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**EVALUATION OF SELECTED STATISTICAL INDICATORS  
IN BALNEOLOGICAL CARE IN THE CZECH REPUBLIC IN  
2002 - 2014**

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## **Abstract**

**Patrik Kajzar, Klára Václavínková: Evaluation of selected statistical indicators in balneological care in the Czech Republic in 2002 – 2014**

*The aim of this paper is evaluation of selected statistical indicators in balneological care in the Czech Republic in 2002 – 2014. The main sources for this research were gained from organizations' websites (Czech Statistical Office, IHS CR, Ministry of Health CR). The spa industry is represented in all regions the Czech Republic, except Vysocina Region and the City of Prague. Balneological care in the Czech Republic has its own character based on history area and local conditions.*

*Key words*

*balneological care, Czech Republic, evaluation, statistical indicators*

*JEL: L83*

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## **Introduction**

Tourism is a rapidly growing sector of the economy in most countries the world, and for many people also form an integral part of their life - work or private. Tourism has become one of the major players in international commerce, and represents at the same time one of the main income sources for many developing countries. This growth goes hand in hand with an increasing diversification and competition among destinations. (Zedková and Kajzar, 2013)

There are a number of definitions of tourism. Width option definition is linked with the interpretation of the term multidisciplinary. Pásková and Zelenka (2002) defined the concept of tourism as a complex social phenomenon, a summary of the activities of tourists; a summary of the process of building and operation services for tourists including a summary of the activities of people who offer these services and provide; a summary of the activities related to the use, development and protection of resources for tourism; a summary of the political and public-administrative activities, recreation and local communities and ecosystems to these activities.

According to UNWTO is tourism social, cultural and economic phenomenon which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes.

The spa industry is part of tourism. It is one of the fundamental pillars of health and social care in the Czech Republic. Spa concept can be understood as a combination of two separate spheres. Intervenes in the field of healthcare and tourism. At present, the spa takes over the function of tourism, which created the new forms such as medical tourism and spa tourism.

### **1. Review of Relevant Literature**

Spa tourism is part of health tourism. The main motivation is to improve the health status of visitors most often using a combination of medical treatment and health services, stay in an environment with therapeutic effects, changes in diet, physical exercise, diet and relaxation programs and other health preventive and therapeutic activities under professional supervision. This is done usually in the area of natural medicinal resources (water, gas, mud, mud, climate). (Cinkanová, 2013)

According to the Kajzar (2015) medical tourism represents a form of tourism, which is directed primarily to the spa or recreational centers, in which the main motivation for participation is improving the health of visitors, mostly through a combination of medical treatment and health services, stay in an environment with medical effects (climate, sea baths, healing springs etc.), changes in diet, physical exercise, diet and relaxation programs, etc. Wellness represents nowadays a very modern way of relaxation, regeneration and relaxation. This is a clear personal care - his physical and mental well-being.

Czech Republic is the first in the long tradition of spa and the countries of Central Europe and is among the leaders. The spa industry is of great importance both for domestic and for inbound tourism, thanks to the tradition and the attractive spa towns with a rich cultural and social offering. Spa tourism is an important source of income for private, municipal and state sector. It contributes to the gross domestic product and foreign exchange earnings. Among the sectors of the economy with high growth potential. As a field of intensive skilled workforce provides a lot of jobs. Finally, spa tourism contributes significantly to the development of spa towns and regions, and it is also the focus and attention of municipalities, regions and the

relevant state authorities that the development of this promising sector adopted various support measures and development programs.

