atria, J. (2018). Income, egalitarianism and attitudes towards healthcare policy: A study on public attitudes in 29 countries. *Public Health*, *154*, 59–69.

Baji, P., Pavlova, M., Gulácsi, L., Zsófia, H. C., & Groot, W. (2012). Informal payments for healthcare services and short-term effects of the introduction of visit fee on these payments in Hungary. *The International Journal of Health Planning and Management*, *27*(1), 63–79.

Białynicki-Birula, P. (2006). Zmiany w systemie finansowania ochrony zdrowia w Polsce: Perspektywa międzynarodowa. *Monografie: Prace Doktorskie/Akademia Ekonomiczna w Krakowie*, *4*.

Birčiaková, N., Stávková, J., & Antošová, V. (2014). The impact of economic development in the Czech Republic on the income inequality between groups of households. *Procedia Economics and Finance*, *12*, 57–65.

Chernew, M. (2010). Health care spending growth: Can we avoid fiscal Armageddon?. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, *47*(4), 285–295.

Crespy, A., & Szabó, I. (2018). Healthcare reforms and fiscal discipline in Europe: Responsibility or responsiveness?. *European Policy Analysis*, *4*(2), 214–233.

de Breij, S., Huisman, M., & Deeg, D. J. (2020). Macro-level determinants of post-retirement health and health inequalities: A multilevel analysis of 18 European countries. *Social Science & Medicine*, *245*, 112669.

Dózsa, C., Jankus, K., & Helter, T. M. (2019). Structural changes in the Hungarian healthcare system between 2000 and 2017. *Value in Health Regional Issues*, *19*, 92–98.

Ferguson, S. C., & Irvine, B. (2003). *Hungary's healthcare system*. OECD.

Gaál, P., Szigeti, S., Csere, M., Gaskins, M., & Panteli, D. (2011). *Hungary: Health system review*.

Grześkiewicz, W. (2015). Finanse samodzielnych samorządowych publicznych zakładów opieki zdrowotnej po wejściu w życie ustawy o działalności leczniczej. *Problemy Zarządzania*, *2/2015*(53), t. 2, 129–149.

Hall, D. (2009). *Healthcare: Rejection of privatisation and patient fees in Central Europe*. Public Services International Research Unit, University of Greenwich.

Hejdukova, P. (2016). Healthcare systems in Austria and the Czech Republic. *International Journal of Business and Management*, *IV*(4).

Hellich, E., & Wierzowiecka, A. (2017). Nowy model finansowania szpitali w Polsce–szanse i zagrożenia. *Studia Ekonomiczne*, *333*, 77–89.

Jaworzyńska, M. (2016). A comparative analysis of the health system financing in Poland and selected countries. *Recent Issues in Economic Development*, 41–51.

Kinkorová, J., & Topolčan, O. (2012). Overview of healthcare system in the Czech Republic. *EPMA Journal*, *3*(1), 4.

