Evaluating care across borders
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SEMMELWEIS UNIVERSITY
HEALTH SERVICES MANAGEMENT TRAINING CENTRE

Why is Hungary the main destination country in dental tourism?

Why do patients choose Hungary for dental care?

Hungarian Case Study on dental care and patient flow

Eszter Kovács, Gábor Szócska, Blanka Török, Károly Ragány

Health Services Management Training Centre - Semmelweis University

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2013

Preferred citation: Kovacs E., Szocska G., Torok B., Ragany K. (2013) Why is Hungary the main destination country in dental tourism? Why do patients choose Hungary for dental care? Hungarian Case Study on dental care and patient flow. ECAB project (Grant agreement 242058). http://english.hsmtc.hu/site/wp-content/uploads/2013/02/Final_case_study_web.pdf

Summary

The establishment and the changes in Hungarian dentistry are summarized from the second half of the 20th century to the current days. The number of dentists increased very slowly in Hungary, thus the government initiated several actions to balance dental care. Financing is low and privatization occurred after the political transition in 1995. Nowadays, a strong private dental care is notable. Hungarian dentistry has old traditions, education and dental care is high quality and also popular among foreigners, dental students, dentists and dental patients.

Hungary became a remarkable destination country for foreign patients, particularly in dental care. There are several reasons why Hungary could gain the leading position in dental tourism. First, the cost-benefit ratio is outstanding. Secondly, the high quality of dental training plays a significant role. Besides Hungarian dental students, more and more foreign students choose Hungary to obtain their diploma in dentistry. High quality of theoretical and practical training is underlined in student evaluations and in GCTS by alumni students as well. Professors are active dentists thus the applicability of the acquired knowledge is high. Professional standards are up-to-date and often supervised. In summary Hungarian Faculties of Dentistry educate high quality dental practitioners. Thirdly, the quality of materials used in dental practices is high – European level – quality. The rate of complications in dental care stays around 5% similarly to other European countries. In terms of quality guarantee is provided. The majority of dental offices ensure quality by ISO and other European, American Quality Assurance Certificates. At last, previous treatment experiences are positive, patient satisfaction level is high. More and more patients choose Hungary, more and more patients state that they would return for another treatment in the future.

Cross-border dental care appeared in the early 90's when patients from neighboring regions crossed the border for dental care. This brought a significant increase of patient turnover in Western Hungary. Since the quality is high and the price is more affordable than in West European countries, further the free movement of persons, services and goods is a basic EU principle[1] the patient inflow has progressively increased. Budapest became the second biggest supplier in dental tourism. Due to the low cost airlines, Hungary has become and is still easily accessible from every part of Europe.

[1] See Bertinato et al. 2005, Exter 2002, Hermesse et al. 1997, Paulus & Evers 2002, Rick & Merrick 2006

History of the Hungarian dentistry

Before transition/political system change

In 1938, the last year before the Second World War, 2 093 dentists were working in Hungary. Taking into account the number of population, this meant one dentist per 4 300 inhabitants. 850 dentists (40%) worked in Budapest, and 1 243 dentists in rural areas. At the end of the Second World War the number of dentists decreased by nearly 50% (Fejérdy et al. 2004).

In 1950, the Dental Professional Group suggested the introduction of dental specialty training to improve the damaged dental care services. The first dental specialty training started in 1952 in Budapest, followed in Szeged in 1960, in Pécs in 1973, while the training started in Debrecen in 1977. Despite of the introduction of specialty training, the situation did not change remarkably, particularly in rural territories of Hungary.

In 1952, the number of registered dentists consisted of 1 049 dentists. Eight years later, the number of dentists still remained around the same volume, namely, 1 278 dentists, that still stayed far behind the volume of the year 1938. The small number of qualified dentists (70 per year) could not modify this situation – especially in rural areas (Fejérdy et al. 2004).

The government – initiating to solve the problem – underlined the significance of dental care of people living in rural areas in 1969. The specialty training time was reduced to four and a half years, in order to increase the number of dentists. With all the efforts taken the number of dentists reached the volume of 1938 only in 1970. The geographical inequalities due to dentists' location still existed. Each year 130 dentists obtained their professional qualifications. Although the government regulation attempted to increase the number of dentists, further the inflow of migrant dentists did not reach a significant level, we can conclude that the problem could not be solved this way.

The aim, that is, to improve the dentists/population rate and to increase the number of dentists could not be achieved. In Hungary there still prevailed significant differences from geographical and professional aspects. Dentists' preferred regions to work were Budapest and the Western region of Hungary, while dental care in Eastern region remained poor (Balázs 2005, Fejérdy et al. 2004). The general intention of dentists was to settle down in Budapest, this is still typical nowadays - similarly to general practitioners (Girasek et al. 2010, Girasek 2012). Obviously, the decentralization of the

dental specialty training did not fulfill the expectations. Further barrier hindered the aforementioned initiations, namely, dental private practice could be done additionally, besides having a full-time job.

In the 1970s and 1980s all Hungarians had access to dental care. Large public health care centers operated, in addition, few smaller private practices were run.

The structure of dental care was well-organized and financing followed simple rules, namely, fee-for-service payment. Practically all dental care services were free of charge for the patients. Thus, the accessibility of dental care was appropriate, but due to the lack of restrictions the free of charge services and the financing technique, the quality of care, equipments and materials were reduced. Further, informal payment was broad and widespread. Therefore, the oral health of the population was hardly satisfying.

In Hungary – particularly in Western Hungary – cross border dental care appeared in the 80's and increased progressively in the early 90's. The wave of foreign – Austrian and German – patients seeking for dental care started[2] (Balázs & Österle 2008, Kámán 2010, Klar 2012, Michalkó et al. 2012). Parts of Western Transdanubia - neighboring Austria - were hidden previously before the fall of the iron curtain, but after the transition several changes occurred because of business boom (Balázs 2005, Marthaler 2003). Later on in the 90's Italian patients arrived to Hungary for dental care.

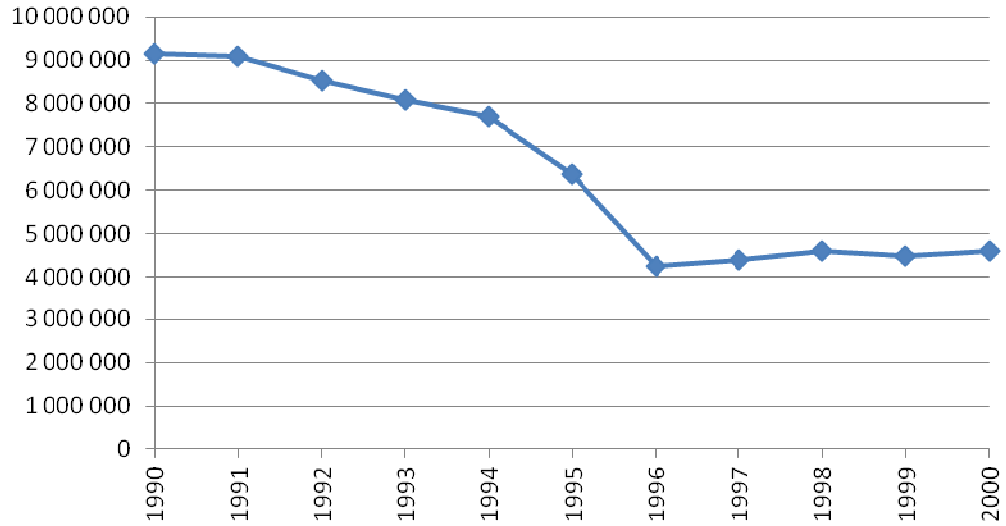
After transition/political system change

The privatization of dental care occurred in 1995 (see also Gulácsi (2006) cited by Klar 2012). The whole dental insurance and dental care system was modified through this action. The so called „Bokros package" – series of regulations and actions raised by Lajos Bokros, Minister of Finance – was introduced to save public finances. First, this meant diminishing of free of charge services in dental care. Secondly, reimbursement and co-payment was introduced into dental care. Thirdly, concerning financing, fee-for-service was terminated, fixed cost support and its mixture with pay for performance[3] was introduced. The introduction of fee-for-service payment was unexpected and unfavorable, therefore the number of patient turnover decreased significantly (Figure 1).

[2] Dental tourism started in Hungary 10-15 years earlier than in other European countries (Kámán 2010). Klar (2012) states that the long tradition of dental tourism in Hungary also triggers its volume and trustworthiness.

[3] Also known as "P4P" or "value-based purchasing"

Figure 1 Patient turnover in dental care in 1990-2000



Source: Hungarian Statistical Office

The majority of dentists – some of them under pressure – had to react on the changes so they established private dental offices, private business. Dental technicians followed their lead, the laboratories also became private business. Through these changes, the whole dental care system disintegrated, the practices worked near each other independently. The administration of suppliers increased, the underfinancing remained common.

In the primary dental care an increasing private sector and a diminishing public sector could be found due to the privatization intentions of the government, started in 1995. From 1995 to 1998 the number of enterprises increased from zero to 1 371, and the number of public servants of public financing decreased from 3 561 to 2 024.

The current situation of dental care

Dental care is divided into three service types: (1) dental primary care, including, among other things, dental screening, school dental services and dental services for pregnant women, (2) dental specialist care, and (3) dental out-of-hours services. Dental primary care is organized on a territorial basis similar to family doctor services, but unlike family doctors, patients are not allowed to choose their primary care dentist freely. Most dental services in Hungary are available free of charge within the

single-payer health insurance system (Gaál et al. 2011 p. 164) if the patient is entitled for supply in the district. Several dental treatments are financed by the health insurance if the patient turnover happens at the local dental practice provided in the district - at the residence of the patient. In the districts dental care operates in mixed practices (adult and children) or adult practices (supply from the age of 14 or 18). The dental care services are available without referral. The dental care services provide out-of-hours service as well.

The following dental treatments are financed by health insurance:

Available treatments free of charge regardless the age of patient:

- emergency care,
- screening (periodically as stated by law),
- treatment of dental and oral diseases with referral,
- prevention treatment,
- dental surgery,
- removal of tartar,
- treatment of gingival graft.

Dental treatments provided regarding patient's age and status:
The patient receives full free of charge service (except of dental technique laboratory expenses)

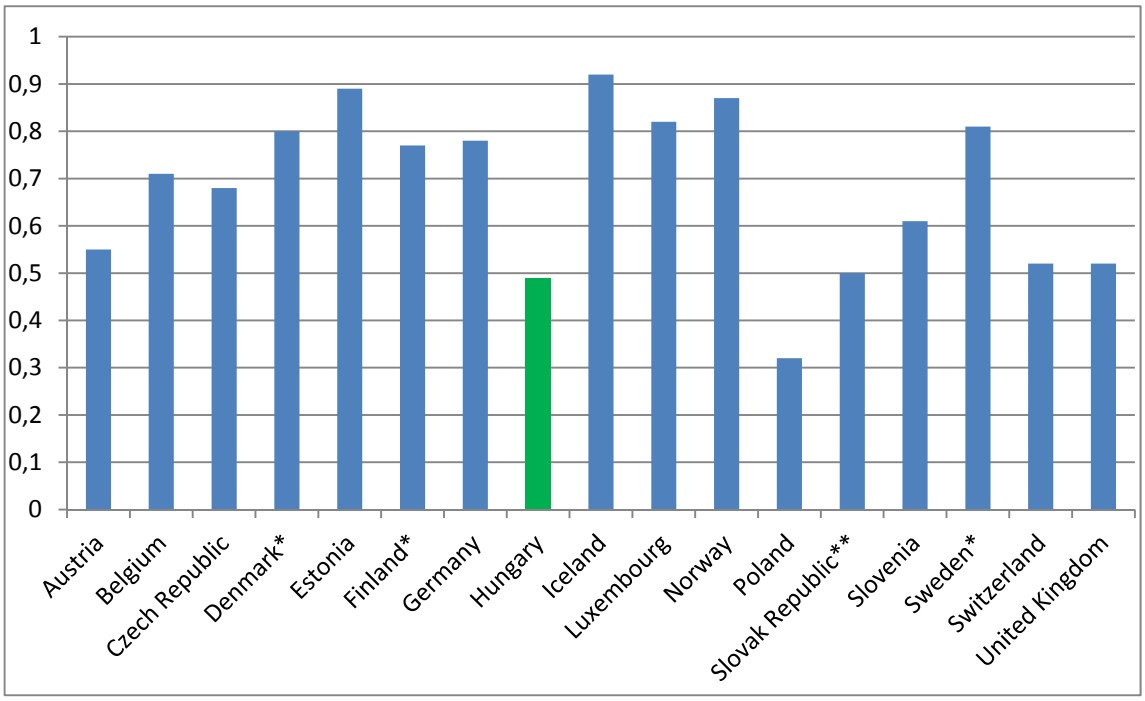
- until the age of 18,
- during full-time studies,
- during pregnancy and 90 days after delivery,
- after the age of 62.

In general, dental consultation, screening is done by the dentist in primary dental care. If the patient receives special dental treatment, screening is done by the service provider specialist dentist who administers it and proves on a form. All dentists working only in private practices have right to conduct screening. The costs of the treatment are reduced by 15%, if the patient is regularly screened. Patients with private insurance receive only emergency treatments in the frame of social health insurance services.

While the majority of dental care services are privatized, notable part of the practices (more than 3 350 dentists – 2800 primary care and 550 specialist care) have contract with National Health

Insurance Fund. The rate of dentists/population is satisfying, however it is still below the EU average level (Figure 2), which is 0.66 dentists per 1 000 inhabitants (see more detailed on p. 11). This number is similar to Slovakian and Swiss dental services.