There are a number of definitions of spa tourism, which essentially mean the same thing and express several rehabilitation of physical and mental strength of people, not for medicinal use of natural resources (water, peloids, gases and climatic conditions). The effect is closely linked to the change of environment and space. A system of physical and psychological stimuli is changed reactivity and regulation of organisms to a qualitatively higher level. (Václavíková, 2013)

The basic functions of the spa is to improve the health status of the population through the provision of health and spa treatments. The system of spa treatments and more and more penetrate new trends and tendencies, of which the most common is called wellness, that according to Marčeková, Kaščáková and Vránová (2015, p. 5) includes a variety of products, which differ by country in which the wellness tourism is applied. This are mainly products focused on preventative care for one's own health in the form of relaxation and rest and as well as products focused on beauty. Some countries may have products aimed at physical therapy, entertainment and leisure time orientation, the balance between work and free time, psychological nature, and spiritual enlightenment, etc.

Each visitor of Spa Hotels & Resorts can expect the following staff to assist them: (Smith and Puczkó, 2009)

- personal therapists, physiotherapist,
- acupuncturist, massage therapist,
- personal fitness instructor,
- naturopathic consultant incorporating nutrition, herbal medicine, etc.

Spa treatment combines the effects of natural medicinal and preventive and rehabilitative care and treatment of several chronic diseases in our country. Spa care, including the determination of the degree of urgency, provided as a necessary part of the healing process, recommended by the attending physician certifies review doctor and pays competent health insurance company. Spa care in the Czech Republic are divided into two groups, on the complex spa care and spa care. The third group consists of separate spa stays for self-payers. This last group has in recent years a growing trend, as more and more people realize that it is better to prevent disease than to treat them subsequently.

## **2. Materials and Methods**

The aim of this paper is evaluation of selected statistical indicators in balneological care in the Czech Republic in 2002 - 2014, which are displayed graphically in the form of time series, The main sources for this research were gained from organizations' websites Czech Statistical Office, Institute of Health Information and Statistics of the Czech Republic (IHIS CR), Ministry of Health CR

Czech Statistical Offices the main organization that collects, analyzes and disseminates statistical data to various sections of local and national governments of the Czech Republic. IHIS CR will continue to follow the principles of the European Statistics Code of Practice that represents the common summary of European standards designated for statistical organs and for the whole European statistical system with the aim to secure high quality and credibility of European data. The Institute cooperates with associations of hospitals, associations of physicians, professional medical societies, health insurance companies and other organisations, particularly on precise specification of the NHIS contents and on utilisation of

the collected data. The Ministry of Health is the central authority of state administration for health care, public health protection, health research activities, directly controlled health facilities, handling addictive drugs, pharmaceutical preparations and medicinal products, precursors and additives, the search for, protection and use of natural medicinal sources, natural spas and mineral water resources, medicinal products and technical equipment for prevention, diagnostics and treating people, etc. The Czech Spa Inspectorate also comprises part of the Ministry of Health.

Traditional medical spa reports back to nature and its rich resources. The beneficial effect of high-quality spa treatments persists long after its completion. Therefore, the spas in the Czech Republic so famous and unique. In 1995 was established The Czech Healing Spa Association as a professional association of spa resorts with the purpose of maintaining and guaranteeing the high healing quality level of spa resorts. Currently, it brings together 41 members, out of which there are 39 health spas, which account for more than two-thirds of all spa beds in the country.

Authors in this paper used analysis of secondary sources, comparative analysis of time series and study of documents.

In the following part of the article the authors devote a closer statistical indicators spa in the Czech Republic between 2002 - 2014. These are mainly indicators: Patients admitted to balneological institutes by mode of payment, expense of health insurance on balneological care, expense of health insurance on balneological care as % total health expenditure, spa treatment at the expense of health insurance by indication groups - adults, number of therapeutic performances and bed capacity of spa facilities in the Czech regions.

### **3. Results**

Spa treatment rehabilitation care is an integral part of health care and consequently is enshrined in the law on health services. Spa therapeutic rehabilitative care varies from hospital rehabilitation care (that is, for example, provided in specialized medical institutions) by the spa for treatment uses natural healing source (natural mineral water, peloid, gas) or climatic conditions. Now the expected effect of using the natural healing resources are the main criteria for providing spa care.

