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# Healthcare systems in Austria and the Czech Republic

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# HEALTHCARE SYSTEMS IN AUSTRIA AND THE CZECH REPUBLIC - THE SAME HISTORY, BUT WITH SOME DIFFERENCES

*PAVLINA HEJDUKOVA*

## **Abstract:**

Healthcare systems across countries are constantly undergoing long and complicated developments. Across all European countries, health care is funded by using public and private sources. For this paper, two counties were chosen with the same historical background in the context of health care funding with the following indicators of health care performance: number of physicians, number of hospital beds, life expectancy, prenatal mortality, public expenditures to the health care, private expenditures to the health care, and total expenditures to the health care. The aims of the paper are to define "healthcare system" and to characterize the main specifics of the Bismarck model of healthcare insurance; to analyze and compare the selected indicators of performance of the healthcare systems in Austria and the Czech Republic, and to compare the results of the analysis.

## **Keywords:**

health care; healthcare systems; models; Bismarck model; insurance; indicators; funding

**JEL Classification:** I12, I15, I18

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## 1 Introduction

Healthcare systems across countries are constantly undergoing long and complicated developments. In every country, there were and there are now, different economic, political, social, and cultural aspects and conditions. The country is committed to meeting the health needs of its citizens on the basis of the selected health system and within the capacity of the economy.

The support of health by using healthcare systems is very important. The reason for this is the fact that health is an important factor of economic growth as a form of human capital, as is shown in many research studies such as Lucas (1988), Sala-i-M. (1996).

Healthcare systems in Europe are a duty, imbedded in our European culture to help people in sickness, to promote a healthy society through education, and for the prevention of diseases (Unger, 2012).

Nowadays, the delivery of healthcare in Europe is a matter for serious public and professional discussion. The old national arrangement of healthcare is seen to have failed. Health care is going to be a very important part of social politics, and has impacts on other specifics in parts of social and health economies – for example education, long-term care, care for seniors, disabled and handicapped etc. So it is possible to say that health care is a very high political priority.

Healthcare systems in Europe have many differences, we can see a specific historical background, and development, and also different models of funding. For this paper, two healthcare systems were chosen with the same historical background and based on the same model of healthcare funding for the analysis of health performance indicators.

## 2 Goals, methodology, and data

The purpose of this paper is to introduce theoretical and practical perspectives of the healthcare systems in Austria and the Czech Republic in the context of the same historical background and same model of healthcare funding.

The goals of this paper are the following: to define the term “healthcare system” and characterize the main specifics of the Bismarck model of healthcare insurance with a focus on the same historical background in Austria and the Czech Republic; to analyze and compare the selected indicators of performance of healthcare systems in these countries, and to compare the results of the analysis.

With respect of the goals of this paper, the following methodological approaches are held: literature review for defining the term “healthcare systems” and to characterize the main specifics of Bismarck model of healthcare insurance, analysis for work with statistical data, and synthesis of results and conclusions.

For the theoretical background and perspectives of the healthcare system, many research studies have been used, mainly from research databases and mostly in the English language. For the analysis, mainly data from OECD and World Health Organization Statistics have been used.

### **3 Literature Review**

#### **3.1 Definitions and approaches to the healthcare systems**

According to Donabedian (1972), the defining goal for a health system is to improve the health of the population. If health systems did not contribute to improved health, then we would choose not to have them. The health of the population should reflect the health of individuals throughout life, and includes both premature mortality and non-fatal health outcomes as key components.

Many definitions and specifics of healthcare systems exist on the professional level. One of the basic definitions is given by the WHO (Nutbeam, 1998), which refers to the health care system as "a formal structure for a current population which is defined by law and state regulation, mainly in parts of the funding, management, breadth and content, which is providing services for people and which is helping the improvement of the their health and offers a defined set of values for homes, educational institutions, workplaces, public spaces, community hospitals, and clinics."

Another definition understands healthcare systems as human resources, institutions, and working resources together in accordance with stated policy to improve the health status of the population, which is offered protection against diseases with help of activities providing primary targets which are improved health (WHO, 2000).

From the perspective of long-term sustainability and development, the healthcare system must have a certain concept. According to Kelly and Hurst (2006), the conceptual framework of a current healthcare system has to include the following indicators: efficiency, security, ability to respond, availability, equity, and effectiveness.

