ANALYSIS OF HEALTH RELATED FINANCIAL FLOWS AND PATIENT SATISFACTION WITH PRIVATE HEALTH CARE IN THE CZECH REPUBLIC

Master Thesis

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“DECLARATION IN LIEU OF OATH

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Innsbruck, June 20th 2016 ----------

Aneta Supová

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List of abbreviations

a.s.	Joint-stock company *(akciová společnost)*
ASA	American Society of Anesthesiologists
CEE	Central and Eastern Europe
CNB	Czech National Bank
CZK	Czech Koruna
DRG	Diagnosis-related group
ECG	Electrocardiography
EU	European Union
EUR	Euro
GDP	Gross national product
GHIF	General Health Insurance Fund *(Všeobecná zdravotní pojišťovna, VZP)*
GP	General Practitioner
HTA	Health Technology Assessment
ICD-10	International Classification of Diseases
ICU	Intensive Care Unit
IHIS CR	Institution of Health Information and Statistics of Czech Republic *(Ústav zdravotních informací a statistiky ČR, ÚZIS)*
MDC	Major diagnostic category
OECD	Organization for Economic Co-operation and Development
PET	Positron Emission Tomography
SÚKL	State Institute of Drug Control *(Státní ústav pro kontrolu léčiv)*
UK	United Kingdom
UN	United Nations
USA	United States of America
WHO	World Health Organization

1 Introduction

1.1 Problem definition

Ever since the industrial revolution, when the health care systems started to be formed, health care financing has been one of the most observed areas of public financing and public policies by both providers and agents. The European health care systems were based on two pillars: the aim to restrain the main causes of death and the effort to make health care accessible for different groups of inhabitants. These principles started to be fulfilled in the second half of 20th century by an intense fight against infectious diseases and by building up health insurance models based on the solidarity principle. Health care development has been significantly influenced by scientific and technological improvements (such as stem cells treatment, gamma knife or microarray technology) which have provided an opportunity to cure even the most complicated forms of diseases. On the other hand, ethical, legal, and social issues, which were not common before, remain unsolved until today. The attitude towards tackling these problems used to be different among European countries due to their political and social division. Most of the western European states regarded health care as an important social value and came up the term “public health”. However, health standards and prestige of health care as a whole field was negatively influenced by the process of normalization when the health care system was politicized and the technological development in former Czechoslovakia was largely limited. Due to this situation, it has been very challenging to find the most suitable way to organize and finance health care and its facilities after the Velvet Revolution in 1989 in the Czech Republic. (Drbal, 2005)

Having looked at the health statistical data (OECD, 2015), the Czech Republic spends nowadays approximately 7,5 % of their GDP for health expenditure which is below the OECD average of 8,9 %. Out of the total health expenditure, 5,7 % is financed from public budget, 79 % is covered by public health insurance and about 15,3 % by private sources. The Czech Republic has 188 in-patient facilities (59 % of them are privately owned) with the capacity of 56 807 beds. (IHIS CR, 2014)

According to the European Health Consumer Index, the Czech Republic’s health care system ranked surprisingly well, even though its health care spending per capita is smaller in comparison with other European and OECD countries. Being the

best performer among CEE countries, Czech health care system ranked 15th (achieving 714 points out of 1000) between UK England and UK Scotland. Regarding this ranking, it is clear that Czech health care system has substantially improved and seems to be fundamentally stable. Nevertheless, the information asymmetry, restrictive pharmaceutical policy, low level of prevention and insufficient intervention in the field of health risks such as smoking, obesity and alcohol usage are areas which must be approached more intensively. (Björnberg, 2015)

Looking at the health insurance system, it has always been a source of disputes and dissatisfaction among citizens. Choosing the correct model of health insurance is very difficult in terms of financing and maintaining an equal access to health care. The public health insurance is mandatory for all residents of the Czech Republic and is managed by health insurance funds – is not part of the state budget. The aim of collecting health care insurance premiums is to redistribute financial flows and costs among insurers and create a system of solidarity. (Maaytová, 2015) However, Czech health insurance does not work well for foreigners from third countries who are excluded from the public health insurance, and therefore have to arrange their health insurance by commercial insurance funds which offer significantly worse conditions. (Bednárová, 2014)

Generally, people tend to be curious about how much goods and services cost. Health care is obviously a very expensive service which could have not been affordable for most of the population if they had not been supported. Hence, health care is highly subsidized by state governments who provide health insurance funds with premiums for people who cannot pay them by themselves. In order to explain this issue, an overview of how much a real person truly costs a health insurance per year for his/her health care services and how much he/she contributes into the health care system will be provided.

Since 1992, the amount of privately owned hospitals in the Czech Republic has been increasing. In the last 10 years, AGEL a. s., the Czech joint stock company and the biggest private health care provider in the Central European region, has been acquiring hospitals and other health care facilities in the eastern part of Czech Republic. Nowadays, AGEL runs 36 facilities in the whole Czech Republic and in Slovakia. AGEL focuses on providing the highest quality care using the newest medical technology. Every year, AGEL invests a huge amount of money into modernization of their hospitals and its equipment which enables them to treat

patients with the most complicated forms of diseases. Their hospitals and other facilities specialize mainly in cardiovascular treatment, surgeries and obesity treatment, orthopedics, gastroenterology, and oncology. (AGEL a.s., 2015) Popularity of this medical group has grown significantly in the past years as more and more patients prefer to be treated in AGEL's facilities instead of public hospitals. These outcomes are results of the high level of patients' satisfaction with the treatment and overall approach of doctors and other medical staff. It seems that AGEL found a way to make patients think about their treatment possibilities and enable them to choose the most suitable option possible.

Another privately owned hospital, Hospital Šumperk a.s., used to be part of AGEL group from 2004 until 2015. As one of the owners of AGEL group decided to leave his position in AGEL, Hospital Šumperk a.s. has been taken over by MUDr. Martin Polach, MBA, in April 2015. Under AGEL, the hospital was modernized and the financial difficulties of the hospital since 1992 were surmounted. Nowadays, the hospital is going through a series of reconstructions and improvements which were initiated by its new owner. (Nemocnice Šumperk a.s., 2015). In 2015, Health Care Institute, which is a non-profit organization established in the Czech Republic conducting annual surveys on quality of care in the Czech hospitals, conducted a survey among 156 hospitals in the Czech Republic in 2015. Based on their survey, Hospital Šumperk was ranked as the second best hospital in the Czech Republic regarding safety and patient satisfaction with the quality of care as well as third in the category of the shortest waiting period. (HealthCare Institute, 2015)

1.2 Goals and Research Question

The aim of this Master Thesis is to provide a comprehensive overview of Czech health care system, its financing, and to analyze and compare health care services of the Czech private health care providers AGEL a. s. and Hospital Šumperk a.s. with publically owned hospitals.

The first part of this thesis will be focused on the development of Czech health care system, and its current organizational structure. The basic terminology, principles and legal framework of health care will be described at the beginning of this part.

The main concepts of Czech health care financing will be explained and demonstrated in the second part of this paper. Having built this thesis on the issue of health related financial flows, budgeting, DRGs, health insurance system, and payment ordinance will be discussed. The author will also analyze several specific medical expenditure for different kind of treatments based on data provided by differently aged people who were willing to provide their health care statements for the purpose of this Master thesis.

The last section will be practically oriented. The practical part addresses AGEL a. s. and Hospital Šumperk a.s. which are willing to unable the author to conduct a survey among their patients. A survey among the patients will be conducted in order to analyze patient's satisfaction with AGEL's hospitals, treatment methods, facilities and doctors'/nurses' approach. Moreover, the comparison between the patients' satisfaction with the care provided in these two privately owned hospitals will be the major outcome of this part.

Research Question:

In what way are medical services provided in privately owned hospitals different from ordinary practices in public hospitals, and how are the patients satisfied with the care provided by these facilities?

1.3 Methodology

The theoretical part of this thesis is based on the method of analysis. In order to explain and outline the structure of Czech health care system and its financing, the author will use both Czech and international bibliography, annual reports of the most important international organizations such as WHO, OECD, and the European Union. The statistical data published in OECD Statistical Books, General Health Insurance Fund, Institute of Health Information and Statistics of the Czech Republic, and annual reports from Czech Ministry of Health and Ministry of Finance will be interpreted in this part as well. Author's own research will be conducted in the field on health insurance expenditure, and the efficiency of utilization of health coverage from annual contributions to the health insurance. The two specific examples include Caesarean section and lung carcinoma treatment.

On the other hand, the practical part will make a use of the questionnaire construction method. The main focus will be paid to the results of a survey conducted among AGEL's and Šumperk hospital's patients which will be a foundation for the final evaluation of patient's satisfaction and the level of services provided in AGEL's and Šumperk hospitals, both privately owned hospitals.

2 Basic concepts of health and development of Czech health care system

This chapter will focus on the main definitions of health related concepts such as health itself, public health, health care, and health system. All definitions will be based on both World Health Organization's (WHO) valid terminology and Czech legal interpretation of the terms mentioned above. The difference among Bismarck, Beveridge and Semashko models will be discussed as well.

Being transformed several times over the last 100 years, Czech/Czechoslovakian health care system development will be briefly described and the major changes will be highlighted. The current structure and organization of health care system in the Czech Republic will be clearly demonstrated in the last subchapter of this section.

2.1 Health

"Health is not everything but without health, everything is nothing" - Arthur Schopenhauer[1]

Health is defined by WHO as "*a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity."* (Official Records of the World Health Organization, 1946, p. 100)

This definition is written in the Preamble to the Constitution of the World Health Organization from 1946 and was adopted by 61 states in 1948. The term has not been amended ever since 1946. (World Health Organization, Definition, 2016)

According to the United Nations (UN) Universal Declaration of Human Rights (1948), health is considered a fundamental human right[2] and this right must be recognized by all UN members around the world.

As far as Czech legal system goes, Act. No. 20/1966 Coll. on The Care of People's Health (*o péči o zdraví lidu*) used to serve as the main legal regulation of health care law until 2012. This act was replaced by Act. No. 372/2011 Coll. on Health Care

[1] Holčík, 2015, p. 7
[2] Official UN definition according to Article 25: „*Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family*"

Services and Conditions of Their Provision (*o zdravotních službách a podmínkách jeho poskytování)* which stipulates the obligations of public services in health care provision, types and forms of health care, the responsibilities and rights of patients and medical staff, and the conditions of health care quality.

It is important to point out that health is not created in hospitals, as most people believe, but in families, schools, workplaces, etc. The reason behind this thinking lay in the understanding of importance of health which usually occurs only when people get sick. (The WHO Ottawa Charter of Health Promotion, 1986)

Health is crucial for living and healthy population is able to be active on the labor market, contributing financially into the national system, improving economic situation of a country, and therefore maintaining general well-being of its citizens. In democratic society, people are responsible for themselves and for their own health but on the other hand they are strongly supported by state apparatus which provides them with all important means needed for maintaining healthy lifestyle. (Barták, 2012, p. 15)

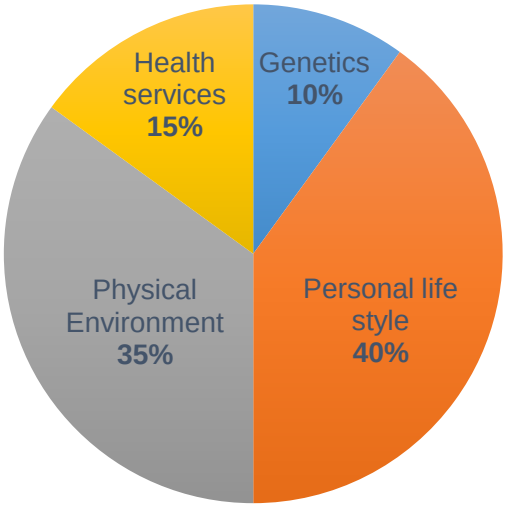
There are 3 main question about health which should be considered (Holčík, 2015, p. 7):

1. What is the general health of people?
2. What determines the general health of people?
3. What can be done in order to improve health?

The first question regards the general indicators of health status such as what is the mortality rate, infant mortality rate, morbidity, birth rate, life expectancy, life expectancy at birth, prevalence of HIV/AIDS, immunization rate and others.

Health determinants define the answer to the second question. Its impact on health can be described by Figure 1. This graph shows that health status can be greatly influenced by improving life style and physical environment (their value is together 75%). Life style is linked with social status, level of education received, sports, and social environment while physical environment means access to drinking water, clean air, sanitation, pollution and more. It is of capital importance for global organizations, governments and people to concentrate on these determinants and thus improve state of health of people who are in need – this is, as a matter of fact, the answer to question number three.

Figure 1. Main health determinants and its impact on health (in %)



Source*: Holčík, 2015, p. 19, author's own creation*

2.2 Public Health

According to WHO, the term public health "*refers to all organized measures (whether public or private) to prevent disease, promote health, and prolong life among the population as a whole. Its activities aim to provide conditions in which people can be healthy and focus on entire populations, not on individual patients or diseases*." (World Health Organization Glossary, 2016)

As public health concerns the whole population, it can be claimed that health is not of individual interest but it is a significant social priority, public good and one of the most important human values. (Holčík, 2015, p. 37) Especially the term public good explains the fundamental value of public health in the most suitable way. Public goods have two main characteristics: non-excludability and non-rivalrous consumption. (Cowen, 2008) If we consider the main principle of public health such as focus on entire population, it is obvious that non-excludability from using health care services and non-rivalrous consumption among patients regardless of age, gender or income define public health in a convenient way as well. It is the overall health care, economic, social, and political system that public health is concerned with.

Act No. 267/2015 Coll. on The Protection of Public Health (*o ochraně veřejného zdraví*) provides legal basis for public health protection and its content is binding and enforceable. However, the main source of health protection in the Czech Republic is The Charter of Fundamental Rights and Freedoms (1992), Article 31 declaring that "*everyone has the right to health protection. Citizens are entitled under public insurance to free medical care and to medical aids under conditions provided by law."*

Public health is the key point of each political party due to its impact on economic and social development of a country (as mentioned on page 6). Despite all governmental efforts to diminish the differences among cities, regions and countries, the gap has not been entirely eliminated yet. There are also existing threats to public health which exceed competencies of national governments and national borders. WHO (World Health Organization, Public Health, 2016) illustrates public health campaigns which are currently relevant for public health protection:

- Vaccination and control of infectious diseases
- Motor-vehicle safety
- Safer working places
- Safer and healthier foods
- Safe drinking water
- Healthier mothers and babies and access to family planning
- Decline in deaths from coronary heart disease and stroke
- Recognition of tobacco use as a health hazard

2.3 Health care

WHO refers health care to "*services provided to individuals or communities by health service providers for the purpose of promoting, maintaining, monitoring or restoring health."* (World Health Organization, A Glossary of Terms for Community Health Care and Services for Older Persons, 2004, p. 28)

The term health care consists of different levels of health care provision. The basic levels of health care and their definitions are following:

- Intermediate care: "*A short period of intensive rehabilitation and treatment to enable people to return home following hospitalization or to prevent admission to hospital or residential care*."
- Primary care: "*Basic or general health care focused on the point at which a patient ideally first seeks assistance from the medical care system. It is the basis for referrals to secondary and tertiary level care*."
- Secondary care: *"Specialist care provided on an ambulatory or in-patient basis, usually following a referral from primary care."*
- Tertiary care: "*The provision of highly specialized services in ambulatory and hospital settings"*

Source: *World Health Organization, A Glossary of Terms for Community Health Care and Services for Older Persons, 2004, p. 9*

Based on the already mentioned Act. No. 372/2011 Sb., § 2, Articles 1 and 2, health services are described as care provided by health and health specialized workers, consultancy services, emergency care, medical transport services, preventive care, and specialized care.

Moreover, the Act No. 372/2011 Coll., § 5, Articles 1 and 2, distinguish between two types of health care:

1. *Types of health care by the urgency of its provision*: urgent care, acute care, necessary care, and planned care.
2. *Types of health care by the purpose of its provision*: preventive care, diagnostic care, dispensary care, therapeutic care, assessment care, rehabilitation care, nursing care, palliative care, and medical care.

The major aims of health care are:

- Prevention, detection, and elimination of disease
- Maintaining, restoring, and improving health and functional health status
- Sustaining and prolonging life, alleviating suffering
- Assistance in reproduction and childbirth
- Health assessment
- Provision of preventive care

Source: *Act no. 372/2011 Coll., § 2, Article 4*

2.4 Health care system

The WHO defines health care system as *"the people, institutions and resources, arranged together in accordance with established policies, to improve the health of the population they serve, while responding to people's legitimate expectations and protecting them against the cost of ill-health through a variety of activities, the primary intent of which is to improve health*." (World Health Organization Glossary, 2004, p. 31)

In order for a health care system to be effective, it has to fulfill 3(+1) main functions:

1. Health care delivery (service provision)
2. Fair treatment of all (equal access to health care)
3. Meeting non-health expectations of the population (resource generation and solidarity in financing)
4. Stewardship (establishment, control, measurement)

Source: *WHO Glossary, 2004, p. 31, The World Health Report 2000, 2000, p. 24*

Solidarity, equity, efficiency, and cost-effectiveness are the most frequently highlighted words when talking about an effective health care system. Solidarity refers to a redistribution (cross-subsidization) of financials among high- and low-risk insured individuals regardless of their age or sex while equity means an equal and non-discriminating access to public health care services. Efficiency and cost-effectiveness are more or less connected as efficiency accounts for the maximum result which can be achieved with given resources and cost-effectives supposes good outcomes without wasting too much resources. Ideally, all of these aspects should be fulfilled in a certain health care system. (Barták, 2012, p. 31, Fidler, 2015)

The truth is, there are no two countries in the world with the completely same health care system. Considering this finding, one can think of many questions regarding health care systems such as: How to organize and finance health care systems in the best way? Is it more reasonable to set up a health care system on the principle of the invisible hand of the market or to get the government involved? And if so, how big power should the government have and to which extent should they be able to control health care? ***Does an ideal model exist?*** (Holčík, 2015, p. 45)

Having certain benefits as well as drawbacks, three basic models of health care systems developed since 1883 (see Table 1). The form of these systems changed after 1989 when a lot of states made transition from socialism to democracy, and therefore transformed their health systems. Nevertheless, different hybrid systems such as “Bev-marck” or “Bis-eridge” might be created in the future. (Kutzin, 2011)

Table 1. Basic models of health care systems

	Bismarck	**Beveridge**	**Semashko**
Main characteristics	Social health insurance	National health service	National health service
Administration	Health insurance funds	State	State
Financing	Insurance premiums, employer and state contributions	Tax revenues	Tax revenues, state budget
Providers of services	Public, profit and non-profit sectors	Public sector	State-owned and managed facilities, no free choice of a doctor
Involved population	Insured people	All people	All people
Advantages	1. High accessibility for basic care 2. Wide range of services 3. Support for primary care 4. Adequate costs	1. Universal accessibility 2. Sufficient range of services 3. Good service connection 4. Lower costs	1. Universal accessibility 2. Good service connection 3. Network of health care facilities
Disadvantages	1. Part of the financials for insurances' needs 2. Focus on curative care 3. Non-transparent funding 4. Bureaucracy	1. Not enough resources for investments 2. Hardship financing during economic recession 3. Long waiting times 4. Non-competitive environment	1. Low productivity of the system 2. Chronical shortage of resources 3. Almost no technical development 4. Low economic appraisal of doctors and nurses
Examples	Germany, Austria, France, **Czech Republic**	The United Kingdom, Sweden, Greece, Spain	Former Soviet Union states, Cuba

Source: *Author’s own creation based on Gladkij, 2003, p. 28*

The first and the oldest health care system model is named after former German Chancellor Otto von Bismarck who enforced new law on health insurance in 1883 in Germany. Bismarck model is based on the solidarity principle and compulsory health insurance as a part of social security. The contributions to the systems are made by employees and employers through payroll deductions as well as by state apparatus which supports those who are not employed or self-employed (children, elderly, disabled people, and currently unemployed people). It is a three-dimensional model which interconnects consumers, health insurance funds and providers of health care services. Health insurance funds can be both public and private, and their number varies among different countries (Wallace, 2013); for example there are 7 insurance funds in the Czech Republic in comparison to Austria which currently has 22 social security institutions and the affiliation is linked to people's profession, e.g. the fund cannot be chosen freely. (Austrian Federal Ministry of Health, 2013). Czech Republic has been using this model since 1991.

The Beveridge and Semashko models share a lot similarities. Both of them are based on National Health Service and are financed through tax deductions and state budget. The decisions on health care and its provision are made centrally by state which owns most of the health care facilities (in Semashko system, the state owns and manages all means of health care provision). Unlike in Semashko system, some private health services do exist in the Beveridge system. (Gladkij, 2003, p. 28)

The Beveridge system was founded in 1948 by William Henry Beveridge, a British economist promoting welfare state and social security. The Beveridge model views health coverage as a human and legal right which should be universal, free and based on solidarity. (Gladkij, 2003, p. 29) The Semashko system (1918) is named after Nikolai Semashko who was the People's Commissar of Public Health in the Soviet Union. According to an interview with Igor Sheiman, the Semashko system was of a great value for Soviet Union in its first decades, approximately until 1970s. The system provided universal coverage for all people and worked on a well-developed referral system. As the new medical technologies started to be available after 1970s, the Soviet Union Bloc did not have enough resources available to afford these new technologies and their medical equipment and treatment methods had quickly started to be obsolete. With the collapse of Soviet Union, the Semashko system was in most cases replaced by Bismarck system. Nowadays, the only state which still operates on Semashko system is Cuba. (Bulletin of WHO, 2013)

2.5 Historical development of Czech health care system (1867-1997)

From 1867 until the end of World War I in 1918, Czech lands were part of Austria-Hungarian Empire of which health care system was based on Bismarckian social health insurance model. In 1887 and 1888, compulsory accident insurance and sickness insurance were codified in the legislature but the law pertained only blue-collar workers. The insurance was provided by autonomous sickness funds which were independent of national institutions. As the Austria-Hungarian Empire fell apart, Czechoslovakia was officially founded on October 28th 1918. The newly created republic continued following Bismarck model but the system of health insurances was rather fragmented, having a huge number of institutions providing different kinds of health insurances and social security benefits. In 1919, a compulsory insurance for family members of blue-collar workers and all wage earners was introduced. (Wittenbecher & van Ginnecken, 2015, p. 17-18).