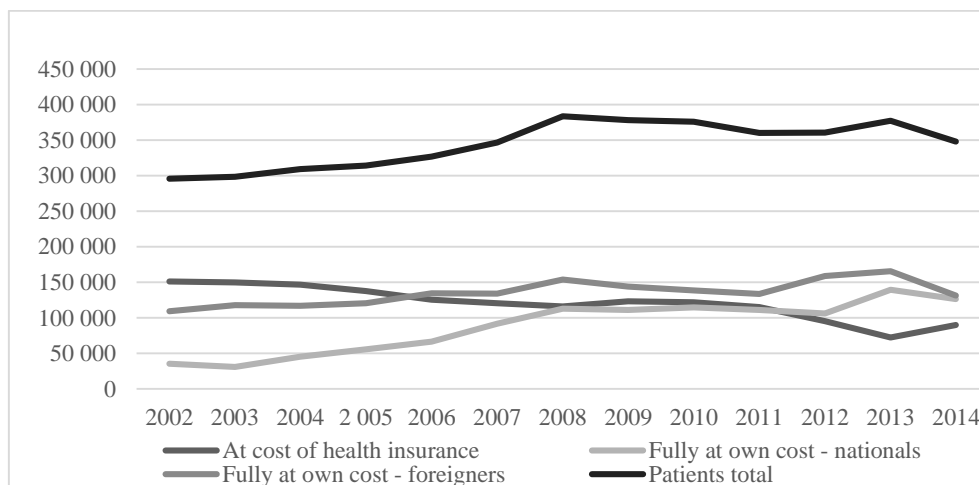
From 01.10 2012 will have a new indicative list announced by the Ministry of Health, which replaced the indicative list in 1997. The indicative list was valid until the end of 2014. In addition to the display list indication groups of diseases and their corresponding diagnoses also the types of spa treatment, duration of the treatment and the possibility of spa locations where the patient can heal. Timeouts, when the patient has to undergo treatment, are determined after surgeries or injuries and other diseases have spa treatments on board.

The most significant change in the new indication list was shortening the minimum length of treatment for certain diseases in adults, from 28 days to 21 days. Length of stay under the contributory spa care for repeated visits to the proposal of the Union of spas shortened to 14-21 days. And also there have been some changes in the classification of individual diagnoses to the new indication list (in the display list are no longer listed e.g. Disease like obesity in adults or allergic rhinitis).

From Figure 1 we can see that most patients were taken at a spa in the year 2008, total 383,414, at the expense of health insurance 116,358 patients at its own cost was accepted 113,041 patients in this country and 154,015 patients from abroad. Conversely, the least people were admitted to the spa at the beginning of the reporting period, ie.. In 2002, a total

of 295 968. Of this cost of health insurance has been taken 151,055 patients at their own expense 35,701 patients from the Czech Republic and 109 of 212 patients abroad. In 2014 it was admitted to the spa for more than 29,000 patients less than in 2013, when it was taken to the baths Total 377,552 patients. Decline in the number of patients admitted to the spa for the cost of health insurance is most evident in 2013. Their number has dropped to 72,324.

