THE EVOLUTION OF HOSPITAL CAPACITIES AND THEIR REGULATION

Doctoral (Ph.D.) thesis

István ÁGOSTON J.D.

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1. Introduction

One of the greatest challenges of our days both nationally and internationally is the working out of a health care system, which is able to meet the requirements of the patient needs on a secure and cost effective mode following up the novel results of the health science development. The greatest segment of health care system is the hospital care system, therefore the examination of the development history of the in-patient care system, exploration of the legal environment which affects the structure and operation of the hospital care system especially need to be attended.

Examining the development of the in-patient care system historically helps to understand the circumstances which indicated the formation of spitals and hospitals, the factors played role in their development, and the influence of the changes of legal environment on their improvement. The establishment of contemporary spitals is interlocked with the appearance of Christianity and relief, however in the course of the decades the healing activities of the spitals maintained by the monks and the church was replaced by the hospitals dealing only with patient care and maintained by the citizenry then the state. The state prescribes the requirements of a hospital establishment, defines the conditions needed for the functioning in parallel with the configuration of medical public administration. The study demonstrates the conformation of the most important index-numbers of the hospital care-system, and the effects of the acts influencing the development of hygiene.

Following the investigation of historical antecedents, the attention was paid onto one of the most important questions of the in-patient care system, the comprehensive regulation of in-patient care capacity. Capacity planning is a process which covers the reception of new medical services beyond the aptitudes of the extant health care system, and it has respect for the changes origin from the technological development. We demonstrate the theoretical possibilities of capacity regulation, review the capacity regulatory techniques of other countries in the frame of an international outlook, and with the help of comparison of the acts, we present the regulatory changes and their effects in our country since the change of the regime.

2. Aims

In the course of the completion of the thesis, applying the results from document analysis and the comparative examination of acts, we aimed to reach the following objectives and to answer and explain the below questions.

1. Within the confines of this study we would like to introduce the formation of Hungarian spitals and hospitals, their evolution from the state foundation until our present days, exploring those factors which influenced the place, role of spitals, in addition to the effects on the development of the current hospital system.
2. In the period of the state foundation to the enlightened absolutism, we intended to create and present a comprehensive database without contradictions which contains the place and time of the establishment of contemporary spitals, in order to support later scientific researches.
3. In the course of the work on this study, we would like to create a database which contains structurally the most important data in relation with the foundation of hospitals between the period of the enlightened absolutism and today.
4. One of our aims was to demonstrate the evolution of the hospital care system, from the enlightened absolutism to our days, following the changes of the determining laws of the given era, presenting the root cause of these and the effects on the health care system.
5. We intended to collect, categorise and demonstrate the changes of index-numbers in connection with the operation of the hospital care system, in special consideration of the period anticipating the establishment of the Central Statistical Office and its predecessors in title.
6. With the help of the international experiences we aimed to summarise the toolkit and methodology of capacity regulation to provide a guideline in consideration of the intensification of capacity regulatory efforts.
7. With the help of a comparative analysis, we would like to draw attention to the strengths and weaknesses of the most important acts regulating the national health care system capacities, hereby facilitating the professional debates in connection with the establishment of the capacities of a new hospital system.

3. Data and methods

3.1. The aim of this study was to demonstrate the possible methods for the determination of medical capacities and the international practice of regulation. In the course of this we overviewed and analysed critically the domestic and international literature, which was expanded to demonstrate the medical and capacity regulating system of four countries (Germany, France, Italy and Netherlands) which was chosen based on the Euro Health Consumer Index.

3.2. The aim of the thesis was to demonstrate the development of the national spital and hospital case from the foundation of the state to the enlightened absolutism. In the course of the study completion, we applied literary overviews, especially considering the comprehensive historical outlooks and statistic collections concerning the given period, the research works dealing with the development of spitals, as well as the writings about the history of hospitals and the church and data from the archives.

