Szent István University

Doctoral School of Economic and Regional Sciences

SPATIAL INEQUALITIES OF THE GENERAL PRACTITIONER AND FAMILY PEDIATRICIAN CARE IN HUNGARY

Theses of the doctoral (PhD) dissertation

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Gödöllő
2020

The doctoral school's

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Scientific field: regional sciences

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1 Rationale for the choice of topic

The topic of my dissertation is the examination of the territorial inequalities in access to primary healthcare and general pediatric care in Hungary.

The general practitioner and, in childhood, the pediatrician are indispensable players in our daily lives. Most people are insecure about health and disease-related problems and phenomena, and can only diagnose themselves (or their child) in the rarest of cases, and have a hard time adjusting to therapies in the mazes of the health care system. Everyone needs a key person with whom a relationship of trust can be built, who knows the person's medical history, recurrent or prolonged illnesses and health peculiarities, who provides guidance in the healing process as well as in the often impersonal, mass care-like system of specialist care. Many times we turn to the general practitioner with even the slightest health problem, and he examines, refers, prescribes, certifies, writes on sick pay, and serves many other activities for the role of "gatekeeper" attributed to him. Of course, the work of other actors in primary healthcare is also very important (e.g. childcare officers in the life of pregnant mothers, primary healthcare dentists, school doctors), but still, the general practitioner can be seen as the backbone of primary care, connecting people with the health care system and giving a 'human face' to the latter.

A rich international literature discusses the role of primary healthcare medicine not only in healing, but also in prevention, nursing care, health education, public health screening work, and, in relieving the burden of specialist care. Thus, expectations for physicians providing primary care, both in terms of the amount of tasks and their complexity, have increased. Moreover, these near-multifunctional professionals need to be available on a territorial basis anywhere in any country to provide care that is accessible to the population close to where they live.

In its current state, general medicine in Hungary can be said to be in crisis. In addition to the growing disease burden of the aging population, the profession is also aging, and the number of doctors who leave permanently due to their age can hardly be replaced by the professionals that are trained. The number of vacant general practitioner and general pediatric practices is constantly increasing, which is why more and more districts need to be replaced. Access to care for people living in such areas is limited in both quantity and quality. Of particular concern to future generations is the vacancy rate of general pediatric practices, as care for minors and adolescents can be provided most effectively by a proven pediatrician.

Although the state operates various support programs for the placement of general practitioners and the filling of districts, they can only postpone the increasingly urgent task of transforming primary care. The fragmented system of solo practices provides an obsolete, often disproportionate district structure, resulting in uncertain funding for many practices. The low existential attractiveness is further reduced by the still inadequate level of recognition of the primary healthcare medical profession, the degree of bureaucratic burdens placed on it, and, in this structure no improvement in the supply of lagging, peripheral areas is expected. It is required to establish the best, economically and humanly sustainable combination of new, more regionally concentrated primary healthcare solutions with expanded capacity and competence and the operation of the current model based on individual practices, which is best adapted to local needs.

2 Research objectives and research questions

In the light of the processes and topicalities mentioned in the introduction, the following research goals were set:

1. To get to know the role and significance of primary healthcare in the health care system, globally, in the objectives of the EU community level, and in Hungary, and to explore the domestic situation and main processes of general practitioner and general pediatric care.
2. Investigation of the spatial characteristics of the capacities and workloads of general practitioner and general pediatric primary healthcare in the settlement dimension, and the exploration of the correlations of the same characteristics with demographic, socio-economic development and disease parameters at the district (micro-regional) level.
3. Investigation of the spatial patterns and vacancies of the general practitioner and pediatric districts, with special regard to the type, size and length of the vacant districts.
4. 4. Review and evaluation of policy efforts, programs and measures aimed at addressing the problem of vacant districts, maintaining, developing and renewing general practitioner and general pediatric care; exploring identified or untapped synergies between them; formulating proposals for territorial considerations in conceptualization.

In order to achieve the research objectives, complex research questions were formulated, which were the following:

1. How do general practitioner and general pediatric care fit into the health care system? What tasks characterize them, what requirements do those have to meet, what professional challenges do they face?
2. How can the socio-health environment in which primary healthcare should operate be described? What is the role of primary healthcare in managing nationally and territorially differentiated risks? What are the experiences with inequalities in access to general practitioner and general pediatric primary care?
3. How has the number of physicians and practices of the general practitioner and pediatric pediatric care system, the size of the registered population of different ages, and the number of patient cases changed in the previous decade and a half in absolute terms and in specific values at the national level?