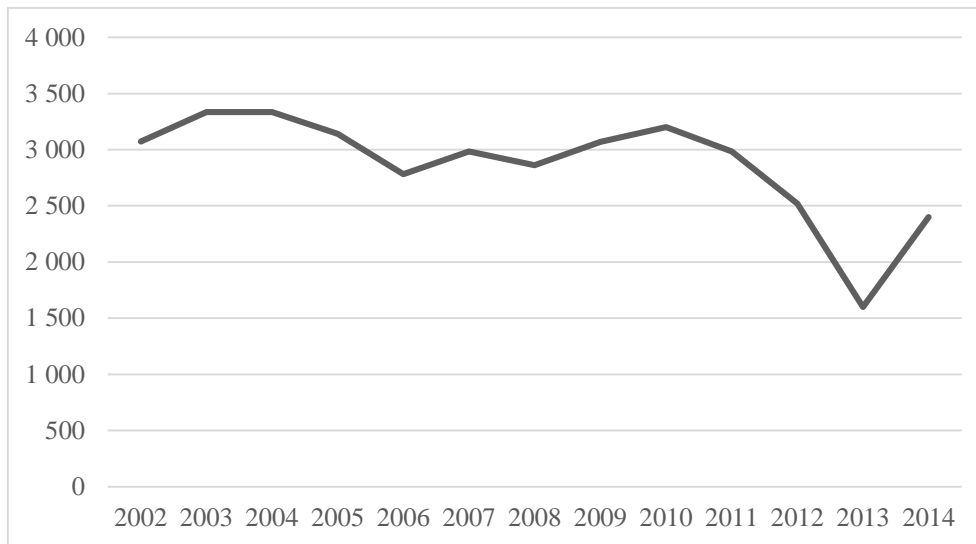
The decreasing number of admissions to the spa for the cost of health insurance is mainly related to the influence of the new indication list, due to regulatory fees for the stay in the inpatient (repealed at the end of 2013), health insurance rigorously assess disease patients with subsequent design of spa treatments and also affected the labor market when employers are reluctant to release their staff for three weeks at the spa.



**Fig. 1: Patients admitted to balneological institutes in 2002–2014 by mode of payment**

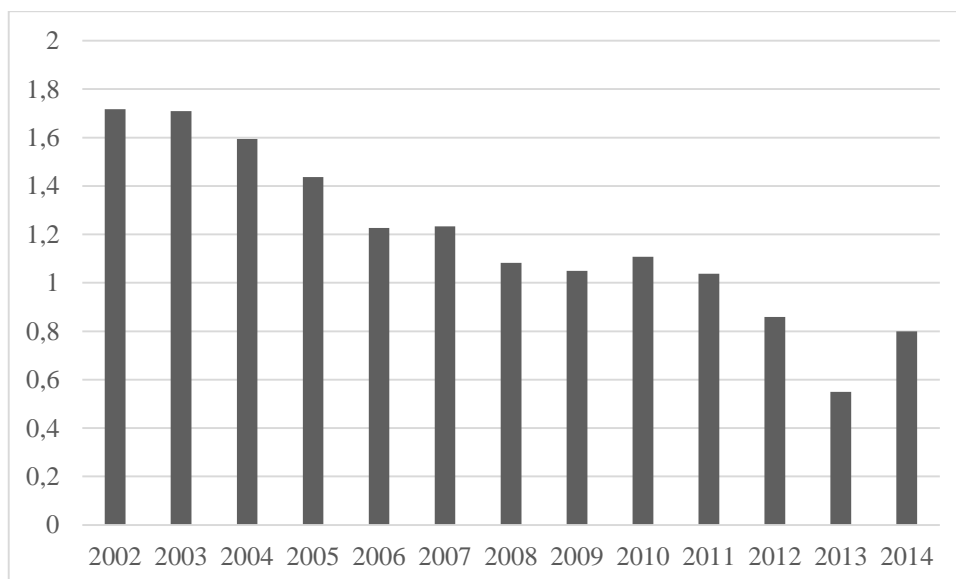
Source: Own, based data of IHIS CR

Expenditure on spa care health insurance companies in the period 2002 - 2014 in the Czech Republic reached the highest values 3.3 billion in 2003 and 2004, see Figure 2. The biggest fall recorded spa care in 2013. Health insurance companies to give her 1.6 billion while a year earlier to 2.5 billion crowns. The decline contributed to a decree by the Ministry of Health reduced the number of diseases treated at the spa to the account insurance, reduced treatment duration from four weeks to three and reduce the possibility of extension or repetition of the treatment. In the year 2014 issued by the insurance company for the spa treatment 2.4 billion.