3.3. The aim of our following study was to present the evolution of Hungarian hospitals between the period of the enlightened absolutism and the end of the II. World War. In the course of the study we applied document analysis and literary overview, which covered literatures about the history of hospitals and statistic collections in connection with this, our applied indicators: the number of hospitals, hospital beds and physicians, where these data were available. On the other hand, we analysed acts, which included the Generale Normativum in Re Sanitatis of 1770, the analysis of Act XIV. of 1876 about the direction of public health.

3.4. In our thesis we provide an outline about the evolution of Hungarian hospitals from the end of the Second World War to the present days. Data about the history of hospitals, statistic collections, as well as the analysis of Act II. of 1972 about hygiene and related acts were greatly emphasised.

3.5. The aim of the study applied at last was to review and comparatively analyse the legal environment regulating the capacities of the Hungarian health care system. In the course of this study we analysed the acts, examining the LXIII. Act of 1996 about the obligations of medical care and regional financing norms, the CXXXII. Act of 2006 about the development of the health care system, and the related acts.

4. Results

4.1. Literary overview of the regulation of health capacity in the international practice

Based on the capacity regulatory practice of the countries participating in the study (Germany, France, Italy and Netherlands) it can be determined that decentralization in the course of planning receives an increasingly greater emphasis, which facilitates the better adaptation of decision-making for the local needs. Regional planning appears in the national practice, however it can be seen that in case of the (predictably) inefficiency of the regional conciliation central regulation comes to the front.

Central government maintains the determination of technologies with high financial needs in its own competence, for instance in Netherlands a separate act regulates the determination of this. The introduction of a national authorisation protocol concerning technologies with great financial needs should be considerable. From international regulations it can be seen that health care system of most countries had a strict control on the reception of new servers, new technologies. One tool of capacity regulation is a transparent and coherent policy for reception, and the establishment of which cannot be passed in our country

In some countries a methodologically established mathematical formula is applied for the determination of capacities, which makes planning more objective and narrows the possibilities of the emergence of political lobby. Firstly demographic, morbidity and mortality data are performed in the formula (France), and it may take consideration onto the time spent in hospitals, the number of cared patients and the indicators showing the utilization of beds (Germany) conditionally on how the question of capacity regulation was observed.

The application of this mathematical formula established considering international experiences and based on reliable morbidity and mortality indicators may make the determination of certain capacities of specialties coherent. Conjoining the results of the formula it shows a well organised institutional structure onto the health map of the country which has a minimum and optimum requirement system and takes consideration into the needs of the patients.

It is a general trend that certain states define a basic attendance package which can be resorted by all citizens (insured). With the help of this package a borderline between social insurance and additional insurance services can be drawn. In case of France and Germany it can be seen that in the course of capacity regulation psychiatric capacities are handled separately, however it may be dangerous for the convergence of the system.

Capacity regulation of ambulatory patient care is an unworthily untended field of national and international capacity regulation. In our opinion, a coherent capacity regulation has to cover both fields, with the finding of adequate methods. Capacity planning of health care system cannot be observed in itself. It has to be in close connection with the financing system and capacity planning of social care system. It can be observed in our country that the needs of patients originated from the deficiencies of the social cares system encumbers the capacities of health care, which problem could be solved with the combined planning and monitoring of the two systems as we can see in Germany.

In the course of the completion of this study such countries were chosen which has similar political and social state, historical traditions, geographical status are similar, and have a determining role in the economics of the European Union. In spite of the numerous similarities, according to capacity regulation different methods are applied. It can be assessed that there is no standard regulation for capacity regulation of health care within the European Union, as the structure of medical systems shows significant differences between countries, and it influences the applied capacity regulating methods.

4.2. Historical overview of the establishment and development of Hungarian spitals between the XI. century and the beginning of the XVIII. century.

After the settlement in Hungary, the activities of the monastic orders, arrived to our land with the admission of west Christianity, formed the system of spitals. The geographic situations of spitals were influenced by the pilgrimages of Saint Stephan. The development of spitals are determine by the wars, such as the Tartar invasion, in the course of which several spitals were destroyed and monastic orders had to recommence their healing activities. Our home was affected as a transit area in the time of the crusades, accordingly, Béla the II. met the crossing orders of health care, later he settled them down in the country, and established a domestic order (St. Stephan) patterned after them.