Figure 2 Number of dentists per 1000 population in EU countries (in 2009)

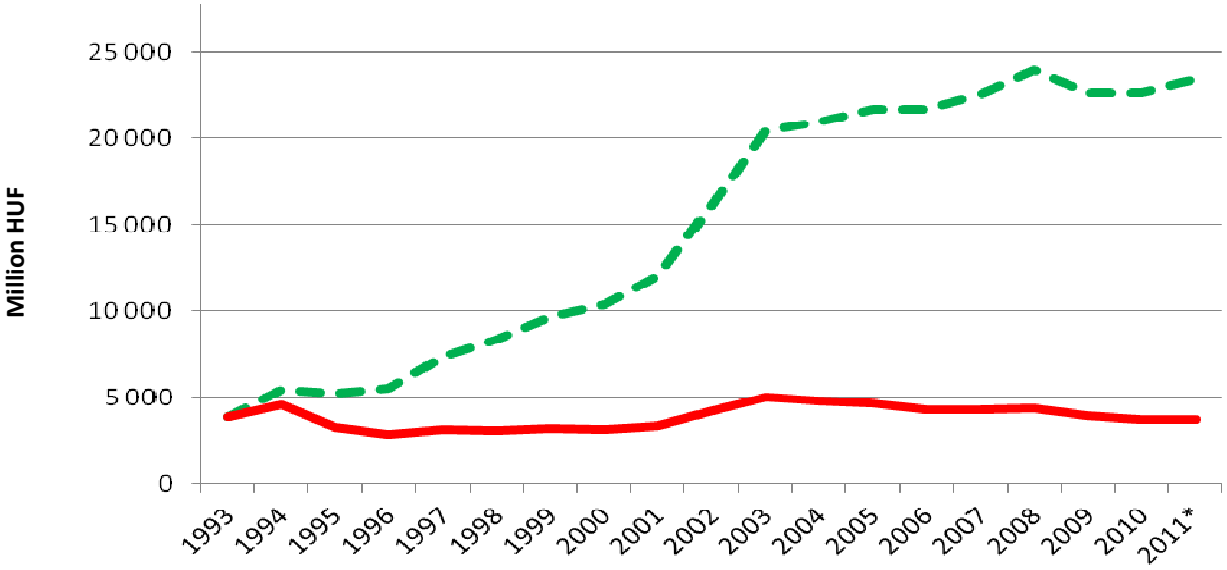


Note: * in 2008 ** in 2007
Source: WHO

Financing of dental care has not changed significantly in the last few years, financing has not increased remarkably (Figure 3). This amount due to the lack of compensation of the inflation and the support for amortization gives only the salary of the health personnel. Nowadays, 2 300 HUF per capita are available from Hungarian National Health Insurance Fund annually.

Public sector's funding compared with other health specialties represents smaller part of the dental care services. Statistical data and quality indicators are available only for publicly funded dental services – for instance at the Hungarian National Dental Public Health Authority –, private practices are invisible to health policy. The primary dental care – such as the whole primary health care – faces financing problems, and struggles with high administration requirements.

Figure 3 Financing of primary dental care from 1993

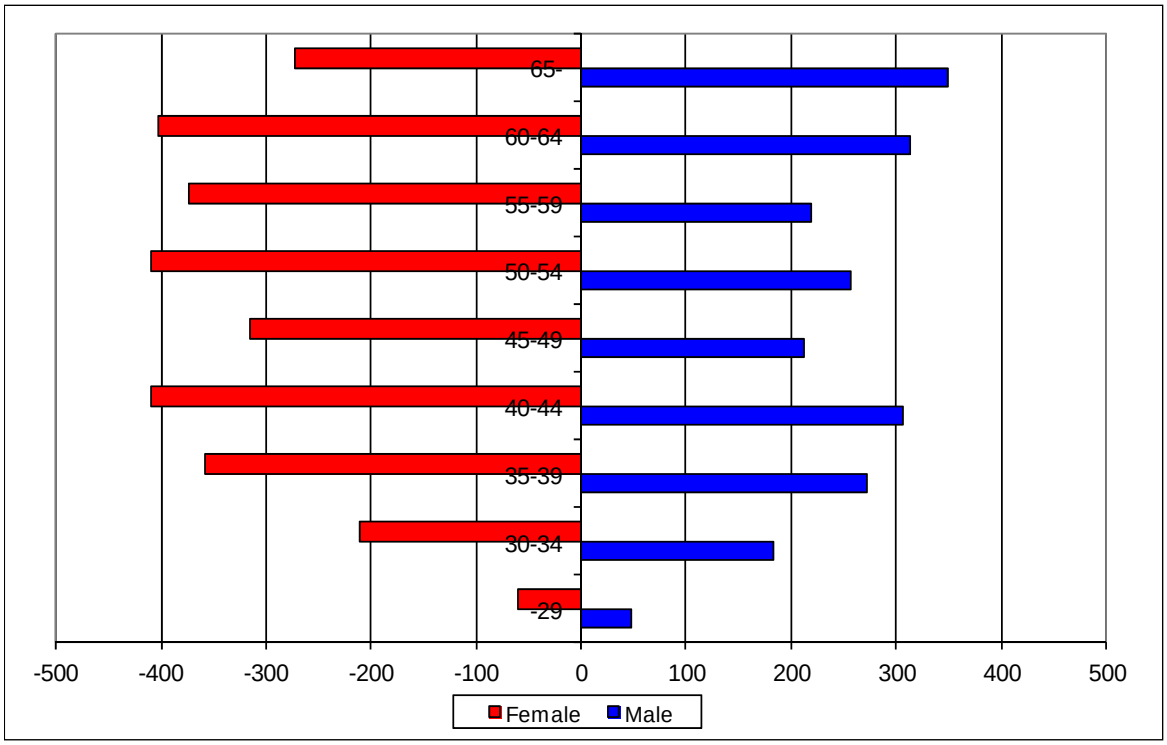


Note: green line shows nominal value, red line shows real value from 1993, *expected

Source: National Health Insurance Fund

Furthermore, in few years ahead a radical decrease is expected in the number of active dentists – similarly to general practitioners. General and dental practitioners are aging (Figure 4), there are a lot of senior dentists, and few dentists in residency, further the specialty training requires stable financial background.

Figure 4 Age pyramid of Dentists



Source: Health Statistical Yearbook 2008 quoted by Szél & Girasek 2010

Figure 4 shows the age distribution of Hungarian dentists. The trend of aging is visible in both genders. Thus resupply of dentists is highly underlined.

Compared to other health specialties dental health professionals' migration is not highly significant. From this aspect patient mobility, namely, foreign patients seeking dental care in Hungary is remarkable (Eke et al. 2011).

In summary, private provision is dominant in dental care in Hungary. The development of private dental care capacities was facilitated by cross-border dental care and health tourism in general. The phenomenon started increasing in the early 1990s, and was originally limited to the border regions – "border hopping"[4] – with Austria where patients pay for private dental services directly (Balázs & Österle 2008, CED[5] Position Paper January 2007, Österle 2007, Österle, Balázs & Delgado 2009).

[4] Term used by Sharon Reier: „Medical tourism: Border hopping for cheaper and faster care" cited by Herrick 2007.

[5] CED refers to the organization Council of European Dentists

Nowadays, dental tourism has approximately 20 years tradition in Hungary. The reliable dental care is widely known (Keckley & Underwood 2008). Besides Western Hungary, Budapest became the second most significant area in dental tourism[6], that is, around 80% of the dental offices in Transdanubia opened dental offices in the capital. With increasing prices in Western European countries and the presence of economy air travel, low-cost airlines[7] Budapest became more accessible from every part of Europe, thus not only neighboring countries but other European countries arrived to Hungary for dental care (Balázs & Österle 2008, Kámán 2010, Michalkó et al. 2012, Ruszinkó 2010, Szűts 2010). Hungary gained the leading position in dental tourism in Europe in 2008 (Szűts 2010, Szűcs 2012)[8].

[6] Österle predicts that 76% of Hungarian dental tourism takes place in border region, 24% in Budapest (Österle, Balázs & Delgado 2009).

[7] First low-cost airline in Budapest in 2003

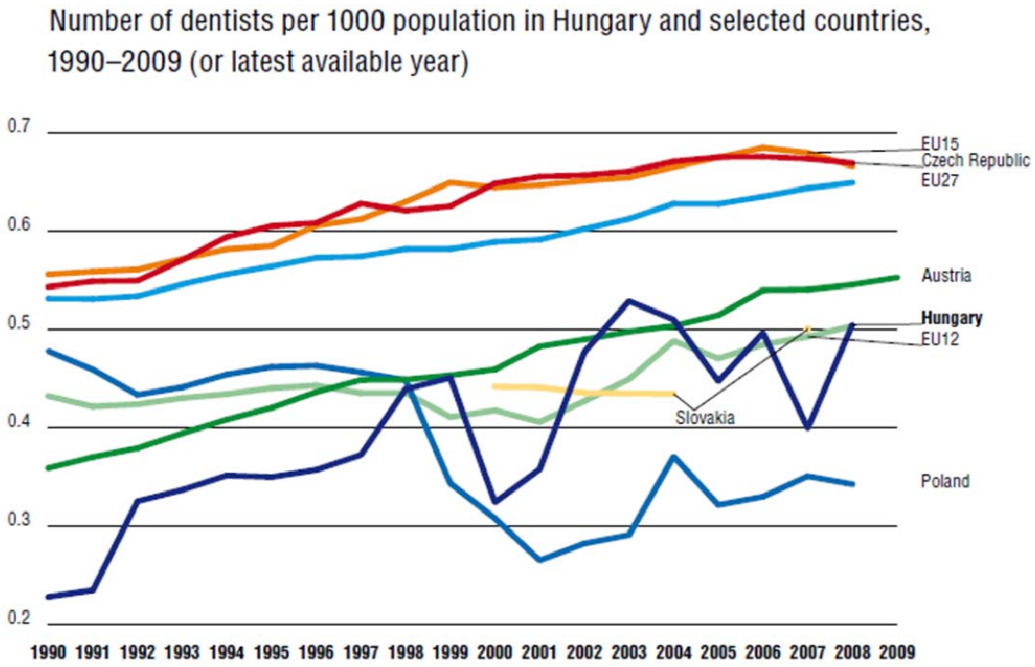
[8] Significant Eastern-European country specialized in dental care (Caballero-Danell & Mugomba 2007)

Human resources - Number of dentists

In contrast to physicians, the per capita number of dentists in Hungary increased by 56% from 2000 to 2008, a phenomenon attributable to the far better remuneration possibilities in private business (Figure 5). In 2008, Hungary had 0.5 dentists per 1000 population, which was about the same as in the EU12 as a whole, but far below averages for the EU15 and EU27 (Gaál et al. 2011, p. 117).

The total number of active dentists in 2011 consisted of 5236 dentists (Statistical Yearbook 2011). Approximately, this number makes 2600 dental offices, from which 500 dental offices are estimated to be involved in dental tourism[9] (CED Position Paper January 2007, Szűcs 2012).

Figure 5



Source: Gaál et al. HiT Profile 2011, p. 118

Note: From 1985 data of the physicians' computerized registration, from 2000 data of operational registration data of Hungarian Medical Chamber. Data of 2000 and 2001 should be treated very cautiously because of the legal and the system-technical differences of the two registrations. In 2006 registered and active physicians: physicians temporarily deleted excluded; medical employments: by making data providers full scope. From 2007 the Office of Health Authorization and Administrative Procedures took over the maintenance of the dentists' registration from the Hungarian Medical Chamber Dental Department. The data base underwent a significant cleaning at the take-over. In 2008 The Office of Health Authorization and Administrative Procedures has significantly revised the data quality of the registry with the help of sending call for refinement, according to the 1997. CLIV. Act.

[9] Kámán's estimation of the year 2010 around 280 dental offices treat foreign patients (Kámán 2010), what shows the dynamism of dental tourism sector. This rate was also supported by the questionnaire survey conducted in 2011-2012 among active dentists – see page 30.

Training

All of the four prestigious medical universities in Hungary provide dental training programs. The dental training program results in a Doctor of Dental Medicine (D.M.D.) degree and is available in three languages: Hungarian, English and German (Table 1).

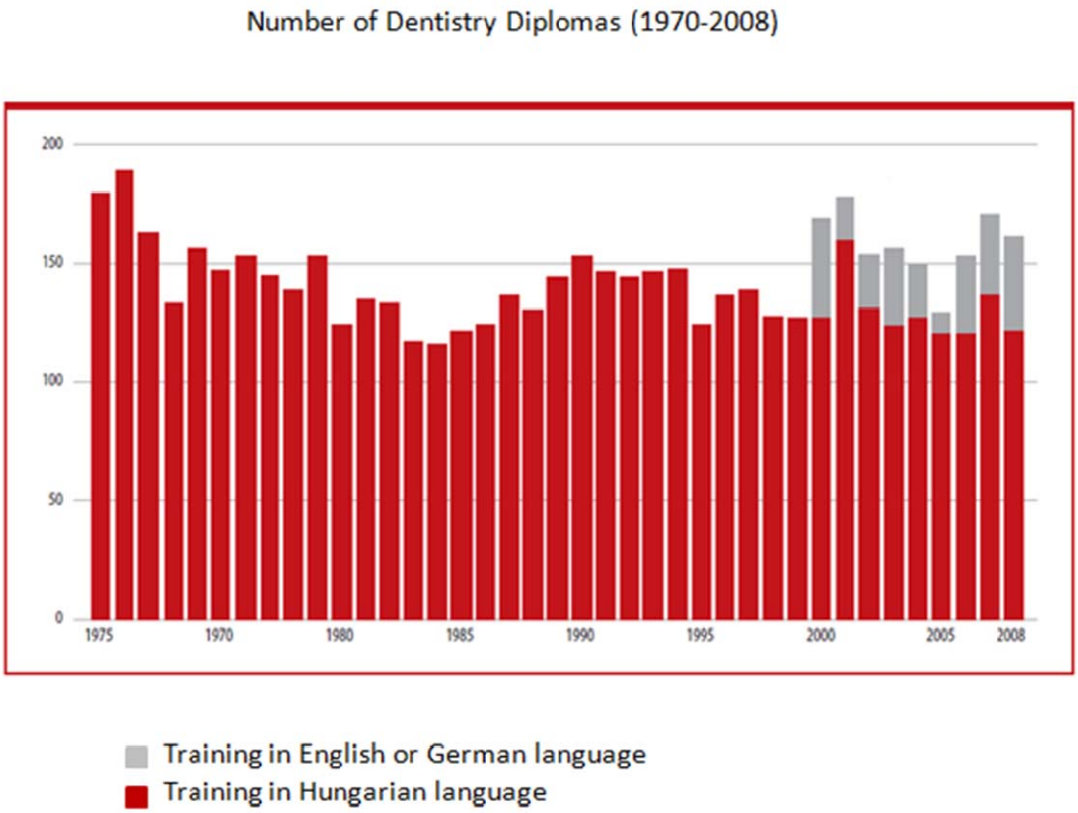
Table 1 The year of introduction the English and German language dental training programs

University	Hungarian language training	English language training	German language training
Semmelweis University	1952	1987	1983
University of Szeged	1960	2004	-
University of Pécs	1973	2005	2005
University of Debrecen	1977	2000	-

Source: Fejérdy et al. 2004, Balázs 2009

From the beginning of the 1970s until 1984 a significant decrease occurred in the number of dental students in dental training (see Figure 6 below). Then, the number started to increase at the beginning of the 1990s, and stayed around 150 people/year. After the year 2000 the numbers of foreign students in the training started increasing and it showed similar numbers - increased capacity – such as in the early 1970s. Accordingly, the annual average number of Hungarian dental students (M= 131) were completed by an average number of foreign dental students (M=29). If we sum up the Dental degrees between 2000-2009 (Hungarian education - 1182, foreign education = 259), we can conclude that training of dentists 'export' - rates are almost 18% (17.97 per cent), that is, lower than the rate in overall medical faculties (Balázs 2009).