**Fig. 2: Expense of health insurance on balneological care in mill.CZK in 2002–2014**  
 Source: Own, based data of Ministry of Health, CZSO, IHIS CR

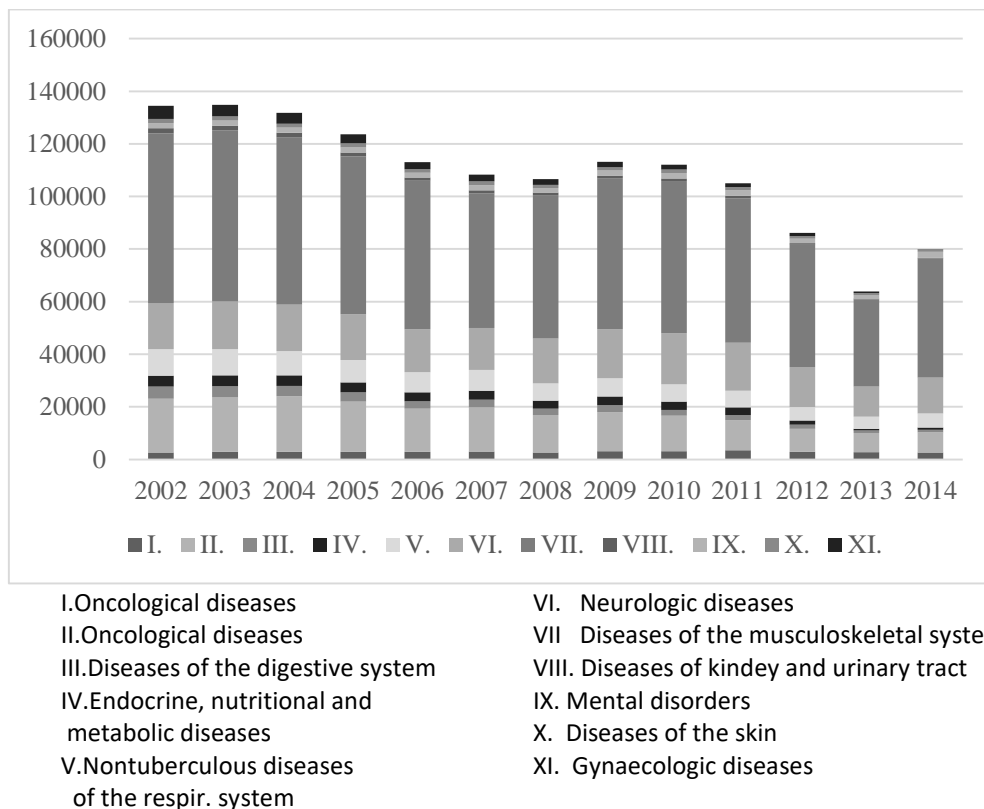
Total expenditure on health since 2002 gradually increased. In 2002, total health spending nearly 179 billion CZK, of which spa treatment accounted for 3.073 billion. In this year the total spending on spa treatments reached the largest share of total health expenditure and amounted to approximately 1,72%, see. Figure 3. The largest increase in total health expenditure was recorded in 2009, when expenditure reached more than 292 billion, of which CZK on spa treatments accounted for 3.071 billion, which accounted for 1,05% of total health expenditure. The greatest fall in the expenditure of spa care in total health expenditure was recorded in 2013, and to decline to 0,55%, representing a reduction of 1.6 billion CZK. Compared to 2012 decline in spending on spa treatment amounted to over 0.3%, which presented a reduction of more than CZK 900 million. In 2014 there was a recovery in the share of spending on spa treatments by 0,25% compared to 2013.