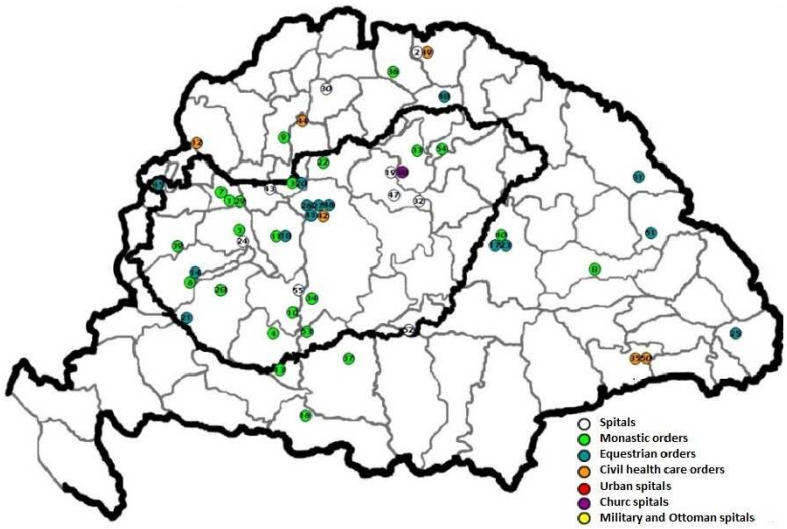

Figure 4.2.1 Spitals in Hungary in the XI-XIII. centuries according to their establishment and maintainers
(The 4.2.1., 4.2.2., and 4.2.3. No. cartograms made myself on the basis of my dissertation.)

In the development of the national hospital case leprosy may emphasised. The healing of lepers was performed by the St. Lazarus order; their leprosariums were uniquely equipped exclusively for the healing of lepers. The lack of spitals providing specialised care contributed that in Hungary less spital was established compared to other European countries. Equestrian orders dealing with patient care had a significant role in establishing and functioning of spitals, as they had great territories. Urbanisation began later in Hungary, therefore the development of spitals was started at the end of the XIV. century, with a real moment is the XV. century when the number of poor was increased at the time of the demographic crisis.

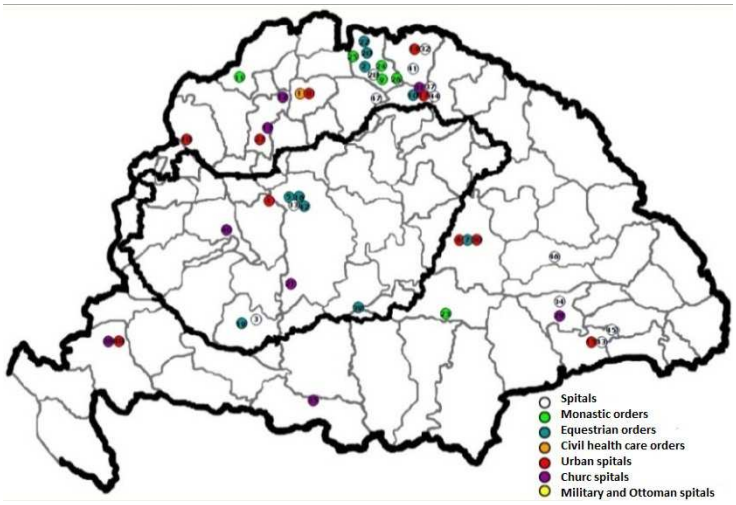

Figure 4.2.2. Spitals in Hungary in the XIV-XV. centuries according to their establishment and maintainers.

Hungary felling into three parts transformed the national history of hospitals, as several spitals were destroyed in the wars and Turkish spitals were built, and on the other hand, we know that monks of the Franciscan order healed in areas under thraldom. The system of military hospitals organised in accordance with the campaigns against Turkish, which had standard leading and maintains from a central source. The role of Catholic Church in the maintenance of hospitals was strengthened, in the XVI century, protestant church determinate the establishment of spitals at the highland. The role of civil health care orders became stronger with the emergence of the patient care mercy order.