Figure 6



Source: Balázs 2009, p. 13

Note: Data on foreign students was collected centrally from the year 2000 on a mandatory basis. Data from previous years can be accessed at the Deans' offices from the four medical universities.

Table 2 Total number of Dental Diploma

	Hungarian	**Foreigner**	**Total**
2006	117	38	155
2007	137	35	172
2008	120	47	167
2009	123	68	191
2010	142	86	228

Source: Szél & Girasek 2010

Table 2 shows the exact numbers of received diplomas in dentistry. The numbers indicate an increasing tendency both education form, namely, in Hungarian and in foreign language training. For instance, in 2010 142 dental students in Hungarian language training and 86 dental students in German and English language training received their diploma. Compared to the year 2006, in 2010 the number of foreign dental students receiving their diploma was two times higher.

Foreigners in Hungary – dental students

Previously, Table 1 showed the year of introduction the English and German language training programs in dentistry. Since all of the four medical universities provide the possibility for foreigners studying in Hungary, we experience moderate increase in their numbers. In Table 2 the number of received dental diploma was presented. Hereby, Table 3 shows the numbers of foreign dental students within the education in 2009-2011. For instance, in 2010 the number of foreign medical students was 316 – comparing with the total number of medical students (794) – reaching the 40% rate in the Faculty of Dentistry, Semmelweis University.

Table 3 Numbers of foreign dental students in 2009-2011

	English	**German**	**Hungarianª**	**Total**
2009				
Semmelweis University	232	46	25	303
University of Szeged	100	-	10	110
University of Pécs	139	63	20	222
University of Debrecen	287	-	9	296
2010				
Semmelweis University	254	34	28	316
University of Szeged	100	-	9	109
University of Pécs	150	61	1	212
University of Debrecen	311	-	10	321
2011				
Semmelweis University	257	35	28	320
University of Szeged	113	-	12	125
University of Pécs	136	79	1	216
University of Debrecen	356	-	11	367

Note: ª foreigners studying in Hungarian language; Source: Education Research and Development Institute - Higher Education Quality Development Portal

The universities provide high quality medical training and they monitor the satisfaction of the students annually. Since more and more foreign student studying in Hungarian Dental Faculties it is worth to take a look of their satisfaction level.

For instance, a Graduate Career Tracking System (GCTS[10]) questionnaire survey was conducted in 2012 among foreign students of the Medical University in Budapest (N=189). The findings show that German students choose medical training abroad because the number of the university places is limited in Germany. Of other factors widening perspective and the fame and popularity of Semmelweis University are mentioned. 84.1% of German students and 91.8% of English training students agreed with the statement "My experience at the university was positive." (completely agreed 64.5% and 48.6%, respectively).

In rating the university's studies German students highlighted the following advantages: the quality of theoretical training, the quality of practical training, the helpfulness of professors, the applicability of the acquired knowledge – because the majority of professors are active dentists – and the quality of the institutional services. More than 60% of the respondents completely agreed in the high quality of theoretical training, and nearly 90% evaluated it "good" or "excellent". Another notable indicator is how previous students rate their acquired knowledge compared to their colleagues. 65.4% of the respondents evaluated their own theoretical knowledge better than their colleagues, 54.6% the overall knowledge better, and 40.4% the applicability of the acquired knowledge better (Girasek & Hogemann 2012, Unpublished data).

[10] See Appendix 1 for details of GCTS

Mobility of dentists

Hungarians abroad

Hungary is experiencing a net **outflow** of dentists. Of all health professionals applying for certification to work abroad between 1st May 2004 and 31st December 2009, an estimated 4901 were physicians, 1316 were nurses, 749 were dentists, and 226 were pharmacists (Eke et al. 2011). The number of dentists who received certification to work abroad has been slightly increased in the last few years: in 2007 114 dentists, in 2008 142, in 2009 158, in 2010 202, in 2011 219 dentists (in 2012 up to 30th June 120 dentists, see Table 4). They might intend to work abroad. The main target countries of dentists' outflow are the UK, Ireland, Germany and Austria.

Table 4 Requests concerning the issue of a certificate

Year	**Total number of requests**
2004 (from 1st May)	137
2005	78
2006	120
2007	114
2008	142
2009	158
2010	202
2011	219
2012 (up to 30th June)	120
Total	**1290**

Source: Office of Health Authorization and Administrative Procedures & Health PROMeTHEUS project, Wismar et al. 2011

Number of Hungarian or in Hungary trained dentists abroad

Based on the Regulated Professions database of the European Commission, the numbers of recognized Hungarian Dental Diploma might be monitored[11].

Figure 7 below shows the numbers of automatic recognition of Hungarian Dental Diploma in 2004-2011. The regulated profession is called Dental Practitioner and it is based on the 2005/36/EC Directive. The Figures (see automatic, non-automatic and overall statistics) show that the main destination countries are Austria, the UK, Switzerland, the Netherlands and Germany.

Figure 7 Host countries of the automatic recognition of Hungarian Dental Diploma

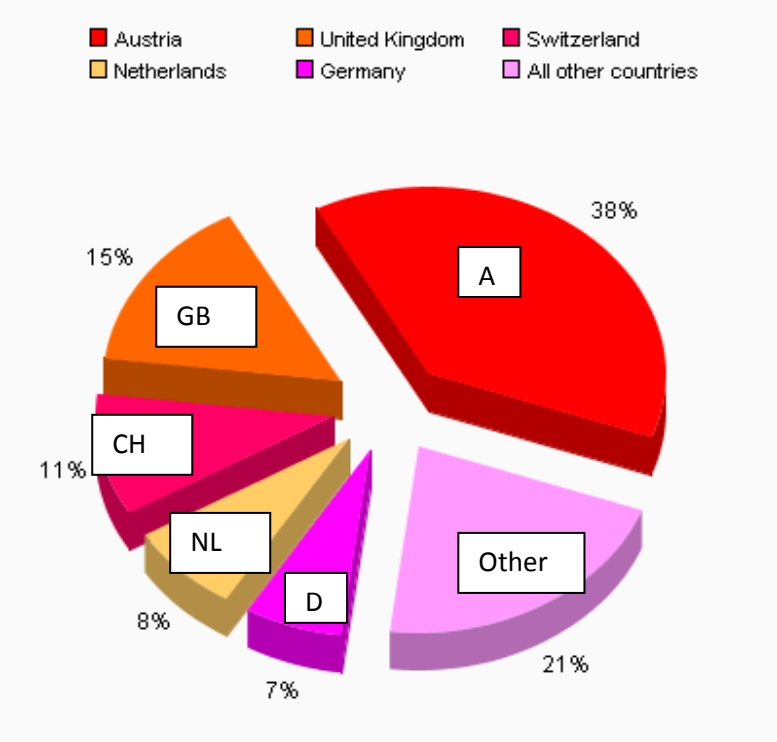


Figure 8 below shows those numbers of recognized Hungarian Dental Diploma in 2004-2011 that were not eligible for automatic recognition. Figure 9 shows the total number of recognition Hungarian Dental Diploma.

[11] Source: http://ec.europa.eu/internal_market/qualifications/regprof/ Note: missing data is due to the lack of providing data from the national authorities

Figure 8 Host countries of the non-automatic recognition of Hungarian Dental Diploma

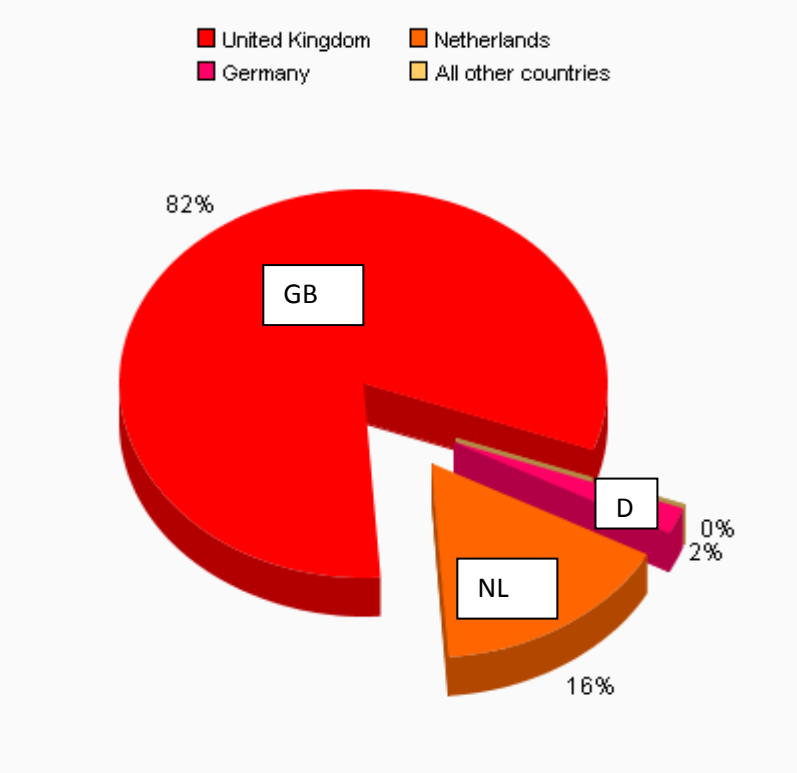
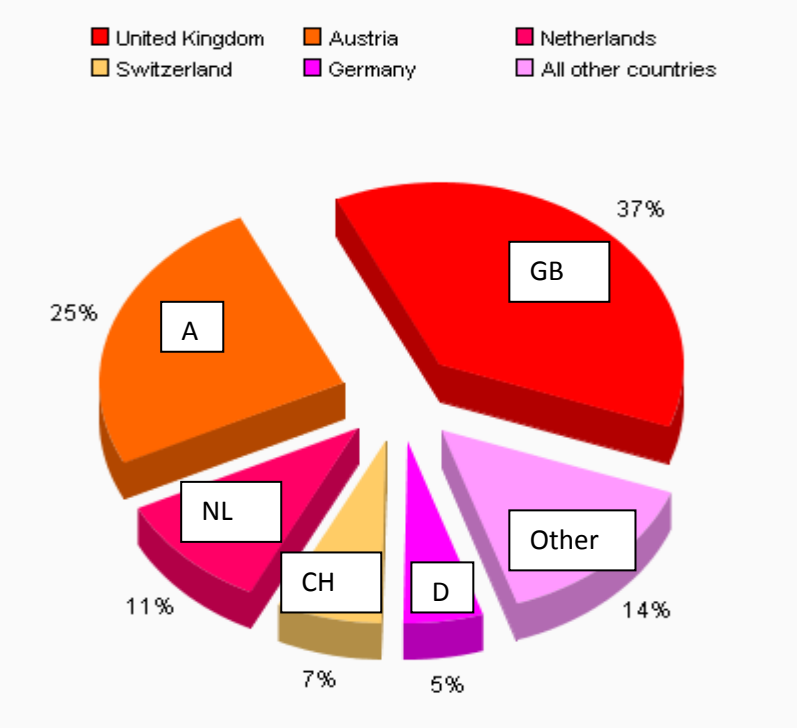


Figure 9 Total number of recognition of Hungarian Dental Diploma



More detailed data was provided for example by the Austrian Dental Chamber on the numbers of Hungarian dentists in Austria.

The numbers of all Hungarian/Hungarian trained dentists registered in **total** at the end of 2011

- 85 dentists with Hungarian nationality registered as dentists in Austria, 52 of these did their university training in Hungary.
- All in all there were 114 registered dentists in Austria who did their university training in Hungary, 52 of them with Hungarian, 42 with Austrian, 20 with different nationalities.

The respective numbers for **newly registered** Hungarian/Hungarian trained dentists are the following ones (Table 5).

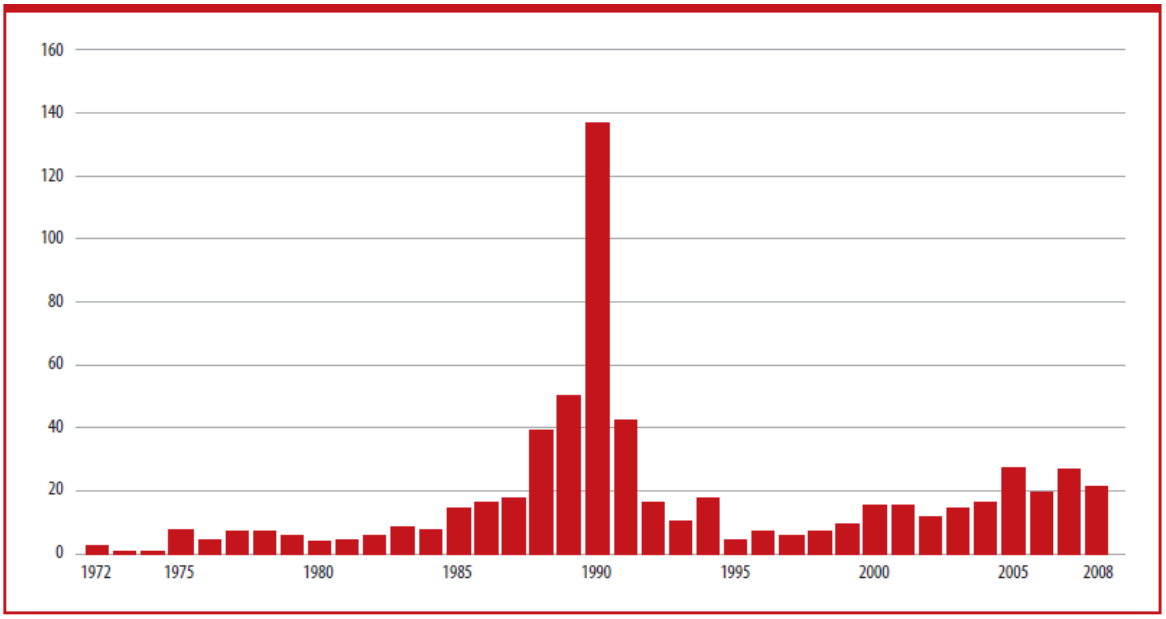
Table 5 Number of newly registered Hungarian/Hungarian trained dentists

Year	Hungarian Nationality	Hungarian Trained[a]
2000	1	0
2001	2	0
2002	4	5
2003	1	0
2004	9	7
2005	4	2
2006	12	18
2007	9	11
2008	5	15
2009	11	19
2010	9	19
2011	9	14

[a]Note: Non-Hungarian nationality

In terms of dentist **inflow** particular mention should be made of the inflows of Hungarians immigrating to Hungary. The country is surrounded by neighbors that have significant Hungarian minorities – mainly Romania, Slovakia, Serbia, Ukraine and Austria, dentists of Hungarian origin but holding foreign citizenship arrived in significant numbers, namely 107 dentists between 2003-2007 (Eke et al. 2011), approximately 20 dentists annually (Source: Office of Health Authorization and Administrative Procedures).

