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REIMBURSEMENT OF DENTAL CARE IN HUNGARY

Ph.D. Thesis Summary

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1. Introduction

Currently, looking at the health system of some states in Europe, we can conclude that we encounter very similar elements, but because of the smaller major differences, some systems are still others. The differences are mainly in the insurance systems and their administration, largely based on historical traditions. Regulation of care, patient's contribution to care, and the development of careers of care providers make the healthcare market extremely diverse.

The organization and maintenance of the health care system is a decisive factor in the internal affairs of all countries. Each country devotes substantial amounts to its healthcare systems, but this expenditure shows significant differences between countries as well. The OECD (Organization for Economic Co-operation and Development) countries, where our country belongs as well, spend on average 6.69% of their GDP on health care (Source: OECD statistics, 2011). From this point of view the Netherlands are the leaders, where it is estimated that the expenditure is almost 9.5%. In our country, this was 4.9% in 2011, which was the fifth lowest among the OECD countries, and have been increased to 7.1% by 2014.

These are the kind of expenditures that have a serious impact on the economies of those countries. Naturally, this amount is further shared among the various actors of healthcare system. This includes dental care and oral surgery inpatient care.

2. Purpose

The purpose of this study is to present the dental health care system in Hungary from the reimbursement point of view. My further aim is to give a general picture of the reimbursement system of other countries, in addition to Hungary, pointing to the main similarities and differences, in particular the financing of certain forms of care. In the rest of my thesis, I would like to present the difference of reimbursement of various fields, looking for the possible causes of unequal reimbursement.

The objectives of the thesis are summarized as follows:

- Presentation of health insurance reimbursement of dental care in Hungary
- Regional differences in the utilization of dental services in Hungary
- Presentation of international dental care reimbursement schemes
- Comparison of the reimbursement of different dental interventions in Hungary and other European countries
- Finding reasons and possible solutions to territorial differences
- Presentation of performance indicators for maxillofacial surgery departments
- Summarizing the determinants of these indicators

3. Materials and Methods

3.1 The aim of the first study was to assess the annual health insurance reimbursement of dental health service in Hungary. The assessment base of the study was the annual reports of National Health Insurance Fund Administration (OEP). Only the data collected from the services in contractual relationship with the OEP and delivered in 2008 were evaluated. Dental care services are organized in different levels: general dental service, specialist dental care, special dental care on university level and inpatient departments. Our study covers primary, outpatient and hospital dental care.

3.2 The aim of this study was to assess regional inequalities in the utilization of dental health service in counties and regions of Hungary. The assessment base of the study was the annual reports of National Health Insurance Fund Administration (OEP). Only the data collected from the services in contractual relationship with the OEP and delivered between 2008 and 2011 were evaluated. Our study covers primary, outpatient and hospital dental care. We analyzed the following indicators: number of cases (patients) per 100 inhabitants, number of intervention (procedures) per 100 inhabitant, intervention per case, and reimbursement per intervention.

3.3 The aim of the third was to compare the outcome of the reformed healthcare system process on public dental services in four European countries. The assessment base for the comparison of reimbursement of dental treatments and the dental fee schedules were collected from the health insurance funds. In this study the following indicators were examined: the ratio of public dental services and the main oral health indicators. From the dental fee schedules the reimbursement of general dental activity, prevention, operative dentistry, endodontic and oral surgery treatments were selected.

3.4 The aim of our study was to present the actual performance indicators of maxillofacial inpatient departments and to compare the departments based on the available data. The study was based on the number of beds maintained by the National Health Insurance Fund. Performance data were supplied by the National Health

Insurance Fund Administration. The assessment included the following indicators: number of beds institutional breakdown by type, number of reimbursed cases, the weighted case number, hospital stay, bed occupancy rates and average length of stay.