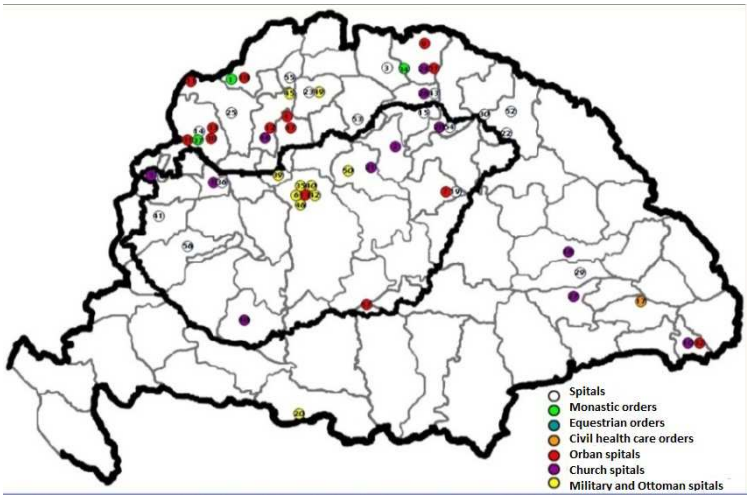

Figure 4.2.3. Spital is Hungary until XVI. century, and the beginning of the XVIII. century according to the maintainers.

Cartograms illustrating the places of contemporary spitals highlights that in Hungary the middle regions, especially the South-Transdanubian area and the region of the Great Hungarian Plain was in a disadvantageous position and this lagging can be felt until nowadays in the hospital supply.

4.3. The history of the development of Hungarian hospital care system from the enlightened absolutism to the end of the II. World War in the mirror of the changes of the legal background

With the peace making at Pozserovac, the country was released from the Turkish regime; the organisation of hygiene was started. Charles III. developed the governor council in 1723 which contained the regulation of poor-patient care. In undercrowded areas monastic orders latched on to patient care. The council ordered that cities based on their place of birth of the patients are obligated to provide care for elderly or poor patients. From 1752 counties are liable to provide a county doctor to ensure free healing for the poor. In the era of Maria Teresa the emphasis is transferred onto nursing. A national fund was established in 1756 by Maria Teresa, which supported the first hospital building project, and it was followed by Joseph II. At the turn of the century the number of spitals were about 34, with approximately 1590 beds. In 1770 the first overall act of hygiene was defined, the „Generale Normativum in Re Sanitatis". This regulation controlled the system of health care and it was the first step towards medical polity.

With the establishment of material and financial bases of hospital building the first hospital building project was able to fulfil. In 1820 the separation of hospitals from poorhouses began, but the whole procedure was not completed for decades. In the first half of the XIX. century, nearly 60 hospitals were founded in Hungary, the number of beds were roughly doubled. In the 1840 the county council initiated the second hospital building project.

After the war of independence in 1848-49, the project continued, and it resulted in more thousands of hospital beds in the country. The act in 1875 deals with the financial background of hospital operation, and the coverage of open patient care costs. The XIV: Act of 1876 regulates the relations of the contemporary hygiene. It established the legal basics of hygiene and determined its organisation and rules until the end of the Second World War.

These acts resulted in a hospital building wave. From the 92 hospitals in 1869 became 427 until 1915. The number of hospital beds increased from 4074 to 45590. The Treaty of Trianon originated a serious situation concerning hospitals. Hungary lost 60% of its hospitals, in 1920 there were only 26 451 beds in 183 hospitals, while the population increased with approximately two million refugees. This extremely heavy situation needed to be solved, in spite of the hardship the second hospital building project was started, which resulted in 291 hospitals with 46 459 beds until 1935. As the first element of the programme, the clinics at Debrecen, Szeged and Pécs were completed.