Figure 10 Dentists' inflow – the number of recognized foreign diploma (N =647)



Source: Balázs 2009, p. 14

Figure 10 shows that the year of the political system change is remarkable in terms of the inflow. Similar increase was expected for the year 2005, after the EU accession of Hungary, however, the rate did not increased significantly.

Professional standards and quality issues by professionals and professional bodies in Hungary

First, leaders or representatives of relevant professional bodies were interviewed by a semi-structured interview guide in terms of maintaining professional standards and quality issues. The following professional bodies were contacted: Dental Section of the Hungarian Medical Chamber; Hungarian Dental Association; National Advisory Board of Healthcare – Dental and Oral Disease Department and Council (Previously Professional Advisory body of Dental and Oral Disease); National Institute of Oral and Maxillofacial Diseases; National Dental Public Health Authority - Chief Dental Officer; National Committee for Hungarian Dentistry.[12] It is important to note that the leadership of these bodies overlap, there is a group of dentistry professors and dentists who coordinate the prioritized issues. Further dental bodies interviewed: the Association of Leading Hungarian Dental Clinics and the Hungarian Dental Tourism Company.

Secondly, questionnaire survey was conducted among active dentists using total population sampling as a type of purposive sampling technique. The survey was available online and also was spread in collaboration with several dental professional bodies by post, for instance, was sent to all active dentists in the Journal of The Hungarian Dentist by the Dental Section of the Hungarian Medical Chamber. The final sample consisted of 273 questionnaires that were analyzed. The findings of the questionnaire survey are also displayed hereby. Active dentists tend to belong to more dental professional bodies. Membership in Dental Section of the Hungarian Medical Chamber is mandatory[13]. Respondents indicated that 22% has membership in the Dental Section of the Hungarian Medical Chamber less than 10 years, 32.4% from 10 to 20 years and 45.6% more than 20 years[14]. Participation in other dental body was remarkable, 66.3% has membership in another dental body, particularly in Hungarian Dental Association (19.8%). On the contrary, individual membership in European dental associations is not characteristic, merely 4.4% has membership.

[12] Further details on dental professional bodies in Appendix 2

[13] Membership was not mandatory for few years between 01.04.2007-01.06.2011, although approximately 85% of practicing dentists were registered for instance in 2008 (Kravitz & Treasure 2009)

[14] They strengthened that the main activity of the Dental Section is Interest representation (85.4%) and Legal representation (27.3%).

Of the aforementioned dental bodies the Dental and Oral Disease Department and Council of the National Advisory Board of Healthcare is responsible for establishing, developing and supervising professional guidelines and professional protocols. Due to the Government Regulation of the Ministry of National Resources[15] – 12/2011 (III.30.), the previous Professional Advisory body of Dental and Oral Disease was restructured on 1st of May 2011. The Dental and Oral Disease Department and Council of the National Advisory Board of Healthcare exchanged the previous Professional Advisory body of Dental and Oral Disease[16]. The members of the Dental and Oral Disease Department and Council[17] are represented in the Dental Section of the Hungarian Medical Chamber – the body responsible for ethical control and interest representation, the scientific organization Hungarian Dental Association – embracing eight other dental professional bodies – and the National Committee for Hungarian Dentistry, these represent the Hungarian Dentistry on international forums and discussions. In Hungary, the relevant professional bodies work in strong connection with each other. Further on European level, these organizations are in connection with Council of European Dentists, FDI World Dental Federation, and International Association of Dental Research.

Professional guidelines, professional protocols and methodological letters

The professional organization that is responsible for developing and supervising professional protocols is the National Advisory Board of Healthcare – Dental and Oral Disease Department and Council. However it is notable, that members of the Advisory Board are represented in several professional bodies. The professional guidelines and protocols are checked for quality by National Advisory Board of Healthcare – Dental and Oral Disease Department and Council in collaboration with the National Institute for Quality- and Organizational Development in Healthcare and Medicines (GYEMSZI) – Division of Quality in Health Care in order to ensure patient safety and quality[18].

[15] Name changed to Ministry of Human Resources on 14th May 2012 (2012/XLII)

[16] With this regulation from 1st May 2011 two advisory boards exist in the field of dentistry: Dental and Oral Disease Department and Council and the Oro- Maxillofacial Surgery Department and Council.

[17] The Chief Dental Officer is an invited member in the Dental Council, nevertheless he represents Hungary in the Council of European Chief Dental Officers (CECDO)

[18] New framework is elaborated based on the previously valid Hungarian Health Care Standards (MEES).

Hungarian dentistry has long traditions. The methodological letters regarding dental care were elaborated in the 1970's. This collection of protocols used to be reviewed every 3rd year (*Collection of methodological letters and guidelines*. Published by the Professional Advisory body of Dental and Oral Disease, Budapest, 2002). Nowadays, this is continuously developed due to the European standards, European level protocols. The methodological letter from the year 2002 is still in use and completed with further developed guidelines, e.g. implantology. The advisory board's department and council are reviewing all of the professional guidelines and protocols. The council is responsible for development and the department for implementation. The council and the department operate in strong connection with the main dental professional organizations. Thus, the process of developing clinical guidelines is done centrally in collaboration with professional organizations, experts and GYEMSZI. Between March 2010 and 2011 most of the protocols were reviewed and evaluated. As of today the up-to-date information has been published in the Health Bulletin by the Ministry of National Resources on 13th January 2012. The supervised protocols are valid till 31st of December 2012 and 2013. The protocols function at 3 levels, they appear in 3 different forms: professional guidelines, professional protocols and methodological letters[19]. The structure of protocols involves the following parts: which section is responsible for developing, short introduction about the disease and the frequency in Hungary in the recent years, area of applying the protocol, conditions of creating the protocol, definitions, general features, background information and symptoms, prevention, diagnoses, anamnesis, obligatory examination, additional examination (what kind of health professional is responsible, how long does it take, what is the aim, what kind of medication do they need etc.), administration-documentation, steps and principles of treatment, therapy, rehabilitation, references and expiration date, appendix.

Standards and protocols are treated centrally. The organization National Advisory Board of Healthcare – Dental and Oral Disease Department and Council deals with the present issue and informs dentists about the updates in collaboration with other professional bodies, namely Dental Section of the Hungarian Medical Chamber and Hungarian Dental Association. Methodological letters are provided for the dentists in the scientific journals entitled Journal of The Hungarian Dentist, Stomatologia Hungarica and Health Bulletin by the Ministry of National Resources[20]. This was confirmed in the questionnaire survey. Accessing information about the professional standards,

[19] The form of methodological letter provides wider frame and more detailed description of professional regulations.

[20] For instance, professional guideline on implantology and prosthetics was published in Stomatologia Hungarica in 2010

protocols 66.9% of active dentists were informed from journals, 36.4% during professional programs, 35.3% from the internet and 23.4% from E-mail updates. 67% of dentists seek information about the new information on current protocols monthly and 31.5% annually. Thus, providing and accessing information on the professional protocols and development are both continuous.

Furthermore, regarding professional guidelines and protocols a so called “Basic requirements of human resources and equipments in dental practices” document was published in 2011 that indicates the minimum requirements in terms of dental professionals, namely, dental specialists, dental specialty training etc. Materials used during dental treatments come from abroad – in Hungary there is no production.

In summary, the use of professional standards and protocols is high in Hungary as strengthened by all dental professional bodies and active dentists. In the questionnaire survey 87.5% of the active dentists stated using professional standards and guidelines during treating patients. 80.2% follows national protocols, 15% international and 2.2% uses institutional protocols. Dentists use the professional protocols during their work in a regular, namely 80-100% extent in their treatments. Thus, the use of protocols is a priority in dentistry.

Quality of dental care

Dental tourism according to Hungarian dental bodies and dental practitioners[21]

"*Dentists use standards in high percentage in order to ensure safety and high quality*." Attila Kámán DMD., Leader of Association of Leading Hungarian Dental Clinics

The Association of Leading Hungarian Dental Clinics operates from 2009 and was established aiming – among others – to provide high professional standards, high quality care, guarantee and liability. First, the 5 biggest dental clinics were involved, nevertheless today the association consists of the 7 biggest dental clinics treating foreign patients in Hungary with extended staff including dental practitioners, dental technicians, parodonthologists etc. (Tolnai et al. 2009). Regarding quality issues the association has widespread and strict guidelines (See Appendix 3). ISO quality management system is mandatory, and similarly to West European or American quality assurance systems these dental clinics have European and/or International quality assurance certificates).

Dental offices in Western Transdanubia used to collaborate with German quality assurance systems, namely, - so called Gutachters – reviewers' suggestions and recommendations were built into the minimum requirements of quality guidelines and protocols. Furthermore, in the last few years so called "Consensus conferences" have been organized, where dentist from all over Europe discuss evidence based professional protocols. To these belongs Lifelong learning, many continuous training programs are available over Europe.

Teamwork is also highlighted as a useful tool of quality assurance; dental offices with more dentists and other professionals ensure supervision in professional protocols. Each patient's treatment plan is discussed in groups.

[21] Based on literature, questionnaire survey, and interviews with: the Dental Section of the Hungarian Medical Chamber; Hungarian Dental Association; National Advisory Board of Healthcare – Dental and Oral Disease Department and Council (Previously Professional Advisory body of Dental and Oral Disease); National Institute of Oral and Maxillofacial Diseases; National Dental Public Health Authority - Chief Dental Officer; National Committee for Hungarian Dentistry; the Association of Leading Hungarian Dental Clinics and the Hungarian Dental Tourism Company.

Hungarian Dental Tourism Company

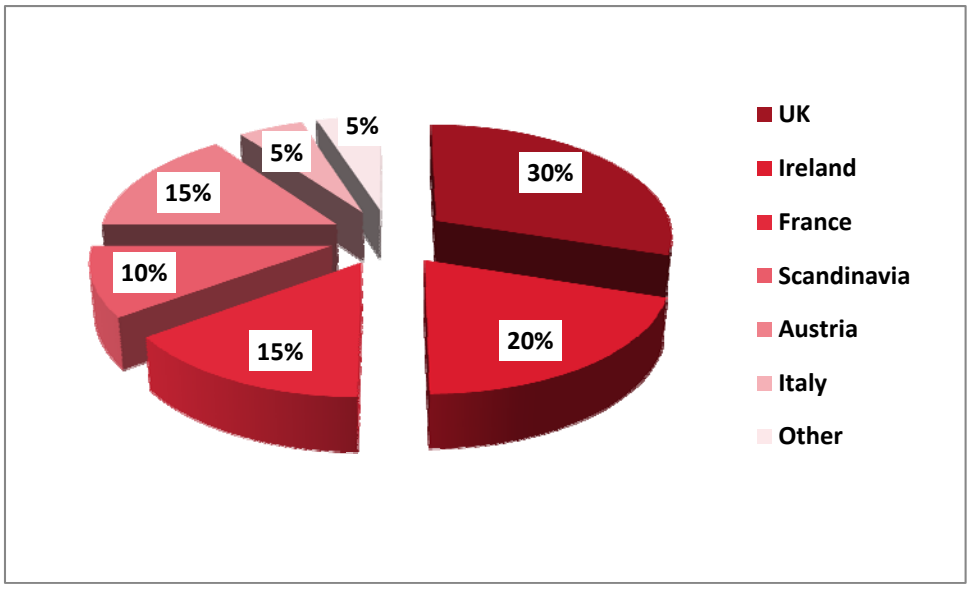
The company was established in 2010 by László Szűcs tourism expert, Béla Bátorfi DMD dentist, and József Piffkó DMD the past president of Hungarian Society of Oro- Maxillofacial Surgery. The company aims to collect dental professionals, dental offices (approximately 455 dental offices joined so far) and other actors participating in dental tourism. An advisory board of dentistry professors consists of 5 professors from different Faculties of Dentistry of the four prestigious medical universities. They elaborated an economic development program, that is, the Hungarian Dental Tourism Development Program supported by the Hungarian government. The program builds on the dental tourism and attempts to improve it in order the keep the leading position in dental tourism in Europe. It supports smaller dental offices in Hungary, further establishing medical tourism offices abroad – UK, Germany, France and Italy – is a highly prioritized objective of the program. The program – on national level – further aims to ensure jobs for dentists in Hungary and attempts to stop the brain-drain. Minimum quality requirements, professional protocols are checked and national accreditation is in process. The program was made in collaboration with dentists and tourism experts, via national consultations, road shows and conferences. The aim is to improve dental practices and provide financial support for the whole dental sector.

Cross-border dental care and Dental tourism

Main sending and receiving countries

Based on the literature, findings of the questionnaire survey and the conducted interviews the main sending and recipient countries can be identified. First of all, it is very important to note that in Hungary there are two crucial areas where dentists are treating foreign patients[22]. Since dental tourism started as a cross-border dental care in Western Hungary, this area is still remarkable for Austrian and German patients. This area – due to the closeness of Austria – is specialized on German speaking patients, most of the times treatments are run in German language. The other remarkable area is the capital Budapest, due to the location of the airport dental tourism became broader. Patients from Scandinavia, the UK and Ireland, Switzerland, France and Italy arrive to Budapest for dental care (Balázs & Österle 2008, Kámán 2010, Klar 2012, Szűcs 2012).

Figure11 Dental tourism – Sending countries in Europe in 2010



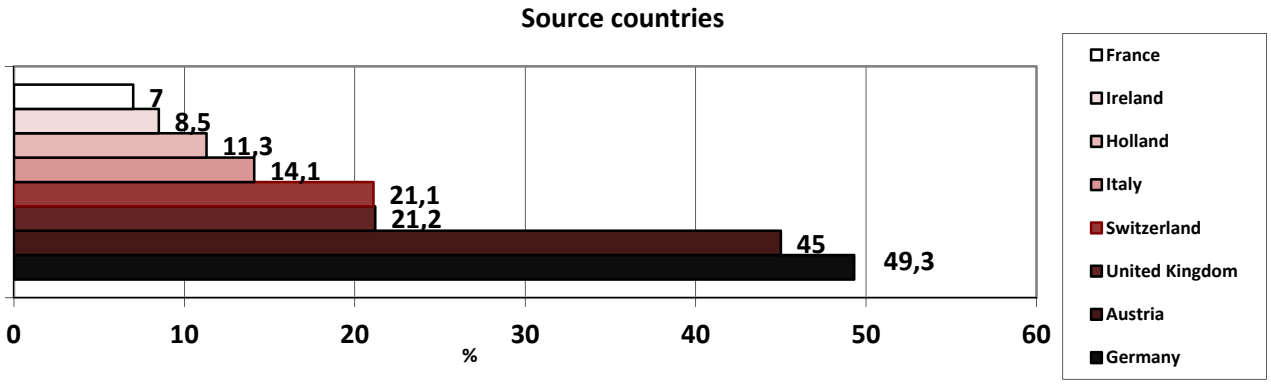
Source: Kámán 2010

[22] However, it is also important to note that these dental offices treat Hungarian **and** foreign patients too.