4. Results

4.1 Dental care was supplied by 3.378 general and specialist dental care services at the end of 2008. For the hospital treatment of more serious cases 17 inpatient department was available with 154 patient beds. Within the period of examination (2008) 7.6 million cases and 23.6 million dental interventions were carried out. The total health insurance reimbursement of dental care (including primary, outpatient and hospital care) was 24.92 billion Hungarian Forints (HUF) (88,82 million Euro) in 2008. The health insurance reimbursement of dental care in Hungary was approximately 2% of the total health insurance expenditures of the National Health Insurance Fund Administration (OEP). Within the period under investigation, the health insurance reimbursement of dental care did not change significantly.

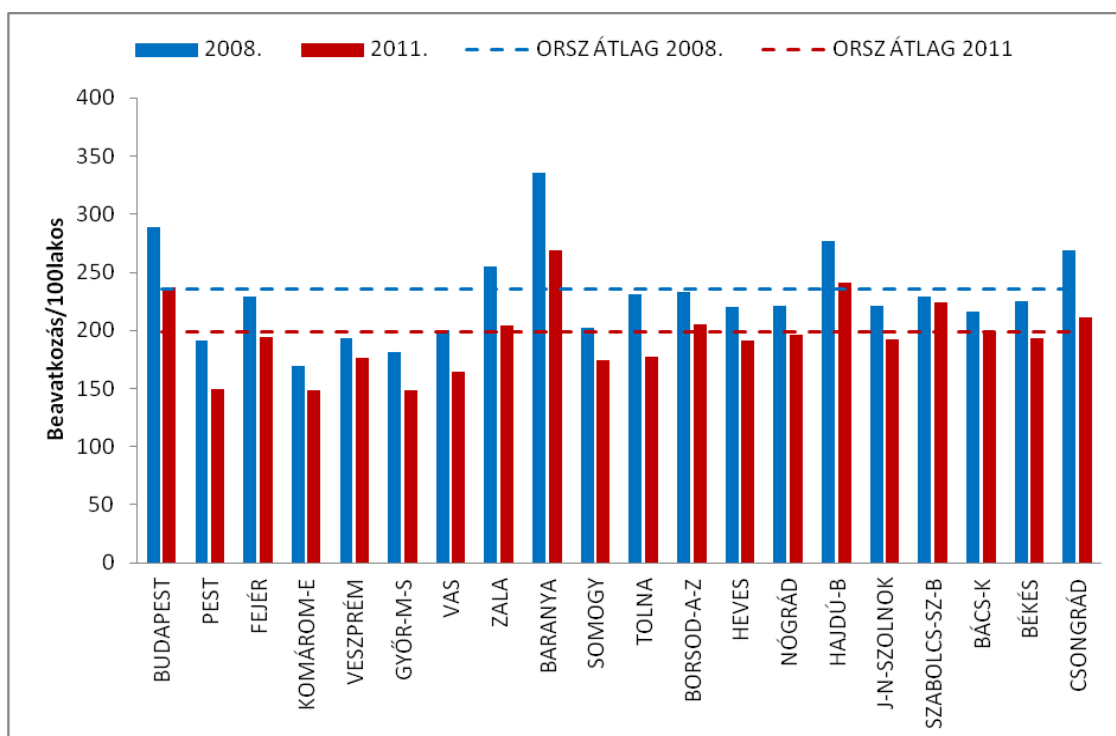
Type of dental supplier	Number of suppliers	Case		Interventions		Points	
		Number (thousand)	%	Number (thousand)	%	Number (million)	%
Basic dental care	2794	6430	84	20521	86,7	4944,4	83,6
Adults	457	961,1	12,63	193,2	13,5	838,2	14,2
School, adolescent	219	603,2	7,9	1885,6	8	324,5	5,5
Children	215	614,8	8	1828,2	7,7	257,2	4,4
Emergency care	29	39,8	0,5	100,9	0,4	5,3	0,1
Mixed	1874	4211	55	13513,1	57,1	3519	59,5
Specialized dental care	428	985,8	12,9	2375,6	10	787,2	13,3
Orthodontics	145	413,6	5,4	987,7	4,2	409,2	6,9
Dental care of handicapped children	16	4,9	0,1	20,2	0,1	5	0,1
Dental care of handicapped adults	1	0,2	0	0,4	0	0,2	0
Pediatric dentistry	3	0,4	0	1,4	0	0,4	0
Periodontology	11	14,5	0,2	80,1	0,3	19,3	0,3
X-ray	135	313	4,1	510,6	2,2	178	3
Oral surgery	117	239,3	3,1	775,2	3,3	175,1	3
University dental care	157	234,8	3,1	768,6	3,2	179,5	3
University basic	21	22,2	0,3	79,9	0,3	13,7	0,2
University specialized	137	212,7	2,8	688,7	2,9	165,8	2,8