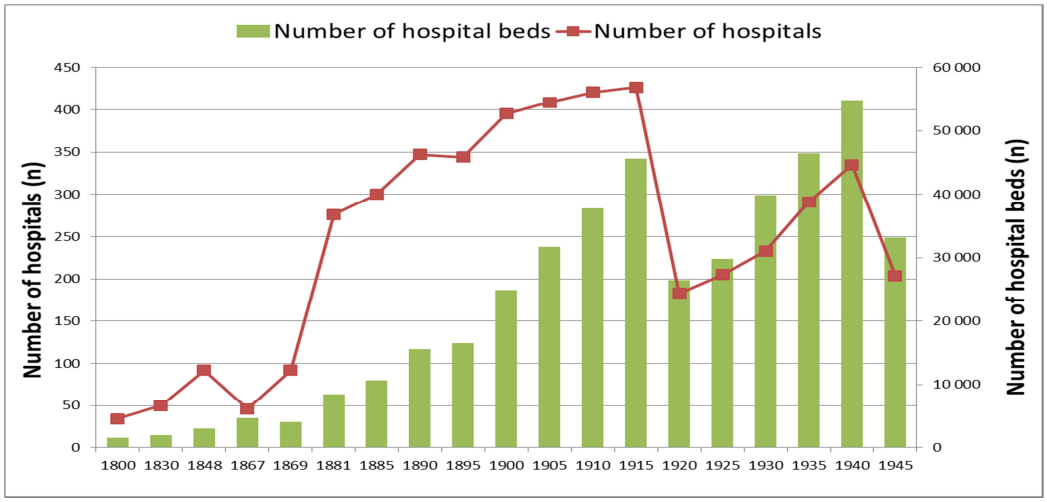

Figure 4.3.1. The number of hospitals and hospital beds in Hungary between 1800 and 1945

Imperfection of the hospital care system was manifested in this time period, 46,7% of the total bed numbers were concentrated into Budapest in 1937, presenting the picture of a capital centric system, as most of the rural hospitals were connected to the areas close to the borders regarding service territories, and the middle of the country was in a disadvantageous position. Based on literary data, the number of hospitals increased with 38 after the territorial reannexation, the number of hospital beds reached 13000, the number of beds in voluntary hospitals was nearly 5000, and this number was devised among 20 institutions. Based on the situation of 1939, Hungary possessed altogether 304 healing institutions and 46 922 beds, from which 10 134 beds belonged to 54 voluntary hospitals.

4.4. The development of the national hospital care system from the II. World War to the present days

At the end of the Second World War, nearly two third of the hospital beds were ruined. The abandoned buildings and military hospitals were transformed for civic patient care by the government. In accordance with the socialistic principles the hygiene governed by the state began. The 47. § of the Constitution of the Hungarian Republic declares that hygiene, so as the maintaining of the hospital care system is a state role. The II. Act of 1972 about hygiene, which is considered to be a milestone, came out. An extremely intensive hospital bed number enlargement was started towards the initiation of hospital capacities needed for the medical care of the population, however, this process was not followed by the development of the hospital infrastructure. In 1960, the III. hospital building programme began, accordingly, instead of the 52.326 hospital beds in 1950, at the time of the regime change, 105.197 hospital beds were found in the country.