At the beginning of 1924, there were 331 health insurance funds in Czechoslovakia guaranteeing 52 months of health care for workers in case of injury. During the sickness time, the insurances paid their clients 60 % of their average wage. Later in the same year, Central Social Insurance Fund was created in order to gather all insurance funds into one system which limited the number of insurance funds up to maximum 300. Until 1938, half of Czechoslovakian population was covered by compulsory health insurance as the compulsory coverage expanded on other professions. (Krnáčová, panel discussion, 2013)

After the end of World War II, Czechoslovakia shifted its politics towards communism and Soviet sphere of influence. All institutions and companies were nationalized and became a collective property. Social and health insurances were compulsory for all citizens without any exception and without any own choice of type of health insurance, doctor, treatment or anything related to health care. The Central National Insurance was the only health insurance fund in the whole republic, stately owned and operated. The contributions were conducted only by employers (not by both as it works in current system) and the value of the contribution was 6,8 % of employees' wages. (Wittenbecher & van Ginnecken, 2015, p. 18-19).

This health care system worked quite well until 1952 when it was replaced by Semashko model. As it was mentioned earlier, the Semashko system is based upon universal state health care coverage financed solely by state budget through general taxation. The technical equipment of hospitals was of poor quality, shortage of drugs and medication was on daily basis, and lack of investment into health care and its facilities precluded any technical or practical development. All doctors and health care specialists were paid according to stately created tables based on the number of years worked off (the oldest doctors earned the highest wages in this system). The major drawbacks of "table wages" were its status of quality depreciation and negligence of treatment costs. (Gladkij, 2003, p. 93-99)

Between 1952 and 1989, the basis of health care provision was a general practitioner who could not have been selected freely by a citizens but was automatically assigned and approved by state apparatus. Moreover, gate-keeping worked perfectly well in socialist Czechoslovakia by not allowing patients to visit hospitals directly in case of pain but a written request paper by GP was required for basically all check-ups and other procedures. All of this resulted only in very long waiting times and diminished efficiency of the system. As for health care services, they were provided for free at the point of delivery and were highly regionalized. What it means is that Czech part of Czechoslovakia was divided into 7 regions, were large hospitals and blood transfusion centers were located, and 76 districts with small or middle size hospitals, polyclinics etc. The truth is that until 1960s, the improvements in infant mortality, tuberculosis and malnutrition rates were recognized. This might be the only highlight of Semashko model's application in former Czechoslovakia. (Wittenbecher & van Ginnecken, 2015, p.19)

After the Velvet Revolution in 1989, Czechoslovakia disposed of Soviet Union (which fell apart later in 1991) and started with the process of democratization. The main aspects of democratization are denationalization, establishment of private entities, and free choice. For this reason, primary care, ambulatory care, pharmaceutical and spa industries were almost entirely privatized; medical chambers were established, new laws were approved and people finally could choose freely their health care provider. The Semashko model was replaced by Bismarck social health insurance model with number of *"self-governing health insurance funds acting as payers and purchasers of services through mandatory, wage-based contributions*." (Act No. 48/1997 Coll. on Public Health Insurance)

On the first January 1993, the independent Czech Republic was founded, following the health direction set after 1989. General Health Insurance Fund, GHIF *(Všeobecná zdravotní pojišťovna, VZP)* was established as the largest health insurance fund in the Czech Republic. This is the only state insurance fund in the Czech Republic as the other funds are occupational insurance funds but the contribution is universally the same for everybody regardless of their insurance fund. In 1995, there were around 27 insurance funds in the Czech Republic but its number decreased significantly until today (7 insurance funds nowadays). Originally, the system was based on fee-for-service but it was cost-ineffective and unsustainable. In 1997, the payment method changed to capitation in primary care sector and hospitals while ambulatory care was still based on fee-for-service with budgetary limits. (Gladkij, 2003, p. 30) Since 2003, the regional governmental bodies took few hospitals under its control and the amount of hospitals transformed into join stock companies has been still increasing. Later in 2007, the DRGs system was firstly introduced in the Czech Republic. (Wittenbecher & van Ginnecken, 2015, p.21)

2.6 Current situation and structure of Czech health care system

Regarding the tortuous journey the Czech Republic and its health care system have undertaken in the past 129 years, the current situation and structure of the system seem to be stable and relatively well established. The creation of Czech health system was highly inspired by German and Austrian health systems primary because of their historical relations and cooperation as well as the proximity, which provides the patients with wider choice of treatment possibilities and health workers with fast information flow. Although it has been almost 27 years since the Czech Republic started to reform its health system, there is still a lot of areas where improvements should be made.

A study conducted by the European Union in 2012 highlights the main features of Czech health care system (Committee of the Regions, p. 23):

- Decentralization, delegation of certain responsibilities to regional self-governing bodies
- Social health insurance with universal coverage, wage-based compulsory contributions

- Public financing of health managed by health insurance funds, low out-of-pocket expenditure
- Diversity in provision – both public and private providers contracted by health insurance funds

Table 2 provides international comparison among Czech Republic and few other member states of OECD. The data were retrieved from OECD Report on health from 2015 and the main indicators were chosen in such way that they depict different areas of health and health care in each country.

Table 2. International health systems comparison based on OECD data and ranking

(1 = the best performance, 34 = the worst performance)

	Czech Republic	Germany	Austria	Mexico	Japan
Life expectancy at birth, both sexes	28 (78,3y)	21 (80,9y)	17 (81,2y)	34 (74,6y)	1 (83,4y)
Smoking	25	23	26	3	17
Alcohol consumption	32	28	34	3	7
Obesity	20	25	8	33	1
Health coverage	1	1	1	1	1
Out-of-pocket expenditure	7	5	18	30	9
All cancer incidence	28	19	10	1	5
Ischemic heart disease mortality per 100 000 population	32 (260 ppl.)	22 (115 ppl.)	27 (140 ppl.)	28 (140 ppl.)	1 (35 ppl.)
Doctors per capita	10	5	2	32	29
Beds per capita	7	8	4	33	1
Perceived health status as good	27 (60%)	24 (65 %)	18 (69 %)	n.a.	33 (35 %)

Source: *Author's own creation based on OECD Report Health at Glance 2015*

The ranking scale in this table is 1-34 with regard to the fact that OECD consists of 34 member states and the comparison takes only these states into account. According to their performance in each area, the ranking was created.

Based on the data, the Czech Republic has very good health coverage (the result of compulsory health insurance), fairly low need for out-of-pocket expenditure, and sufficient number of doctors and beds per capita. On the other hand, the fields which should be targeted in the next years are smoking and alcohol consumption, cancer incidence and ischemic heart disease mortality. Smoking and alcohol consumption

are issues intensively discussed in the Czech Republic – the general ban on smoking in restaurants is about to be enforced in 2017 and the prices of alcohol beverages and cigarettes are constantly rising due to higher tax rate imposed on these products. However, the cancer incidence in the Czech Republic is below OECD level and the number of inhabitants is many times lower than in other states mentioned in the report which leads to possible inaccuracies in ranking but the need to discover and enhance new treatment methods of non-communicable diseases is still urgent.

Overall it can be claimed, that Japan's health indicators show the best results except of smoking, number of doctors per capita and perceived health status which is very surprising, given the exemplary outputs in other categories. Mexico's issues lay in high number of obese people, shortage of doctors and beds, and life expectancy. Frankly, smoking, alcohol usage, and cancer mortality are areas where Mexico achieved good results in comparison to Czech Republic which finds its weaknesses right in this fields. Unlike Czech Republic, Austria has one of the lowest obesity rates and cancer mortality out of OECD countries which is possibly a result of sufficient number of doctors and beds per capita as well as high percentage of people with very good or good perceived health status. On the other hand, the alcohol consumption seems to be a considerable problem in Austria and Czech Republic as well. As far as German health indicators go, the outcomes are roughly similar with those of Czech Republic due to the resemblance of both systems.

2.6.1 Key players in Czech health care system

There are several players in Czech health care system which influence policy formulation and decision making. The key players in Czech health care system are (Wittenbecher & van Ginnecken, 2015, p.22-25):

- Valid legislation
- Ministry of Health
- Ministry of Finance
- Regional Governments
- Health Insurance Funds
- Unions
- Private Sector

Valid legislation regulates and supervises ministries, health insurance funds, and sets the norms for health care facilities. The legislation is performed by Parliament through Ministry of Health, Ministry of Finance, and other Ministries such as of Labor and Social Affairs.

Ministry of Health creates policies and proposes legislation regarding health care. Its main tasks include ensuring public health, supporting research, licensing professionals, administering and regulating health facilities, supervising pharmaceuticals and health insurance funds, regulating and administering specialized centers, National Institute of Public Health, State Institute of Drug Control, and Regional Public Health Authorities. The current Minister of Health of the Czech Republic is MUDr. Svatopluk Němeček, MBA.

Ministry of Finance administers the state budget, manages the health insurance contributions, provides economically inactive citizens with health insurance contributions, and supervises health insurance funds and health care agencies.

Regional Governments own and run regional hospitals and other health care facilities, register private practitioners (no volume restriction on their amount), and in some cases possess majority shares in regional hospitals which function as joint stock companies.

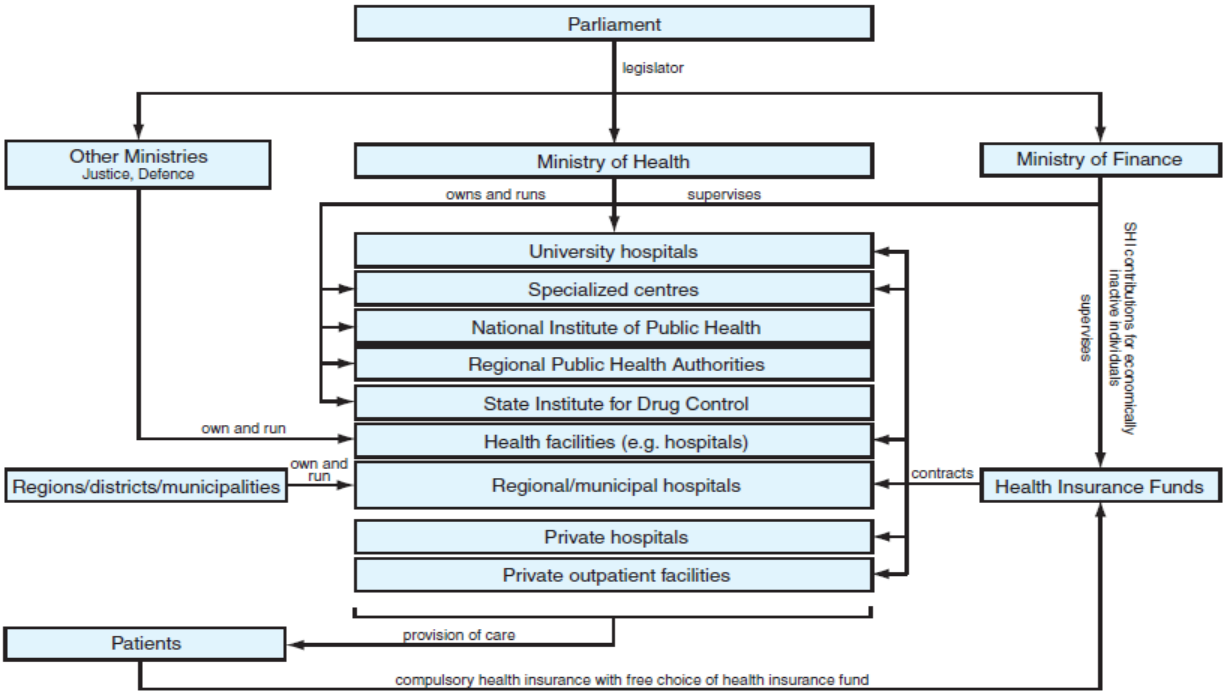
Health Insurance Funds serve as buyers and purchasers of health care services. There are 7 health insurance funds in the Czech Republic, out of which only General Health Insurance Fund is state insurance fund insuring about 75 % of Czech citizens. This state fund manages special account for pooling and redistribution of contributions based on risk-adjustment scheme. The other 6 insurance funds are quasi-public, self-governing companies. Each health insurance fund concludes contracts with health care facilities and private practitioners. More detailed information about financial flows and specific costs can be found in next chapters.

Unions represent interests of health care staff, protect ethical behavior, and negotiate wages with employees. There are 3 main medical unions: Czech Medical Chamber, Czech Dental Chamber and Czech Chamber of Pharmacists in which membership is compulsory for physicians, dentists, and pharmacists.

Private sector includes pharmaceutical companies, pharmacies, private practices, private hospitals and out-patient facilities. The private sector is also obliged to have contracts with health insurance funds.

A comprehensible overview of Czech health care structure is illustrated in Figure 2.

Figure 2. Overview of the Czech health system[3]



Source: *Wittenbecher & van Ginnecken, 2015, p.17*

2.6.1. Main statistics regarding health care establishments

Health care can be divided into 3 groups according to the complexity of care. The primary care in the Czech Republic consists of 4 different providers: general practitioner for adults, general practitioner for children and adolescence, gynecologist, and dentist. Secondary care is performed in ambulances and small/middle sized hospitals while tertiary care is provided in large, highly specialized hospitals. Hospitals can be classified according to their size as small (up to 300 beds), middle (300-600 beds), and large (600 and more beds) as well as according to their ownership as (Gladkij, 2003, p. 45-50):

- Stately owned and administered (university hospitals, military hospitals)

[3] The term health facilities describes not only regular but also specialized hospitals such as prison hospitals

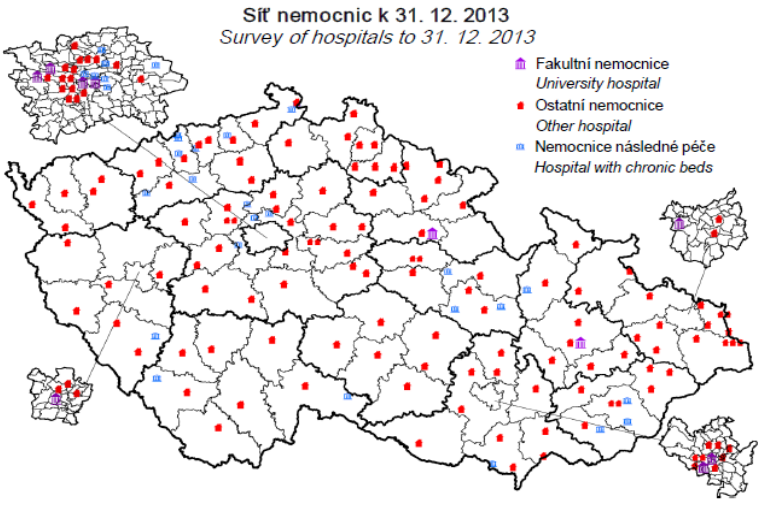
- Publically owned hospitals in state ownership but under regional administration and supervision
- Private hospitals of non-profit character in ownership of churches or voluntary organizations
- Private hospitals in the form of joint stock companies

The data in this part were retrieved from the report on Czech Health Statistics 2013 published by Institute of Health Information and Statistics of Czech Republic.

As of January 1st 2014, there were 29 218 health facilities and 2 796 pharmacies on the territory of Czech Republic out of which 15 % are located in Prague, 11 % in Southern Moravia and 11 % in Moravian-Silesian region. Approximately 30 % of in-patient care is managed in stately owned facilities, 11 % in facilities under regional supervision, and about 59 % in privately operating facilities. Overall, 188 in-patient facilities with 56 807 beds guarantee health care in the Czech Republic and the number of beds has been increasing each year. On the other hand, average duration of stay in hospitals decreased by 8 % to 6,8 days. (IHIS CR, 2014)

Figure 3 depicts the network of hospitals in the Czech Republic to December 31st 2013. It is obvious, that the majority of hospitals can be found in the biggest cities such as Prague, Brno, Ostrava, and Pilsen.

Figure 3. Survey of hospitals in the Czech Republic

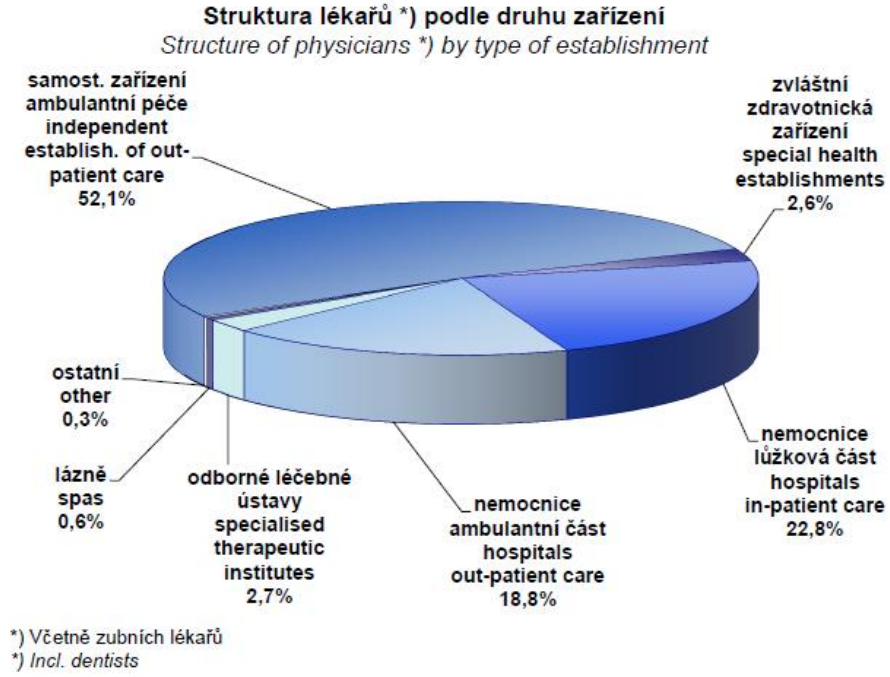


Source: *IHIS CR, 2014, p. 121*

In total, 250 233[4] people were employed in health sector: 20 388 primary health care specialists (8 %), 47 459 physicians (19%), 75 142 nurses (30 %) and 107 244 other para-medical workers with professional qualification (43 %). In average, there was one general practitioner for adults per 1 623 inhabitants, one dentist per 1 561 inhabitants, one gynecologist per 3 794 women, and one physician per 222 people. (IHIS CR, 2014)

The structure of physicians can be seen in Figure 4. More than half of physicians are independent, working in independent out-patient care facilities while about 23 % of them are employed in in-patient facilities and 19 % in hospitals' out-patient care department. Only 3 % of physicians work for specialized therapeutic institutes and special health establishments.

Figure 4. Structure of physicians by type of establishment



Source: *IHIS CR, 2014, p. 121*

[4] Health care sector employs in total 5 % of all employed people in the Czech Republic. In 2013, the employment rate in the Czech Republic reached 55,2 % (approximately 4 937 1000 people) and the unemployment rate was 7 %. (Czech Statistical Office, 2016)

3 Health care financing in the Czech Republic

The third part of this Master Thesis will deal with specifics of health care financing in the Czech Republic. The chapter will be divided into several parts taking different aspects of financing into consideration. At first, the definition of financing, acts of law, and payment ordinance in the Czech Republic will be explained. General information about health care financing such as the structure of health care costs, the roles of public and private sectors, and state budget will be discussed as well.

Moreover, different types of payments in Czech health care system will be elaborated, providing the reader with detailed overview of specific fee-for-service payments but the main focus will be aimed to the system of DRGs in the Czech Republic. Finally, the limitation of Czech health care financing and possible solutions will be presented in form of SWOT analysis in the last part of this chapter.

3.1 Health financing

Financing of health and health care in general has always been a source of many disputes all over the world. Finding and enforcing a suitable system of financing has been a challenge for most politicians and state leaders in the last decades. The decisions regarding health financing affect all citizens in a state, and therefore must be thoroughly considered. In addition, the roles of public and private sectors, health insurance funds, health facilities, and patients must be clearly defined in every health care system. The major issue of finding the ideal model of health financing lay in the fact that everyone has unlimited wishes but the financial resources are scarce. On the other hand, not only the amount of financial resources is important but the control over financials, effectiveness, efficiency, prices of inputs and drugs play a key role in health financing. (Gladkij, 2003, p. 113)

According to WHO, health financing is *"concerned with how financial resources are generated, allocated and used in health systems. Health financing policy focuses on how to move closer to universal coverage with issues related to: (i) how and from where to raise sufficient funds for health; (ii) how to overcome financial barriers that exclude many poor from accessing health services; or (iii) how to provide an equitable and efficient mix of health services"* (World Health Organization, 2016)

As clearly stated in the definition, the aim of efficient health financing is to ensure sufficient amount of financial resources, to build a good-quality equivalence mechanism in order to create universal coverage system with an effective and efficient health care services provision.

World Bank defines three principles of health financing (World Bank, 2011):

1. Raise enough resources to provide the citizens with basic health services
2. Manage the resources efficiently in order to ensure equivalence
3. Make sure that the payments and purchases of health services are technically efficient

These principles basically correspond with the WHO's definition of health financing and highlight the need for resources (financial contributions to the insurance funds, taxes and fees), risk management (risk-adjustment scheme and equivalence), purchase of health services (insurance funds and state apparatus), and last but not least, health service provision (health care facilities).

Generally, there are different sources of health financing and different forms of payments for health services. In his publication on health care and health systems, Holčík (Holčík, 2015, p. 42) states that the sources of health financing include state and public sources, private sources, voluntary and charitable sources, foreign sources, and gifts. On the other hand, the health services can be paid using various types of payment methods such as fixed salary, capitation, fee-for-services, fee-for-expected-services, case payments (DRGs), flat-rates, and daily charges. Usually, different combination of these types of payments are used for health financing. The different types of payments in the Czech Republic will be described in detail later in this chapter.