Total	3379	7650,7	100	23665,3	100	5911	100
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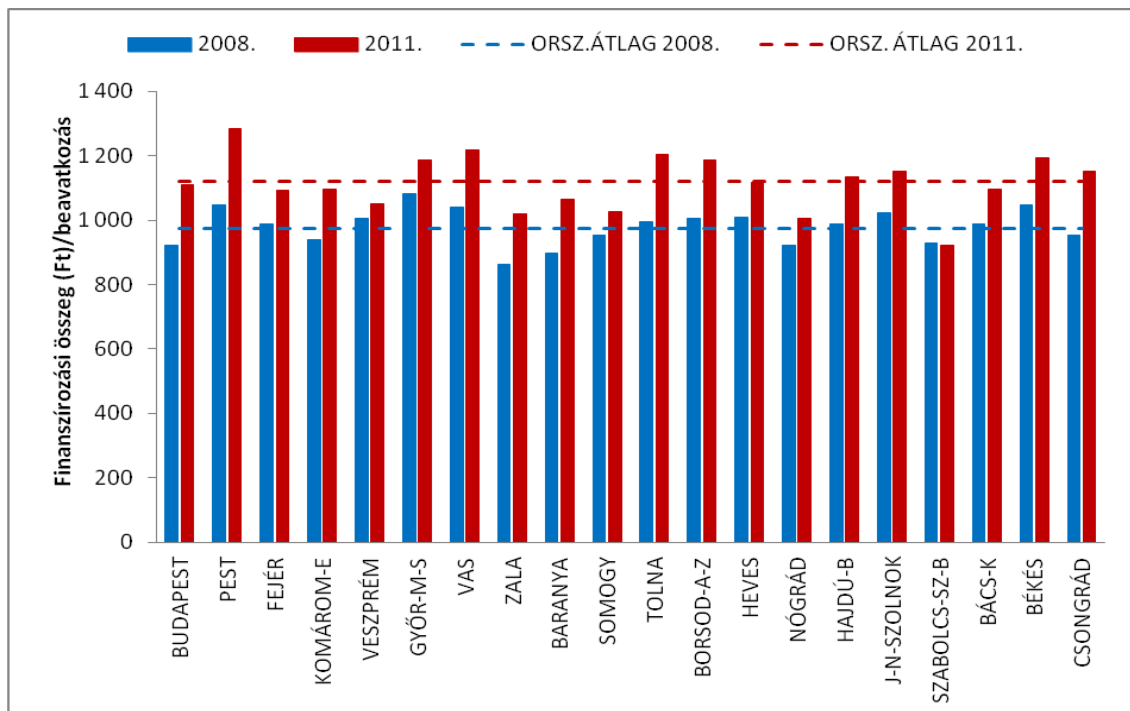
4.1 Table: Number of points, interventions and cases in different levels of dental care (2008)

4.2 Dental care was supplied by 3366 general and specialist dental care services at the end of 2011. The average number of cases per 100 inhabitants was 71 and varied between 55-95 in the counties. The average number of interventions per 100 inhabitants was 199 and varied between 149-268 in the counties. The average number of interventions per case was 2.8 (2.56-3.13). The average reimbursement per intervention showed also significant differences among the counties (1018-1217) with an average of 1122 HUF per case. Due to the progressive dental care system in those counties where university dental school can be found, the utilization of dental services is higher than in counties without dental school.