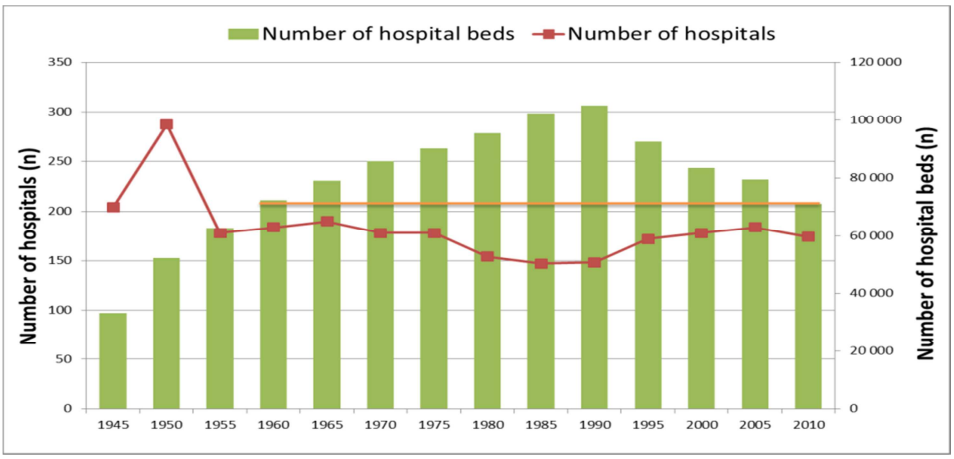

Figure 4.4.1. Number of hospitals and hospital beds in Hungary between 1945 and 2010

After the change of the regime, the dynamic improvement of hospital care system was visionalised by the participants of hygiene because of the introduction of the insurance system and the application of the performance-based financing. Hygiene needs to be prepared for the realignment of capacities origin from the elderly society, and functional modifications proceeding from modern technologies. In point of the hospital bed numbers, similarly to the European trends, a significant restructuralisation is processing in hygiene. As a result of this process 71.216 hospital beds exist in Hungary in 2010, which corresponds to the hospital bed numbers on 1960. The reduction of hospital bed numbers cannot be nominal, affecting all providers, as a “lawnmower”, but it can be imagined as a process realising the effective renewal of the domestic hospital care system, trends towards the health policy aims and determined with international systems

4.5. Changes in the legal regulations of Hungarian health care capacity between the period of the founding of the state and our present days

After the change of the regime it unravelled that the maintained hospital structure does not allow efficient utilization of sources and the complete validation of health policy aims. With the decrease of the load-bearing ability of the national economy, the regulation of health care system capacity came into prominence and in line with this the Parliament constituted three significant acts. Overviewing the Act LXIII. of 1996 about health care obligations and regional financing norms, the Act XXXIV. of 2001 about primary health care obligations and the Act CXXXII. of 2006 about the development of health care system, it can be identified that Hungarian capacity regulation deploys methods of the international literature.

	Act LXIII. of 1996	**Act CXXXII. of 2006**
Measure of bed number reduction	Cca. 81.000 from 92.000	Cca. 71.000 from 80.000
Scale of bed number reduction	Cca. 12 %	Cca. 11 %
Active/chronic scale	Remained. *(79 % vs. 21 %)*	Significantly changed. *(From75% vs. 25% to 62% vs. 38%)*
Timing	5 years gradually	1st April, 2007. by term
Nature of bed number reduction	Lawnmower-principle like, consistent	Institutional and organisational unit featured derivation
List of emphasised hospitals?	Yes, Annex 4.	Yes, Annex 1.
Definition of emphasised hospitals	Institutions recommended providing national and regional assignments.	A) Special institutions with national scope B) Priority hospitals
Level of conciliation	County Conciliation Forum.	Regional Health Council.
In case of the disability of decision-making	MEP/OEP decides.	Minister decides.
Involved capacities	Ambulatory, active and chronic.	Active and chronic.
Dimension of capacity definition	County / professional	Regional / professional
Methodology	Legally given.	NOT given legally.
Transparency	Significant.	None.
Primal edifications	- bed number became less - patient circulation does not decreased - the system does not became cheaper - its efficiency does not increased	- bed number became less - long-term effects require further analysis

Table 4. 5. 1. ***Within the frame of the study comparison of the acts of 1996 and 2006 concerning the regulation of hospital capacities***

The act on hospital bed numbers of 1996 and the act of 2006 on the development of the care system resulted a similar, nearly 11-11% decrease in the number of hospital bed. It is a feature that the law of 2006 significantly modified the rate of active and chronic in-patient bed numbers, as the scale was changed from 75 vs. 25% to 62 vs. 38%. The capacity reductive effect of the "salad law" of 2001 is not significant, because this was not the primary aim of this law. It is remarkably anticipatory that the bed number act of 1996 specified the capacities with a well-designable mathematical formula, which may became competent for scientific capacity planning by its improvement, similarly to the German Hill-Burton formula. Furthermore, it wanted to implement the transformation scheduled through five years, leaving enough time for the realisation. Unfortunately, the methodology of the basis-approached capacity planning of the act of 2006 about the development of the care system is unknown, thus there is no information about its scientific grounding.