Overall in the European Union, the average health costs have increased between 1990 and 2006 from 7% up to 10 % of GDP. The reasoning behind this trend can be explained by current issues of health systems in the world such as more advanced technology, higher demand for health care services, aging of population, an increase in non-communicable disease incidence, high costs, and bad investment decisions. (Barták, 2012, p. 19)

3.2 Acts of law and payment ordinance

Regarding health care payments in the Czech Republic, multiple acts of law and ordinances has to been taken into consideration. The following list states which acts and ordinances are relevant to health care payments (DRG Restart, 2016):

- **Act No. 48/1997 Coll. on Public Health Insurance** *(o veřejném zdravotním pojištění)*
- **Ordinance No. 273/2015 Coll. Issuing a List of Medical Treatments with Point Values for year 2016** *(vyhláška, kterou se vydává seznam zdravotních výkonů s bodovými hodnotami)*
- **Act No. 592/1992 Coll. on General Health Insurance Premiums** *(o pojistném na všeobecné zdravotní pojištění)*
- **Act No. 551/1991 Coll. on the General Health Insurance Company of the Czech Republic** *(o Všeobecné zdravotní pojišťovně)*
- **Act No. 280/1992 Coll. on Departmental, Professional, Business and Other Health Insurance Companies** *(o resortních, oborových, podnikových a dalších zdravotních pojišťovnách)*
- **Act No. 372/2011 Coll. on Health Care Services and Conditions of Their Provision** *(o zdravotních službách a podmínkách jeho poskytování)*
- **Act No. 400/2015 Coll. on State Budget of the Czech Republic** *(o státním rozpočtu České republiky)*

All the legislative acts mentioned above serve as general legal framework for health care payments in the Czech Republic. The payment ordinance is defined for every single year, separately from the other acts of laws, based on the decision of Ministry of Health and is posted on the official website of Ministry of Health of the Czech Republic in October. Naturally, the state budget is adjusted by Ministry of Finance of the Czech Republic for every single year depending on the amount of resources, budget deficit, and state debt.

Regarding the legislative framework, different types of payment mechanisms are used for various types of health care services. In the Czech Republic, the law distinguishes out-patient care, dentistry care, in-patient and urgent in-patient care. Specifics about the payment mechanisms of each type of health care services will be explained later in this chapter. (DRG Restart, 2016)

3.3 Structure of health related financial flows in the Czech Republic

Firstly, most of health care in the Czech Republic is financed by non-market instruments - by public resources in form of public finances. Due to the continuously increasing expenditure for health care, the financing of health care must be under surveillance and all financial flows related to health should be analyzed and assessed.

In order to understand how health financial flows are organized in the Czech Republic, a comprehensive and detailed scheme can be found in the Annex I (Wittenbecher & van Ginnecken, 2015, p. 56). Explaining the scheme briefly, a certain percentage of state budget is issued for health care. Ministry of Health of the Czech Republic receives the financial support from the state in the form of transfer payment which is afterwards relocated between regional and local budgets across the country. Moreover, a part of state budget is allocated for social and health insurance of citizens who are not economically active to pay the insurance themselves. This payment is done through transfers between Ministry of Finance and health insurance funds or other social security systems. On the other hand, citizens (insured people, employees, and patients) provide state budged with financial resources in form of taxes and the health/social insurance contributions by employees, employers, and state flow to the budget of health insurance funds or other social security systems. Out of the social health insurance funds, the financial resources are risk-adjusted based on age, gender, and state of health. The funding of health services providers is then slightly complicated.

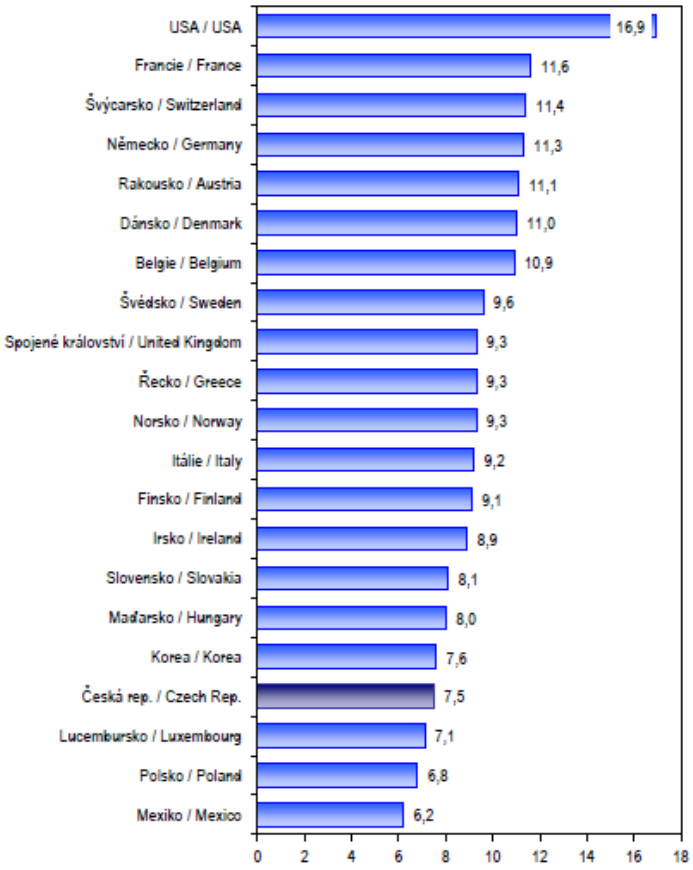
Starting from the basic health service provision, GPs are paid by regional bodies and health insurance funds. Ambulatory care is paid exclusively by health insurance funds whereas services in acute care hospitals are financed by all key players in health care – state budget, regional and local funds, and health insurance funds. Nevertheless, the social care is subsidized out of health insurance funds, in the form of government funding system. (Wittenbecher & van Ginnecken, 2015, p. 56)

Regarding voluntary health insurance, its role on the Czech health market is negligible, with less than 0,2 % of health expenditure because the share of public expenditure on health is enormous in the Czech Republic as the citizens do not

have any incentives to make a voluntary agreement with private health insurance funds. Financing of Czech health care might seem complicated but has been functioning relatively well for past years, having approximately 99 % of citizens under universal health coverage. (Wittenbecher & van Ginnecken, 2015, p. 56)

Having looked at the major economic indicators, the share of GDP is an indicator with the biggest evidence value. Based on the data retrieved from IHIS CR, health expenditure as a percentage of GDP in the Czech Republic is relatively low in comparison with other OECD member states (see Figure 5). Czech Republic spends about 7,5 % of GDP on health which is below the OECD average of 8,9 % of GDP. The country spending the biggest part of their GDP for health care is the USA with almost 17 % of GDP spent on health care. (OECD, 2015, p. 166) Nevertheless, the percentage of GDP spent on health care does not have a significant influence on its effectiveness (pointing out the situation in the USA)

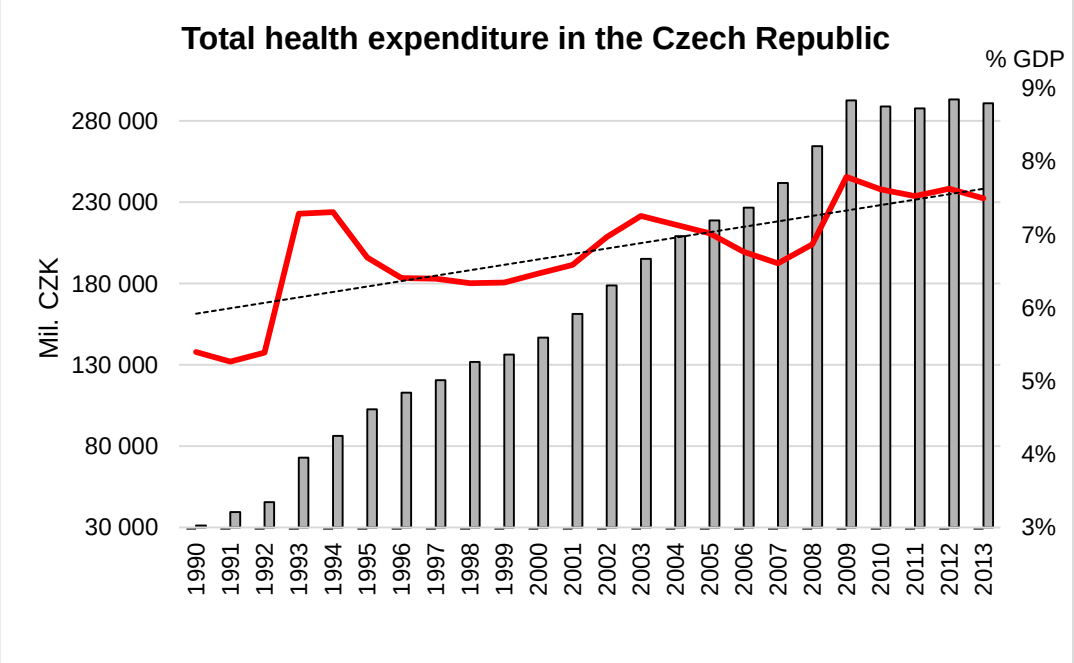
Figure 5. Health expenditure in selected OECD countries as % of GDP in 2012



Source: *IHIS CR, 2014, p. 28*

The relationship between the total health expenditure and GDP can be observed in Figure 6. In comparison with 1990, total health expenditure in the Czech Republic is currently almost ten times higher – approximately 30 000 million CZK in 1990 and 290 000 million in 2013. The trend in health expenditure is constantly increasing, reaching its maximum in 2009 and slightly decreasing in 2010 and 2011 due to the global financial crisis. The red curve in the figure represents total health expenditure as a percentage of GDP. Starting with 5,4 % of GDP in 1990 and reaching its peak in 2009 with the value of 7,8 % of GDP. A growing trend of health expenditure is apparent from the graph.

Figure 6. Total health expenditure in the Czech Republic between 1990 and 2013 (in mil. CZK and % GDP)



Source: *Author's own creation based on IHIS CR, 2014*

According to the Ministry of Finance of the Czech Republic, Czech health care has to face a major issue concerning public health financing. Even though Czech GDP has been growing since the planned intervention of Czech National Bank (CNB) in

2013 which intentionally depreciated Czech currency in favor of EURO[5] to support international trade, health expenditure grow faster than GDP. In 2014, the annual GDP showed 2 % growth relative to 2013 while public health expenditure increased by 6 %. These numbers prove that higher involvement of private sector in health care is needed and should be incentivized. (Bílková, 2015)

3.3.1 Public vs. Private health expenditure

Based on IHIS statistics (IHIS CR, 2014), the total health expenditure in 2013 add up to 290 billion CZK. The public expenditure accounted for 85 % and the private expenditure for about 15 % of total health expenditure. It is crucial to mention that among European Union's states, Czech Republic has one of the lowest share of private health expenditure.

The average total revenue from one insured person reached 21 966 CZK (app. 813,5 EUR) and average total expenditure on one insured person was 22 095 CZK (app. 818,3 EUR) in 2013. Moreover, state provides health insurance for 6 million economically inactive citizens and the total payment for health services in 2013 reached 54 billion CZK while all health insurance funds' revenues from obligatory contributions in the same year were 173,7 billion CZK. In total, health revenues in 2013 accounted for approximately 228 billion CZK (some marginal revenues such as fines, international payments and others do not make more than 2 billion CZK in total revenues). To sum it up, the difference between health revenues and expenditure was -62 billion CZK. (IHIS CR, 2014)

The public health expenditure refer to the state budget, local budgets, and health insurance funds. Overall, the public expenditure reached 246 billion CZK in 2013 (85 % of all expenditure as mentioned above) which is about 23 458 CZK per capita. Out of this amount, 6,8 % of resources come from state and local budgets whereas 93,2 % of expenditure are financed by health insurance funds. (IHIS CR, 2014)

On the contrary, private health expenditure accounted only for 44,3 billion CZK in 2013 (15 % of all expenditures as mentioned above). Average private health expenditure per capita per year was 3 168 CZK. The vast majority of this amount was spent on drugs and other medical devices, and less on private health care

[5] "*CNB will not allow the koruna to appreciate to levels it would no longer be possible to interpret as close to CZK 27/EUR.*" (CNB, 2016)

services. Looking at the situation in other OECD countries, USA, Chile and Mexico are countries with high percentage of private health expenditure (around 50 %) while the Czech Republic is in the end of the ranking. The only two countries with even lower share of private health expenditure are Norway and Denmark. (Bílková, 2015)

3.3.2 State budget

State budget is a financial plan of a country for the whole fiscal year including all expenditure, revenues, and deficits/surpluses. (Act No. 400/2015 Coll.) State budget in the Czech Republic is prepared by Ministry of Finance of Czech Republic and has to be approved by the Chamber of Deputies, signed by the President of the Republic, and published in the legal code of conduct. The state account is administered by Czech National Bank. The current state budget for year 2016 was prepared by the current Czech Minister of Finance, Andrej Babiš, and was ratified by the Chamber of Deputies as Act No. 400/2015 Coll. The state budget of the Czech Republic consists of 42 chapters (different numbers between 301 and 398) including all Ministries, the Office of the President, Chamber of Deputies and Senate, the Government, Security Information Service, different state bureaus and agencies, and state debt. (Ministry of Finance of the Czech Republic, 2016)

The total revenues of current state budget of the Czech Republic are estimated to amount of 1 180,8 billion CZK and total expenditure are estimated to amount of 1 250,8 billion CZK. The state budget deficit is 70 billion CZK[6]. The deficit will be settled by funding these items: increasing the state governmental bonds in the amount of 70,6 billion CZK and increasing state financial assets account by 635,1 billion CZK. (Act No. 400/2015 Coll.)

The total revenues consist of tax revenues, non-tax revenues, capital revenues, received transfers, and revenues from European Union's budget. The highest shares of state budget's revenues come from Ministry of Labor and Social Affairs of the Czech Republic, namely from social security contributions which is expected reach 410,1 billion CZK. Out of the social security contributions, more than 88 % account for mandatory pension insurance. (Act No. 400/2015 Coll., Annex 2)

[6] The EU convergence criteria, particularly Article 126 of The Treaty of Functioning of the EU, states that the state budget deficit should not exceed 3 % of GDP. The current Czech state budget deficit is 1,5 % which is in line with the criteria. (Ministry of Finance of the Czech Republic, 2015)

On the other hand, the biggest volume of financial resources within total expenditure is annually spend for social security benefits (93 % of all expenditure of Ministry of Labor and Social Affairs of the Czech Republic). In total, expenditure on social security benefits account for 43,5 % of the whole state budget. The second highest amount of financial resources is allocated to Ministry of Education, Youth and Sports (11,4 %) and the third to General Treasury Administration (9,2 %). (Act No. 400/2015 Coll., Annex 3)

Moving on to the position of Ministry of Health of the Czech Republic in the state budget, the total revenues from Ministry of Health equal to 1,5 billion CZK and the total expenditure account for 7,1 billion CZK which is only about 0,6 % of the whole state budget. The reason behind this small percentage of resources is that the major part of health expenditure come from social insurance funds and not from state budget. Moreover, this sum of 7,1 billion CZK does not include the payment for health insurance of economically inactive people who are financially supported by state. This payment for state insured people can be found in the chapter named General Treasury Administration, section of Specific expenditure, namely “Transfers to central public budgets”. (Act No. 400/2015 Coll.)

A detailed description of all expenditure of Ministry of Health from the state budget can be found in Chapter 335 – Indicators of Ministry of Health. These indicators include following (Act No. 400/2015 Coll., Chapter 335):

- Revenues
    - Tax revenues, non-tax revenues, capital revenues, transfers
- Specific expenditure
    - Expenditure on civil services and health programs
    - Research, development and innovation in health care
    - Institutional care
    - Special medical facilities and services for health care
- Sectional indicators
    - Salaries
    - Compulsory health insurance contributions paid by employers
    - International development aid
    - Program of health prevention and prevention of criminality
    - Expenditure on immunization and Pandemic plan
    - Expenditure on co-financed programs of the European Union

3.3.3 Health insurance and health insurance funds

Health insurance funds in the Czech Republic are public institutions which follow two acts of law: Act No. 551/1991 Coll. on the General Health Insurance Company of the Czech Republic *(o Všeobecné zdravotní pojišťovně) and* Act No. 280/1992 Coll. on Departmental, Professional, Business and Other Health Insurance Companies *(o resortních, oborových, podnikových a dalších zdravotních pojišťovnách)*.

Each insured person in the Czech Republic has a right to change his/her insurance fund once in a year and always the first day of the new half-year. All newborn children become insured by the same insurance fund where their mothers are currently insured and it is an obligation to report a child to the insurance fund within 8 days after the childbirth. The principle of insurance by only one health insurance fund is applied. By law, no insurance fund can reject to insure any resident of the Czech Republic. (Act No. 551/1991 Coll. § 10, 11)

The public health insurance is mandatory for all people with permanent residence in the Czech Republic and for foreigners working for an employer whose place of business is located in the Czech Republic. Moreover, each person is insured separately already from the childbirth. The principle of solidarity, when people with higher incomes contribute more into the health insurance funds, is applied. Regarding the employment relationship, an employer pays 9 % of employee's gross wage for health insurance and an employee contributes 4,5 % of his/her gross wage to health insurance. This relationship respects the 2:1 principle of contributions. In addition, active health insurance payers pay 75 % of all public health expenditure and consume only about 40 % of it. (Němec, 2008)

The exact health insurance payments according to different groups of insured people are following (Tichý, 2015):

- The minimum assessment base for **employees** is dependent on minimum wage which is 9 900 CZK (as of January 1st 2016), therefore the minimum health insurance payment is equal to 1 337 CZK/per month.[7]
- The minimum assessment base for **self-employed people** accounts for 50 % of their earnings after interests and taxes and is dependent on average

[7] Health insurance is always calculated as **13.5% of the assessment base**

monthly wage. If for year 2016, the average monthly wage for self-employed people is equal to 27 006 CZK, the minimum assessment base is 13 503 CZK and the minimum health insurance payment is 1 823 CZK/per month.

- The minimum assessment base for **state insured people** is given by the government regulation and for 2016, the payment is 870 CZK/per person/ month.
- The minimum assessment base for **people without taxable income**[8] is dependent on minimum wage as well, therefore the minimum health insurance payment is equal to 1 337 CZK/per month.

There are seven health insurance funds in the Czech Republic (see Table 3). As mentioned above, it is of a free choice of each Czech resident to choose and switch his/her insurance fund. In principle, all of the listed insurance funds provide patients with almost the same services as the health services, drugs and in-patient care are reimbursed in the same way in each of these funds. The only difference can be observed in the special programs which each insurance fund offers for its clients. These programs include: travel insurance for students for free, discounts on specific products for children, discounts for spa treatments, discounts for sport courses and vitamins, and other types of discounts and allowances.

Table 3. List of health insurance funds in the Czech Republic

CODE	NAME OF THE FUND IN CZECH	NAME OF THE FUND IN ENGLISH
111	Všeobecná zdravotní pojišťovna	General Health Insurance Fund
201	Vojenská zdravotní pojišťovna	Military Health Insurance Fund
205	Česká průmyslová zdravotní pojišťovna	Czech Industrial Health Insurance Fund
207	Oborová zdravotní pojišťovna	Trade Health Insurance Fund
209	Zaměstnanecká pojišťovna Škoda	Occupational Insurance Fund Škoda
211	Zdravotní pojišťovna ministerstva vnitra	Health Insurance Fund of Ministry of Interior
213	Revírní bratrská pokladna	Coalfield Brotherhood Cash Office

Source: *Author's own creation based on Ministry of Health of the Czech Republic, 2014*

[8] People without taxable income are for example: students older than 26 years, students who do not start working after the graduation and are not registered within the Labor Office, unemployed people who are not registered within the Labor Office, patients of a psychiatric institution, and similar cases.

Table 4 presents the economic indicators of all health insurance funds in the Czech Republic. The data were retrieved from the annual reports of each health insurance fund from year 2013 due to the fact that most of the data presented in this thesis come from 2013 and the level comprehensiveness needs to be maintained.

The total number of insured people in 2013 in the Czech Republic was 10 405 581 (99 % of all residents). According to the data in Table 4, the General Health Insurance Fund (code 111) is the biggest health insurance fund in the Czech Republic. It was established and is managed by state, based on the Act. No. 551/1991 Coll. on the General Health Insurance Company of the Czech Republic *(o Všeobecné zdravotní pojišťovně).* GHIF insures 58,4 % of all Czech residents, earns the highest revenues and has the highest expenditure. Moreover, if a resident does not have any preferred insurance fund, he/she is automatically provided with insurance from GHIF. At the moment, the other insurance funds keep only 40 % of their contributions and 60 % are send to a special account which is managed by GHIF for the purpose of solidarity and risk-adjustment. The reason behind this process is the high amount of elderly, poor, and high risk people within GHIF who could not be provided with the needed treatment and medication if the redistribution of financial resources among insurance funds would not be working. (Němeček, 2013, panel discussion)

Another two insurance funds have over 1 million clients - Health Insurance Fund of Ministry of Interior (code 211) and Czech Industrial Health Insurance Fund (code 205) On the other hand, the two smallest insurance funds, Coalfield Brotherhood Cash Office (code 2013) and Occupational Insurance Fund Škoda (code 209) operate only in certain regions of the Czech Republic; 213 functions only in 7 regions out of 14 and 209 in 6 regions out of 14. This is why these insurance funds do not have higher number of clients and revenues. (Ordinance No. 273/2015 Coll.)

Regardless of the size or the level of total expenditure, each of the 7 insurance funds provide their clients with approximately the same level of expenditure per person. What is also obvious from the table is that in all insurance funds, more than one half of the clients are state insured people. In addition, in most cases, the total revenues and the total expenditure equal or almost equal as the insurance funds are non-profit institutions which means that if there are any surplus revenues, they must be invested into any health related area.