Figure 12 shows the source countries based on the experiences of active dentists in their own practice – Which countries do foreign patients come from?

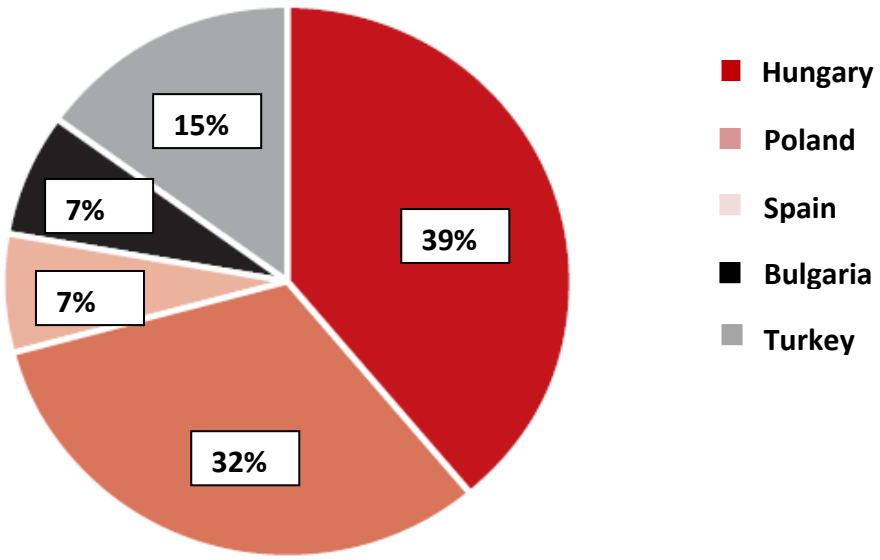
Dentists stated that the main source countries in their dental practices are Germany, Austria, the UK and Switzerland (Figure 12).

Figure 12 Source countries of the patient turnover in dental practices (in %)



In terms of Hungary's competitors Poland, Czech Republic, Slovenia, Bulgaria, Romania, Turkey and Spain might be mentioned (Szűts 2010). See Figure 13 for rates.

Figure 13 Recipient countries in Europe in 2007



Source: Tolnai et al. 2009, p. 39

The questionnaire survey showed that treating foreign patients has a noteworthy volume in Hungary. Similarly to Szűcs's and the CED previous estimations regarding the number of dental offices treating foreign patients – that was, 20% of dental offices involved in treating foreign patients – our sample showed similar rates (CED Position Paper January 2007).

Figure 14 Rate of treating foreign patients (in %)

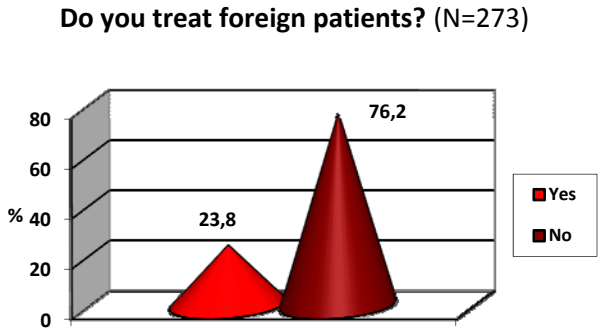


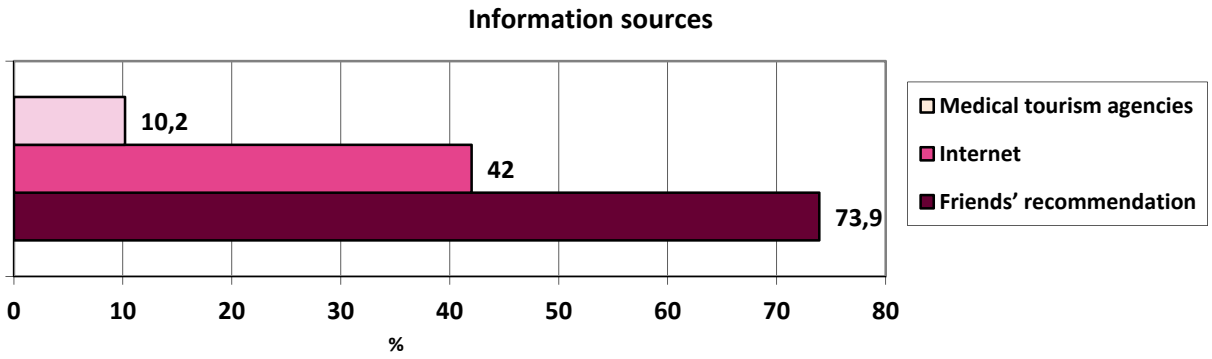
Figure 14 shows that nearly 24% of the respondents treat foreign patients in their dental practice. More detailed, in an average month 61.7% of the dentists treat mostly Hungarian patients with health insurance. The rate of treating mostly Hungarian private patients is 12.5%. In addition, 77.4% mentioned treating foreigners in low level, namely, 0-10% volume in the dental practice. Treating foreign patients within emergency cases showed very low level (3.6%).

Patient information

Since concerning the organizing aspect 95% emphasized that patients arrive on private journey and only 5% indicated that they arrive on organized trip, thus, it is a very important issue from where do patients receive information about dental care abroad. Three items have to be underlined hereby, namely, friends' recommendations, internet, and medical tourism agencies (Figure 15). Friends' recommendation is the most trustworthy source; good experiences generate more and more satisfied patients. Patients' experiences and evaluations can be read, in general, on the websites of dental offices. The second significant source, the internet provides widespread information about dental treatments in Hungary. Medical tourism agencies also operate and provide useful information, frequently in cooperation with travel agencies. Surprisingly, the majority of the interviewed dental

practices do not collaborate with medical tourism agencies. Only 4.4% of the respondents know medical tourism agencies, and 1.8% has contract with those agencies.

Figure 15 Patients' information sources (in %)



Another activity from dental offices – that increases trust – is to open dental offices abroad where patients have opportunity to meet the dentists during pre-consultation. In addition, this means that the treatment plan might be done in the home country, before traveling abroad. Dental offices abroad might serve aftercare and liability, redress as well.

Although pre-consultations occur that ensures trust, the volume of preparing treatment plan before the arrival is 23.3%, making treatment plan after the arrival is more common, 76.7%. The language of the treatment plan is mostly in English language or in the mother tongue of the patient (42.1% - 42.1% respectively). Similarly, the doctor-patient communication is mostly in English language during the treatments (55%) and 30% in the mother tongue of the patient. Regarding aftercare, it mostly takes place in Hungary (72.1%) and rarely abroad around 5%.

Patient motivation

There are several reasons why patients decide having treatment abroad. For instance in England, around 40-50 000 patients seek dental care abroad; in Austria or Switzerland, the lack of health insurance might be mentioned as a significant patient motivation; and rarely the lack of treatments' availability, in Ukraine.

Of the main patients' motivations affordable prices, good service - good quality, good professionals, advanced technology - and the combination of treatment with holiday, cultural programs play a

significant role (CED Position Paper January 2007). Klar (2012) also underlines the importance of the ability of planning. For the patients it is remarkable to see in advance how much time does the treatment take, how is the treatment process build and how many times do they have to see the dentists and how is the aftercare (see also CED Position Paper January 2007, Ehrbeck et al. 2008, Horowitz & Rosenweig 2007, Turner 2008).

Advantages and disadvantages of dental tourism

Most opinions emphasize the advantages of dental tourism both for patients and for the health care system, several respondents said there is no disadvantage is dental tourism.

For patients: they receive good quality treatment packages from well qualified dental professionals for reasonable price, thus the cost-benefit ratio is excellent. Hungary has provided good quality treatment for foreigners in the last 20 years since cross-border care started. Patient satisfaction rates are high. Other advantage, namely, combination of dental treatment with holiday is getting more popular (Barrowman et al. 2010, Caballero-Danell & Mugomba 2007, CED Position Paper January 2007, Klar 2010, Klar 2012). Actually, dentists stated that after reasonable prices (83.5%) and good quality (35%), combining treatment with holiday (27.4%) and avoiding waiting lists (27%) count a lot in the decision. In summary, saving time and money, quick and easy access to dental care increase the rates of dental treatment abroad.

In the questionnaire survey the followings were illuminated regarding advantages for patients: 86.2% saving money – around 1000 EUR saving patients are motivated for treatment abroad. Saving time is also crucial, namely, 24% thinks time plays a significant role, saving 1 week (36.7%) or 1 month (33.3%) is a motivating factor. So as are easy accessibility of treatments (19.3%) and special treatments (17.7%).

For health care system: high tech equipments, and continuous technical development may be done, dental technology can be improved via increasing patient flow (22%) and income (68.2%). 40% of the respondents stated the more advanced equipments and quality due to increased income. Further, dental offices make new jobs (13.7%), keep Hungarian dentists away from leaving the country – might reverse brain-drain (9.7%). Dental tourism also facilitates other sectors that mean income for tourism, which triggers economic growth[23] (12.8%), (Szűts 2010).

[23] See also: Horowitz & Rosenweig 2007.

As disadvantages only patients' aspect was stressed: the time pressure, namely, receiving aftercare in case of complications or lack of aftercare were mentioned – despite of the fact that 72.1%.of the dentists stated providing aftercare for foreign patients.

Time pressure leads us to overtreatment and aftercare – more and more dental offices have dental offices abroad where pre-consultation and aftercare is provided without going and returning to Hungary. This also helps in liability and redress issues.

Most of the times patients are aware of the whole dental treatment process in advance. Unexpected complication and aftercare is rare, the rate is similar to other European countries.

Table 6 Dental procedures supplied for foreign patients (in %)

	%
1) Individual Prevention for children	12.7
2) Two surface direct filling, Class II cavity (mo), Filling material: Composite	54.0
3) Three surface indirect, (cast) inlay filling, Class II cavity (mod), Filling material: Gold	38.1
4) Root canal filling, one root canal, vital tooth	54.0
5) Extraction of one tooth	46.0
6) Porcelain partially blended crown , Metal substructure made of gold, porcelain bonded	27.0
7) Cast metal bridge on 2 teeth, Bridge made of gold	20.6
8) Full porcelain bonded bridge on teeth 45 and 47, Replacement of tooth 46, Metal substructure made of gold for a porcelain bonded bridge	27.0
9) Metal cast denture (frame prosthesis), replacement of 5-8 teeth by resin teeth	22.2
10) Complete dentures in the upper and lower jaw, replacement of missing teeth by resin teeth	31.7
11) Single tooth implant and crown (anterior tooth)	39.7
12) Provision of four/two dental implants and telescopic dentures for an edentulous ridge	19.0

The most common dental treatments are: Two surface direct filling, Root canal filling and Extraction. Moreover, Single tooth implant and crown, Complete dentures, Porcelain partially blended crown and Porcelain partially blended crown procedures are supplied. These rates confirm the literature findings, namely, implants, crowns, and bridges are the most common treatments.

Data from Techniker Krankenkasse

In Germany, the second largest statutory health insurance fund, the Techniker Krankenkasse (with currently 8.2 million insurees) conducts regularly questionnaire surveys among its insurees (writing to approximately 35,000 -50,000 TK insurees) concerning cross border care in EU countries[24] (Wagner et al. 2011, Wagner 2009, Wagner & Verheyen 2009, Wagner & Schwarz 2008).

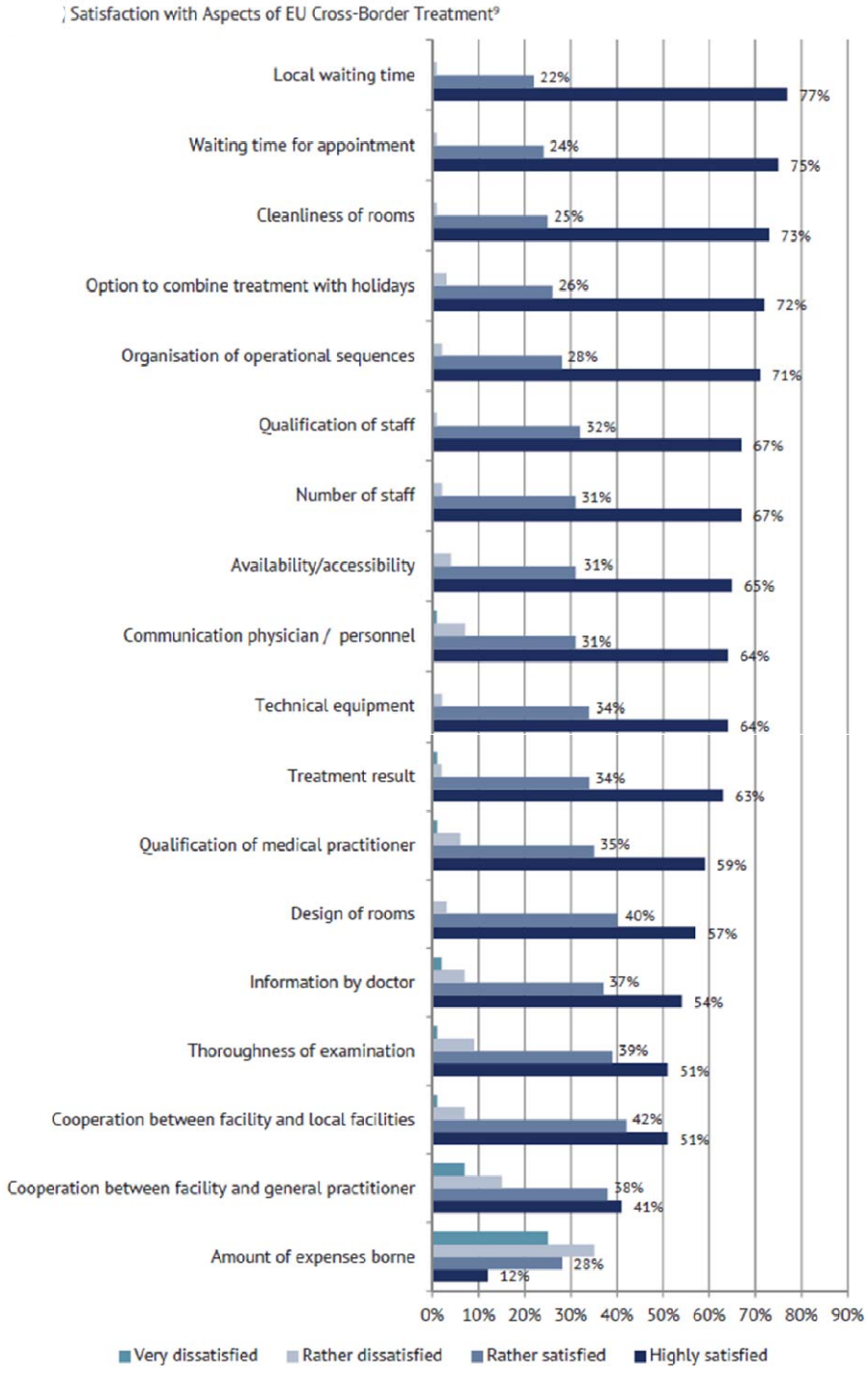
Based on the sample analyzed Wagner et al. extrapolated that "at least 420,000 members and thus at least 680,000 people in Germany received medical care in other EU countries in 2007" (Wagner, 2009). Thus, a notable volume of patient mobility within the EU is experienced. Medical cross border treatment in the EU was frequent in 2007. TK addressed 34,000 members, of which 12,000 members responded. Among these were 4,800 TK members with planned EU cross border care. In total 1,900 TK members received medical treatment in Hungary. Of these treatments planned treatments consisted around 40%. The rate of dental treatments achieved 11% among all respondents and their satisfaction reached 95% (Wagner & Schwarz 2008, p. 19).