A health system has many key components. In addition to patients, families, and communities, Ministries of Health, health providers, health services organizations, pharmaceutical companies, health financing bodies, and other organizations all play important roles. The interconnections of the health system can be viewed as the functions and roles played by these parts. These functions include oversight (e.g., policymaking, regulation), health service provision (e.g., clinical services, health promotion), financing, and managing resources (e.g., pharmaceuticals, medical equipment, and information). Describing the parts, interconnections, and purpose, Roemer (2002) defined a health system as "the combination of resources, organization, financing, and management that culminates in the delivery of health services to the population." The World Health Organization (2000) redefined the main purpose in its definition of a healthcare system as "all activities whose primary purpose is to promote, restore, and maintain health." In recent years, the definition of "purpose" has been further extended to include the prevention of household poverty due to illness (World Bank, 2007). Plsek & Greenhalgh (2001) mentioned how the health system is a complex adaptive system which has important implications for approaches to influencing health systems to produce better health outcomes, or to do so in a more efficient or equitable manner.

#### **3.2 Bismarck model of healthcare systems funding**

The basis for the classification of healthcare systems is the method of funding. The starting point of the three historically established funding models differs in this fact: what role the population plays in contributions to healthcare. The way healthcare is financed significantly affects the

relations among the three entities and health insurance. Their distribution follows the historical development, because in some areas the relationship between patient and health care provider was a straightforward matter. This means that the patient is reimbursed for care provided directly by doctors. They entered into a healthcare relationship with other subjects at the end of nineteenth century (Krebs et al, 2010).

According to Physicians for a National Health Program (2010) four basic models of healthcare systems exist from the perspective of type of finance and management of health care: The Beveridge model (the health care is provided and financed by the government through tax payments), Bismarck model (this model is based on social insurance), National Health Insurance (this model has elements of both Beveridge and Bismarck models), and Out-of-Pocket model (this model could be called "market driven" health care; the most expensive activities are paid by the consumers of health care).

The question of financing has always played a prominent part in the classification of healthcare systems – see Field (1973) OECD (1987), Culyer (1990), Jönsson & Musgrove (1997), Moran (1999), Moran (2000) Blank & Burau (2004).

There are many differences between models of healthcare in Europe. It is necessary to point out the fact that nowadays costs of health care funding are influenced by demographic changes, pressure for higher quality care, and increased costs by reason of the emergence of new diseases (Hejduková, 2015).

The "Bismarck model", which was based on a nationwide social security system, was introduced in Germany at the end of 19th century at the behest of Chancellor Otto von Bismarck. Within the system was included a system for social insurance, long-term nursing care, a national health insurance scheme, and also became part of insurance against industrial accidents and disability, and pension and unemployment insurance (Kotlikoff, 1996), (Hicks, 1999).

In practice, we can call the Bismarck model a "mixed" model, funded by a premium financed social insurance system and with a mixture of public and private providers (Laimer et al., 1999). For more details see for example Maarse (2006), Vecchi (1999), Wendt et al. (2009) or Bevan (2010).

The main characteristic of this model is that financial contributions from each citizen are paid into the fund for mandatory health insurance, regardless of the amount of usage of their future health care consumption. Insurance companies created by this fund pay funds to physicians and healthcare facilities with which they contract. This model is applied in Austria and since the transformation of its economy, was re-introduced in the Czech Republic (Janečková & Hnilicová, 2009).

Access to health care is guaranteed for the entire population in this model, because it is a public, statutory, and compulsory insurance. The state is the guarantor of health care, and is responsible for the overall efficiency of spending of resources. Each individual pays a premium based on their income, but gets his health care according to their needs. The state also participates in financing in the form of additional contributions to fund health insurance for certain groups of the population which cannot pay the premium, some examples are children, students, pensioners, unemployed, etc. The state also pays for the investments in the hospital care (Hejduková, 2011).

From a historical perspective (and we can also say from the current perspectives), Austria favours a state-oriented and interventionist approach (Theurl, 1999) and the situation is similar in the healthcare markets in the Czech Republic.

Health insurance was introduced in the late 19th century in the Czech Republic. This fact points to the shared history with Austria. Primarily, we have both the health and sick insurance together (Sinkulová, 1970). But due to unfavourable political developments in the Czech Republic, mainly because of the socialist state arrangement, there have been many changes in the healthcare system. During the transformation of the economy in the Czech Republic, the system of healthcare insurance was re-introduced, but with the establishment of public healthcare, insurance was held separately for the sick from the normal healthcare insurance system. There was a significant differentiation of health care financing in the Czech Republic from insurance systems applied in the First Republic and the insurance system utilized in other western European countries, where the healthcare insurance system and the sick insurance system were a common system (Hejduková, 2011), (Kalina, 1992).

## 4 Analysis

The first step of analysis is to shortly describe the main aspects of the two healthcare systems – firstly in Austria, and secondly in the Czech Republic.