Table 4. Economic indicators of health insurance funds in the Czech Republic

Code	Total revenues (bill. CZK)	Revenues from compulsory insurance (bill. CZK)	Total expenditure (bill. CZK)	Expenditure on health services (bill. CZK)	Total number of insured people	State insured	Expenditure on 1 client (CZK)
111	143,7	95,2	144,7	138,9	6 076 727	3 590 491	22 858
211	24,1	23,1	24,5	23,5	1 207 918	667 710	19 455
205	22,7	17,4	22,7	21,9	1 188 753	705 589	18 423
207	13,5	13,4	13,5	12,9	706 765	406 168	18 252
201	13,3	11,6	13,1	12,8	668 854	370 271	19 137
213	7,7	5,7	7,8	7,6	418 749	253 359	18 149
209	2,9	2,8	2,9	2,8	137 815	79 483	20 317

Source: *Author's own creation based on annual reports of all Czech insurance funds*

Looking at the distribution of insurance funds, it has to be highlighted that there are 14 regions in the Czech Republic (see Annex II): Prague, Central Bohemia, South Bohemia, Plzeň, Karlovy Vary, Ústí nad Labem, Liberec, Hradec Králové, Pardubice, Olomouc, Moravia-Silesia, South Moravia, Zlín and Vysočina. Generally, GHIF has the dominance in all regions except of Moravia-Silesia and Zlín where Czech Industrial Health Insurance Fund and Coalfield Brotherhood Cash Office have a significant influence due to historical reasons (coal mining, industrial center of the republic). In Prague, Trade Health Insurance Fund is the second biggest insurance fund after GHIF but does not have a huge importance in other regions. Regarding Occupational Insurance Fund Škoda, the highest prevalence of people insured by this fund live in Central Bohemia and Pardubice due to automobile production in these two regions. (Ordinance No. 273/2015 Coll.)

The structure of health care costs covered by health insurance funds by types of health care in 2013 is following (IHIS CR, 2014):

- Hospitals: 46,9 %
- Prescribed drugs and medical aids: 18,3 %
- Other out-patient care establishments: 16,5 %
- GPs: 6 %
- Stomatological health establishments: 4,5 %
- Other in-patient establishments: 4 %
- Transport services, spa, and others: 3,7 %

3.4 Specifics of Payment Ordinance No. 273/2015 Coll.

As mentioned before, the payment ordinance is published annually by Ministry of Health of the Czech Republic. The valid ordinance for 2016 is Ordinance No. 273/2015 Coll. Issuing a List of Medical Treatments with Point Values for year 2016 *(kterou se vydává seznam zdravotních výkonů s bodovými hodnotami)* in compliance with Act No. 48/1997 Coll. on Public Health Insurance *(o veřejném zdravotním pojištění)*. The ordinance is divided into several parts/annexes based on different types of care:

a) In-patient care (DRGs)
b) General Practitioners
c) Out-patient care (a lot of sub-divisions)
d) Stomatological and dentistry care
e) Rescue service and transportation
f) Spa and rehabilitation care
g) Pharmacies

Before presenting the specifics of payments for GPs, out-patient care, stomatological and dentistry care, and pharmacies, the scale of treatments must be explained in order to understand the monetary point values stated in the ordinance. In-patient care will be elaborated in the next part in more detail.

The scale of treatments is issued by health insurance funds in agreement with health care providers, and is modified every quarter. It is a rather difficult and complex publication including more than 300 pages of tables with different indicators of medical treatments. Table 5 provides an example of point values for EEG monitoring and for cervicovaginal cytology. The first column always represents a code of a treatment, starting from no. 00041 until 99992. This is followed by a number of a medical profession, for instance no. 001 which is general practitioners, no. 209 is neurology, no. 603 is gynecology, no. 902 is physiotherapy etc. After the identification number, a name of a treatment, its explanation, and an average time of a treatment in minutes per one case are stated. What is important in this table is the “BOD” (point) indicator which states how many points are assigned to a specific treatment. Based on the number of points of a treatment, the payment for a treatment can be calculated using the ordinance which provides the monetary value for each treatment’s points. (VZP, 2016)

Table 5. A code of a treatment and a number of points for EEG and cervix cancer screening

KOD	ODB	NAZ	VYS	TVY	BOD	UMA
29123	209	EEG using activation methods	Monitoring bioelectric activity of the brain	60,00	712	1,81
95198	817	Cervicovaginal cytology	Cervix cancer screening	15,00	219	0,45

Source: *Author's own creation based on VZP, 2016*[9]

Agenda:

KOD: *Code of a treatment*

ODB: *Medical profession*

NAZ: *Name of a treatment*

VYS: *Explanation of a treatment*

TVY: *Duration of a treatment in minutes*

BOD: *Number of points*

UMA: *Partial payment of material by insurance funds in %*

Once the number of points is known, the payment calculation depends on the payment ordinance which sets the monetary value for each point. The next part will focus on different types of health care provision and specifics of payments for their services. The following description of payment types is based on the Ordinance No. 273/2015 Coll., the list of medical professions (Ministry of Health of the Czech Republic, 2016), and the scale of medical treatments (VZP, 2016)

3.4.1 Combined capacity-performance payment

Combined capacity-performance payment is used by general practitioners. The amount of the payment is given by the number of patients who are insured at the same insurance fund times the age group index times the basic capitation rate. The basic capitation rate is between 47-52 CZK according to the number of office hours per week. The age group index (Annex III) defines the costs per patient in a given

[9] The list of medical professions and the scale of medical treatments can be downloaded only in Czech language at GHIF's official website. Due to their length (more than 300 pages), these tables are not included in the main part or annex of this thesis.

age group. The index is the highest for patients between 0-4 years (index 3,97) and 85+ years (index 3,40). On the other hand, the lowest index is defined for patients between 20 and 30 years old (index 0,9) who are supposed to be the healthies group in the society. GPs receive the payment for each patient every month, regardless of whether a patient visits the practice or not. For GPs, the age structure of their patients is the most important parameter of the income.

An example: Let's say that a GP whose capitation rate is 52 CZK (he has at least 30 office hours per week) takes care of 300 patients aged 20-24 years, with index 0,9, from the same insurance company (for instance GHIF).

In this case the income is calculated as:

*300*0,9*52 = **14 040 CZK** is the income from all patients in this age group from one insurance fund, e.g. 1 patient costs **46,8 CZK***

Using this method, a GP has to know how many patients in each age group he/she treats in order to submit the list to every health insurance fund for reimbursement.

3.4.2 Out-patient care

The point values for out-patient care are defined either according to the medical profession or the medical treatment. Each group of professions or treatments has a different monetary value. The examples of different values for specific out-patient care are listed below.

a. **For medical professions 305, 306, 308, 309, 910, 901, 931** which are psychiatry, children psychiatry, addictive diseases treatment, sexology, psychotherapy, and children psychology, the value is **1,08 CZK**/point

An example: The medical treatment code 35712 - **repetitive transcranial magnetic stimulation** - which is conducted by a psychiatrist (305) is awarded with 650 points. For the purpose of reimbursement of the payment by health insurance fund, the total monetary value of this treatment is calculated as:

*650*1,08 = **702 CZK** is the total cost of the treatment. This amount of money will be charged to a patient's insurance fund which will make the payment to a health facility where this treatment was conducted.*

b. For medical professions 927, 903, 905, 919, 701, and 702 which are orthoptics, clinical logopaedics, optical therapy, addictology, otorhinolaryngology, and phoniatrics, the value is **1 CZK**/point.

An example: In these cases, the reimbursement is very easy. The medical code number 71127 – **Electronystagmography** – which is conducted by otorhinolaryngologist (701) is awarded with 323 points. Regarding the monetary value for the treatment provided by this group of medical professions, the value is the same, e.g. **323 CZK** (only multiplied by one).

c. For oncological treatments numbers 43311-43315, 43613, 43617, 43627, 43629, and 43633 (different types of radiotherapy), 75347-48, and 75427 (intraocular lenses implants), the value is **0,68 CZK**/point. The payment calculation is done in the same way as in the two examples above.

d. For medical professions 603 and 604 (gynecology and children gynecology), the value for all gynecological treatments is **1,08 CZK/**point.

e. For nursing and assisting medical professions 911, 914, 916, and 921 which are general nurses, psychiatric nurses, nutrition therapists, and midwifery, the value **0,90 CZK**/point, except of 921 for which the value is **1,02 CZK**/point.

f. The point value for rescue service (709) is **1,11 CZK**/point and the transportation of urgent care patients (799) is valued as **1,10 CZK**/point.

The length of the thesis does not allow the author to mention all types of out-patient care with relevant point values. However, generally, all medical treatments are valued in interval 0,68 and 1,11 CZK/point. Other treatments and their point values can be found in the Ordinance No. 273/2015 Coll.

3.4.3 Stomatological and dentistry care

Since 1997, stomatological and dentistry (014 and 015) treatments are listed in a separate list of treatments which is different from the system applied for GPs and out-patient care. All treatments included in the list are reimbursed by insurance funds. For stomatological and dentistry specialist, the treatments are not valued in points but directly in Czech currency. The list includes fixed prices for specific treatments and the list of above-standard treatments and materials which, when

required by a patient, are not reimbursed but paid out-of-pocket. The restrictions on the frequency of treatment reporting, e.g. how often in one year is a dentist eligible to reimbursement for the treatment, is part of the list as well. For example, the surgical treatment of periodontium disease costs 1000 CZK and can be reported without any restriction (many times per year) while the treatment of dental caries can be reported only once in six months/per patient (in case of no complications) and costs 270 CZK. The price of above-standard treatments is determined individually by a dentist and is not subjected to any restrictions.

3.4.4 Pharmacies

The majority of pharmacies in the Czech Republic are private[10] or are operated by health care establishments. Either is a drug distributed for free (prescribed medication which is usually fully covered by the health insurance fund) or with a patient's copayment (the health insurance fund covers only part of a drug price and a patient covers the rest). The third option is that a patient pays the whole price of a drug which is not prescribed by a doctor and is not covered by the health insurance fund. The drug consumption has been increasing in the Czech Republic for past years even though the copayments are higher every year. Regarding the pricing, the state regulates the prices of covered drugs through the State Institute of Drug Control (SÚKL). Since 1995, so called "generic principle of categorization and payment" of drugs has been applied. The principle states that in the generic substance group, at least one drug must be fully covered by the health insurance fund in so that poor people could afford the medication. The price of drugs, which are not covered by the health insurance fund, is not regulated and each pharmacy is therefore able to set its own prices. Each drug has its own code for the purpose of clarity in reporting. (Gladkij, 2003) The list of drugs' codes is published by SÚKL on their official website. (SÚKL, 2016)

For example, Lipanthyl 267 M is a regularly prescribed drug for high cholesterol treatment with SUKL code no. 0058271. The maximum health insurance fund's coverage for Lipanthyl is 185,34 CZK however, the usual price is 395,38 CZK. In average, a patient has to pay approximately 210 CZK out-of-pocket for this drug. (SÚKL, 2016)

[10] Dr. Max is the biggest pharmacy network in the Czech Republic, having 15 % share of the pharmacy market while other smaller private providers own a lower percentage of the market. The hospital pharmacies account for 2,6 % of the total pharmacy market in the Czech Republic. (SÚKL, 2016)

3.5 In-patient care (DRGs)

The system of Diagnosis-related group (DRG) was developed at the Yale University, Connecticut, the United States of America, by Professor Robert Fetter and his team to ensure a quality payment system for American health care (Medicare). Prof. Fetter managed to develop a process of *"measuring hospital production as a means of evaluating what takes place in the hospital".* (Busse, 2011, p. 3) The very first version of DRGs was published in 1973 and consisted of 54 major diagnostic categories (MDCs) while current version has 25 MDCs. In order for the DRGs to work, an IT platform had to be designed which would help the doctors to put the diagnosis into a specific group of International Classification of Diseases (ICD-10) which is a subdivision of MDCs. Nowadays, the DRGs system is one of the most important classification systems used internationally. The first country to introduce DRGs in Europe was Portugal already in 1984, followed by France in 1991, the United Kingdom and Ireland in 1992, Sweden and Finland in 1995, Spain in 1996, and Austria in 1997. The Czech Republic adopted DRG system in 2007. (Busse, 2011) The system of DRGs functioning in the Czech Republic will be described in the following paragraphs.

Unlike any other provided health care in the Czech Republic, the payment for in-patient care is not based on points and their values but on DRG system. In case of hospitalization, different diseases and their treatment are divided into groups and subgroups (MDCs and ICDs mentioned above) according to the average incurred costs and clinical similarities. All cases belonging in the same diagnostic group have set a uniform remuneration which is either known or can be easily estimated by health care providers and payers. The provider then receives a particular amount of money based on the costs of average treatment for an average patient with given medical characteristics. In this way, a physician is motivated not to use more means of treatment than necessary as the price is set regardless of the amount of means used. Overall, the aim of DRGs is to promote effectiveness, decrease the costs of treatment, accelerate hospital dismissals and focus on truly important cases. Hospitalization is described as an in-patient stay of a patient in a health care facility. If a patient is moved to a different facility (for less than two days) and then returns to the original facility, the hospitalization is combined into one case. (Šedo, 2012)

In order to explain the system of DRGs precisely, an example of diagnosing a specific patient will be used.

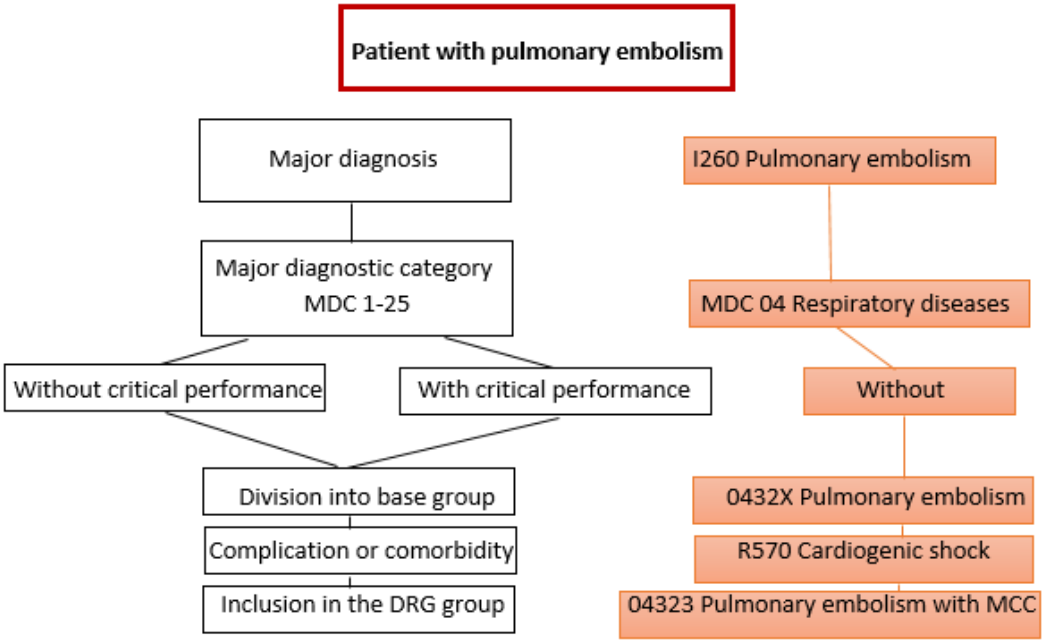
When a patient is admitted into a health care facility, the major diagnosis has to be determined by a physician. The major diagnosis is based on ICD-10 which is published by WHO (the new version of ICD-11 is planned to be launched in 2018). The ICD-10 is an international classification of diseases divided into 22 chapters including thousands of diseases, each having a specific code – starting from A00 (cholera) and ending with U85 (resistance to antineoplastic drugs), (for more information see Annex IV). If a patient suffers from more than one disease, such as pulmonary embolism and chronic obstructive pulmonary disease, a physician should define such major diagnosis for which a facility receives higher payment. Nevertheless, a patient must be treated for both diseases. The Czech version of ICD-10 is published by IHIS CR. (Šedo, 2012)

Besides the major diagnosis, the major diagnostic category, base group, and complication or comorbidity have to be determined. According to the major diagnosis a patient receives, the diagnostic cases are clustered into 25 different major diagnostic areas: 00-25, not classified DRG, and error DRGs (see Annex V). As soon as the major category is defined, the disease must be put into a base group which is a more concrete sub-group of the major diagnostic category. After this procedure is finished, a physician assesses the secondary diagnosis in form of comorbidity and/or complication. Comorbidity is an additional disease a patient suffers from simultaneously with the major diagnosis such as diabetes, hypertension, or tracheostomy. The comorbidity might or might not affect the treatment of the major diagnosis. For example, if a patient went to a hospital for eye surgery, and at the same time he/she suffers from thyroiditis, this comorbidity (in this case thyroiditis) will not be codified within the major diagnosis as it does not cause any complications in current treatment. The comorbidities should be codified in the DRG system only if they influence the ongoing hospitalization and treatment of a patient. If a patient undergoes any additional disease (health issue) during the hospitalization, it is called a complication (e.g. sepsis or infection). In addition, the secondary diagnoses are classified into 3 categories according to the costs incurred (Šedo, 2012):

1. Without CC (complication or comorbidity)
2. With CC
3. With MCC (major complication or comorbidity)

The whole procedure described above is portrayed in the Figure 7 in which a patient with pulmonary embolism is shown as an example.

Figure 7. DRG codification scheme



Source: *Author's own creation based on Šedo, 2012, p. 27*

In this example of hospitalization, a patient was diagnosed with pulmonary embolism which is codified in ICD-10 under Chapter 9 Diseases of the circulatory system, Block I26-I28 Pulmonary heart disease and disease of pulmonary circulation, Code I260 Pulmonary embolism with mention of acute cor pulmonare. This disease belongs to the major diagnostic category no. 04 Disease and disorder of the respiratory system. The first two digits of the code represent the MDC, the third and the fourth are the base group – 32 is the base group for pulmonary embolism and the fifth digit (X) will represent the complication or comorbidity (categories 1-3) in the final coding. During the hospitalization, our patient suffered from cardiogenic shock (ICD code R570) which is a major complication, category 3. The final DRG coding for this patient is 04323. The process of defining the right code is in reality very quick as the physicians have uniform IT platform which defines the coding.

As the correct DRG code is defined, the monetary value of the treatment must be calculated. For DRGs, a system of relative weights and base rates is used. Each case (DRG code) has its own relative weight. In the Czech Republic, the list of relative weights is published by the Ministry of Health of the Czech Republic every year. Regarding our example of a patient with DRG 04323, pulmonary embolism with major complication, the relative weight is set to 1,006. On the other hand, if this patient did not suffered from major complication, the relative weight would be 0,7345. (Ministry of Health of the Czech Republic, 2016)[11]

To finalize the calculation for one treatment, the base rate will determine the total sum. However, each health care facility in the Czech Republic has an individual base rate according to the agreement with health insurance funds. These base rate agreements are strictly confidential and the content of these agreements is almost impossible for a regular person to achieve. In general, the base rates are between 22 000 CZK and 42 000 CZK. According to Mr. Karel Kabátek from GHIF, the average base rate in 2013 was **29 987 CZK**. The majority of hospitals had a base rate of 29 0000 CZK or 30 0000 CZK. (Kabátek, 2014)

Regarding the fact about base rates, it can be claimed, that the exact same treatment in one hospital will not cost the same amount of money in another hospital in the Czech Republic. Our patient with DRG 04323, RW 1,006 would cost an average Czech hospital **30 166,92 CZK** (1,006*29 987).

The truth is that this inequality and non-transparency in the base rate settlements between a hospital and a health insurance fund has been a source of escalated debates in the Czech Republic for past couple years. Some politicians in the Czech Republic propose to introduce a system similar to the German one in which all hospitals have the same base rate with all health insurance funds.

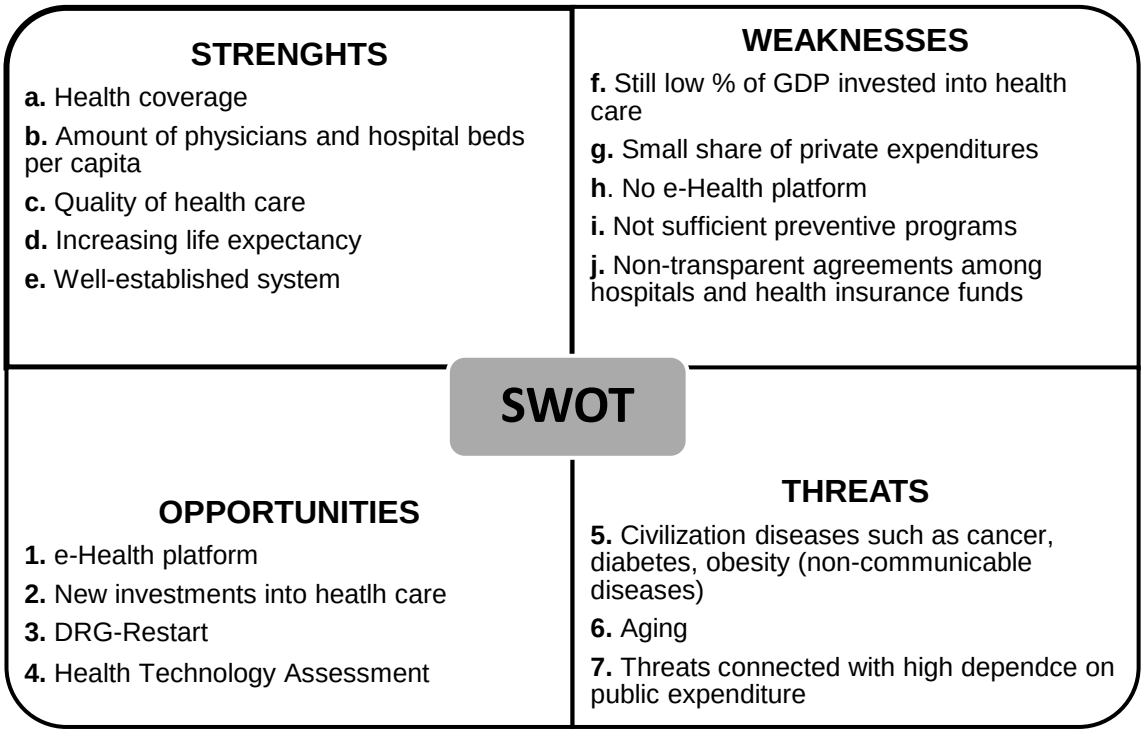
To sum it up, the DRG system has proven to be an effective way of classifying specific hospitalization cases as well as of comparing results among hospitals. The explanation used in this thesis is very brief and does not cover all aspects important for defining the amount of payment of a treatment (such as the length of stay, costs of materials, an). However, author's aim was to highlight the most important aspects of DRGs and its application in the Czech Republic.