In 2009 the questionnaire was sent to 47,038 TK members of which 15,540 responded. Among the latter 874 TK members had treatment in Hungary (Wagner & Verheyen 2009). Of these treatments around 40% resulted in the rate of planned treatments. The rate of planned dental treatments achieved 7%, and 12% of unplanned dental treatments among all respondents. 13% of the planned treatments took place in Hungary. Further analyzes showed that the demand for dental treatment among TK members was the strongest in Hungary with 11% (Wagner & Verheyen 2009 p.18). The satisfaction of planned treatments reached 76%, and 84% of unplanned treatments respectively.

In 2010 TK sent out questionnaires to 40,000 insurees who had EU cross border care and to 10,000 insurees who did not. The latter survey was carried out in order to estimate the future potential for planned EU cross border care. Extrapolating the result of the sample currently 30 per cent of all TK insurees, i.e. approximately additional 2.4 million insurees, could imagine to have planned EU cross-border care in future. These future consumers differ completely from the current consumers. Hungary roughly remained stable with the percent of 12% regarding the demand of cross border treatments among TK insurees (Wagner et al. 2011). The satisfaction of all respondents having had planned EU cross border care in 2009 showed the following picture (Figure 16).

[24] Regarding the TK surveys this includes all countries where the social security agreement as a result of EEC Regulation 1408/71 applies, i.e. all member states of the EU, the European Economic Area (EEA) and Switzerland, Iceland, Liechtenstein and Norway. For simplification furthermore referred to as "EU".

Figure 16 Satisfaction rates Cross Border Survey 2010



Source: Wagner C., Dobrick K., Verheyen F. EU Cross-Border Health Care Survey 2010. WINEG Wissen 02. Hamburg: Techniker Krankenkasse 2011, p. 16

The latest EU cross border care survey of TK was conducted in 2012 by its "Wissenschaftliches Institut der TK für Nutzen und Effizienz im Gesundheitswesen (WINEG)" (Scientific Institute of TK for Benefit and Efficiency in Health Care) entitled “Europabefragung 2012 - Geplante Grenzüberschreitende Versorgung - Ärzte, Zahnärzte, Behandlungen und Kosten aus Versichertensicht” (EU Cross Border Care Survey 2012 - Planned Health Care - Physicians, Dentists, Treatments and Costs from the Perspective of Insurees". In this survey WINEG analyzed in depth the patient satisfaction with the physicians, dentists and the quality of their treatments.[25] Other foci are the continuity of care in the context of chronic and rare diseases, dental treatments,[26] the use of EU-wide electronic of health data,[27] exchange of the patient mobility between Germany and Poland[28] as well as between Germany and Hungary.[29] 505 patients had different planned and unplanned treatments in Hungary, where 25.5% arrived for dental treatment. In general, of the dental patients 60% planned their treatments, and 69% planned their last treatment – giving the rate of dental tourists. The most frequent treatments in dentistry were the followings (Figure 17).

[25] The report of the results will be published in January 2013. For further information see www.wineg.de.

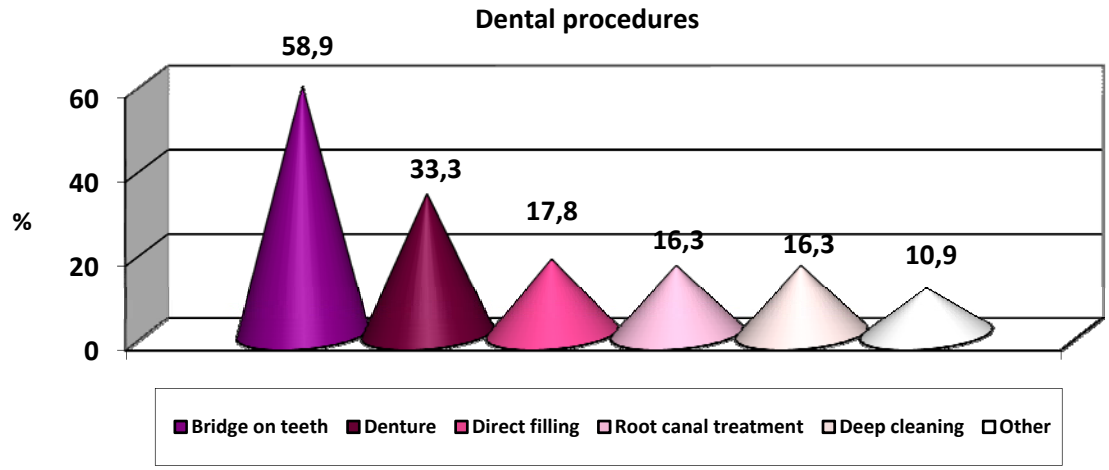
[26] Both carried out as a joint project with the Health Care Management Department - WHO Collaborating Centre for Health Systems Research and Management of the Technische Universität Berlin.

[27] In co-operation with the Department of Life Sciences, Hamburg University of Applied Sciences.

[28] The evaluation of the results is carried out in co-operation with the University of Greifswald as part of the PhD Research Group "Baltic Borderlands: Shifting Boundaries of Mind and Culture in the Borderlands of the Baltic Sea Region".

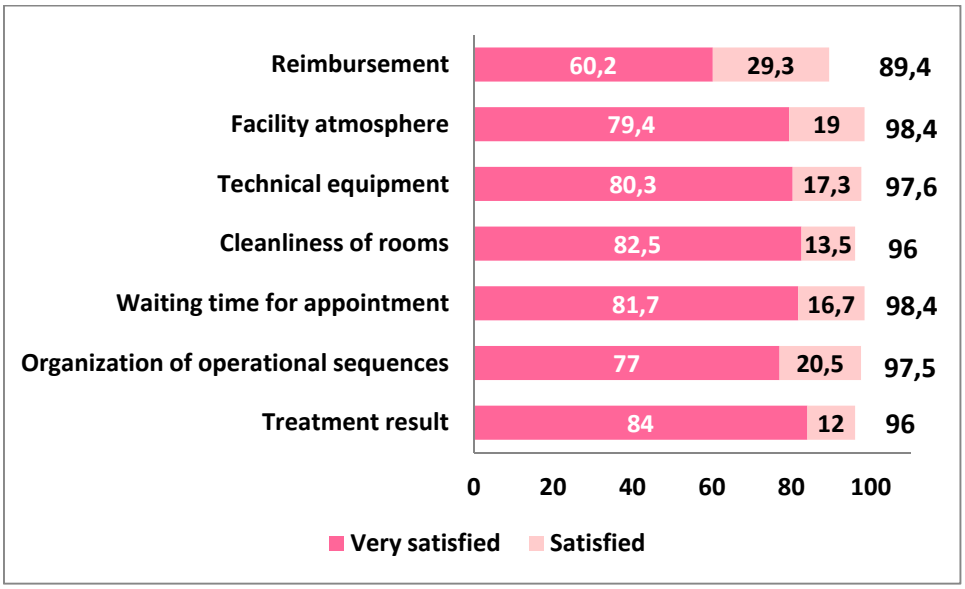
[29] This part of the survey is evaluated in collaboration with the Health Services Management Training Centre of the Semmelweis University.

Figure 17 Most common dental treatments supplied by TK members (in %)



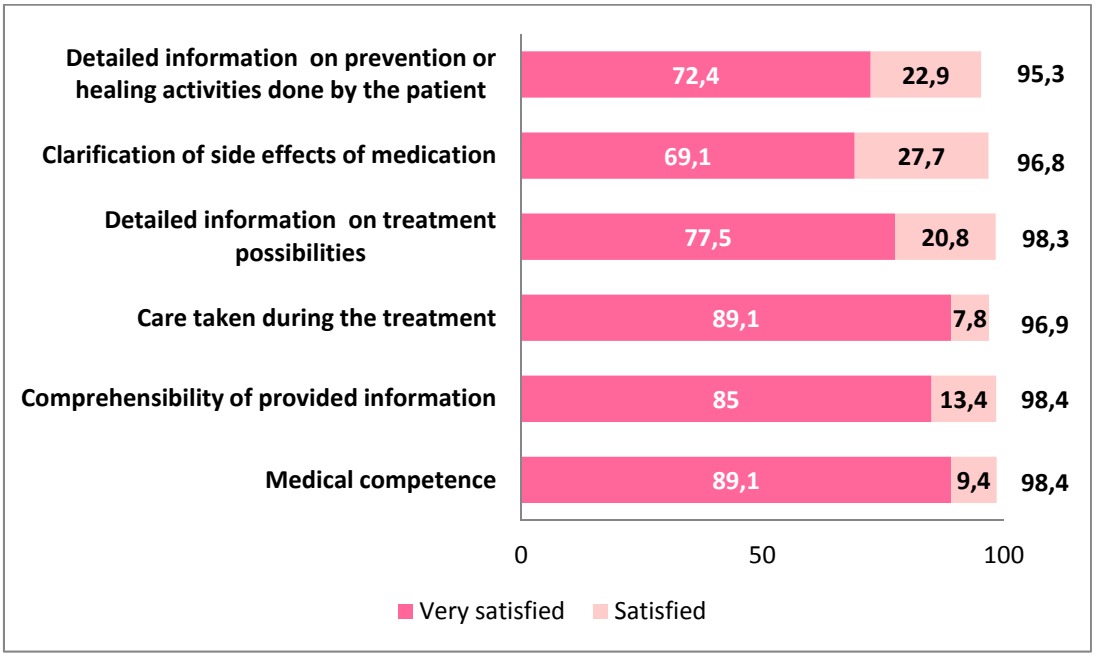
The satisfaction among patients having dental treatment in Hungary was measured by several items (Figure 18-19). Figure 18 shows that the vast majority of the patients are highly satisfied with the dental service. 98.4% of the patients were very satisfied with the waiting time for appointment and the facility atmosphere. In addition, 97.6% rated the technical equipments and 97.5% the organization of operational sequences very good. The treatment result and the cleanliness of rooms were also highly appreciated.

Figure 18 Patient satisfaction on dental services (in %) in Hungary



Furthermore, satisfaction level with the dentists and their dental procedures was also measured. Patients indicated that the medical competence and the comprehensibility of provided information was very satisfying, similarly to the clarifications and the further detailed information provided by the dentists during the dental treatments (Figure 19)

Figure 19 Patient satisfaction on dentists and their dental treatments (in %) in Hungary



Regarding aftercare 72% of the patients did not demand aftercare, while 22.4% had planned aftercare and merely 5.6% experienced unexpected complications, so aftercare. These problematic cases were treated mainly by German dentists, and the same Hungarian dentists.

Costs

Based on the responses of the TK insures having dental treatment in Hungary, the average price of their dental treatment was around 1,800 EUR, however the standard deviation is fairly high, namely 2,400 EUR.

Average costs of the treatment abroad reached 1,822 EUR (SD = 2,406 EUR)

Average costs of extra expenses were around 376 EUR (SD = 840 EUR)[30]

[30] Klar (2012) found in his research 530 Euro in average for extra expenses.

Patient motivation

Of the main reasons why TK insurees travel to Hungary for dental treatment are the followings[31]:

- First, saving money is currently the main motivating factor, 67.4%
- Second, good experiences from previous cross border treatments in Hungary, 30.2%
- Third, the combination of the dental treatment in Hungary with a holiday trip, 29.5%

Language

74.1% use the German language with dentists and 72.4% with the staff. Moreover, it is notable that 19% with dentists, as well as 16.9% with the staff used Hungarian language.

The reason for the high level use of the Hungarian language could be because: Hungary is attractive "as a result not only of the potential cost savings that treatment here can provide, but also because of the old historical association in the form of the German tradition of spa treatments in Eastern Europe. Further analyses broken down by federal states have shown that this relates in particular to TK members from the former East Germany; certainly also as a relic of the close relations with neighboring Eastern European countries during GDR times." (Wagner & Verheyen 2009, p. 18).

[31] These findings also confirm the results of the questionnaire survey and the interviews.

Summary from Survey on dental tourism 2010, Dental travel in Hungary by Andreas Klar

Patient survey was conducted between June 2010 and November 2010 in 15 dental clinics in Budapest. Survey questions concentrated on the details of dental treatment in Budapest supplied by foreign patients (see more detailed Klar 2012).

- Based on 330 valid responses we can summarize that regarding dental treatments the majority (62%) arrived for crown treatments, 54% for dental implants and 46% for bridges.
- 31% of the respondents have already received dental treatment abroad previously, once or more times.
- Of the respondents 90% would return to Hungary for another dental treatment and 89% would recommend it.
- Most of the times, patients searched and received information about dental treatments abroad from their friends and the internet.
- The main motivation factors are the better price, better quality and comfort. The guarantee, dentists' education and providing aftercare were also important factors. Not surprisingly, combination of dental treatment with holiday also played a significant role.
- Regarding the price the respondents stated that they could save around 6000 EUR with treatment abroad – average price of the treatments around 5500 EUR. The minimum saving considering treatment abroad was pointed around 3500 EUR. In summary, the rate of average saving is 50%[32].

[32] Similarly to Pollard (2007) who stated 48% for average saving. Klar (2012) found that the saving rate gave 59% rate for Norwegian patients and 57% for Swiss patients.

Price list comparison

Gaps in prices between different parts of the world, and Western and Eastern European countries are widely known (Baulig 2004, Baulig 2008, Herrick 2007, IDZ 2009, Joss et al. 1999, Kaufhold 2000, Obermeier 2009, Tan et al. 2008). There are more websites and studies that deal with the current prices of different dental treatments. This capital focuses on price differences in world and Europe wide context. The three figures below from Woodman, Pollard and Lunt and colleagues show that there is a crucial price difference (in several currency), thus, saving via affordable prices as a motivating factor have been highlighted in the last decade. Since the economic situation has been declining lately and the prices for dental treatments are increasing, traveling abroad became more popular (Figure 20).