The compliance system of the acts are similar, however while the bed number law of 1996 regulates on county-level, the law of 2006 prefers regional conditioning which facilitates more the efficient capacity planning. The act of 2001 brings novel approaches regarding capacity reception in the course of tender procedures. The solution for the hidden capacity increasing problem origin from the definition of capacity dimensions established the need for the punctuation of definitive elements. All of the three acts remain in debt with the regulation of the ambulatory care capacities, which in our opinion is a necessary assumption for the solution of the national medical problems, like other countries such as Netherland and Germany recognised the significance of ambulatory patient care. Alloying the listed methods, techniques and the reached experiences a well-functioning, calculable medical capacity regulating could be developed, for the optimalisation of which the recognition of he applied methods in the international practice would be necessary, which is facilitated by this study.

5. Novel findings, comparison of practical applications

Our analyses presented in this thesis contain numerous novel findings and possibilities for practical applications, which are summarised as the followings:

1. Factors influenced the historical development from the founding of the state to our days of national spitals and hospitals, especially the effects on the structure of the current care system are introduced and analysed within the frame of this study.
2. With the help of the critical analysis of literary data, we established a monitored and structured database, which is according to our light is the most complete, including Hungarian spitals between the period of the state foundation and the enlightened absolutism and their main establishing data, and it is also designed with cartograms.
3. We developed a database containing the most important establishment data of national hospitals from the enlightened absolutism to the present days, supporting researches concerning the examination of the development of the hospital care system.
4. Legal sources regulating the foundation and functioning of hospitals from the enlightened absolutism to our days were explored and demonstrated, the reasons of their establishment were presented, and the effects of the changes of the legal environment on the hospital care system, its structure and index numbers were analysed.
5. We collected, cleared and categorised the statistical data and demographic indicators representing the operation of the hospital care system from the enlightened absolutism, from which data concerning the period before the establishment of the Central Statistical Office (and its predecessors).
6. Methods for regulating the capacity of hygiene which are adequate for application in the national methodology of capacity regulation were collected and presented with the data processing of the international literary results.
7. We demonstrated the legal toolkit of the capacity regulation of the Hungarian medical system, and the effects of the legal modifications on the national hospital care system after the regime change was analysed.

Researches presented in this thesis includes possibilities for practical application, as the created databases containing the data about the foundation of contemporary spitals and the hospitals in the modern sense may be a platform for historical and health scientific researches examining the history of the hospital care system, facilitating the scientific examination of the evolution of hospitals and the development of this scientific area grounded with critical debates of this field of science.

According to our expectations these databases will support the reforming of the national hospital care system for the decision makers implementing rationalisation, to recognise the historical "roots" and pay attention on this while making decisions. The introduction and application of the international capacity regulating methods presented in this study may contribute in the establishment of a calculable, maintainable and cost effective hospital care system in our country as a result of the novatory domestic capacity regulating system.

The dynamic change in the number of hospitals and hospital beds and the alignment with the medical needs of the population could be observed in the course of the centuries. The series of endemic specific institutions began with the leprosariums, then it was followed by the institutions issuing plague-stricken patients, and in the modern times institutions for tubercular, psychiatric patients, and elderly were emerged. These foreshadow the necessity of accommodation in the future, however presumably not for new diseases, but for novel medical technologies (eg. minimal invasive surgery) or up-to-date medical attendance forms (eg. one day attendances).

Through the historical overview, explanatory factors of the emergence or the lack of hospitals can be seen: settlement of monastic orders, development of citizenry, wartime periods, Turkish occupation, economic recovery, political motivations. These maybe secular motivation factors – probably in a little modified way – significantly affect the reformation and improvement of the Hungarian hospital system of our present days.

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