[11] One of the highest relative weights – 110,4444, is assigned to DRG 00070 Long-term mechanical ventilation > 1008 hours (more than 43 days) with transplantation of heart, lungs, livers or bone marrow

3.6 SWOT analysis

The aim of the last part of this chapter is to summarize the findings presented earlier in the thesis in order to provide the reader with a coherent overview of the strengths, weaknesses, opportunities, and threats (SWOT analysis) of Czech health care system. Figure 8 displays the main characteristics of the Czech system.

Figure 8. SWOT analysis of Czech health care system



Source: *Author's own creation*

As mentioned earlier on page 16, the strengths of Czech health system lay in the universal **health coverage**, sufficient **amount of physicians and hospital beds per capita**, relatively high **quality of health care** (in May 2016, the first uterus transplantation was conducted in Prague Institute of Clinical and Experimental Medicine), **increasing life expectancy** and the position of **the most stable health system in Eastern Europe** according to the Health European Customer index (already stated in the introduction).

The key weaknesses of Czech health system can be observed in its financing structure. Not only is **the share of GDP invested into health care still below**

OECD level but what is more important to highlight is **the low share of private investments** into health care. The current system cannot rely on public expenditure in a long-run and specific steps towards easing the public budget should be taken into consideration. For example, patients' copayment for alternative medicine or out-of-pocket payments for very cheap treatments could be enforced. Another problem of the system is **the lacking e-Health platform** which was supposed to be working a few years ago but the process has been stagnating for some period of time. Last but not least, the **non-transparent agreements between health care facilities and health insurance funds** should be regulated and should be made accessible for public. (Bílková, 2015)

The opportunities for the Czech Republic regarding health care are following: **e-Health**, **new foreign investments into health care**, new project DRG-Restart and Health Technology Assessment (HTA). Mentioning the investments, **the Czech Republic has become a frequently visited country for cross-border health care and medical tourism** in the EU because of the relatively low costs and good quality of care (Frischhut, 2015). As the system of DRGs started to be used in 2007 in the Czech Republic, new modifications are always required to be made. **DRG-Restart project** has been launched by IHIS CR and aims to build a long-term, sustainable and efficient platform (medical, statistical, and IT) for acute in-patient care. (IHIS CR, 2016). In addition, one important component of health care is **missing** in the Czech Republic and it is **HTA**. HTA is a process which evaluates new medical technologies with regard to its cost-effectiveness, ethics, social acceptability, medical results, etc. HTA is a significant tool for health system innovation which should be applied in the Czech Republic in the future. (IHETA, 2013)

Lastly, the general threats to Czech health care system are those threats which are common for all developed countries in the world. These threats include the growing incidence of **non-communicable diseases** and mainly **aging**. The Ministry of Finance of the Czech Republic predicts increase in costs associated with aging by 20 % by 2040 and up to 30 % by 2060. (Bílková, 2015). Regarding this significant increase in future costs associated with both non-communicable diseases and aging, it can be claimed that **public expenditures will not be sufficient** enough to cover all expenditure in the future. For this reason, a close cooperation among all key players in Czech health system is crucial for determination of the future of this system.

4 Real examples of health care costs in the Czech Republic

The fourth chapter of the thesis aims to analyze specific health care costs for various kinds of treatments in the Czech Republic. The analysis will be based on personal health insurance funds' expenditure statements provided to the author by differently aged people whose identity will be kept confidential. Regarding the individual statements, the overall costs of the treatment and drugs as well as the utilization of health coverage from annual contributions will be elaborated.

According to age and treatments, the chapter will be divided into several sub-chapters. First sub-chapter will describe the health contribution/expenditure ratios of a seventy eight years old pensioner, a CEO in his mid-fifties, fifty year old female dentist technician, and a twenty year old student. The next two sub-chapters will focus on two specific treatments' costs of Caesarean section and lung carcinoma treatment.

4.1 Health contribution/expenditure ratios

To start with, this sub-chapter will always highlight the type of a contribution, its annual amount, and the name of a health insurance fund for each individual example. Followed by the total expenditure overview, the comparison between the amount of a contribution into health insurance and the total amount of treatments/drugs' costs will be made. Finally, the ratio will be calculated.

The first example is a seventy eight years old pensioner (**Mr. A**) who suffered from lung carcinoma in 2014. Being a pensioner, Mr. A is regarded as economically inactive, and therefore the monthly health contribution is conducted by state apparatus. In 2014, the assessment base for state insured people was 845 CZK/ month which means that in total for this year, the state paid **10 140 CZK** (376 EUR) for Mr. A's health insurance. (Tichý, 2015) Looking at the expenditure side, the amount is highly influenced by Mr. A's disease. However, in general, elderly people suffer from different kinds of diseases which still enables the author to consider Mr. A as a regular elderly patient.

In 2014, Mr. A's health insurance was the Health Insurance Fund of Ministry of Interior which provided the following summary of Mr. A's health care expenditure:

- Cost of medical treatments : 166 553,84 CZK (6 169 EUR)
- Cost of drugs and medications : 128 744,99 CZK (4 768 EUR)
- Cost of spa treatment : 22 302,00 CZK (826 EUR)
- Sum of GP capitation : 1 555,20 CZK (58 EUR)
- Additional regulatory payments : 4 501,60 CZK (167 EUR)
- **Total for 2014** **319 156,03 CZK (11 821 EUR)**

In order to set Mr. A's contribution/expenditure ratio, a simple calculation is made.

Ratio calculation: 10 140/319 156,03 = 0,0317 → **≈ 3,2 %**

To conclude, the annual health insurance contribution for Mr. A was sufficient only for 3,2 % of his total health expenditure. The rest of 96,8 % was covered by risk-adjustment and cost redistribution mechanism used by health insurance funds in the Czech Republic. In other words, the economically active people "paid" Mr. A's lung carcinoma treatment and medications through their health insurance contributions which is in line with the principle of solidarity.

The next example involves **Mr. B** who is a fifty five years old CEO of an unspecified company in the Czech Republic. Mr. B does not suffer from any serious disease apart from higher cholesterol. Being employed in a company, Mr. B's health insurance contribution is paid in 2:1 principle (mentioned in chapter 3.3.3) which means that an employer pays 9 % of the gross wage and employee pays 4,5 % of the gross wage for health insurance (13,5 % in total). In 2014, Mr. B's employer sent to Mr. B' health insurance fund the amount of 116 324 CZK and additional 58 166 CZK was distracted directly from Mr. B's gross wage. The sum of Mr. B's health insurance contribution for 2014 was **174 490 CZK.**

Mr. B was also insured by the Health Insurance Fund of Ministry of Interior and his health expenditure for year 2014 were following:

- Cost of medical treatments : 2 625,06 CZK (97 EUR)
- Cost of drugs and medications : 3 840,11 CZK (142 EUR)
- Sum of GP capitation : 874,80 CZK (32 EUR)
- Additional regulatory payments : 383,94 CZK (14 EUR)
- **Total for 2014** **7 339,97CZK (272 EUR)**

In order to calculate the ratio, a reversed equation will be used to demonstrate which percentage of his contribution Mr. B truly used for his health care in 2014.

Ratio calculation: 7 399,97/174 490 = 0,0424 → **≈ 4,2 %**

In 2014, Mr. B used only 4,2 % of his health insurance contribution for medical treatments and medication. Most of Mr. B's expenditure include preventive check-ups, complete blood count test and purchase of drugs for cholesterol which are quite expensive. Nevertheless, the rest of his contribution, 95,8 % (approximately 167 000 CZK), could have been used for treatment of a severely ill patient with low health insurance and thus saving his/her life.

The third example focuses on **Ms. C** who is a fifty years old dentist technician. Ms. C does not suffer from any sever disease, does not take any medication, but has a regular back pain. As an employee, her health insurance contribution is made in the same way as we have seen in Mr. B's case. However, Ms. C has rather lower income in comparison with Mr. B, therefore some differences might be observed. Ms. C's employer paid for Ms. C's insurance 18 937 CZK and she paid 8 603 CZK from her gross wage which equals to **27 540 CZK.**

Ms. C was also insured by the Health Insurance Fund of Ministry of Interior and her health expenditure for year 2014 were following:

- Cost of medical treatments : 7 272,48 CZK (270 EUR)
- Cost of drugs and medications : 2 368,68 CZK (88 EUR)
- Sum of GP capitation : 874,80 CZK (32 EUR)
- Additional regulatory payments : 330,00 CZK (12 EUR)
- **Total for 2014** **10 845,92 CZK (402 EUR)**

Again reversed ratio calculation will be used to calculate the utilization.

Ratio calculation: 10 845,92/27 540 = 0,3938 → **≈ 39,4 %**

In 2014, Ms. C spend 39,4 % of her health insurance contribution on health care which is more than Mr. B but way less than Mr. A. Looking at the capitation sum, Ms. C and Mr. B have the same amount of capitation as they belong to the same age group unlike Mr. A whose capitation is almost two times higher. These statements prove the capitation theory mentioned on page 37. Moreover, Ms. C has lower wage than Mr. B which leads to lower health insurance contribution and to a usage of higher portion of health insurance contribution for personal needs. The

majority of Ms. C's health insurance contribution was used on physiotherapy, gynecological and preventive check-ups, and dentistry care.

The last and very brief example concerns **Ms. D**, a twenty years old student. Ms. D does not suffer from any disease and the only medication she takes are contraception pills. As a student, the health insurance contribution for Ms. D is provided by state. The value of the contribution in 2014 was the same for Ms. D as for Mr. A, and so **10 140 CZK.**

Ms. D had the same insurance fund and her health expenditure in 2014 were:

- Cost of medical treatments : 1 758,52 CZK (65 EUR)
- Cost of drugs and medications : 2 024,20 CZK (75 EUR)
- Sum of GP capitation : 583,20 CZK (22 EUR)
- Additional regulatory payments : 229,55 CZK (9 EUR)
- **Total for 2014** **4 365,92 CZK (162 EUR)**

Ratio calculation: 4 365,92/10 140 = 0,4305 → **≈ 43 %**

Ms. D used in total 43 % of the state health insurance contribution. The predominant part of health expenditure were spend on complete blood count, gynecological check-ups and dentistry care. For the sake of clarity, contraception pills are not reimbursed by health insurance funds and a person has to pay the full price of the pills. If they were covered, the costs for drugs would have been much higher.

To conclude this part, significant differences can be observed among differently aged people and the type of their health insurance payments. The GPs sums in each cases proved the theory that people in productive age pay the lowest capitation while the elderly pay the highest. Moreover, the economically active people, whose health insurance contributions are distracted from their gross wage, hardly ever use the whole amount of their contributions. On the other hand, the state does not have enough resources to cover the treatment and medication for all elderly people. Therefore, the system of redistribution and the principle of solidarity is essential and crucial for health care system functioning.

For the sake of simplification, relatively healthy people (except of Mr. A) were chosen to serve as examples for this thesis. The purpose of this part was not to elaborate on the health insurance funds' contribution system in detail but only to demonstrate the practical side of the health insurance statements.

4.2 Caesarean section

In 2013, Ms. E was pregnant with a child. The pregnancy was high-risk as in past years, Ms. E had three ectopic pregnancies which resulted in removal of one Fallopian tube and uterus corner. From the beginning of her pregnancy, Ms. E was aware that Caesarean section is the only possible way for her to deliver the child as normal labor would be too dangerous for her own life. In October 2013, Ms. E had a regular check-up in the hospital in Ostrava when she started to feel an unbearable pain in her belly and had to undergo immediate Caesarean section. The cost for this treatment are described below in more detail (Table 6)

Table 6. Costs of Caesarean section

Date	Provider	Code of a treatment	Name	Amount	Price (CZK)
17.10.2013	00843989	78140	Anesthesia ASA 3E, 20min	3,00	1 414,26
17.10.2013	00843989	78022	Target examination by an anesthesiologist	1,00	208,62
17.10.2013	00843989	78989	Anesthesia with controlled ventilation	3,00	2 167,56
17.10.2013	00843989	78999	Securing of air passages during anesthesia	1,00	186,21
17.10.2013	00843989	78121	Capnometrics during anesthesia	3,00	220,86
17.10.2013	00843989	63239	Relaxations of the lower pole of fetal eggs , prostaglandin application , installation of cervical dilator	1,00	163,22
17.10.2013	00843989	657	Type 57, for hospitals type 3 (category 6), intensive care of lower degree	1,00	6 007,95
17.10.2013	00843989	63021	Complex gynecologist screening	1,00	309,78
17.10.2013	00843989	63115	Complex cardiotocographic screening	1,00	211,68
17.10.2013	00843989	63125	Vaginal delivery - termination by Caesarean section	1,00	5 952,78
17.10.2013	00843989	63117	Cardiotocographic screening during delivery	1,00	333,36

Source*: Author's own creation based on Ms. E's health insurance statement*

Table 6 portrays a real health insurance statement which any insured person in the Czech Republic can obtain from his/her health insurance fund. The statement contains a list of all treatments, a list of medication used, a code of a provider, GPs capitation, additional costs, and total sum. Each health care provider has its own number of identification which is used for reporting purposes. In addition, the code of a treatment is part of the scale of treatments explain in sub-chapter 3.4.

In our example, Ms. E had her Caesarean section surgery on October 17th 2013. Firstly, all procedures related to anesthesia are listed in the statement consisting of the anesthesia itself, examination, control, and Capnometrics. The abbreviation ASA 3E is an international classification of anesthesia used during a surgery. ASA stands for American Society of Anesthesia which defines six types of anesthesia depending on severity of patient's health status and surgery. The letter E means emergency surgery. During Ms. E's childbirth, ASA 3 was applied as the surgery was of severe or moderate character. (American Society of Anesthesiologists, 2016) Overall, the costs of the whole anesthesia in this example was **4 197,51 CZK** (155 EUR)

The most expensive items on the statement are the intensive care (hospitalization) after the surgery and the Caesarean section itself. The intensive care unit (ICU) is worth approximately **6 000 CZK** (222 EUR) per one hospitalization day and the Caesarean section costs about **5 900 CZK** (almost the same amount as ICU).

In total, the price consist of all the treatments listed in Table 6 plus medication plus additional payment for each day of hospitalization (100 CZK/day). During Ms. E's surgery, IGAMAD (anti-D immunoglobulin, used if partners have different Rh blood factors), PROSTIN (childbirth induction pill), AMOKSIKLAV (against infection), METRONIDAZOL (antimicrobial drug) were applied.

Calculation:

- Treatments: 17 176,28 CZK
- Medication: 336,08 CZK
- Hospitalization 400,00 CZK
- **Total 17 912,36 CZK (663 EUR)**

In comparison with other countries, the cost of Caesarean section in the Czech Republic is fairly low. According to WHO Report from 2010, the C-section in Austria costs app. 1 000 EUR, 850 EUR in Germany, and 750 EUR in the UK. (WHO, 2010)

4.3 Lung carcinoma treatment

In early 2014, Mr. A (the same example as mentioned above) was diagnosed with lung carcinoma for which he was treated approximately one year and followed by regular check-ups during next two years. The following summary of costs of such a treatment including detection of the condition, detailed testing and check-ups, surgery, and chemotherapy will be presented in a comprehensible way. One notion, the overview of the costs will include only the health insurance costs from year 2014 as the author does not have access to the data from 2015. Nevertheless, the data available (from Mr. A's health insurance statement) include all important parts of the treatment in order for the reader to get a general overview of this issue.

Firstly, Mr. A was informed about an abnormal results of his blood count in the area of lungs at the beginning of 2014. After a series of usual screening tests and roentgen of the chest, Mr. A was diagnosed with lung carcinoma in February 2014. In the hospital in Zlín, Mr. A had to undergo different types of screenings and tests such as computed tomography, activated partial thromboplastin test, and immunofluorescence which provided the doctors and the patient with an overall development of the carcinoma and possibilities of the treatment.

After the diagnosis, Mr. A's case was passed on to a specialized hospital in Nový Jičín (a member of AGEL group) where he underwent a surgery after another series of testing. About one month after the surgery, Mr. A started with the chemotherapy treatment which lasted for one year.

In the hospital in Zlín, Mr. A was hospitalized for 7 days in order to be monitored and tested for his lung carcinoma. The whole stay in this hospital costed **27 576, 81 CZK** (1 021 EUR). Out of this sum, the two most expensive items on the statement are immunofluorescence for 3 040,92 CZK (113 EUR) which was done twice and computed tomography for 2 121,40 CZK (79 EUR). However, in general, the hospitalization is the most costly item of the whole stay (33 % of the total costs) and not the treatment/testing.

After the case was transferred to the hospital in Nový Jičín, Mr. A had to take a few more tests such as PET screening for **14 336,40 CZK** (531 EUR), blood count test and ECG screening for 124,60 CZK (4,6 EUR). The testing during this period was pre-surgical and its costs were **17 473,89 CZK** (647 EUR). Obviously, the most expensive item was the PET screening which accounted for 82 % of the total sum.

On April 7th 2014, Mr. A was submitted into the hospital for a lung carcinoma surgery where he stayed for one week. The surgery itself costed **44 354,55 CZK** (1 643 EUR), the after-surgery care and testing was for 11 937,83 CZK (442 EUR), and the medication for 31 190,15 CZK (1 155 EUR). The total price of one week stay in the hospital and lung carcinoma surgery was **87 482,53 CZK** (4 374 EUR). As for the surgery, the usage of ultrasound scalpel (5 148 CZK ≈ 190 EUR), pneumonectomy (9 024, 60 CZK ≈ 334 EUR), one day at ICU (11 870, 23 CZK ≈ 440 EUR), and anesthesia (15 719 CZK ≈ 582 EUR) were procedures with the highest costs.

After a successful surgery, Mr. A had to go to chemotherapy treatment for about one year. The price of the chemotherapy consists of the anti-tumor chemotherapy application, a check-up conducted by clinical oncologist, infusion, and medication (Navelbine, Dexamed, Cycloplatin 150, and Magnesium Sulfuricum Biotika 10%). The chemotherapy costs **5 480, 64 CZK** (203 EUR) per one application day out of which approximately 88 % accounts for the medication (curative substances). If a patient does not have to be present for chemotherapy, he is given an oral chemotherapeutical substance - Navelbine Oral which costs 6 701,04 CZK/dose. This whole treatment is fully covered by health insurance funds.

Lung carcinoma treatment costs overview

➢ Pre-diagnosis testing, and hospitalization	27 576,81 CZK
➢ Pre-surgical screening (incl. PET)	17 473,89 CZK
➢ Surgery and after-surgery treatment	87 482,52 CZK
➢ Chemotherapy (4x)	21 922,56 CZK
➢ Oral chemotherapy (3x)	20 103,12 CZK
➢ **Total costs in 2014**	**174 558,90 CZK (6 465 EUR)**

The costs of Mr. A's treatment related to lung carcinoma were 174 558,9 CZK. The most expensive part was the surgery itself and the chemotherapy which started few weeks after the surgery. Regarding the fact that Mr. A underwent another 16 days of chemotherapy in 2015, the sum presented here is not the total price of the overall treatment of his disease. Moreover, the overview does not include all the check-ups and medicine Mr. A had to take during his treatment but only the main treatments in the hospitals. On the other hand, the reader is provided with a sufficient overview of each type of testing, surgery and a follow-up treatment concerning lung carcinoma.

5 Patient satisfaction with health care provided in privately owned hospitals in the Czech Republic

The last chapter of the thesis is the practical part. Having focused the thesis on patient satisfaction in privately owned hospitals in the Czech Republic, the results of the survey conducted among patients in two privately owned hospitals – one of the AGEL group hospital and Hospital Šumperk a.s., will be interpreted. Moreover, the general information about both hospitals and the recent investments into their facilities and medical technology will be highlighted at the beginning of this chapter.

5.1 AGEL group a.s.

As already mentioned in the introduction, AGEL group a.s. (joint-stock company) is the biggest private health care provider in the Central Europe. Being established already in 1990 by Ing. Daniel Dudys and Jiří Foltýn in the city of Třinec in the Moravia-Silesian region, the only owner of the company as of 2015, is Ing. Tomáš Chrenek, PhD. who came into AGEL in 2005 as a Chairman of Supervisory Board. (Ministry of Justice of the Czech Republic, Public Register, 2016). During its twenty-five years of existence, AGEL has become the leading health care provider in the eastern part of the Czech Republic as well as in Slovakia.