Within the period under investigation, the health insurance reimbursement of dental care showed significant differences among counties and regions of Hungary. The presence of a dental school is an important predictive factor for higher than national average utilization of dental services



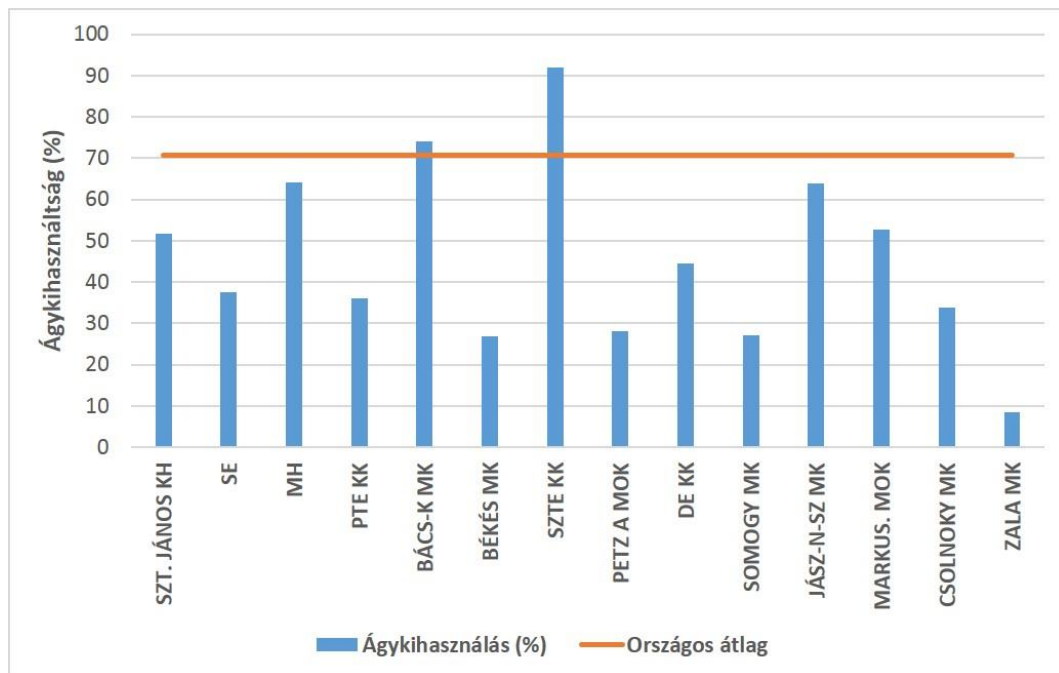
4.2.1 Figure Interventions per 100 inhabitants in the counties of Hungary (2008, 2011)



4.2.2 Figure Reimbursement of interventions in the counties of Hungary (2008, 2011)

4.3 The highest value of population to active dentist ratio was in Germany (population to active dentist ratio: 1247/1) and the lowest in Hungary (population to active dentist ratio: 2020/1). Oral health indicators show significant differences between the Western- and Eastern-European countries. On the other hand, the ratio of completely edentulous people at the age of 65yrs did not show great variations. Reimbursement of public dental treatments showed significantly higher value in Germany and the United Kingdom. Reimbursement of public dental services varied considerably in the selected European countries.

4.4 In the examined period 40% of active beds (65) were in university clinic. The distribution of reimbursed cases was similar. The university clinics showed higher weighted case number and case-mix index. The oral surgery departments' bed occupancy rate (45.75%) was below the national average of inpatient departments. The indicators showed significant differences among different departments in the examined period.