4. What characterizes the territorial distribution of general practitioner and general pediatric districts according to the type of district, regions and settlement size? How, by what sort of interrelations can the settlements of the country be grouped based on the specific capacity and load of cases? What kind of co-movement does the capacity and turnover of the care produce with the individual demographic and developmental characteristics and the number of patient cases at the district level?
5. What image was shown in the last quarter of 2019 by the number of vacant general practitioner and general pediatric practices with territorial care obligations, their proportion within all districts, their territorial distribution according to the type, size, regional location and size category of the base settlement?
6. How, along what objectives and measures does the Hungarian policy react to the situation of primary health care, the problem of vacant districts, the crisis of human resources in the general medical profession, and to what extent is it able to compensate for them? What are the solution alternatives for renewing primary care?

3 Structure and methodology

To explore the research questions outlined above, the review of the Hungarian and international literature sources surrounding the topic, and the description of the data collection and analysis methodology of the author's individual study were done, and, after explaining the results, conclusions and suggestions were formulated on the situation of territorial access to general practitioner and general pediatric care, and possible interventions.

In the introduction of the dissertation the topicality of the topic was described, and the objectives of the research and the research questions were outlined.

In the Literature Review chapter, the concept of health was clarified, the social, economic, environmental factors that affect health, and the source of health inequalities, covering inequalities in access to care were explored. Health was interpreted as one of today's megatrends and the global challenges and risks associated with it. The global health-related development goals were recalled. The health situation of Hungary was described in a European comparison, the findings of the source works discussing territorial inequalities within the country were presented. The global development history of primary care, its main functions, requirements, drivers of its transformation, and its place in the target systems of the European Union and the WHO European Region were reviewed. The structure of the Hungarian health care system, the regulatory background of primary care, including general practitioner and pediatric care, and the criteria for the establishment of districts were outlined. The relevant results of the literature sources discussing the history, structural and human resource characteristics, financing, professional requirements, current events and organizations of primary healthcare in general practice were synthesized. The objectives of the policy strategies and program documents aimed at the development and renewal of primary care were collected, and the specific training and support programs aimed at filling the districts were detailed. In addition to the initiatives already underway, the possibilities for reforming primary healthcare and dealing with its access problems, which exist only on a theoretical level, but are most likely part of the solution, were described.

In the Material and Methods chapter, the quantitative and qualitative data collection and data analysis methodology used in independent research were described. The national changes and the territorial distribution of the absolute and specific capacities and traffic load of GP and home pediatric care were explored by descriptive statistical analysis; the correlations of the settlement characteristics were examined by principal component and cluster analysis; the relationship with

developmental conditions and health status was analyzed by district-level partial correlation analysis. The type of vacant districts, their regional location, the size of their base settlements as grouping criteria were examined by nonparametric tests, one-way analysis of variance and post-hoc tests. The methodology of primary data collection was the interview conducted with the staff of the primary healthcare department of the National Healthcare Service Center. The results were nuanced with the findings of previous empirical village research interviews with general practitioners, as well as with the lessons learned from a conversation with a leading general practitioner in a community practice.

4 New scientific results

1. A synthesis of the global conceptual approach, complex dimensions, functions, competencies, requirements and expectations of primary health care, the characteristics of access, the experience of its integration, the situation of human resources, and the development objectives of the WHO European Region and the European Union was made referring to comprehensive, mostly international literature sources.

Based on these, the main finding is that an effective health care system can only be built on strong primary care.

Accessible, accessible, affordable, quality healthcare has an undeniable role to play in improving health-related quality of life. This principle is also emphasized in the various global and regional (European) development objectives. There is ample evidence that the foundation of modern health care systems is an extensive, stable primary care, which is the entry level of health care and provides individuals, families, communities with continuous, close-to-home and/or close-to-work care throughout their lives. In recent decades, the role of primary healthcare has also transformed and expanded, in part as a result of the recognition that it increases health gains (by reducing the causes of death), the efficiency of the health system (by relieving the burden on specialist care), and the level of equality and equity; and partly due to excess demand and expectations set by an aging, but more health-conscious population, chronic illnesses and the new care providers and technologies. The primary healthcare of today is therefore ideally health-centered rather than disease-centered. It includes diagnosis, prevention, screening, classification and referral; care for chronic patients and palliative care; in addition, complex structure, process, and outcome dimensions can be assigned. There is a growing importance of a proactive approach, the essence of which is to integrate some of the specialist care, rehabilitation and therapeutic tasks and interventions into primary care, so the majority of doctor-patient encounters to take place as part of primary care, and to avoid unnecessary hospitalizations, leading to cost savings, higher patient and employee satisfaction.

2. By analyzing the national time series data of general practitioner and general pediatric care, the processes and main trends of the absolute and specific capacities and patient case-load of the sector, the substitution relations of practices, in the light of the demographic characteristics (and their changes) were indentified.

Based on this, the following findings can be outlined:

2 / a. In Hungary, the team of general practitioners and general pediatricians is in a tendency to decline, as a result of complex processes.