**Fig. 3: Expense of health insurance on balneological care as % total health expenditure in 2002-2014**  
 Source: Own, based data of CZSO, IHIS CR



Figure 4 shows a spa treatment at the expense of health insurance by indicating groups. The authors focused on a group of adults. Indicating list includes 11 kinds of diseases, from I. Oncological diseases to XI. Gynaecologic diseases. Most adult patients were admitted to the spa at the expense of health insurance in 2002 and 2003. The total number of patients reached the number of 134 513, resp. 134 876. Most adults in these years was adopted in accordance with the indication in group VII. Diseases of the musculoskeletal system, and their number may reach 64 507, respectively. 65,057 patients. The least adults was adopted at the spa treatment at the expense of health insurance in 2013 and the number 63 816. This decline was due to the previously mentioned new indicator list. In 2013 it was admitted to the spa most adult patients, 33 114 of disease from VII. Diseases of the musculoskeletal system, 11,417 adult patients from group VI of the Neurologic diseases and 7 322 adult patients of group II. Oncological diseases. In the last year reporting in 2014 rose again the number of adult patients admitted to the spa at the expense of health insurance, compared to the year 2013, more than 16 000. The largest increase was observed in adult patients of the disease from groups VII. Diseases of the musculoskeletal system, VI. Neurologic diseases and IX. Mental diseases.