4.4 Figure Bed occupancy rate of different departments and the country average (2015)

5. Discussion and summary

After changing the political system in Hungary there was no significant change in the organization and reimbursement system of the dental care. The necessary reform, which resulted in important changes on general care in 1992 and specialized care in 1993, did not extend to dental care. The change could have been introduced in 1994, but the surplus for reorganization was overwhelmed by the introduction of the public wage bill. Economic reforms in 1995 have already fundamentally affected the reimbursed treatments. In the active age population, except for emergency care, a fee charge for all dental interventions was introduced from 1 July, while simultaneously reducing the support provided to maintainers by OEP. The dental technical work and materials were not prepared without a fee any more, resulting a great uneasiness among the services. The patients' turnover has fallen considerably and patients have increasingly opted for free emergency care by removing the teeth instead of restoration or replacing the already missing teeth. Financing of dental care have changed from 4.2-5.5 billion HUF per year by OEP in the year 1994, declining in real terms. In the framework of economic stabilization measures, the 0.6 billion HUF actually disbursed from the support of the dental health care provider is small compared to the HUF 192 billion in

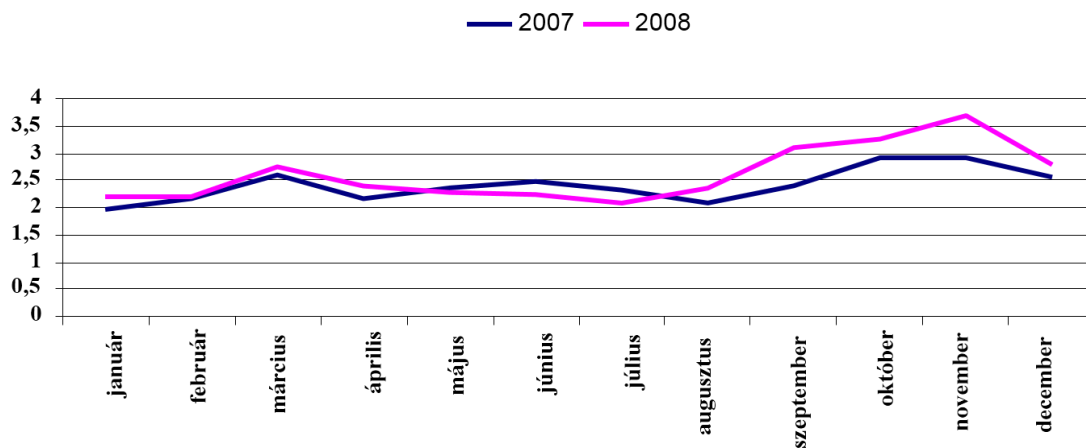
the curative-preventive benefits, while this amount of money is already significant, and initiated extremely harmful processes in the prevention.

The next milestone in organizing care was the introduction of the local government law, which obliged local governments to take care of the primary health care of the population, including the provision of dental care. This task was first handed over to healthcare providers by the local governments and subsequently to businesses. In the period prior to 1 July 1995, the vast majority of dental care was available to the public free of charge, but this form of supply did not stimulate the providers to adequately preventive attitudes and to create a higher level oral care culture.

Unlike other medical professions, dental care has a significant number of private practices that have provided a large proportion of the population. Because of this, there is little overall and reliable data on dental activity and statistical processing of these is also missing. The ideas for creating stability in the economy in 1995 have brought rapid changes, which have not led to far-reaching reforms. The 1996 measures for solving the problems that have emerged have also not been real reform measures. One of the positive points was that stronger emphasis was put on prevention, which was further strengthened by the fact that since 1998 regular screening for dental status was made to ensure that certain interventions were free of charge. Compared to the period before 1995, reimbursement regulation changed frequently and unpredictably. The basis for the settlement was not performance and ignored the age composition of the population. The changes were considered as transient, they were not preceded by a thorough assessment of the realistic financial background and consequences of the change. The dramatic change in the number of treatment-related patients was also based on the fluctuation of the reimbursement amount within a short time frame.