Nowadays, AGEL *"operates 11 hospitals, 6 health centers, a network of pharmacies, laboratories, and distribution companies, along with other specialized medical facilities*" (AGEL a.s., 2015). Annex VI depicts the allocation of AGEL's facilities across the Czech Republic and Slovakia. Annually, more than 2,6 million patients (out of which 2,5 million is out-patient care and 170 000 is in-patient care) are treated in AGEL's health care facilities by almost 9 000 employees. In addition, in 2011, the AGEL Foundation was established in order to support those individuals with lack of resources. (AGEL a.s., 2015)

The main goal of the AGEL imperium is to create a highly specialized department in each of its hospital. For instance, the hospital in Nový Jičín specializes in oncological treatments, the hospital in Třinec-Podlesí is one of the best in the treatment of cardiovascular diseases, and last but not least the hospital in Ostrava-Vítkovice focuses on cerebrovascular accidents and neurological diseases. Besides

the specialized centers, all the hospitals mentioned above operate also other traditional departments such as gynecology and obstetrics department, surgical department, pulmonary department, urological department and others. (AGEL a.s., 2015)

According to AGEL's annual report (2014), the total investment reached approximately 800 million CZK (30 million EUR). The overview of the major investments can be found below. (AGEL a.s., Annual Report, 2014)

- 15 million CZK for a new multiple-detector computed tomography for Hospital Vítkovíce
- 61,5 million CZK for a reconstruction of pulmonary and endoscopic departments and in Hospital Nový Jičín
- 200 million CZK for a construction of one of the best-equipped operating theaters for oncological treatment in Hospital Nový Jičín
- 120 million CZK for a linear accelerator which is one of its kind in the Czech Republic, also in Hospital Nový Jičín

It is estimated that the revenues of AGEL a.s. reached more than 12 billion CZK in 2014 which is a 4 % increase in revenues in comparison with the previous year. (AGEL a.s., 2015)

In 2014, Hospital Třinec-Podlesí become the absolute winner in the survey called "Best Hospital of 2014" conducted by HealthCare Institute (including 156 hospitals in the Czech Republic). Hospital Třinec-Podlesí achieved the best ranking in all four categories: hospitalized patients, out-patient care, employees and financial situation of the hospital. In addition, Hospital Vítkovice was the second best in the category of perceived satisfaction with doctors' and nurses' approach towards patients among out-patient patients. (HealthCare Institute, 2014)

5.2 Hospital Šumperk a.s.

Hospital Šumperk a.s. (further in text only Hospital Šumperk) is located in the northern Moravia, in Olomouc region. Between 2004 and 2015, the hospital was part of AGEL group a.s. However, as the second owner (MUDr. Martin Polach, MBA) of the AGEL group decided to leave the company, the ownership of Hospital Šumperk was granted to Mr. Polach as part of the settlement agreement between

him and Mr. Chrenek. Under AGEL group, Hospital Šumperk received a huge amount of investments into the reconstruction of the facility and purchase of medical technologies. Having the new owner, the new plan for general development, revitalization and the project for the construction of magnetic resonance pavilion were developed. The hospital nowadays employs 769 employees in total, out of which 110 are medical professional. The overall capacity of 523 hospital beds in 6 pavilions and 22 specialized departments is available for approximately 19 000 hospitalized patients a year. In addition, the annual turnover of ambulatory patients is about 200 000. The hospital specializes mainly in orthopedics, gynecology and obstetrics, besides another medical treatments. (Nemocnice Šumperk a.s., 2015)

Looking at the investments provided in 2015, the total amount reached 55 million CZK (2 million EUR) which consisted of following (Nemocnice Šumperk a.s., 2015):

- 1,4 million CZK for purchase of dishwashers of central sterilization
- 10,5 million CZK for two C-arms roentgen devices
- 3,2 million CZK for new operating tables
- 17 million CZK for the reconstruction of operating theaters

According to HealthCare Institute survey from 2015 (including 156 hospitals in the Czech Republic), Hospital Šumperk reached the second best position in perceived satisfaction and safety of out-patient patients, the third place in the shortest waiting time, and the second place in the category of the coziest waiting room.

5.3 Evaluation of survey results

Firstly, the author will mention the general results of the HealthCare Institute survey conducted in 2015 in terms of quality of care and financing, and then will elaborate on her own findings.

As the summary of the HealthCare Institute survey claims, a slight decrease (-1,4 percentage points) was noticed in the choice of hospital based on doctor's recommendation as well as in the area of complete trust in the hospital (only 66,4 % of patients have full trust in the hospital). On the other hand, the satisfaction with intimacy and respect for dignity of patients increased up to 96,6 % of the total sample. Moreover, the approach of hospital employees towards patients improved in comparison with previous years. The major drawback of hospital services is the

food served to patients with which only 47 % of respondents are satisfied. In general, patients would appreciate improvements in: food, internet, availability of TVs in the rooms, sanitary facilities, and equipment of the rooms. (HealthCare Institute, 2015).

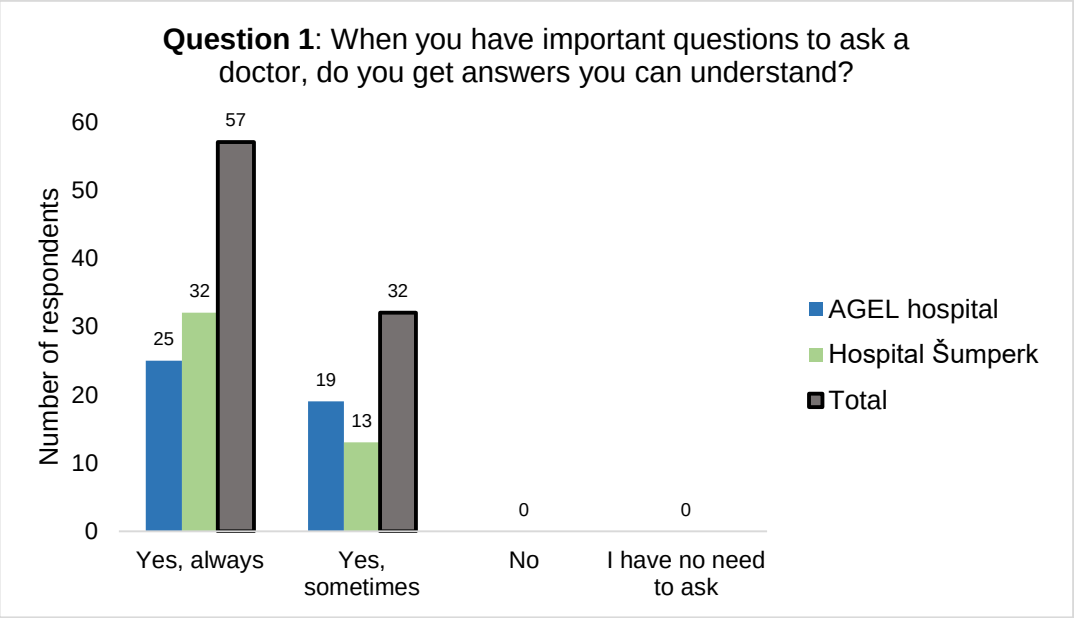
Regarding hospitals' financing, about 38 % of the examined hospitals (59 out of 156) do not have sufficient financial health and may have problems with payment obligations. This issue regards mainly public hospitals which are able to survive only due to support of their owners (Ministry of Health, regional authorities) which is extremely costly. As these health care facilities are unlikely to be privatized in the future, it is of crucial importance to increase the efficiency of their activities. Overall it can be claimed, that two-thirds of hospitals have at least sufficient financial health. As health care sector does not operate on market-regulatory basis, which means that the financially "unhealthy" institution would be taken over by stronger competitors, the efficiency of the system as a whole remains questionable but is, at least, accessible to everybody. (HealthCare Institute, 2014)

The author has created her own survey based on The Picker Patient Experience Questionnaire and her own questions regarding the topic of the thesis. The questionnaire can be found in Annex VII and VIII in both English and Czech languages. The Picker PPE-15 Questionnaire has been developed by the Picker Institute in Boston, USA, and consists of fifteen question which assess the overall patient satisfaction with care provided in the hospitals. (Jenkinson et.al, 2002). As this standardized questionnaire has been used several times by different studies, the author believes that it is a reliable source for her research.

The questionnaire is called "Patient Satisfaction with Private Hospital's Inpatient Treatment" and is divided into three parts. All questions refer to the current stay of a patient in the hospital and the target group was the hospitalized patients in the two hospitals. The first part of the questionnaire (questions 1-14) consists of the Picker's questions. These questions explore if a patient understands the information provided by doctors and nurses, if patient's concerns are taken into account, if the family is sufficiently informed about patient's condition, and if a patient would like to be more involved in decisions made about the treatment. Questions I-VI has been created by the author herself and focus on patient's choice of the hospital and ask a patient if he/she sees a difference between health care provided in the private hospital and the public one. Finally, two demographic questions (gender and age) and two questions regarding the current hospitalization are asked.

The survey was conducted during April and May 2016 in two private hospitals in the Czech Republic – one of AGEL's hospitals[12] and in Hospital Šumperk. In each hospital, within cooperation between the author and the management of both hospitals, fifty questionnaires were distributed across departments. Approximately 70 % of the respondents were females and 30 % were males. Regarding the age distribution, 31 % of respondents were 61 and more years old, 25 % were between 45 and 60 years old, 18 % were between 36 and 45 years old, and 25 % were below 35 years old. As the author received only 45 questionnaires from one of the hospitals back, the total sample size is 90 patients. It is also crucial to highlight that not all questions were answered by all respondents. Out of the twenty questions in the questionnaire, the author has picked five most interesting and significant ones which should provide the reader with a solid overview of the situation in these hospitals. Each graph provides data from both hospitals and the sum of all answers.

Figure 9. Results of a survey (Question 1)



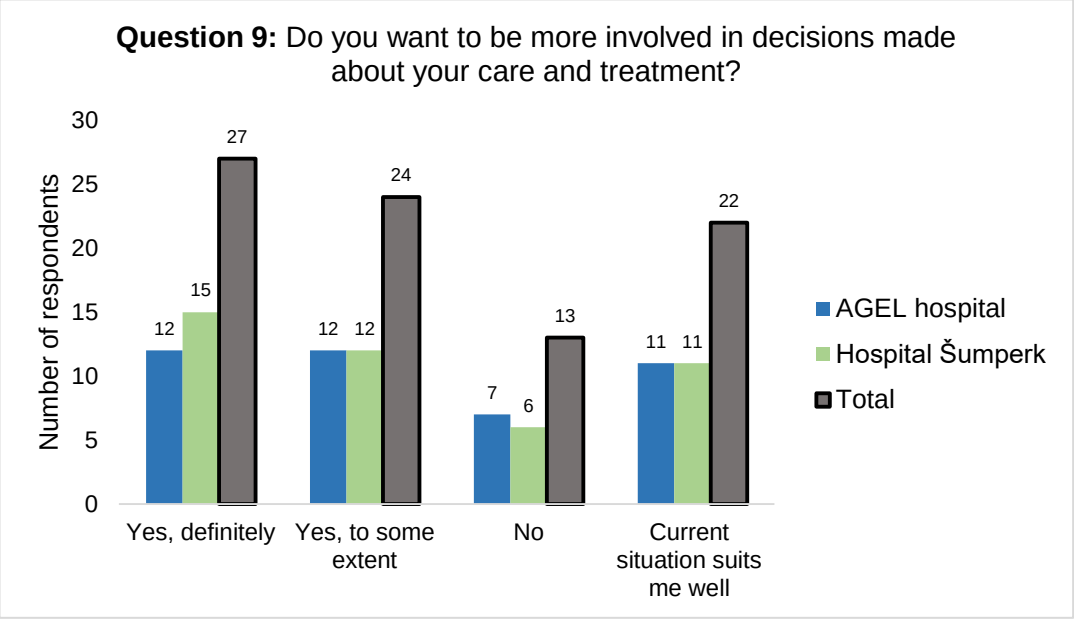
Source: *Author's own creation based on the results of the questionnaire*

Figure 9 portrays the results of question no. 1 which asked if a patient understands doctors' answers on his/her questions. All respondents replied that they understand in general. Around 66 % of the respondents always understand the doctor and

[12] The name of the specific AGEL's hospital remains strictly confidential for the purpose of the thesis

34 % of them are sometimes confused with the information provided by the doctors. Patients in Hospital Šumperk seem to receive a little clearer answers from their doctors. As it was mentioned in the survey by HealthCare Institute, the approach of medical staff has improved and the patients are provided with more concrete and understandable information. In addition, a lot of respondents added that questions such these are not relevant as the approach of medical staff is individual and cannot be generalized to the medical personnel as a whole.

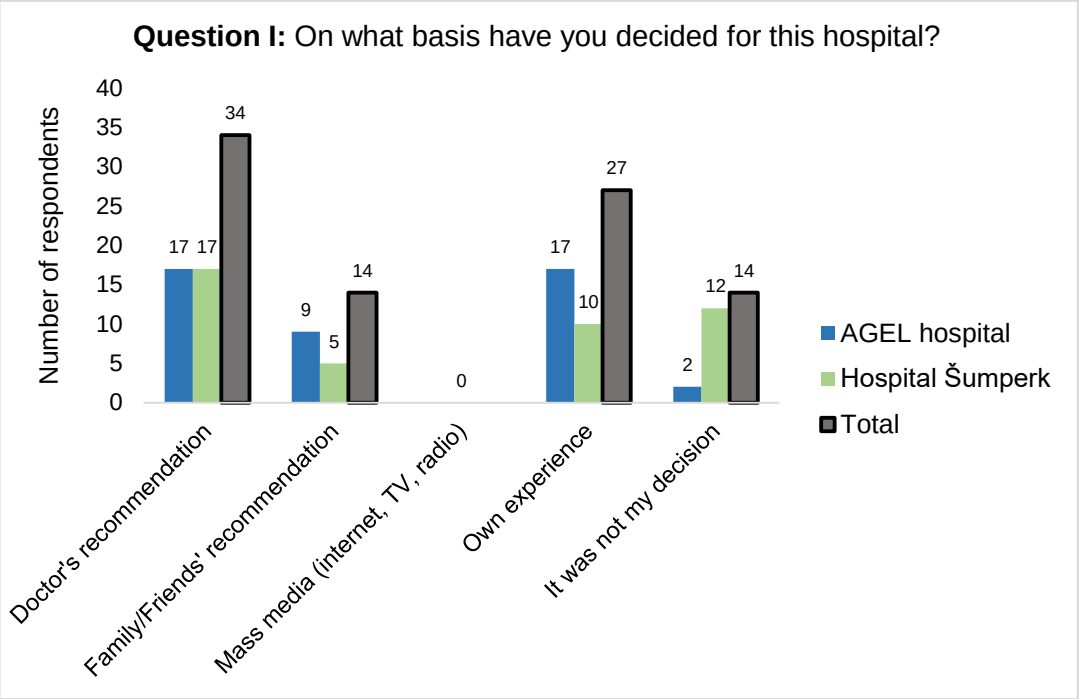
Figure 10. Results of a survey (Question 9)



Source: *Author's own creation based on the results of the questionnaire*

The next question, question 9, focused on patient involvement in decision-making about the treatment. In total 51 respondents out of 86 (60 %) claim that they would appreciate being more involved or at least to some extent. On the other hand, 22 respondents are satisfied with current situation and believe that their involvement in decision-making is sufficient. Only 15 % of the respondents do not wish to be more engaged. Overall, the answers in both hospitals were fairly identical which might provide the generalized picture of the situation in the Czech Republic. Of course, this question is very personal and subjective. In general, the elderly people answered that the current situation suits them well while the younger people would prefer more involvement.

Figure 11. Results of a survey (Question I)

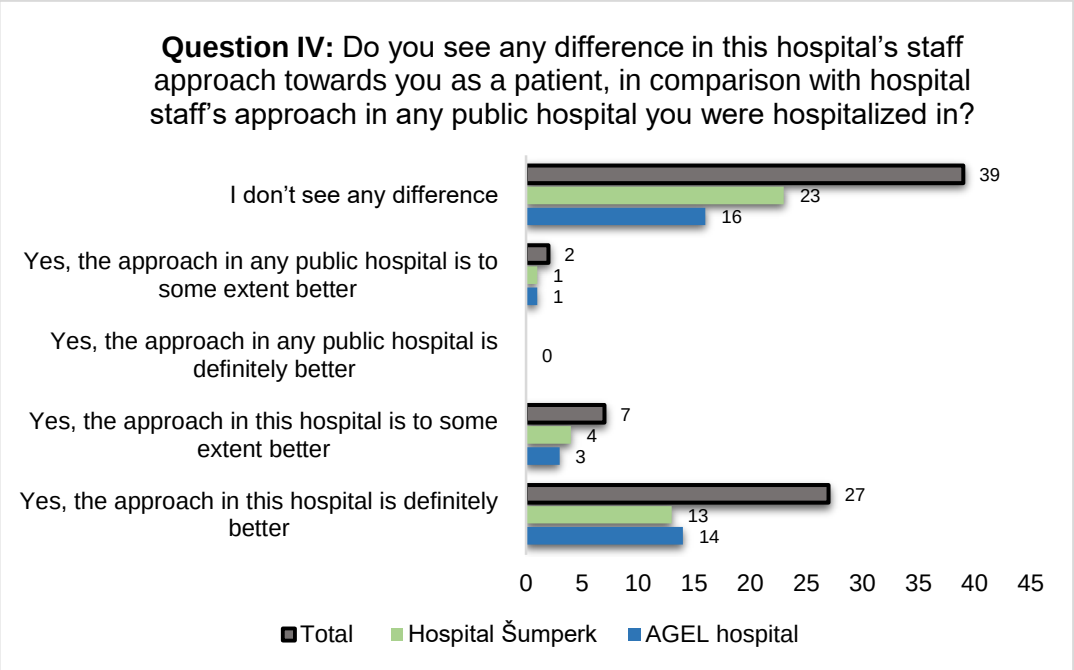


Source: *Author's own creation based on the results of the questionnaire*

The first question of the second part of the questionnaire regards the reason why a patient has been hospitalized in this kind of hospital. The most frequently chosen answer was the doctor's recommendation, even though this trend has been slowly decreasing as proven by the HealthCare Institute survey. The second most favored answer is own experience (30 %) which emphasis the growing interest of patients to look for the best health care services in their region, thus motivating the hospitasls to improve their services.

Mainly AGEL patients have chosen this kind of hospital because of their previous experience (the same portion as those who were recommended by a doctor) which contributes to a good image of the AGEL group. On the other hand, about 25 % of respondents in Hospital Šumperk replied to this question that it was not their decision to be treated in this hospital (probably due to an emergency situation or lack of availability of other health care facilities in the region). Based on these data, only a minor effect has family/friend's recommendation on the hospital selection and the mass media also do not play a role in the decision-making process.

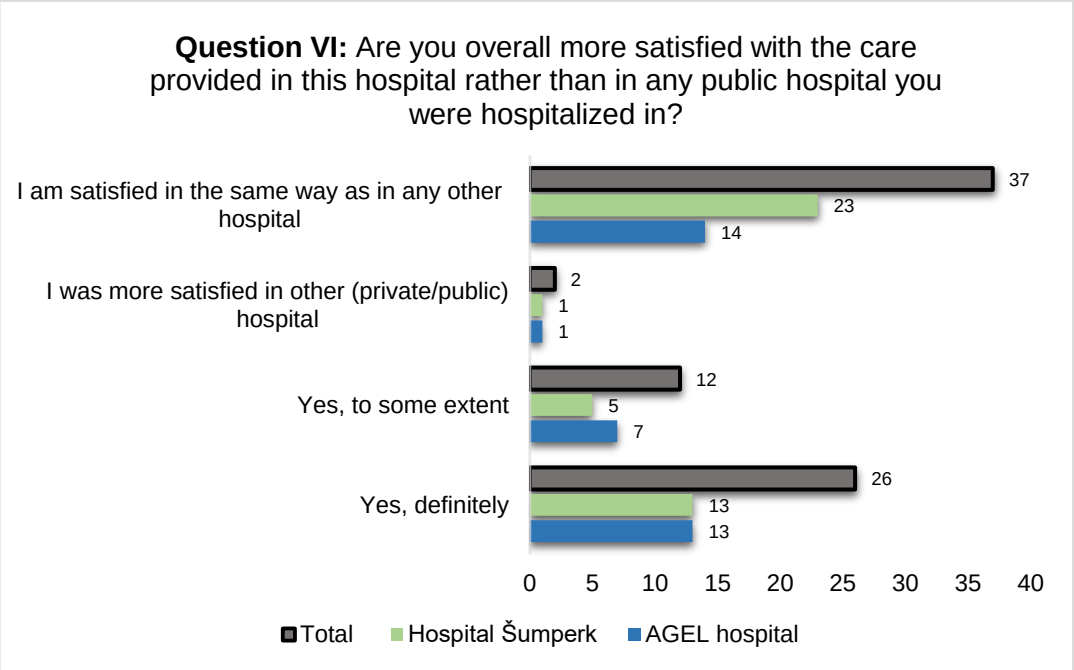
Figure 12. Results of a survey (Question IV)



Source: *Author's own creation based on the results of the questionnaire*

Questions IV and VI were quite complex and aimed to find out if the patients in general can/cannot see a difference between privately and publically owned hospitals in the Czech Republic. Only 75 respondents out of 90 were willing to answer this question – some respondents may have misunderstood the question but the majority of respondents who did not fill in this question wrote that it was their first hospitalization, and therefore they were not able to make a comparison. For those who answered this question, a smaller majority (52 %) do not see any different between approaches of medical staff in a private hospital in comparison with medical staff in a public hospital. About 45 % of patients would say that the approach in the private hospital is definitely better or to some extent better than in any public one. In Hospital Šumperk, slightly more patients cannot see a difference in the approach of the medical staff in this hospital in comparison with a public one. Only one respondent in each hospital reported that he/she has already experienced a better approach in any public hospital but only to some extent. No respondent would answer that the approach in any public hospital is definitely better than in the private one. As the results seem to be approximately equal (no difference, huge difference), the larger sample might have provided a more precise outcomes.

Figure 13. Results of a survey (Question VI)



Source: *Author's own creation based on the results of the questionnaire*

Finally, the last question to be elaborated, concerns the overall satisfaction of patients in the private hospitals. In total, 77 respondents out of 90 answered this question. Approximately 49 % of all respondents agreed to be more satisfied with the care provided in the private hospitals and 48 % said that they are satisfied in the same way as in any other hospital. This result is almost identical with the result of the previous question (question IV) which proves that half of the patients do not see any difference between public and private hospitals while the second half of the patients is able to distinguish between them. Only one respondent in each hospital admitted that he/she was more satisfied in other hospital.

A remarkable difference can be observed in the answer which states that a patient is satisfied in the same way in this hospital as in any other. More respondents from Hospital Šumperk have decided for this answer. However, this question was answered only by 35 patients from AGEL hospital, in comparison with 42 respondents from Hospital Šumperk, which disables the author to draw a valid conclusion from the results of this question. Nevertheless, only a negligible amount of respondents was not satisfied with the care provided in these hospitals which could be seen as a positive result for both hospitals.

To conclude the findings of the survey, four major conclusions could be drawn from the answers. The conclusions regard the communication of medical staff towards patients, the involvement of the patients in the decision-making about their treatment, the choice of the hospital, and the perceived difference between health care provided in the privately owned hospitals in comparison with public hospitals.

Firstly, the results proved that the communication between a doctor and a patient has significantly improved. All of the respondents agreed that they understand the information provided by the doctors at least most of the time. This outcome can be evaluated as positive.