Figure 20 The impact of economic recession on medical tourism

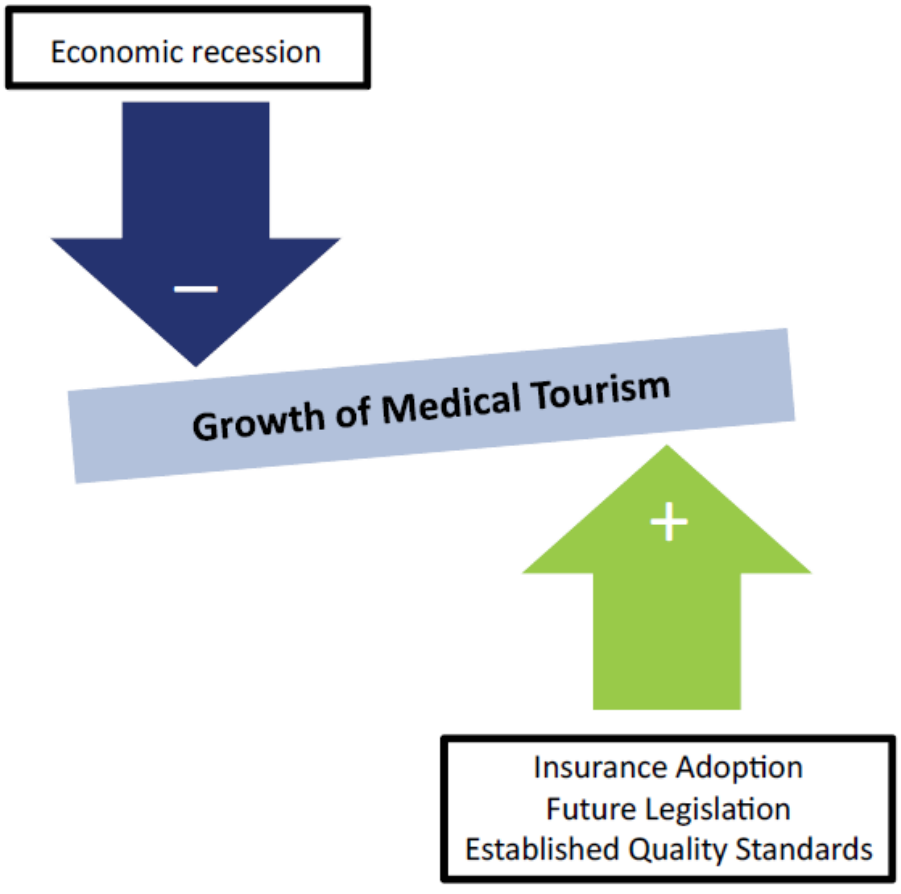


Figure 21

Dentistry: Comparative Costs in Popular Destinations

Procedure	US Cost	Mexico	Costa Rica	Hungary	Thailand
Implant	$2,200	$1,500	$725	$1,400	$2,150
Crown	$1,750	$495	$400	$590	$540
Porcelain Veneer	$900	$390	$350	$620	$285
Dentures (Upper & Lower)	$5,000	$2,700	$1,600	$1,500	$1,000
Inlays & Onlays	$1,500	$360	$350	$500	$235
Surgical Extraction	$365	$235	$195	$265	$60
Root Canal	$600	$265	$190	$120	$165

Source: Woodman 2007, p. 11.

Woodman provides an overview about the price of seven dental treatments (Figure 21). Not surprisingly, Costa Rica has the lowest prices, is also known the first destination in dental tourism in the world (Appendix 4).

Pollard shows more detailed information on the prices (Figure 22), he counts the extra expenses such as travel cost and accommodation from the Medical Tourism Survey 2007. As a conclusion Pollard determines 48% package saving in Hungary compared to UK.

Lunt et al. uses the same database from the Medical Tourism Survey 2012 (Figure 23). In summary, regarding dental procedures, Hungary ensures good, affordable price for patients, however Poland appears as competitor.

Figure 22 Price for dental implant (in GBP)

Dental implant

Country	Procedure price	Procedure saving	Travel cost	Hotel nights	Hotel per night	Hotel cost	Total price	Package saving
Bulgaria	£700	65%	£160	7	£45	£315	£1,175	41%
Costa Rica	£435	78%	£650	7	£50	£350	£1,435	28%
Croatia	£672	66%	£60	7	£50	£350	£1,082	46%
Germany	£600	70%	£165	7	£60	£420	£1,185	41%
Greece	£600	70%	£235	7	£50	£350	£1,185	41%
Hungary	£665	67%	£100	7	£40	£280	£1,045	48%
India	£550	73%	£350	7	£30	£210	£1,110	45%
Italy	£411	79%	£65	7	£65	£455	£931	53%
Poland	£750	63%	£170	7	£40	£280	£1,200	40%
Turkey	£588	71%	£155	7	£35	£245	£988	51%
Vietnam	£545	73%	£1,030	7	£40	£280	£1,855	7%
UK	£2,000						£2,000	

Source: Pollard 2007

Figure 23 Price for three selected dental procedures (in USD)

Procedure	US	India	Thailand	Singapore	Malaysia	Mexico	Poland	Hungary	UK
Crown	385	180	243	400	250	300	246	322	330
Tooth Whitening	289	100	100		400	350	174	350	500
Dental Implants	1 188	1 100	1 429	1 500	2 636	950	953	650	1 600

Note: Prices in US dollar

Source: Lunt et al. 2012, p. 12

Desk search on price gaps

The present desk search resulted in the following price list features.

The prices in dental care show wide range concerning different treatments. There are dental practices providing care for lower prices and on the other hand, there are such dental clinics having higher prices. These prices are available publicly in the dental offices and the websites most of the times. Prices are available in HUF but there are many dental practices indicating the prices in foreign currency, namely, in EUR and GBP. The patients pay the same price regardless their nationality, that is, the procedures cost the same price for locals and foreigners based on their treatment needs.

Table 8 The selected 11 dental procedures investigated - price ranges (in EUR)

	Minimum	Maximum	Mean
1) Individual Prevention for children			28*
2) Two surface direct filling, Class II cavity (mo), Filling material: Composite	21	125	60
3) Three surface indirect, (cast) inlay filling, Class II cavity (mod), Filling material: Gold	60	490	206
4) Root canal filling, one root canal, vital tooth	9	150	63
5) Extraction of one tooth	11	70	40
6) Porcelain partially blended crown , Metal substructure made of gold, porcelain bonded	70	370	213
7) Cast metal bridge on 2 teeth, Bridge made of gold			680*
8) Full porcelain bonded bridge on teeth 45 and 47, Replacement of tooth 46, Metal substructure made of gold for a porcelain bonded bridge			167*
9) Metal cast denture (frame prosthesis), replacement of 5-8 teeth by resin teeth	316	950	500
10) Complete dentures in the upper and lower jaw, replacement of missing teeth by resin teeth	386	1600	805
11) Single tooth implant and crown (anterior tooth)	323	1257	634
12) Provision of four/two dental implants and telescopic dentures for an edentulous ridge	1319	2400	1840*

Note: Prices in EUR, Prices based on indicated prices of 200 dental practices, *High percent of missing data

For instance, Root canal filling[33] showed a huge standard deviation, the price achieved 63 EUR in average and the range between 9-150 EUR. Similarly to root canal filling, two surface direct filling reached similar price, 60 EUR in average. Extraction of one tooth costs approximately 40 EUR. Further, a three surface indirect, (cast) inlay filling has higher price, M = 206 EUR.

Among the most expensive treatments metal cast denture, complete dentures and single tooth implant and crown is highlighted. Metal cast denture costs around 500 EUR, and single tooth implant 634 EUR. Complete dentures have the highest price, that is, 805 EUR.

Based on the price lists we can state that no matter how high the price it is, it stays still lower level compared to other Western European countries.

[33] It has to be noted that price lists contained not as detailed dental procedures as listed here, so similar treatments were taken into account.

Discussion

The raised questions, namely, “Why is Hungary the main destination country in dental tourism?” and “Why do patients choose Hungary for dental care?” was investigated in the present paper. A comprehensive overview was provided where each part of the dental care, from dentistry training till daily practice was described. There are several factors that strengthen the role of dental care in Hungary:

- Dental tourism has long traditions in Hungary. The affordable price, **cost/benefit ratio** was already recognized in the early 90’s and was appreciated even before the EU accession of Hungary.

- High quality of dentistry training - more and more foreign students choose Hungary to receive their dentistry diploma; **high quality of theoretical and practical training** is underlined by alumni students as well; professors are active dentists thus the **applicability of the acquired knowledge is high** → Hungarian Faculties of Dentistry educate high quality dentists

- The **quality of materials, equipments is high** – European level – **quality**, the rate of complications stays around 5% similarly to other European countries.

- **Previous treatment experiences are positive, patient satisfaction level is high** – more and more patients choose Hungary, more and more patients state that they would return for another treatment in the future.

- Not only from **neighboring countries** but from **Europe** and the whole **world** there are patients seeking dental care in Hungary. Due to the increasing prices in Western Europe and the easy accessibility of Hungary and dental treatments in Hungary, the country gained its leading position in dental tourism in 2008 and the volume of foreign patients is increasing.

- **Guarantee** is provided, the majority of dental offices **ensure quality** by ISO and other European, and American Quality Assurance Certificates.

Conclusions and considerations for practical policy relevance

The globalization of the health care market resulted in medical, dental and health tourism. As regards to previous estimation 4% of Europeans received medical treatment in another EU Member State over the past 12 months – stated by Gallup group in 2007. Further studies highlighted an increasing tendency of patient mobility (Caballero-Danell & Mugomba 2007, Ehrbeck et al. 2008, Gallup group 2007, Herrick 2007, Horowitz & Rosenweig 2007, Keckley & Underwood 2008, Lunt et al. 2012, Wismar et al. 2011). Over average 53% of EU citizens would be willing to travel abroad for medical treatment, dental treatment. This fact calls the attention for dealing with the present specific issue of patients crossing borders for dental care.

Cross-border dental care, dental tourism is mutually beneficial to the international patients and the institutions, namely, increases investments and stimulates doctors. Opening borders, frontiers to patients resulted in a new phenomenon, being new Europeans, where country of residence is no longer appropriate because of the large volume of patient mobility[34].

The affected parties in dental tourism are the followings: patient, insurer, provider-dentist, MS, EU.

- From the patients' perspective dental travel is a rational choice, for that they are accountable – consumer accountability. Dental treatments are usually paid out-of-pocket. Patients are offered greater financial benefit whilst treatment abroad and maybe additional experiences such as vacation. Since patients seek information in advance, the use of internet provides well informed patients.

- For the insurer dental tourism might be beneficial too. Decreased prices might mean decreased amount of reimbursement. Additional insurance might be purchased by the patients. Additional categories have been already introduced in order to facilitate patient mobility, for instance, special visa for medical tourists[35].

[34] See: temporary visitors abroad, long term residents retiring to other countries, people living in border areas, people who are referred abroad to seek care abroad, Jelfs & Baeten 2012, Legido-Quigley et al. 2007 and Rosenmöller et al. 2006

[35] See Caballero-Danell & Mugomba 2007

- For the dentists patient-centered care becomes notable, providers intend to ensure widespread and comprehensive patient-tailored information of the available dental procedures.

- For the MS and the EU there are several issues to discuss concerning legislative harmonization, namely, 1) regulation of accreditation: legal reforms policymakers should consider include recognizing licenses and board certifications from other states and countries; 2) human resource: in health workforce planning dental tourism might reduce brain drain that is good for the local population that might suffer from lack of specialists; 3) quality: as a consequence – increased competition, promoted cost competitiveness might improve quality through competitive pressure, further enhance productivity; 4) patient safety: in terms of liability and redress acceptable standard for compensation could be elaborated, compensation scheme could be drawn, through that risks and malpractice could be preventable, avoidable. The market-oriented EU rules now affect these national experiments as patients and health-care providers turn to EU law to assert certain rights. The recent debates on the Directive on Patients' Rights further underline the importance, but also the difficulty (and controversy), of allowing EU law to regulate health care.

The key is transparency. The EU regulation provides the free movement since 1998[36], the European Health Insurance Card since 2004[37], the mobility of health professionals since 2005[38] and the most recent the aspects of patients' rights since 2011[39]. Despite of several vague and challenging issues medical tourism, dental tourism shows an increasing tendency. The EU recommendations should include agreed international standards (i.e. on prior authorization, quality assurance, litigation, patient documentation, and electronic medical records) and need to be crystal clear in order to provide quality health care for all European citizens in all MS (Jelfs & Baeten 2012, NHS Briefing 2011).

[36] Free movement of persons, workers, services, goods and capital (14/2 EC)

[37] EC Directive 2004/38/EC

[38] 2005/36/EC EU Directive about the mutual recognition of professional qualifications (currently under revision)

[39] 2011/24/EU Directive on the application of patients' rights in cross-border health care (introduction into national legislation by the end of 2013)

Moreover we should raise the question concerning necessity of medical travels; How would sending countries react if there were no medical tourism? What would happen to the health status of the population and health care systems?

The waiting time would extend and the waiting lists would be longer; some treatments would not be available and accessible – this might harm equity –, perhaps there would be not enough capacity in human resources and health care systems to treat patients based on their needs. Telemedicine and state-sponsored outsourcing – IT solutions – would show increasing trend and health professionals' mobility would increase. It might trigger the harmonization of the use of electronic medical records.

As Lunt et al. (2012 p. 44) highlighted the issue: international level regulation, agreements and research is further needed in order to see "whether medical tourism is virus, symptom, or cure."

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About the authors

Dr. Eszter Kovács, PhD: Sociologist, Researcher in HSMTC, Semmelweis University. Main research fields are cross-border health care, health professionals' migration and health workforce planning.

Dr. Gábor Szócska, MD: Research Director, Scientific leader of the ECAB project. His areas of expertise focus on health tourism, health system development, and health management.

Károly Ragány, MSc: Expert on human resources for health, health professionals' migration and health workforce planning.

Blanka Török, MSc: International Program Coordinator in HSMTC, Assistant in ECAB project.

Acknowledgements

Special thanks for Dr. Caroline Wagner – WINEG Techniker Krankenkasse, and Andreas Klar – Universität Bayreuth Düsseldorf, providing data and information, and interesting discussions in the current issue.

We thank for Österreichische Zahnärztekammer the data on Hungarian dentists in Austria.

We thank the Ministry of Human Resources contributing to the research project.

We are grateful for the medical universities, Semmelweis University, University of Szeged, University of Pécs, University of Debrecen, dentistry faculties for providing information on the numbers of students and dentistry training, and for Edmond Girasek in HSMTC providing data on GCTS.