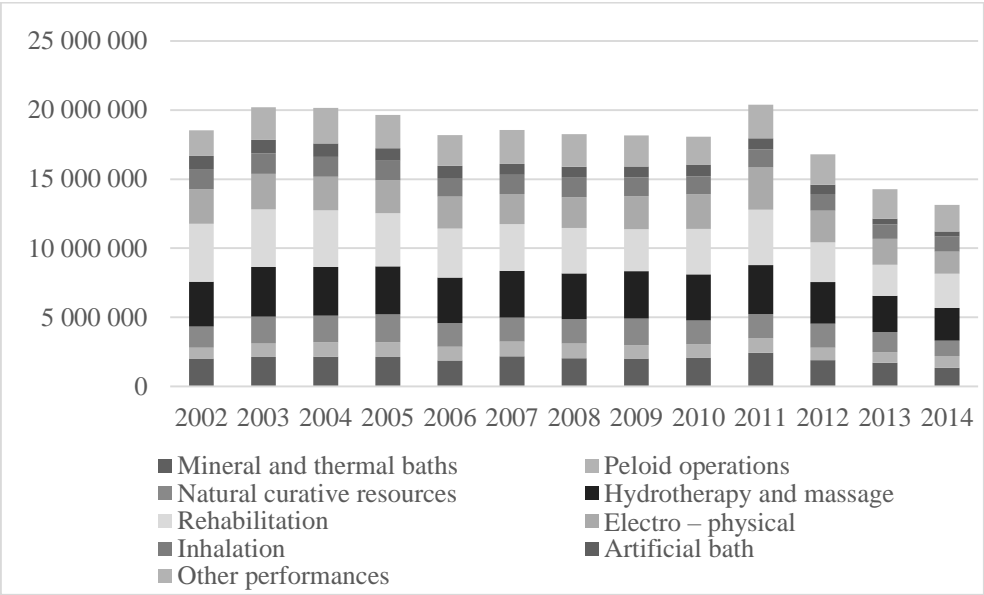


**Fig. 4: Balneal care at cost of health insurance by indication group - Adults**

Source: Own, based data of IHIS CR

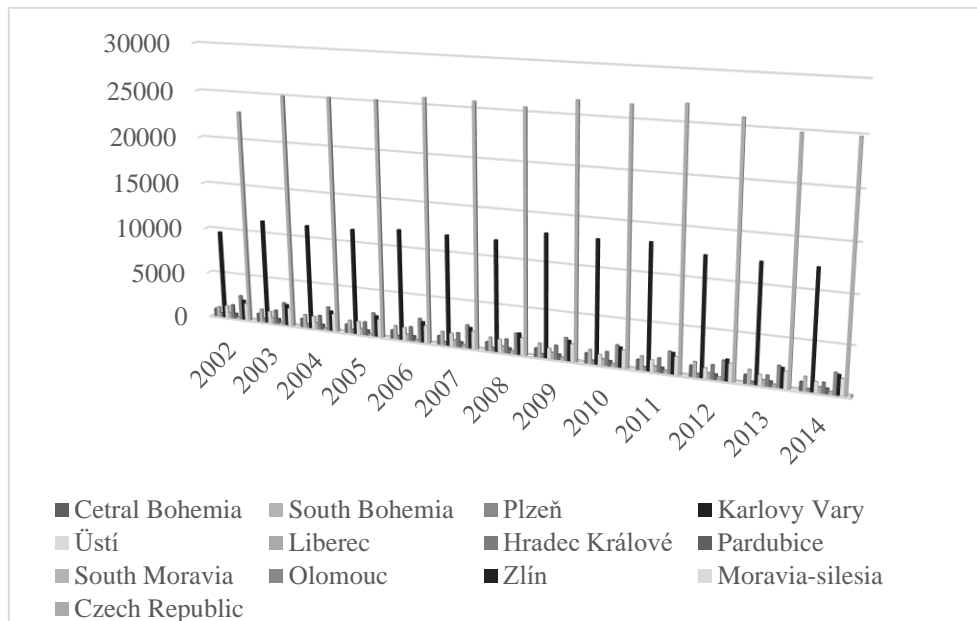
Most medical treatment provided at a spa in the Czech Republic was granted in 2011, and their number exceeded 20.3 million, see Figure 5. The boundaries of the 20 million medical treatment at the spa has been overcome even in 2003 and 2004, in 2011 accounted for 20 million of medical treatment in the spa for about rehabilitation (4 mill), hydrotherapy and massage (3.5 mill) and electro - physical (3,1 mill). The fewest medical treatment was granted in 2014 at a spa in the Czech Republic, about 13.1 mill. It accounted for about rehabilitation

(2.5 mill), hydrotherapy and massage (2.4 mill) and other performances (1.9 mill) therapeutic procedures. The greatest decline medical treatment were recorded in 2012 when compared to 2011, the number declined medical treatment for more than 3.5 mill, the largest fall was observed in rehabilitation, the decline amounted to about (1.1 mill), electro - physical (0.7 mill), hydrotherapy and massage (0.5 mill) and mineral and thermal baths (0.5 mill).



**Fig. 5: Number of therapeutic performances in 2002 - 2014**  
 Source: Own, based data of IHIS CR

At the end of 2014 the Czech Republic had a total of 82 registered providers of spa treatment rehabilitation care, which had a total of 24 840 beds, see Figure 6. This capacity has not changed - compared to 2013, even though it occurred and at the end of year 2013 spas Velichovky and Dolní Lipová end the activities. In the Czech Republic Karlovy Vary region reached the maximum number of beds, a total of 12 360 beds. At another point a distant placed Olomouc region, with the number of 2255 beds. The highest number of beds was recorded in 2011, when it was in the Czech Republic operated 88 health spa facilities, that had a total of 26 835 beds. About 10% of bed capacity belonged Spa operation for central authorities, i.e. The Ministry of Health and the Ministry of Defence. One spa facilities owned by the city and about 89% capacity in managing other legal or natural persons. The regions with the highest number of beds belonged to region Karlovy Vary (13229 beds) Olomouc region (2332 beds) and the Zlín region (2235). Karlovy Vary Region is the only region in which has been the largest increase capacity by more than 2500 beds since 2002. Number of beds in the Moravia Silesia region in 2002 reached the number of 1831 beds, but in 2014 the number of 1743 beds, and ranks him 4th place for the and region Karlovy Vary and region Olomouc and Zlin region, in terms of number of beds offered intended for spa treatment in spa facilities.



**Fig. 6: Bed-places capacity of spa accommodation establishments in regions of the Czech Republic in 2002 - 2014**

Source: Own, based data of IHIS CR

#### 4. Discussion

Spa treatment rehabilitation care is an integral part of medical care and follow-up is enshrined in the law on health services. Spa therapeutic rehabilitative care varies rehabilitation care (which is e.g. provided in specialized medical institutions).