Prior to the introduction of the Bokros package, the insurance company financed 3 million tooth fillings, while this figure fell to half after 1995. After 1999, the number of people turning to the dentist increased dramatically. This growth also reached 60%. The ministry expected measures to increase the income of suppliers. However, due to the rules of the closed pot, it was achieved only at a low level. Undoubtedly, the current system of care is based on 43/1999. (III.3.) edict The Regulation is supplemented by the Code of Activities for Dental Care. The Code of Activities for Dental Care lists the reimbursed interventions, the points eligible for interventions and the conditions for their settlement. It's specialty that the amount of funding for interventions is determined according to the "closed pot" principle. The essence of this is that the amount spent on

performance payout is constant. This constant amount is allocated in proportion to the total number of points reported. This means that the points change the value of the Forint per month, and depends primarily on how many points have been reported in the month in question. Figure 5.1 shows that the HUF value of the points in 2007 was an average of 2.40 and in 2008 HUF 2.60. The value of the points has a seasonal fluctuation.



5.1 Figure Monthly point/HUF ratio in 2007 and 2008

After the introduction, no significant changes were made in the Code of Activities for Dental Care. The most significant change was announced in 2008. 25 new items added or changed the range of supported interventions. In addition, the value of 15 interventions has been modified. Most of them increased, but the average of change did not exceed 50 points.

It can be seen that the dental expenditure of the central budget does not show a significant increase, the real value of the dues for the points is constantly decreasing. This process will make community dental care impossible in the short term, as until the dentist's income is unchanged, their expenditures increases considerably. It is obvious that the current financing structure cannot be sustained over the long term. Comprehensive reform measures are needed to ensure the future supply system in order to maintain the standard of living for the population. The dental health of the population makes this a necessity. Analyzing the health systems and financing structures of the surrounding and other Western European countries and adopting the appropriate elements, the structure that can be considered the most optimal has to be established. However, it is also clear from the international comparison that without significant

increases in the sector's support from the central budget, comprehensive reforms cannot be viable in the long run either.

6. Novel findings, practical conclusions

The research presented in the thesis also produced novel results and practical exploitation opportunities.

The *new results of our research* are summarized as follows:

1. We presented the health insurance reimbursement system of dental care out- and in-patient treatment in Hungary
2. We have shown that, despite the considerable pooling of reimbursement, the amount of financing for dental interventions did not change significantly during the period under review.
3. We found evidences that there are great regional differences in the utilization of dental services and reimbursement in Hungary
4. We have shown that the territorial differences in the utilization of benefits did not change significantly during the period under consideration despite the significant restructuring of the revenue sources and the forms of support
5. We have pointed out that the amount of financing for each dental care varies considerably in the European countries surveyed. Currently, Hungary has the lowest level of GDP-proportionate reimbursement.
6. We have shown that there is no correlation between the intervention amounts and the health insurance model.
7. We have confirmed that there were significant differences between the performance indicators of the maxillo-facial surgery departments in the examined period.
8. We presented the reasons behind the indicators, pointing to their need for change.

Concerning the practical utilization of our results, we propose the following suggestions:

1. The financing of interventions in dental outpatient care has not changed in recent years. At the same time, the burden on the dentist (cost of materials, office fees, etc.) increased above the rate of inflation. In addition to the unchanged reimbursement, the current form of supply will be difficult to organize.
2. The dental expenditure of the budget also did not show any significant change. Accordingly, they tried to increase the compensation of interventions by transforming the financing model. It can be seen from our study that these provisions, the introduction of the minimum time, did not fulfill the hopes. Therefore, the partial or complete transformation of the financing structure is necessary to maintain the supply system, which implies a greater proportion of the budget involved.
3. We have verified that the reimbursement in the examined countries showed enormous differences, although there were no such differences between dentist expenditure. This necessarily brings with it the increase in the number of districts financed by the OEP dental and oral surgery service. To stop and reverse this, the will of the professional decision-makers has to be radical, at the government level, to make radical decisions.
4. Territorial irregularities in dental care also affect the dental care of the population. There is a disproportionate increase in the number of general and specialist suppliers in university cities. Incentive methods and the restructuring of the financing system should aim to reduce unevenness, thus improving the average population's supply.

Publications

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1. **Marada Gy.**: Wax-up practice for building up the occlusal part of the posterior teeth. In: Odontology and Gnathology. Ed.: Radnai, Márta. Medicina Publishing House, Budapest, 2017. ISBN 978 963 226 439 4

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