Next question regarded the involvement of patients in their treatment. In this case, higher majority of the respondents wish to be more involved in the decision-making and the minority is satisfied with the current situation. However, the issue of supply-induced demand arises with regard to this result as patients are usually those with less information about their health condition, and therefore are not able to be fully engaged in the decision on their treatment.

Looking at the reason behind choosing a hospital, the prevailing answer was based on doctor's recommendation but its importance has been decreasing, as observed by HealthCare Institute, in favor of choosing the hospital based on own experience.

Evaluating the perceived difference of medical staff approach and overall satisfaction with health care in private and public hospital, the results do not allow the author to make precise conclusion. A small majority of respondents cannot tell the difference and are equally satisfied in both facilities while the second half appreciates the privately owned hospitals more than the public ones.

Finally, the results of the survey did not entirely proved or disproved author's hypothesis that patients are more satisfied with health care provided in the privately owned hospitals. With the current Czech health care system in which patients are not required to pay almost anything out-of-pocket, health care has been often taken for granted. Despite the huge investments made by private companies into hospitals' reconstruction and the newest medical technology available, the patients in the Czech Republic seem to be not aware of the development which has been in progress for more than one decade. Now, it might be a time to re-evaluate the efficiency of the current health care system in the Czech Republic and encourage more transparent and effective distribution of financial resources into health care.

6 Limitations of the thesis

The author is aware of the fact that the content of this thesis is fairly broad for detailed interpretation. Due to the length of the thesis, language obstacles, and challenges with research development and evaluation, following limitations of the thesis has to be taken into consideration.

The legal acts, namely emphasized throughout the thesis, are available only in Czech language. Therefore, their translation and interpretation might include some minor language errors which are possible to occur when translating from one language to another. Nevertheless, the author believes that no crucial mistake, which would discredit the thesis as a whole, has been made.

Due to the length and words limitation of the thesis, the author could not afford to deal with the international aspects of health care such as medical tourism, cross-border health care, EU laws and directives, and others. Moreover, sub-chapters regarding the payment ordinance no. 273/2015 Coll., DRGs and pharmacies provide the readers with only a general overview of the current situation in the Czech Republic as the author was not able to address these topics in more detail.

Regarding the survey itself, the sample size, data collection, and the long distance communication obstacles can be considered as limitations. Starting with original idea of collecting one hundred questionnaires from two hospitals, only ninety-four were given to the author for evaluation, including also one completely blank questionnaire and several which were filled only partially. As the author was not physically present in the Czech Republic during the time of writing the thesis, the responsibility for the survey distribution and its completion was delegated on to the hospital staff of the two hospitals were the surveys were conducted in. Also for this reason, the author could not be helpful during the filling-in process. Even though a larger sample size would have resulted in more precise results, the author believes that her research provided the thesis with an added value.

7 Conclusion

Firstly, the aim of this thesis was to provide a general overview of health care system in the Czech Republic, to describe how the health care system is financed, and to find out if there is a difference between privately and publically owned hospitals in the eyes of patients hospitalized in the selected private hospitals.

The first chapter dealt with different definitions regarding health, public health, health care, and health care system from the perspective of the World Health Organization as well as from the legal perspective of the Czech national law. Moreover, the historical development of Czech health care system was briefly introduced focusing mainly on the major changes in health care sector which were caused by different political regimes (from Bismarck model to Semashko model and back to Bismarck). The last part of the first chapter highlighted the major features of current Czech health care system which is based on decentralization, social health insurance with universal coverage, and excess of public financing. In addition, the basic statistical data about health care establishments were provided.

The second part of the thesis was already more focused on health related financial flows. The WHO definitions and the principles of health financing were mentioned as well as the valid legislative framework and the importance of the payment ordinance was emphasized. Further, the flow of financial resources among all key players in Czech health care system was described in detail, followed by the percentage of GDP spent on health care and its relationship with total health expenditure development. As there is a huge disproportion between public and private expenditure regarding health care, it was crucial to point out that among European Union's states, the Czech Republic has one of the lowest share of private health expenditure. After the health care insurance funds in the Czech Republic were presented, the specifics of the payment ordinance and the system of DRGs were clearly described as its understanding is of major importance when setting the price of out-patient and in-patient (hospitalization) treatments in the Czech Republic. The findings of the second chapter were briefly summarized in the SWOT analysis.

Moving towards the practical part of this thesis, the real examples of health care costs were used in order to demonstrate the utility of current system and resources distribution. Four differently aged people with different health care conditions provided the author with their health insurance expenditure statements which

enabled the author to calculate the health contribution/expenditure ratio. The calculations proved that the economically active people do not usually use the full amount of their health contributions which can be then re-distributed among elderly people whose coverage is provided by state. Without the solidarity principle applied in health insurance system, most elderly people would not be able to pay for their health treatment themselves. Next, the costs of a C-section and lung carcinoma treatment were elaborated in detail which could serve as a good source for comparison of costs of treatments in the Czech Republic and abroad.

Finally, the research question could have been answered as the author has conducted a survey among patients in two private hospitals in the Czech Republic – one of AGEL's a.s. hospitals and Hospital Šumperk a.s. The questions included in the survey aimed to discover if patients understand the information given to them by hospital staff, if they would like to be more involved in their treatment, and if they are more satisfied with the care provided in private hospitals. According to the answers and final evaluation of the results, the following conclusions were drawn:

- All of the respondents agreed that they understand the information provided by the doctors, at least most of the time
- Majority of the respondents wish to be more involved in the decision-making but the supply-induced demand seems to be an issue in this case
- The doctor's recommendation is still a prevailing reason behind hospital selection but the emphasis on own experience is getting more importance
- A smaller majority of respondents cannot tell the difference between public and private hospitals and are equally satisfied in both facilities while the second half appreciates the privately owned hospitals more than the public ones

As the results of the survey showed, patients in the Czech Republic are not fully aware of the difference between privately and publically owned hospitals, even though the investments of private companies into the newest medical technology and reconstruction are enormous. The society seems to be divided in two halves out of which one is convinced of higher quality of health care services in the private hospitals while the second half is not able to distinguish between the two. In author's opinion, health care is taken for granted in the Czech Republic and the possibilities the private hospitals provide their patients with – such as the most modern treatment methods and professional approach – are still not entirely appreciated.

8 List of References

AGEL a.s. (2015) *About Us and Our Services*. Available at: http://www.agelhealth.eu/about-us--2824.html (Accessed: 12 January 2016).

American Society of Anesthesiologists (2016) *Physical Status Classification System*. Available at: https://www.asahq.org/resources/clinical-information/asa-physical-status-classification-system (Accessed: 27 May 2016).

Austrian Federal Ministry of Health (2013) '*Austrian Health Care Key Facts 2013'*. Available at: http://www.bmg.gv.at/cms/home/attachments/3/4/4/CH1066/CMS1291414949078/austrian_health_care_key_facts_2013.pdf (Accessed: 28 April 2016).

Barták, M. (2012) *Mezinárodní srovnávání zdravotnických systémů*. Praha: Wolters Kluwer Česká republika.

Bednárová L. (2014) '*Na veřejné zdravotní pojištění nedosáhne v ČR až sto tisíc cizinců* (Public Health Insurance in the Czech Republic is not affordable for 100 000 foreigners)'. Available at: http://www.euractiv.cz/cr-v-evropske-unii/clanek/na-verejne-zdravotni-pojisteni-nedosahne-v-cr-az-sto-tisic-cizincu-012339 (Accessed: 1 December 2015).

Bílková, M. (2015) *Financování zdravotnictví v ČR - mezinárodní srovnání a vývoj*. Available at: https://www.psp.cz/sqw/hp.sqw?k=3206&td=19&cu=36. (Accessed 20 April 2016)

Björnberg, A.P. (2015) '*Euro Health Consumer Index 2014'*. Available at: http://www.healthpowerhouse.com/files/EHCI_2014/EHCI_2014_report.pdf (Accessed: 1 December 2015).

Busse, R. (2011) *Diagnosis-related groups in Europe moving towards transparency, efficiency and quality in hospitals*. Maidenhead: Open University Press.

Committee of the Regions (2012) *The management of health systems in the EU Member States: The role of local and regional authorities*. Luxembourg: Publications Office (Accessed: 1 April 2016).

Czech National Bank (2016) *The exchange rate as a monetary policy instrument*. Available at: https://www.cnb.cz/en/faq/the_exchange_rate_as_monetary_policy_instrument.html (Accessed: 29 April 2016).

Czech Statistical Office (2016) *Základní charakteristiky ekonomického postavení obyvatelstva ve věku 15 a více let*. Available at: https://vdb.czso.cz/vdbvo2/faces/cs/index.jsf?page=vystup-objekt&pvo=ZAM01-B&skupId=426&katalog=30853&pvo=ZAM01-B&str=v467&u=v413__VUZEMI__97__19 (Accessed: 23 May 2016).

Česká průmyslová zdravotní pojišťovna (2014) '*Výroční zpráva 2013'*. Available at: http://www.cpzp.cz/pdf/vz_cpzp_2013.pdf (Accessed: 1 May 2016).

Dr. Armin Fidler MD, MPH, MSc. (2015) *Health Systems, 1.* Management Center Innsbruck. December 2015 (Accessed: 12 March 2016).

DRG Restart (2016) *Legislativní rámec DRG - DRG Restart*. Available at: http://www.drg-cz.cz/index.php?pg=drg--legislativa (Accessed: 19 April 2016).

European Commission (2013) '*Investing in Health'*. Available at: http://ec.europa.eu/health/strategy/docs/swd_investing_in_health.pdf (Accessed: 1 August 2016).

European Union (2012) '*CONSOLIDATED VERSION OF THE TREATY ON THE FUNCTIONING OF THE EUROPEAN UNION'*. Available at: http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:12012E/TXT (Accessed: 23 May 2016).

Friedrich, L. (2014) '207 OZP *Výroční Zpráva 2013'*. Available at: http://www.ozp.cz/files/tiskove_centrum/vz_ozp_2013.pdf (Accessed: 1 May 2016).

Gaskings, M. and van Ginnecken, E. (2009) *Czech Republic Health System Review*. Available at: http://www.euro.who.int/__data/assets/pdf_file/0010/97633/E92968.pdf (Accessed: 13 January 2016).

Gladkij, I. (ed.) (2003) *Management ve zdravotnictví*. Brno: Computer Press (Praxe manažera).

HealthCare Institue (2014) *'Vnitřní audit-Hodnocení finančního zdraví nemocnic v České republice v roce 2014 z údajů hospodaření za rok 2013*'. Available at: http://www.hc-institute.org/userfiles/files/Tiskova%20zprava_hodnoceni%20financniho%20zdravi.pdf (Accessed: 15 June 2016).

Healthcare Insitute (2015) *Nemocnice ČR 2015 - výsledky hodnocení 2015*. Available at: http://www.hc-institute.org/cz/nemocnice-cr-2015.html (Accessed: 13 June 2016).

HealthCare Institue (2014) *Nemocnice ČR 2014*. Available at: http://hc-institute.org /cz/nemocnice-cr-2014.html (Accessed: 15 June 2016).

Holčík, J. (2015) *Systém péče o zdraví a zdravotnictví : východiska, základní pojmy a perspektivy*. 2nd edn. Brno.

IHIS CR (2014) *Czech Health Statistics 2013*. Praha.

IHIS CR (2014) *Economic information on health care 2013*. Available at: http:// www.uzis.cz/publikace/ekonomicke-informace-ve-zdravotnictvi-2013 (Accessed: 1 May 2016).

IHIS CR (2016) *O projektu - DRG Restart,* 16 May. Available at: http://www.drg-cz.cz/index.php?pg=home (Accessed: 16 May 2016).

Institute of Health Economics and Technology Assessment (2013) *HTA proces v ČR*. Available at: http://hta.iheta.org/hta-proces-v-cr (Accessed: 16 May 2016).

Jenkinson, C., Coulter, A. and Bruster, S. (2002) *The Picker Patient Experience Questionnaire: development and validation using data from in-patient surveys in five countries,* 1 October. Available at: http://intqhc.oxfordjournals.org/content/14/5/353 (Accessed: 15 June 2016).

Joseph Kutzin (2011) *Bismarck vs. Beveridge: is there increasing convergence between health financing systems?* Available at: http://www.oecd.org/gov/ budgeting/49095378.pdf (Accessed: 12 March 2016).

České zdravotnictví: Jak dál? (zlepší se péče? změní se struktura? kolik budeme platit a za co a jakým způsobem? kolik bude zdravotních pojišťoven?) : 23. října 2013 ; Kam bude Německo směrovat svůj vývoj i vývoj celé EU po letošních volbách? (bude velká koalice? pokud ano, kterým směrem povede EU? funguje ještě německo-francouzský motor evropské integrace? co udělá Energiewende s Německem i celou EU?) : 27. listopadu 2013 (2014). (Sborník textů, č. 49/2013). Dráchov: Fontes Rerum.

Káňa, L. (2014) '*Výroční zpráva RBP 2013'*. Available at: http://www.rbp-zp.cz/ userdata/pages/12/vz_2013.pdf (Accessed: 1 May 2016).

Maaytová, A. (2015) *Veřejné finance v teorii a praxi*: Grada.

Markus Frischhut (2015) '*Legal and ethical issues of cross-border reproductive care from an EU perspective:* [Class material]' (Accessed: 16 May 2016).

Ministry of Finance of the Czech Republic (2016) *Státní rozpočet*. Available at: http://www.mfcr.cz/cs/o-ministerstvu/zakladni-informace/organizacni-struktura/verejne-rozpocty-sekce-06/odbor-11-statni-rozpocet (Accessed: 30 April 2016).

Ministry of Health of the Czech Republic (no date) *Metodické materiály pro rok 2016*. Available at: http://www.mzcr.cz/dokumenty/metodicke-materialy-2016_11198_1058_3.html (Accessed: 15 May 2016).

Ministry of Health of the Czech Republic (2014) *Zdravotní pojišťovny*. Available at: http://www.mzcr.cz/dokumenty/zdravotni-pojistovny_945_839_1.html (Accessed: 30 April 2016).

Ministry of Health of the Czech Republic (2016) *Seznam odborností*. Available at: http://www.mzcr.cz/obsah/seznam-odbornosti_1647_3.html (Accessed: 12 May 2016).

Ministry of Justice of the Czech Republic (2016) *Veřejný rejstřík a Sbírka listin (Public Register and Collection of Documents) - AGEL a.s.* Available at: https://or.justice.cz/ias/ui/rejstrik-firma.vysledky?subjektId=71342&typ=UPLNY (Accessed: 15 June 2016).

Němec, J. (2008) *Principy zdravotního pojištění*. Praha: Grada.

Nemocnice Šumperk (2015) *Historie*. Available at: http://www.nemocnicesumperk.cz/historie--1507.html (Accessed: 13 June 2016).

Nemocnice Šumperk a.s. (2015) '*Výroční zpráva 2015*'. Available at: http://www.nemocnicesumperk.cz/data/files/O%20nemocnici/vyrocni_zprava_2015_ns.pdf (Accessed: 15 June 2016).

Organization for Economic Co-operation and Development (2015) *Health at a Glance 2015*: OECD Publishing (Accessed: 08/01/216).

Státní ústav pro kontrolu léčiv (2016) *Databáze léků*. Available at: http://www.sukl.cz/modules/medication/search.php (Accessed: 14 May 2016).

Šedo, J. (ed.) (2012) *DRG v praxi 2012: seznámení s českou implementací úhradového systému DRG*. Praha: Galén.

Štein, K. (2014) '*Výroční zpráva VOZP za rok 2013*'. Available at: https://www.vozp.cz/opencms/export/sites/vozp/.content/galerie-souboru/O-pojistovne/

Tiskovy-servis/Vyrocni-zpravy/Vyrocni-zprava-za-rok-2013.pdf (Accessed: 1 May 2016).

Tyler Cowen (2008) *Public Goods*. Available at: http://www.econlib.org/library/Enc/PublicGoods.html (Accessed: 7 March 2016).

United Nations Organization (1948) *The Universal Declaration of Human Rights*. Available at: http://www.un.org/en/universal-declaration-human-rights/ (Accessed: 7 March 2016).

Vacek, J. (2014) '*Výroční zpráva ZP MV ČR za rok 2013'*. Available at: http://www.zpmvcr.cz/_sys_/FileStorage/download/2/1198/vz_2013.pdf (Accessed: 1 May 2016).

VZP (2014) 'Výroční zpráva VZP 2013'. Available at: https://webevzp.blob.core.windows.net/media/Default/vyrocni-zpravy/vyrocni-zprava-vzp-2013-pdf.pdf (Accessed: 1 May 2016).

VZP (2015) *Od ledna 2016 se mění zdravotní pojištění u všech skupin plátců*. Available at: https://www.vzp.cz/o-nas/aktuality/od-ledna-2016-se-meni-zdravotni-pojisteni-u-vsech-skupin-platcu (Accessed: 1 May 2016).

VZP (2016) '*Výkony 01101'*. Available at: https://webevzp.blob.core.windows.net/media/Default/dokumenty/ciselniky/vykony-01101.pdf (Accessed: 2 May 2016).

Wallace, L.S. (2013) '*A View Of Health Care Around The World'*, The Annals of Family Medicine, 11(1), p. 84. doi: 10.1370/afm.1484.

Wittenbecher, F. and van Ginnecken, E. (2015) *Health Systems in Transition - Czech Republic*. Available at: http://www.euro.who.int/__data/assets/pdf_file/0005/280706/Czech-HiT.pdf (Accessed: 13 January 2016).

World Bank (2010) *Health Systems - Financing,* 31 March. Available at: http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTHEALTHNUTRITIONANDPOPULATION/EXTHSD/0,,contentMDK:22523961~menuPK:6485082~pagePK:148956~piPK:216618~theSitePK:376793,00.html (Accessed: 19 April 2016).

World Health Organization (1946) *Preamble to the Constitution of the World Health Organization*. Available at: http://www.who.int/about/definition/en/print.html (Accessed: 3 January 2016).

World Health Organization (1986) *The Ottawa Charter for Health Promotion*. Available at: http://www.who.int/healthpromotion/conferences/previous/ottawa/en/ (Accessed: 7 March 2016).

World Health Organization (2000) *The World Health Report: Health Systems: Improving Performance*. Available at: http://www.who.int/whr/2000/en/whr00_en.pdf (Accessed: 12 March 2016).

World Health Organization (2004) *A Glossary of Terms for Community Health Care and Services for Older Persons*. Available at: http://www.who.int/kobe_centre/ageing/ahp_vol5_glossary.pdf (Accessed: 10 March 2016).

World Health Organization (2010) '*The Global Numbers and Costs of Additionally Neededand Unnecessary Caesarean Sections Performed per Year: Overuse as a Barrier to Universal Coverage*'. Available at: http://www.who.int/healthsystems/topics/financing/healthreport/30C-sectioncosts.pdf (Accessed: 27 May 2016).

World Health Organization (2013) '*Rocky road from the Semashko to a new health model*', Bulletin of the World Health Organization, 91(5), pp. 320–321. doi: 10.2471/BLT.13.030513.

World Health Organization (2016) *Health financing*. Available at: http://www.who.int/topics/health_economics/en/ (Accessed: 19 April 2016).

World Health Organization (2016) *ICD-10 Version: 2016*. Available at: http://apps.who.int/classifications/icd10/browse/2016/en (Accessed: 14 May 2016).

World Health Organization (2016) *Trade, foreign policy, diplomacy and health: Public Health*. Available at: http://www.who.int/trade/glossary/story076/en/ (Accessed: 7 March 2016).

Zaměstnanecká pojišťovna Škoda (2014) '*Výroční zpráva 2013 - ZPS'*. Available at: http://www.zpskoda.cz/wysiwyg/VZ%202013%20-%20ZP%C5%A0.pdf (Accessed: 1 May 2016).

Žurovec, M. (2016) *Schodek státního rozpočtu za rok 2015 je o 37 mld. nižší než plánovaný*. Available at: http://www.mfcr.cz/cs/aktualne/tiskove-zpravy/2016/schodek-statniho-rozpoctu-za-rok-2015-je-23541 (Accessed: 23 May 2016).

Legal Acts

The Charter of Fundamental Rights and Freedoms 1992 (Constitution of Czech Republic). Available at: http://www.psp.cz/docs/laws/listina.html (Accessed: 7 March 2016).

Vyhláška č. 273/2015 Sb., kterou se vydává seznam zdravotních výkonů s bodovými hodnotami 2015. Available at: http://www.drg-cz.cz/index.php?pg=drg--legislativa (Accessed: 19 April 2016).

Zákon č. 400/2015 Sb. o státní rozpočtu České republiky na rok 2016 2015. Available at: http://www.mfcr.cz/cs/legislativa/legislativni-dokumenty/2016/zakon-c-400-2015-sb-23454 (Accessed: 19 April 2016).

Zákon 20/1966 Sb. o péči o zdraví lidu 1966 (Sbírka zákonů). Available at: http://www.psp.cz/sqw/sbirka.sqw?r=1966&cz=20 (Accessed: 7 March 2016).

Zákon č. 551/1991 Sb., o Všeobecné zdravotní pojišťovně 1991. Available at: http://www.drg-cz.cz/index.php?pg=drg--legislativa (Accessed: 19 April 2016).

Zákon č. 280/1992 Sb., o resortních, oborových, podnikových a dalších zdravotních pojišťovnách 1992. Available at: http://www.drg-cz.cz/index.php?pg=drg--legislativa (Accessed: 19 April 2016).

Zákon č. 592/1992 Sb., o pojistném na všeobecné zdravotní pojištění 1992. Available at: http://www.drg-cz.cz/index.php?pg=drg--legislativa (Accessed: 19 April 2016).