The new indicator list will apply from 01.10. 2012, replacing the list of indications of 1997. The most significant change in the new indication list was shortening the minimum length of treatment for certain diseases in adults, from 28 days to 21 days. Length of stay under the contributory spa care for repeated visits to the proposal of the Union of spas shortened to 14-21 days. And also there have been some changes in the classification of individual diagnoses to the new indication list. The indicative list was valid until the end of 2014. Now in 2014, it was admitted to the spa for more than 29 000 patients less than in 2013, when it was taken to the baths total 377 552 patients. The biggest fall recorded spa care in 2013. Health insurance companies to give her 1.6 billion, which represented the largest decline in the expenditure of spa care in total health expenditure to 0,54%.

The least 63 816 adults spa treatment at the expense of health insurance was also adopted in 2013. In 2014 there was another increase the number of adult patients admitted to the spa at the expense of health insurance, compared to the year 2013, more than 16 000. The largest increase was observed in adult patients of the disease from groups VII. Diseases of the musculoskeletal system, VI. Neurologic diseases and IX. Mental diseases.

Provided medical treatment at a spa was the highest paid in the year 2011 in the Czech Republic, and their number exceeded 20.3 million. The fewest medical treatment at a spa in the Czech Republic was granted in 2014, about 13.1 mill. It accounted for about rehabilitation (2.5), hydrotherapy and massage (2.4) and other performances (1.9) therapeutic procedures.

82 registered providers of spa treatment rehabilitation care seemed operating in the Czech Republic at the end of 2014, who had a total of 24 840 beds. This capacity has not changed to

2013. Among the regions with the highest number of beds belonged to Karlovy Vary and region, Olomouc and region, Zlín and region and Moravia-Silesia and region.

It is important to pay close attention precisely spa care, which has a positive effect both on reducing the frequency of acute diseases and doses of medicine, leads to limit complications of various diseases and, ultimately, spa treatment also leads to improved quality of life.

The spa industry is among a significant segment of tourism in the Czech Republic. It is necessary to support this segment. The formation and subsequent approval of the list of indications should strictly negative impact on this area. The Ministry for Regional Development should focus on this area and try to encourage entrepreneurs in the spa. At the same time, the existing National Tourism Policy of the Czech Republic - 2014-2020 stated only that: Spa tourism - in the entire range of spa plays an important role. There is located about 8% of total capacity, but the performances are about twice. The spa industry as a whole has been rather stagnant. However, the SWOT analysis of the current trends in the spa industry is listed as strengths. As a way to support this area is therefore incorporation spas support to the National Tourism Policy of the Czech Republic. But this is real until after 2020.

## Conclusion

The aim of this paper was evaluation of selected statistical indicators in balneological care in the Czech Republic in 2002 – 2014. Data are processed in the form of graphs and time series. The main sources for this research were gained from organizations websites Czech Statistical Office, Institute of Health Information and Statistics of the Czech Republic (IHIS CR), Ministry of Health CR.

Spa treatment rehabilitation care is an important part of the comprehensive treatment of patients in Czech Republic. Due to the high incidence of thermal and mineral springs in the Czech Republic is relatively widespread and Czech spas are such a favorite retreat for both domestic and foreign clients. All other rehabilitation procedures and treatments must be prescribed individually. Medical care increases the resistance of man against stress, enhances immunity, regulates metabolism and hormonal regulation of organism. Spa an overall positive effect on the human body and increases the range of functional capabilities. Positive results are achieved not only in adult individuals, but also in pediatric patients and in adolescents.

There are too many unanswered questions. To answer them we have to wait for some time. The first question is how the spa treatments evolve in the next 5 years. How much funding each year, a State health insurance segment spa treatment. How many patients will be recommended proposal spa treatment. How will the bed capacity of the spa facilities in the regions of the Czech Republic? Whether or not incur new spa in 5 years, etc

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