We thank all of the dental organizations enthusiastically collaborating, contributing and participating in the research project - Dr. Péter Hermann, Dental Section of the Hungarian Medical Chamber, Dr. István Gera, Hungarian Dental Association, Dr. Pál Fejérdy and Dr. Mihály Orosz, National Advisory Board of Healthcare – Dental and Oral Disease Department and Council, Dr. Péter Kivovics and Dr. Péter Vágó, National Institute of Oral and Maxillofacial Diseases, National Dental Public Health Authority - Chief Dental Officer, National Committee for Hungarian Dentistry, Dr. Attila Kámán from the Association of Leading Hungarian Dental Clinics and László Szűcs from the Hungarian Dental Tourism Company; dentists from Premium Dental Clinic and for all dentists providing information on the issue of Hungarian dental care and patient flow.

We are also grateful for Edina Pest and Richárd Faller from HSMTC, who contributed significantly to the informatics and technical part of conducting the research and reporting.

Special thanks for Dr. Péter Hermann for the content review of earlier draft of the case study.

Appendix 1

Graduate career tracking in Hungary – nationwide database of graduate and current students

Tracking the careers of fresh graduates has proved to be an internationally successful method of promoting communication between higher education and the labor market. Graduate career tracking programs are empirical studies among university or college graduates aiming to provide information about the professional progress of graduate students, their opportunities on the labor market, as well as their feedback and evaluation of their degree course:

- Information on their former students' job finding experience, their status on the labor market, and the relevance of the skills they acquired provides essential feedback for universities and colleges, based on which these institutions can further improve their training programs and services.

- Graduates' success in finding employment and the pre-requisites of success represent useful information for future students as for the career path they wish to pursue, and for choosing a degree course.

- Governmental organizations as well as institutions of higher education can benefit from the survey as an essential source of information when planning their training programs.

- The findings of career tracking survey can also provide useful information for employers about the trainings at institutions of higher education.

The nationwide, centralized, continuously updated career tracking database was created in 2008 with the support of the European Union (Social Renewal Operative Programme 4.1.3). The program was managed by Educatio Public Services Non-profit LLC in co-operation with the successfully applying institutions.

For more information on health professionals' career paths contact Edmond Girasek at the Health Services Management Training Centre, girasek@emk.sote.hu

Appendix 2

Dental Professional bodies

1. Dental Section of the Hungarian Medical Chamber

Leader: Dr. Péter Hermann

1068 Budapest, Szondi u. 100.

Ethical control and interest representation are the main tasks of the organization. Membership is mandatory for active dentists since 1st June 2011. The Dental Chamber publishes the monthly dental bulletin: Journal of The Hungarian Dentist.

2. Hungarian Dental Association

Leader: Dr. István Gera

1088 Budapest, Szentkirályi u. 47.

Scientific organization, facilitates development of the profession and professionalism, operates on national and international level. It publishes the scientific journal Stomatologia Hungarica.

3. National Advisory Board of Healthcare – Dental and Oral Disease Department and Council

Leader of the Dental department: Dr. Pál Fejérdy

Leader of the Dental council: Dr. Mihály Orosz

The previous "Professional Advisory body of Dental and Oral Disease" changed on 1st of May 2011 due to the Government Regulation of the Ministry of National Resources – 12/2011 (III.30.). This organization is responsible for establishing, developing and supervising professional guidelines and professional protocols.

4. National Institute of Oral and Maxillofacial Diseases

Leader: Dr. Péter Vágó

National Dental Public Health Authority

Leader: Dr. Péter Kivovics (Hungarian Chief Dental Officer)

1088 Budapest, Szentkirályi u. 47.

These institutes provide professional trainings and continuing education, and patient care.

5. National Committee for Hungarian Dentistry

Leader: Dr. István Gera

The Committee represents Hungarian Dentistry on international forums and discussions, particularly in the Council of European Dentists. Members are recruited from the Dental Section of the Hungarian Medical Chamber and the Hungarian Dental Association. The Committee operates since the year 2000.

6. Association of Leading Hungarian Dental Clinics

Leader: Dr. Attila Kámán

1114 Budapest, Orlay u. 1.

This umbrella organization consists of dental clinics and dental offices treating foreign patients. This organization aims to promote of the Hungarian Dental Tourism and to build collaboration in order to serve dental tourism in Hungary.

7. Hungarian Dental Tourism Company

Leaders: László Szűcs, Dr. Béla Bátorfi, Dr. József Piffkó

1126 Budapest, Nagy Jenő utca 10.

This organization aims to promote of the Hungarian Dental Tourism with the support of the Hungarian government.

Appendix 3

The Quality – Code of Practice

The members of the association strive to provide the highest standards possible therefore they believe:

1. Dentistry is made up of different specializing fields. In order to provide the possible highest standard of remedy a team of specialized dentists is essential:

The practices employ a minimum of ten dentists / oral surgeons to hold specializing diploma.

2. The safety of the medical care depends on the respective utilization of the existing capacity:

Practices are equipped with a minimum of 5 modern dental medical operating units and prepare at least 1500 units of aesthetic tooth replacements a year.

3. Modern dental technology demands an adequate medical experience:

Practices placed a minimum of 1000 implants a year in the past 2 years.

4. Using all advantages given by today's computer technology secure patient care and high quality patient satisfaction:

Practices use cutting edge technology CAD-CAM (Procera, Cercon, Cerec, Everest) and pre-implantation surgery planning methods on a daily basis.

5. The quality of treatment strongly relate to the quality of the surgerys' equipments:

All materials and instruments are of the highest quality and only sourced from reputable manufacturers: (KaVo, Siemens, Morita, Castellini, ADec, WH, Nouvag, NSK, Trophy, DeTrey, Kerr, Nobel, Zimmer, Friadent, etc.)

6. The development of medical attendance makes it possible to provide the best yet affordable treatment available for every patient:

Practices ensure that all practitioners work within industry recognized protocols, including clinical governance and undergo regular internal clinical audits and assessments. They also participate in ongoing dental and hygienist clinical education and professional development courses.

7. The precision of diagnosis is the key factor to enhance prevention, therapy and rehabilitation:

Practices dispose both digital intra-oral and panoramic X-ray equipments.

8. It is essential to keep attention to patients' safety:

Companies possess great value profession liability insurance throughout Europe.

9. The quality of patient care has to be credited by external experts:

Practices aspire to introduce an audited quality assurance system.

10. Up-to-date knowledge is not possible without excellent international communication:

Practices employ multilingual staff.

11. Precise administration is the foundation to high quality patient care, this includes post-treatment follow-ups and a good customer relations:

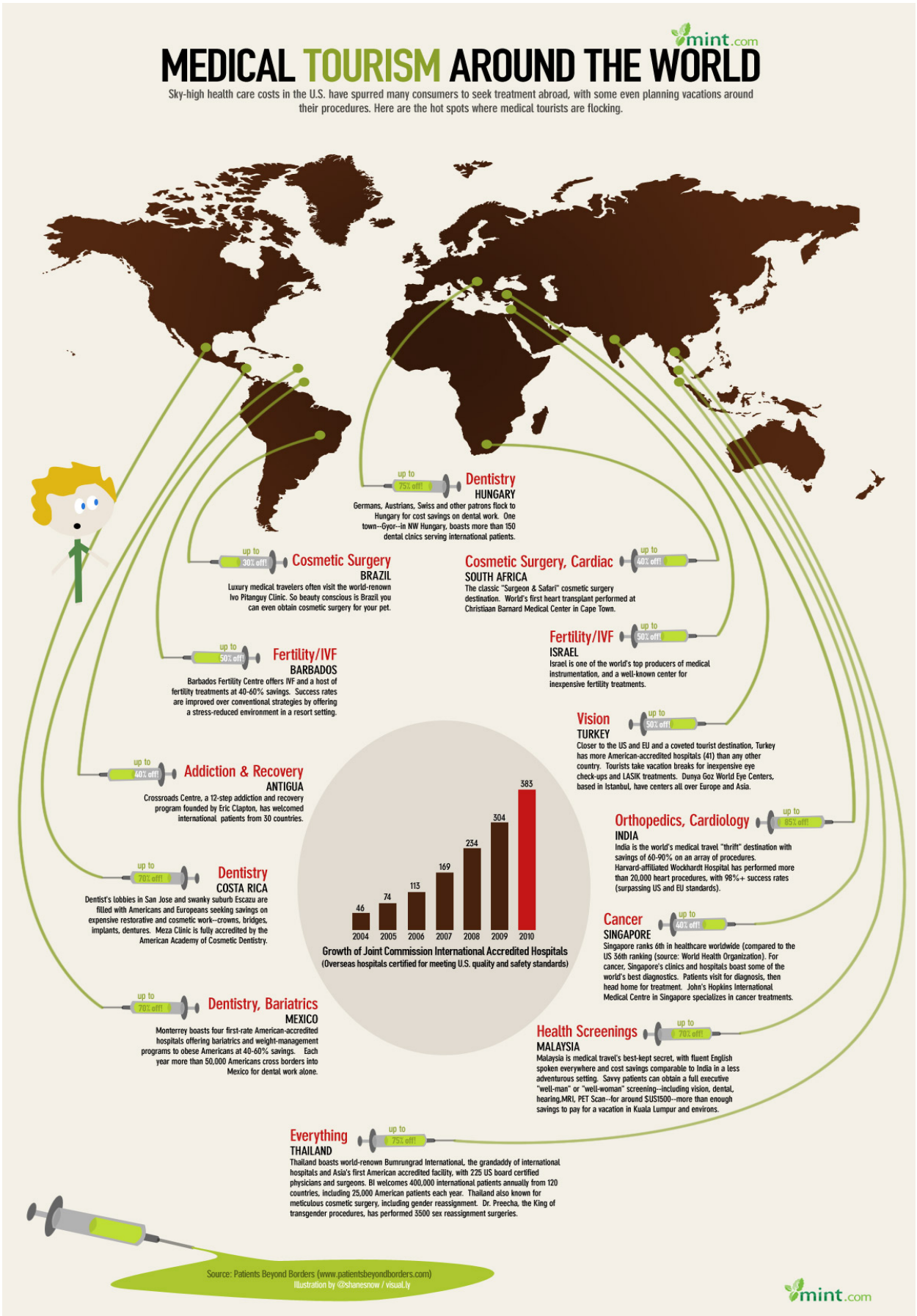
The practices employ a team of coordinators and customer care staff.

12. It is very important to create a safety environment for foreign patients during their stay:

Practices operate their distinctive transfer service.

Source: http://www.hungariandentalclinics.com/?wl=723

Appendix 4


mint.com
MEDICAL TOURISM AROUND THE WORLD
Sky-high health care costs in the U.S. have spurred many consumers to seek treatment abroad, with some even planning vacations around their procedures. Here are the hot spots where medical tourists are flocking.
up to 75% off!
Dentistry
HUNGARY
Germans, Austrians, Swiss and other patrons flock to Hungary for cost savings on dental work. One town--Gyor--in NW Hungary, boasts more than 150 dental clinics serving international patients.
up to 30% off!
Cosmetic Surgery
BRAZIL
Luxury medical travelers often visit the world-renown Ivo Pitanguy Clinic. So beauty conscious is Brazil you can even obtain cosmetic surgery for your pet.
Cosmetic Surgery, Cardiac
up to 40% off!
SOUTH AFRICA
The classic "Surgeon & Safari" cosmetic surgery destination. World's first heart transplant performed at Christiaan Barnard Medical Center in Cape Town.
Fertility/IVF
up to 50% off!
ISRAEL
Israel is one of the world's top producers of medical instrumentation, and a well-known center for inexpensive fertility treatments.
up to 50% off!
Fertility/IVF
BARBADOS
Barbados Fertility Centre offers IVF and a host of fertility treatments at 40-60% savings. Success rates are improved over conventional strategies by offering a stress-reduced environment in a resort setting.
Vision
up to 50% off!
TURKEY
Closer to the US and EU and a coveted tourist destination, Turkey has more American-accredited hospitals (41) than any other country. Tourists take vacation breaks for inexpensive eye check-ups and LASIK treatments. Dunya Goz World Eye Centers, based in Istanbul, have centers all over Europe and Asia.
up to 40% off!
Addiction & Recovery
ANTIGUA
Crossroads Centre, a 12-step addiction and recovery program founded by Eric Clapton, has welcomed international patients from 30 countries.
Orthopedics, Cardiology
up to 65% off!
INDIA
India is the world's medical travel "thrift" destination with savings of 60-90% on an array of procedures. Harvard-affiliated Wockhardt Hospital has performed more than 20,000 heart procedures, with 98%+ success rates (surpassing US and EU standards).
up to 70% off!
Dentistry
COSTA RICA
Dentist's lobbies in San Jose and swanky suburb Escazu are filled with Americans and Europeans seeking savings on expensive restorative and cosmetic work--crowns, bridges, implants, dentures. Meza Clinic is fully accredited by the American Academy of Cosmetic Dentistry.
46
74
113
169
234
304
383
2004
2005
2006
2007
2008
2009
2010
Growth of Joint Commission International Accredited Hospitals
(Overseas hospitals certified for meeting U.S. quality and safety standards)
Cancer
up to 40% off!
SINGAPORE
Singapore ranks 6th in healthcare worldwide (compared to the US 36th ranking (source: World Health Organization). For cancer, Singapore's clinics and hospitals boast some of the world's best diagnostics. Patients visit for diagnosis, then head home for treatment. John's Hopkins International Medical Centre in Singapore specializes in cancer treatments.
up to 70% off!
Dentistry, Bariatrics
MEXICO
Monterrey boasts four first-rate American-accredited hospitals offering bariatrics and weight-management programs to obese Americans at 40-60% savings. Each year more than 50,000 Americans cross borders into Mexico for dental work alone.
Health Screenings
up to 70% off!
MALAYSIA
Malaysia is medical travel's best-kept secret, with fluent English spoken everywhere and cost savings comparable to India in a less adventurous setting. Savvy patients can obtain a full executive "well-man" or "well-woman" screening--including vision, dental, hearing,MRI, PET Scan--for around $US1500--more than enough savings to pay for a vacation in Kuala Lumpur and environs.
Everything
up to 75% off!
THAILAND
Thailand boasts world-renown Bumrungrad International, the grandaddy of international hospitals and Asia's first American accredited facility, with 225 US board certified physicians and surgeons. BI welcomes 400,000 international patients annually from 120 countries, including 25,000 American patients each year. Thailand also known for meticulous cosmetic surgery, including gender reassignment. Dr. Preecha, the King of transgender procedures, has performed 3500 sex reassignment surgeries.
Source: Patients Beyond Borders (www.patientsbeyondborders.com)
Illustration by @shanesnow / visual.ly
mint.com