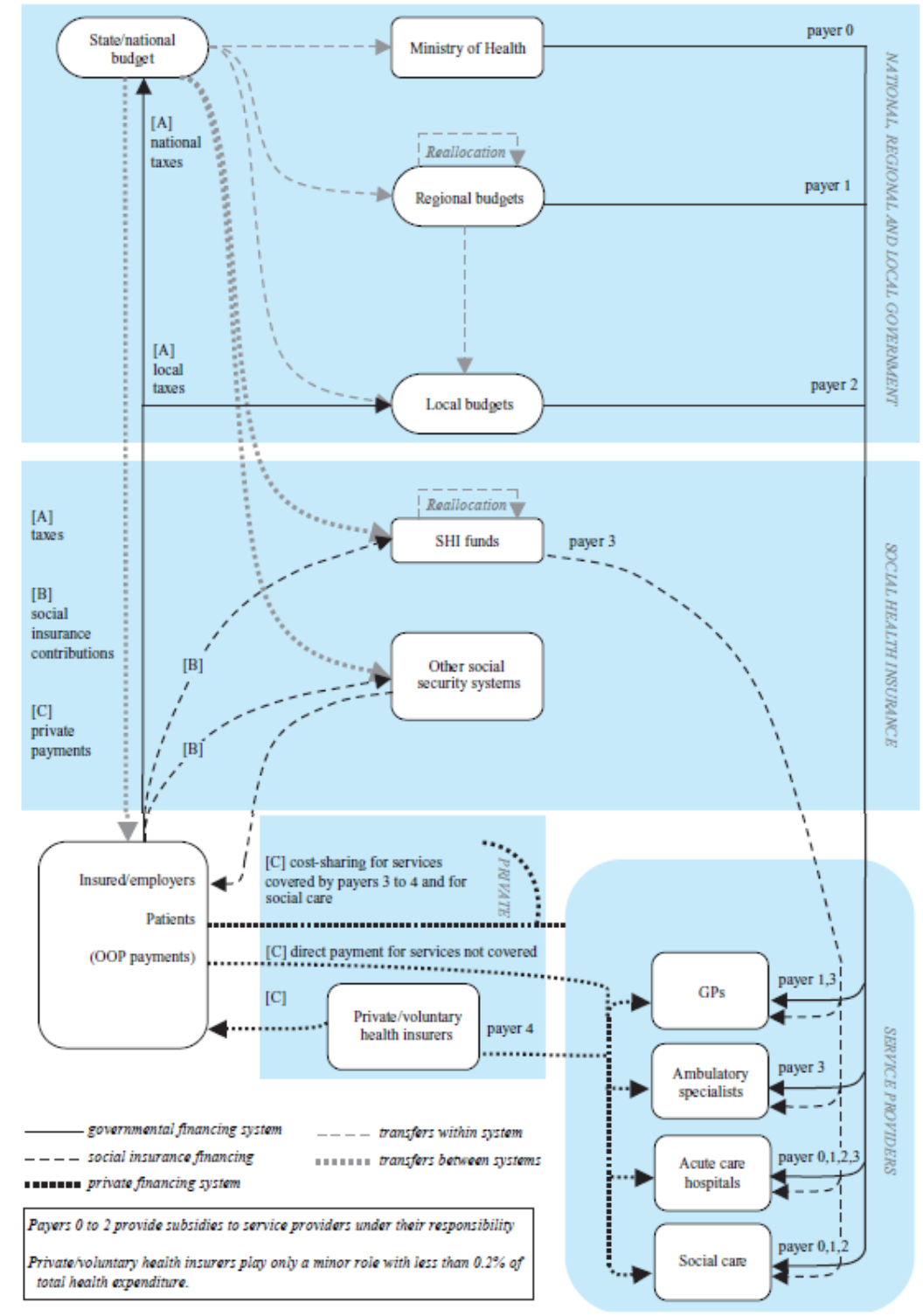
Zákon č. 48/1997 Sb., o veřejném zdravotním pojištění a o změně a doplnění některých souvisejících předpisů 1997. Available at: http://www.drg-cz.cz/index.php?pg=drg--legislativa (Accessed: 19 April 2016).

Zákon č. 372/2011 Sb. o zdravotních službách a podmíkách jejich poskytování 2011 (Sbírka zákonů). Available at: http://www.mzcr.cz/Legislativa/dokumenty/zdravotni-sluzby_6102_1786_11.html (Accessed: 7 March 2016).

Zákon č. 267/2015 o ochraně veřejného zdraví 2015 (Sbírka zákonů). Available at: http://www.mzcr.cz/Legislativa/dokumenty/zakon-c267/2015-sb-kterym-se-meni-zakon-c258/2000-sb-o-ochrane-verejneho_10910_11.html (Accessed: 7 March 2016).

9 Annex

Annex I. Scheme of Czech health care financing



Source: *Wittenbecher & van Ginnecken, 2015, p. 56*

Annex II. Regions of the Czech Republic

Source: *Government of the Czech Republic, 2009*. Available at: <http://www.eu2009.cz/en/czech-republic/regions/regions-of-the-czech-republic-329/>

Annex III. Age groups and indexes which express the costs per patient for combined capacity-performance payment

Age group	Index
0-4 years	3,97
5-9 years	1,8
10-14 years	1,35
15-19 years	1,00
20-24 years	0,9
25-29 years	0,95
30-34 years	1,00
35-39 years	1,05
40-44 years	1,05
45-49 years	1,10
50-54 years	1,35
55-59 years	1,45
60-64 years	1,50
65-69 years	1,70
70-74 years	2,00
75-79 years	2,40
80-84 years	2,90
85+	3,40

Source: *Ordinance No. 273/2015 Coll.*

Annex IV. ICD-10

Chapters	Blocks	Titles
I	A00-B99	Certain infectious and parasitic diseases
II	C00-D48	Neoplasms
III	D50-D89	Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism
IV	E00-E90	Endocrine, nutritional and metabolic diseases
V	F00-F99	Mental and behavioral disorders
VI	G00-G99	Diseases of the nervous system
VII	H00-H59	Diseases of the eye and adnexa
VIII	H60-H95	Diseases of the ear and mastoid process
IX	I00-I99	Diseases of the circulatory system
X	J00-J99	Diseases of the respiratory system
XI	K00-K93	Diseases of the digestive system
XII	L00-L99	Diseases of the skin and subcutaneous tissue
XIII	M00-M99	Diseases of the musculoskeletal system and connective tissue
XIV	N00-N77	Diseases of the genitourinary system
XV	O00-O99	Pregnancy, childbirth and the puerperium
XVI	P00-P96	Certain conditions originating in the perinatal period
XVII	Q00-Q99	Congenital malformations, deformations and chromosomal abnormalities
XVIII	R00-R99	Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified
XIX	S00-T98	Injury, poisoning and certain other consequences of external causes
XX	V01-Y98	External causes of morbidity and mortality
XXI	Z00-Z99	Factors influencing health status and contact with health services
XXII	U00-U85	Codes for special purposes

Source: *Authors own creation based on WHO, 2016*

Annex V. Major Diagnostic Categories

00	Pre-MDC
01	Diseases and disorders of the nervous system
02	Diseases and disorders of the eye
03	Diseases and disorders of the ear, nose, mouth and throat
04	Diseases and disorders of the respiratory system
05	Diseases and disorders of the circulatory system
06	Diseases and disorders of digestive system
07	Diseases and disorders of the hepatobiliary system and pancreas
08	Diseases and disorders of the musculoskeletal system and connective tissue
09	Diseases and disorders of the skin, subcutaneous tissue and breast
10	Endocrine, nutritional and metabolic diseases and disorders
11	Diseases and disorders of kidney and urinary tract
12	Diseases and disorders of the male reproductive system
13	Diseases and disorders of the female reproductive system
14	Pregnancy, childbirth and puerperium
15	Newborn and other neonates
16	Diseases and disorders of blood, blood-forming organs immunological disorders
17	Neoplastic disorders (hematological and solid neoplasm's)
18	Infectious and parasitic diseases and disorders (systemic or unspecified areas)
19	Mental diseases and disorders
20	Alcohol/drug use and alcohol/drug-induced organic mental conditions
21	Injuries, poisoning and toxic effects of drugs
22	Burns
23	Factors influencing health status and other contacts with health services
24	HIV infection
25	Multiple trauma
88	Not classified in DRG
99	Error DRGs

Source: *Author's own creation based on Šedo, 2012, p. 24*

Annex VI. Map of AGEL's facilities

Source: *AGEL a.s., 2015*

Annex VII. Patient Satisfaction with Private Hospital's Inpatient Treatment – Questionnaire (English version)

Thank your taking part in this questionnaire measuring patient satisfaction in privately owned hospitals. My name is Aneta Supová and I'm currently working on my Master Thesis at MCI Innsbruck, Department of International Health and Social Management. The results of this questionnaire will serve exclusively for the purpose of my Master Thesis.

This questionnaire should only take about 10 minutes. Be assured that all answers you provide will be kept in the strictest confidentiality.

Always pick **ONLY ONE answer.**

Questions 1 – 14 refer to your **CURRENT** stay in the hospital.

1. When you have important questions to ask a doctor, do you get answers you can understand?
    - Yes, always
    - Yes, sometimes
    - No
    - I have no need to ask

2. When you have important questions to ask a nurse, do you get answers you can understand?
    - Yes, always
    - Yes. sometimes
    - No
    - I have no need to ask

3. Sometimes in a hospital, one doctor or nurse will say one thing and another will say something quite different. Did this happen to you?
    - Yes, often
    - Yes, sometimes
    - No

4. If you have any anxieties or fears about your condition or treatment, does a doctor discuss them with you?
    - Yes, completely
    - Yes, to some extent
    - No
    - I don't have any anxieties or fears

5. If you have any anxieties or fears about your condition or treatment, does a nurse discuss them with you?
    - Yes, completely
    - Yes, to some extent
    - No
    - I don't have any anxieties or fears

6. Do doctors talk in front of you as if you weren't there?
    - Yes, often
    - Yes, sometimes
    - No

7. Do you consider the hospital staff professionally qualified?
    - Yes, definitely
    - Yes, to some extent
    - No

8. Does the hospital staff pay enough attention to you?
    - Yes, definitely
    - Yes, to some extent
    - No

9. Do you want to be more involved in decisions made about your care and treatment?
    - Yes, definitely
    - Yes, to some extent
    - No
    - Current situation suits me well

10. Overall, do you feel you are treated with respect and dignity in this hospital?
    - Yes, always
    - Yes, sometimes
    - No

11. Did you find someone among the hospital staff to talk to about your concerns?
    - Yes, completely
    - Yes, to some extent
    - No
    - I have no concerns

12. Where you in pain during your current stay in this hospital?
    - Yes
    - No

    If yes…

    Do you think the hospital staff does/did everything to help control your pain?

    - Yes, definitely
    - Yes, to some extent
    - No

13. If your family or someone else close to you wants to talk to a doctor (with regard to your current stay in the hospital), do they have enough opportunity to do so?
    - Yes, definitely
    - Yes, to some extent
    - No
    - No family or friends are involved
    - My family doesn't want or need information
    - I don't want my family or friends to talk to a doctor

14. Did the doctors or nurses give your family or someone close to you all the information they need to help your recover?
    - Yes, definitely
    - Yes, to some extent
    - No
    - No family or friends are involved
    - My family doesn't want or need information

I. On what basis have you decided for this hospital?
    - Doctor's recommendation
    - Family/Friends' recommendation
    - Mass media (internet, TV, radio, newspapers)
    - Own experience
    - It was not my decision

II. Would you recommend this hospital to your family and friends?
- Yes, definitely
- Yes, to some extent
- No

  If no,
  why?.....

III. Do you see any difference in this hospital's treatment methods in comparison with any public hospital's treatment you have experienced?
- Yes, treatment in this hospital is definitely better than in any public hospital
- Yes, treatment in this hospital is to some extent better than in any public hospital
- Yes, treatment in any public hospital is definitely better than in this hospital
- Yes, treatment in any public hospital is to some extent better than in this hospital
- I don't see any difference

IV. Do you see any difference in this hospital's staff approach towards you as a patient, in comparison with hospital staff's approach in any public hospital you were hospitalized in?
- Yes, the approach in this hospital is definitely better than in any public hospital
- Yes, the approach in this hospital is to some extent better than in any public hospital
- Yes, the approach in any public hospital is definitely better than in this hospital
- Yes, the approach in any public hospital is to some extent better than in this hospital
- I don't see any difference

V. Would you say that the doctors and nurses in this hospital are relatively better qualified than the doctors and nurses in any public hospital you were hospitalized in?
- Yes, definitely
- Yes, to some extent
- I have experienced better qualified doctors and nurses in other (private/public) hospital
- I cannot tell any difference

VI. Are you overall more satisfied with the care provided in this hospital rather than in any public hospital you were hospitalized in?
- Yes, definitely
- Yes, to some extent
- I was more satisfied in other (public/private hospital)
- I am satisfied in the same way as in any other hospital

---

a. Gender
- Male
- Female

b. Age
- 18-25
- 26-35
- 36-45
- 46-60
- 61 and more

c. What kind of treatment are you having?
.....

d. How long have you been a patient in this hospital?
.....

If you have any other comments, please use the space below:

……
……
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Thank you for your time

Annex VIII. Spokojenost pacientů s péčí v privátní nemocnici v ČR– dotazník (Czech version)

Předem velice děkuji za vyplnění dotazníku týkajícího se spokojenosti pacientů s péčí v privátní nemocnici v ČR. Mé jméno je Aneta Supová a v současnosti pracuji na své diplomové práci na univerzitě v rakouském Innsbrucku, se zaměřením na mezinárodní zdravotní a sociální management.

Výsledky dotazníkového šetření budou sloužit výhradě k účelům mé diplomové práce. Dotazník Vám zabere max. 10 minut. Veškeré odpovědi jsou anonymní a přísně důvěrné.

Vždy vyberte prosím **POUZE JEDNU** odpověď.

Otázky 1-14 se vztahují k Vašem **SOUČASNÉMU pobytu** v této nemocnici. ¨

1. Když pokládáte svému ošetřujícímu lékaři důležitou otázku, dostanete odpověď, které rozumíte?
    - Ano, vždy
    - Ano, občas
    - Ne
    - Nemám žádné otázky

2. Když pokládáte zdravotní sestře důležitou otázku, dostane odpověď, které rozumíte?
    - Ano, vždy
    - Ano, občas
    - Ne
    - Nemám žádné otázky

3. Někdy se v nemocnicích stává, že jeden lékař či sestra řeknou jednu věc a jiný lékař či sestra říkají zcela odlišnou věc. Zažil/ Zažila jsem takovou situaci v této nemocnici?
    - Ano, často
    - Ano, občas
    - Ne

4. Když pociťujete úzkost či strach z vašeho stavu nebo léčby, můžete se obrátit na svého ošetřujícího lékaře?
    - Ano, vždy
    - Ano, do určité míry
    - Ne
    - Nepociťuji úzkost či strach

5. Když pociťujete úzkost či strach z vašeho stavu nebo léčby, můžete se obrátit na sloužící zdravotní sestru?
    - Ano, vždy
    - Ano, do určité míry
    - Ne
    - Nepociťuji úzkost či strach

6. Stává se Vám, že před Vámi lékaři mluví, jako byste tam vůbec nebyl/nebyla?
    - Ano, často
    - Ano, občas
    - Ne

7. Považujete zdravotní personál této nemocnice za odborně způsobilý?
    - Určitě ano
    - Ano, do určité míry
    - Ne

8. Dostává se Vám v této nemocnici dostatečné pozornosti?
    - Určitě ano
    - Ano, do určité míry
    - Ne

9. Chtěl/Chtěla byste být více zapojený/zapojená do procesu rozhodování o Vaší péči a léčbě?
    - Určitě ano
    - Ano, do určité míry
    - Ne
    - Současný přístup mi vyhovuje

10. Máte pocit, že je s Vámi jednáno s respektem a úctou v této nemocnici?
    - Ano, vždy
    - Ano, občas
    - Ne

11. Našel/Našla jste mezi zaměstnanci nemocnice někoho, na koho se můžete obrátit ohledně Vašich obav?
    - Rozhodně ano
    - Ano, do určité míry
    - Ne
    - Nemám žádné obavy

12. Pociťoval/Pociťovala jste během Vaší současné hospitalizace bolest?
    - Ano
    - Ne

Pokud ano…

Domníváte se, že zdravotní personál udělal/dělá vše pro to, aby Vám od bolesti ulevil?

- Určitě ano
- Ano, do určité míry
- Ne

13. Pokud Vaše rodina či osoba Vám blízká chce hovořit s Vaším ošetřujícím lékařem (s ohledem na Vaší současnou hospitalizaci), mají k tomu dostatek příležitostí?
    - Určitě ano
    - Ano, do určité míry
    - Ne
    - Má rodina ani osoby mi blízké se nepodílejí na mé léčbě
    - Má rodina ani osoby mi blízké nepotřebují hovořit s mým ošetřujícím lékařem
    - Nepřeju si, aby má rodina či osoby mi blízké hovořili s mým ošetřujícím lékařem

14. Podali lékaři a zdravotní sestry Vaší rodině či osobě Vám blízké veškeré informace, které jsou zapotřebí k Vašemu zotavení?
    - o Určitě ano
    - o Ano, do určité míry
    - o Ne
    - o Má rodina ani osoby mi blízké se nepodílejí na mé léčbě
    - o Má rodina nemá zájem o tyto informace

15. Na základě čeho jste se rozhodl/rozhodla pro tuto nemocnici?
    - o Doporučení lékaře
    - o Doporučení rodiny/přátel
    - o Veřejných médií (internet, TV, rádio, noviny)
    - o Vlastní zkušenost
    - o Nebylo to mé rozhodnutí

16. Doporučil/Doporučila byste tuto nemocnici Vaší rodině či Vaším přátelům?
    - o Určitě ano
    - o Ano, do určité míry
    - o Ne

      Pokud ne, proč?.....

17. Vnímáte nějaké rozdíly v péči/zdravotních praktikách v této nemocnici oproti péči/zdravotním praktikám v běžné státní nemocnici, ve které jste byl/byla v minulosti hospitalizovaný/ hospitalizovaná?
    - o Ano, péče/zdravotní praktiky v této nemocnici jsou rozhodně lepší než v běžné státní nemocnici
    - o Ano, péče/zdravotní praktiky v této nemocnici jsou relativně lepší než v běžné státní nemocnici
    - o Ano, péče/zdravotní praktiky v běžné státní nemocnici jsou rozhodně lepší než v této nemocnici
    - o Ano, péče/zdravotní praktiky v běžné státní nemocnici jsou relativně lepší než v této nemocnici
    - o Nevnímám žádný rozdíl

18. Vnímáte nějaké rozdíly v přístupu zdravotnického personálu v této nemocnici oproti přístupu zdravotnického personálu v běžné státní nemocnici, ve které jste byl/byla v minulosti hospitalizovaný/ hospitalizovaná?
    - o Ano, přístup zdravotnického personálu v této nemocnici je rozhodně lepší než v běžné státní nemocnici
    - o Ano, přístup zdravotnického personálu v této nemocnici je relativně lepší než v běžné státní nemocnici
    - o Ano, přístup zdravotnického personálu v běžné státní nemocnici je rozhodně lepší než v této nemocnici
    - o Ano, přístup zdravotnického personálu v běžné státní nemocnici je relativně lepší než v této nemocnici
    - o Nevnímám žádný rozdíl

19. Domníváte se, že lékaři a zdravotní sestry v této nemocnici jsou relativně kvalifikovanější/způsobilejší než lékaři a zdravotní sestry v běžné státní nemocnici, ve které jste byl/byla v minulosti hospitalizovaný/ hospitalizovaná?
    - o Určitě ano
    - o Ano, do určité míry
    - o Již jsem zažil/zažila kvalifikovanější doktory a zdravotní sestry v jiné (soukromé/státní) nemocnici
    - o Nevnímám žádný rozdíl

20. Jste celkově více spokojen/spokojená se zdravotní péčí poskytnutou v této nemocnici než se zdravotní péčí v běžné státní nemocnici, ve které jste byl/byla v minulosti hospitalizovaný/hospitalizovaná?
    - o Určitě ano
    - o Ano, do určité míry
    - o V jiné (soukromé/státní) nemocnici jsem byl/byla spokojenější
    - o Jsem spokojen/ spokojená v této nemocni stejně jako v jiné běžné státní nemocnici

e. Pohlaví
    - o Muž
    - o Žena

f. Věk
    - o 18-25
    - o 26-35
    - o 36-45
    - o 46-60
    - o 61 a více

g. Jakou léčbu v této nemocnici podstupujete?
……

h. Jak dlouho jste v této nemocnici hospitalizovaný/ hospitalizovaná?
i. ……

Pro dodatečné komentáře použijte prosím tyto řádky:

……
……
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Děkuji za Váš čas

Annex IX. Results of the survey

a. AGEL hospital

Questions	a	b	c	d	e	f	SUM
1	25	19					**44**
2	35	9					**44**
3	2	19	21				**42**
4	20	14	1	7			**42**
5	32	3		7			**42**
6	2	11	29				**42**
7	39	2					**41**
8	34	8					**42**
9	12	12	7	11			**42**
10	35	7					**42**
11	28	7		6			**41**
12	27	15					**42**
12a	32	6					**38**
13	21	14	3	2	1	1	**42**
14	23	12	1	3	2		**41**
I	17	9		17	2		**45**
II	22	19					**41**
III	9	6		1	17		**33**
IV	14	3		1	16		**34**
V	6	6	1	19			**32**
VI	13	7	1	14			**35**
a	9	33					**42**
b		8	8	11	15		**42**

b. Hospital Šumperk

Questions	a	b	c	d	e	f	SUM
1	32	13					**45**
2	36	9					**45**
3	9	14	22				**45**
4	23	18	2	2			**45**
5	33	10	1	1			**45**
6	4	12	29				**45**
7	36	8					**44**
8	32	10	1				**43**
9	15	12	6	11			**44**
10	36	7					**43**
11	29	7	3	5			**44**
12	28	17					**45**
12a	31	4	1				**36**
13	33	5	1	3	2		**44**
14	24	13		6	1		**44**
I	17	5		10	12		**44**
II	29	14	1				**44**
III	10	7		1	24		**42**
IV	13	4		1	23		**41**
V	12	5	2	23			**42**
VI	13	5	1	23			**42**
a	16	28					**44**
b	4	10	8	10	12		**44**