https://doi.org/10.7172/1644-9584.89.2

Kowalczyk, M. (2015). Finansowanie ochrony zdrowia w Polsce w latach 1999–2015. *Zeszyty Naukowe Politechniki Częstochowskiej Zarządzanie*, *20*, 139–148.
Kulesher, R., & Forrestal, E. (2014). International models of health systems financing. *Journal of Hospital Administration*, *3*(4), 127–139.
Lameire, N., Joffe, P., & Wiedemann, M. (1999). Healthcare systems – An international review: An overview. *Nephrology Dialysis Transplantation*, *14*(suppl_6), 3–9.
Laskowska, I. (2017). Rola prywatnych ubezpieczeń zdrowotnych w systemie ochrony zdrowia w obliczu zmian demograficznych w Polsce. *Problemy Zarządzania*, *15*(3(69)), 117–129.
Lenio, P. (2018a). *Publicznoprawne źródła finansowania ochrony zdrowia*. Wolters Kluwer.
Lenio, P. (2018b). Źródla finansowania ochrony zdrowia w Polsce i w Wielkiej Brytanii. *Studenckie Prace Prawnicze, Administratywistyczne i Ekonomiczne*, *23*, 49–62.
Lorenzoni, L., Marino, A., Morgan, D., & James, C. (2019). *Health spending projections to 2030*. Retrieved from https://www.oecd-ilibrary.org/content/paper/5667f23d-en
Malinowski, W., & Nojszewska, E. (2017). Uwarunkowania ekonomiczne możliwości komercyjnego świadczenia usług medycznych przez polskie szpitale publiczne. *Management Sciences/Nauki o Zarzadzaniu*, *32*(3), 5–11.
Marmor, T., & Wendt, C. (2012). Conceptual frameworks for comparing healthcare politics and policy. *Health Policy*, *107*(1), 11–20.
Nemec, J., Spacek, D., & de Vries, M. (2015). Coordinating healthcare under a pluralistic health insurance system: The case of Slovakia. *Transylvanian Review of Administrative Sciences*, *11*(45), 168–184.
Nojszewska, E. (2015). Publiczne i prywatne finansowanie ochrony zdrowia w Polsce– stan obecny i propozycje rozwiązań. *Problemy Zarządzania*, *2/2015*(53), t. 2, 15–36.
OECD. (2014). *Elderly population*. Retrieved from https://www.oecd-ilibrary.org/content/data/8d805ea1-en. Doi:https://doi.org/10.1787/8d805ea1-en.
OECD. (2019a). *Life expectancy at birth, 1970 and 2017 (or nearest year)*. Retrieved from https://www.oecd-ilibrary.org/social-issues-migration-health/health-at-a-glance-2019_5b274e35-en. Doi: https://doi.org/10.1787/5b274e35-en.
OECD. (2019b). *Practising doctors per 1 000 population, 2000 and 2017 (or nearest year)*. Retrieved from https://www.oecd-ilibrary.org/sites/b33ab4c1-en/index.html?itemId=/content/component/b33ab4c1-en. Doi: https://doi.org/10.1787/888934017253.
Ortiz-Ospina, E., & Roser, M. (2017). Financing healthcare. *Our World in Data*.
PMR Industry Report: Private Healthcare Market in Poland 2017. (2017). Retrieved from https://mypmr.pro/products/private-healthcare-market-in-poland-2017.
Polak, P., Świątkiewicz-Mośny, M., & Wagner, A. (2019). Much ado about nothing? The responsiveness of the healthcare system in Poland through patients' eyes. *Health Policy*, *123*(12), 1259–1266.
Rabiej, E. (2017). Transformacja systemu ochrony zdrowia w Polsce – w drodze do zrównoważonego rozwoju. *Studia BAS*, *4*, 121–142.
Roberts, A. (2009). The politics of healthcare reform in postcommunist Europe: The importance of access. *Journal of Public Policy*, *29*(3), 305–325.
Sheingold, B. H., & Hahn, J. A. (2014). The history of healthcare quality: The first 100 years 1860–1960. *International Journal of Africa Nursing Sciences*, *1*, 18–22.
Smith, S., Newhouse, J. P., & Freeland, M. S. (2009). Income, insurance, and technology: Why does health spending outpace economic growth?. *Health Affairs*, *28*(5), 1276–1284.
Sowada, C., Sagan, A., & Kowalska-Bobko, I. (2019). *Poland: Health system review*, *21*(1), 1–235.
Stepurko, T., Pavlova, M., Gryga, I., & Groot, W. (2015). Making patients pay: Informal patient payments in Central and Eastern European countries. *Frontiers in Public Health*, *3*, 192.

Sześciło, D. (2017). *Zmierzch decentralizacji? Instytucjonalny krajobraz opieki zdrowotnej w Europie po nowym zarządzaniu publicznym*. Scholar.
Wagstaff, A., & Moreno-Serra, R. (2009). Europe and Central Asia's great post-communist social health insurance experiment: Aggregate impacts on health sector outcomes. *Journal of Health Economics*, *28*(2), 322–340.
World Health Organization. (2017). *New perspectives on global health spending for universal health coverage*. World Health Organization.
Zajac, R., Marcincin, A., & Pazitny, P. (2005). *Health-care reform in Slovakia* (CESifo DICE) [Report 1/2005].

https://doi.org/10.7172/1644-9584.89.2