For the second step of analysis, the following indicators of health care performance were chosen: the number of physicians, number of hospital beds, life expectancy, and prenatal mortality, public expenditures to the health care, private expenditures to the health care, and total expenditures to the health care in these countries. Selected indicators were analyzed in the years 2010 – 2013.

All chosen indicators for the analysis are shown in the following tables (Tab. 1, Tab. 2, Tab. 3, Tab. 4, Tab. 5, Tab. 6, Tab. 7 and Tab. 8).

### 4.1 Selected indicators of the healthcare system in Austria

Health Systems in Transition, Austria (2013), mentioned how the Austrian healthcare system consists of three major institutional characteristics since the mid-19th century:

1. constitutional composition of the state, where powers are divided between the federal and regional levels,
2. a high degree of delegation of responsibility to the state authorities,
3. a mixed funding model, in which state social insurance and direct payments exist.

In terms of health care organization in the Austrian health care system, all citizens have relatively unrestricted access to all levels of care, and the healthcare insurance is compulsory. Every citizen is thus insured. Health insurance is dependent upon the employer and on his estate. Thus, there is no competition between insurance companies, because employees can choose their own insurance company. Health insurance is determined based on income, not on the basis of health risks. The amount of the premium is determined annually by the National Board (Health Systems in Transition, Austria, 2013; Help gv. at., 2016).

**Tab. 1: Selected indicators of the healthcare system in Austria in years 2010 - 2013**

Indicators/ years	2010	2011	2012	2013
Physicians/ 100 000 inhabitants	480	484	490	499
Hospital beds / 100 000 inhabitants	742	768	768	765
Life expectancy	80,7	81,1	81,0	81,2
Prenatal mortality/ 1000 inhabitants (in ‰)	3,01	3,09	2,96	3,13

*Source: own work based on OECD (2015) and WHO (2016)*

Tab. 1 shows indicators as number of physicians per 100 000 inhabitants, number of hospital beds per 100 000 inhabitants, and life expectancy and prenatal mortality per 1000 inhabitants. There is no big variation in development of these indicators in years 2010 – 2013. A small change can be seen in the development of number of physicians per 100 000 inhabitants (growth - positive) and in development of prenatal mortality per 1000 inhabitants (growth - negative).

**Tab. 2: Public expenditures for health care in Austria in the years 2010 – 2013 (in %)**

Years	Public expenditures/ GDP	Public expenditures/ total healthcare expenditures
2010	7,7	76,14
2011	7,5	76,16
2012	7,7	76,37
2013	7,7	76,20

*Source: own work based on OECD (2015)*

Tab. 2 shows the indicator - public expenditures to the health care. The development of this indicator in time has no big variation. We can see in fact, that public expenditures play the primary role in total healthcare expenditures.

**Tab. 3: Private expenditures for health care in Austria in the years 2010 – 2013 (in %)**

Years	Private expenditures/ GDP	Private expenditures/ total healthcare expenditures
2010	2,4	23,86
2011	2,4	23,86
2012	2,4	23,63
2013	2,4	23,80

*Source: own work based on OECD (2015)*

As presented in Tab. 3, the private expenditures are nearly identical in the given time, and private expenditures do not play the biggest role in total healthcare expenditures.

**Tab. 4: Total expenditures for health care in Austria in the years 2010 – 2013 (in %)**

Years	Total expenditures/ GDP
2010	10,1
2011	9,9
2012	10,1
2013	10,1

*Source: own work based on OECD (2015)*

As shown in Tab. 4, the total expenditures per GDP in years 2010 – 2013 are about 10 %.

#### **4.2 Selected indicators of the healthcare system in the Czech Republic**

The health care system in the Czech Republic is based on a model of compulsory national health insurance, which means that every citizen has an obligation to pay healthcare insurance. The healthcare insurance is defined as a proportion of their income, and one must have a compulsory membership for health insurance. This insurance is represented by the character of the health tax. Non-economically active people are also required to pay the insurance, but the state pays for them (Hejduková, 2011). Health insurance is compulsory for all persons who have permanent residence in the Czech Republic or who are employed by an employer principally established in the Czech Republic (General Health Insurance Company, 2016).

The amount paid for the contributions and the insurance rates are held by state law. Health insurance is determined based on income, not on the basis of health risks – it is the same situation as in Austria.



**Tab. 5: Selected indicators of the healthcare system in the Czech Republic in the years 2010 - 2013**

Indicators/ years	2010	2011	2012	2013
Physicians/ 100 000 inhabitants	358	364	368	369
Hospital beds / 100 000 inhabitants	701	684	666	646
Life expectancy	77,7	78	78,2	78,3
Prenatal mortality/ 1000 inhabitants (in ‰)	3,08	3,63	3,63	2,96

Source: own work based on OECD (2015) and WHO (2016)

As is presented in Tab. 5, there are no big variations of the number of physicians per 100 000 inhabitants, we can see a decreasing of number of hospital beds per 100 000 inhabitants, small growth of life expectancy, and a decrease in prenatal mortality per 1000 inhabitants.

**Tab. 6: Public expenditures for health care in the Czech Republic in the years 2010 – 2013 (in %)**

Years	Public expenditures/ GDP	Public expenditures/ total healthcare expenditures
2010	5,8	83,8
2011	5,9	84,2
2012	5,9	84,0
2013	6,0	83,3

Source: own work based on OECD (2015)

Tab. 6 shows indicators - public expenditures for health care. The development of this indicator in the given time has no big variation. We can see the fact that public expenditures play a primary role in the total healthcare expenditures; and there is the same trend as in Austria.

**Tab. 7: Private expenditures for health care in the Czech Republic in the years 2010 – 2013 (in %)**

Years	Private expenditures/ GDP	Private expenditures/ total healthcare expenditures
2010	1,2	16,2
2011	1,1	15,8
2012	1,1	16,0
2013	1,1	16,7

*Source: own work based on OECD (2015)*

Tab. 7 shows private expenditures for health care in the Czech Republic. What we can see above is that there are very limited opportunities for private payments in the Czech healthcare system by law.

**Tab. 8: Total expenditures for health care in the Czech Republic in the years 2010 – 2013 (in %)**

Years	Total expenditures/ GDP
2010	7,4
2011	7,5
2012	7,5
2013	7,2

*Source: own work based on OECD (2015)*

As is presented in Tab. 8, the total expenditures per GDP in the years 2010 – 2013 are about 7 %. This indicator has a much lower value in the Czech Republic in comparison to Austria.

## 5 Results

The chosen indicators from the analysis are: number of physicians; number of hospital beds; life expectancy; prenatal mortality; public expenditures for health care; private expenditures for health care, and total expenditures for health care in these countries.

The selected countries have the same history, but today's practice shows some differences in their healthcare systems.

We can define access to health care by using of the following indicators: number of physicians, number of hospital beds, life expectancy, and prenatal mortality. It is possible to evaluate that the development of the values of these indicators are not much different in comparison of data in Austria and in the Czech Republic, but the values are better in Austria, it means that there are more physicians, hospital beds per 100 000 inhabitants, and higher life expectancy in Austria, the similar value has been indicated for prenatal mortality.

We can see bigger spending on health care in Austria, both in total expenditures and also at the level of public and private spending of GDP.

Based on the evaluated indicators in selected years, it is possible to mention that the Austrian healthcare system has better results in comparison to the Czech healthcare system in this analysis; on the other hand, I know that the results are limited and explicit.

The Austrian healthcare system is primarily financed through a mix of income-based social insurance contributions, public income generated through taxes, and private payments in the form of direct and indirect co-payments. In the Czech Republic, there is a similar model which is used for healthcare funding, but there is this main difference: there is a mix of income-based health insurance contributions and public income from the state budget. The co-payments in direct form are very limited by law in the Czech Republic.

## 6 Conclusions

Today, healthcare systems play more and more important roles in life of everyone. There are several reasons for this fact: many very skilled people work in the health sector, many new technologies are used there, there is better access to health care in comparison to previous years and to the older arrangements of the healthcare systems. On the other hand, the policies of all modern states have many things to do in the area of the healthcare sector. It means mainly the following: the healthcare institutions very often are poorly structured; non-effectiveness, management, etc. So it is necessary to continuously monitor the behavior of the healthcare systems and their complements and evaluate their indicators of performance (Hejduková & Kureková, 2016).

I am aware that the mentioned conclusions are, of course, tentative. My main objective was to show that the attainment and efficiency of health systems can be measured and compared across countries and for my analysis, healthcare systems with similar models of healthcare funding were chosen. It should be emphasized that the compared systems are similar but not same, even though they have the same historical origins. Using the examples of Austria and the Czech Republic the performance of selected indicators of healthcare were presented and it is evident that these countries (and not only them) have similar problems.

Healthcare systems are organized and financed in different ways across the Europe, but most European policies would agree that universal access to good healthcare at an affordable cost to both individuals and society at large is a basic need of any sustainable healthcare system.

All modern countries must recognize that without the ability to measure the inputs and outputs of health systems, they cannot know if reforms achieve their objectives.

The topic opens up the space for other research studies about healthcare systems. For deeper analysis, it is possible to extend the number of evaluated indicators, extend the analyzed

countries, to use a longer time series, and to compare the data set across more countries over time.

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