In Hungary, the number of general practitioners and family pediatricians and the number of own (occupied) practices have been declining for two decades, while the number and proportion of general practitioner and general pediatric services provided in substitution is increasing sharply. The root cause of the process, based on literature and empirical experience, is the aging of the team of professionals, the low prestige of the profession (despite increasing levels of qualifications and stricter requirements), funding problems, the financial burden of purchasing and maintaining the practice, areas with many disadvantages (location, size and socio-economic status), often inadequate working conditions, and the administrative burden on the doctors. Among those who acquire the profession of pediatrician, a career in clinical pediatrics is an increasingly attractive alternative to practicing general (family) pediatrics.

2 / b. The aging population represents an increasing care burden for general practitioners, with increasing substitution tasks and administrative burdens, which also contributes to the decline in home visits.

In absolute and in specific terms, the number of people under 18 registered with a general practitioner has fallen sharply, while the number of people over 65 registered has increased significantly over the past decade and a half. Due to the growing demand for care of the aging population, the patient turnover of general practitioner surgeries (except for the pause of the visiting fee period) followed an increasing trend overall. In general pediatric care, however, the number of cases is close to stagnation and, in specific terms (per practice), is increasing: this is due, on the one hand, to a decrease in the number of practices, on the other hand, it suggests that the age group cared for by pediatricians has, in terms of registration, been partially ’reallocated’ over the years from mixed districts to child districts. Nationwide, the number of home visits in both general practitioner and general pediatric care fell by three-quarters between 2000 and 2018. The drastic decline of this form of care is due to the growing number of cases in the surgeries, the increasing burden of substitution, and the experience that on the one hand the doctor's time and knowledge are best used when he/she does not have to travel and on the other hand the district nurse can perform many routine tasks (continuous in coordination with the general practitioner), and thirdly, the data recording tasks accompanying the care require the presence of the doctor (and an assistant).

3. Using the data available in primary healthcare in a territorial breakdown, a picture was given of the spatial characteristics of the development of different types of districts, their distribution by regional and settlement status and size category, and the same basic correlations in relation to vacant general practitioner and general pediatric districts were also explored.

It was pointed out that the spatial differences in the type distribution of general practitioner services with a territorial care obligation can be traced back to the size of the base settlement.

In settlements with less than 2,000 inhabitants, there is an absolute dominance of mixed districts, while above 5,000 inhabitants, adult and child practices are separated. With regard to the legal status of the settlements, this means that the establishment of mixed districts in the villages is reasonable, while in the cities the population under and over the age of 14 reaches the number required to operate different practices along the age groups. Large villages and small towns with a settlement size of 2000-4999 form the transition, where the majority of mixed districts are far from dominant. Regional differences in the composition of settlements cause differences in the structure of primary healthcare in each region: although all regions have adult districts in the most, the proportion of mixed practices is one-quarter to one-third in regions mostly consisting of small villages (Transdanubia and the Northern Great Plain), while much lower in the Pest region and the Southern Great Plain, and there is no mixed general practitioner district in Budapest.

4. Partly to confirm the findings of the descriptive analyzes, and partly to explore previously unknown interrelations, a co-movement between the variables of the availability of general practitioner and general pediatric services for the age group and the specific number of cases in the practice and home were shown. With the help of the groups of factors with a high content of information created through the reduction of variables, the settlements in Hungary were classified, taking into account the regionalization, capacity and load conditions of primary healthcare medicine. In connection with the settlement groups, the cluster-forming effect of the regional location, the size of the settlement and the socio-economic development was pointed out. In this way, it was possible to outline the categorized primary healthcare characteristics of the Hungarian settlement structure.

Based on the above, my findings are as follows:

4 / a. Based on the capacity and case-load analysis at the settlement level, the patient turnover of general practices is mostly influenced by the type of district served.

From the correlations outlined in the established principal component structure, it can be concluded that the specific number of adult and pediatric general practices for a given age group moves together, which is easy to see as adult and pediatric general practitioners are in a complementary relationship as they serve two non-overlapping age groups. In general - but of course with a large number of exceptions - in settlements where (mostly) a mixed general practitioner is available, the number of general pediatric (and general practitioner) cases provided inside and outside the surgery room is lower. The number of cases per general practitioner service in the surgery room or at the patient's home correlate with each other and with the number of district nurses per service, but they do not show a significant relationship with the age group-specific availability of each district type or with the specific patient turnover of family pediatricians.

4 / b. Based on their characteristics of general practitioners and pediatricians, Hungarian settlements can be classified into five main categories, the spatial patterns of which are outlined along the settlement size categories.

The cluster analysis pointed out that the district sizes of the settlements with more than 5,000 inhabitants, mostly in Pest county, and quite a few settlements with 2000-4999 inhabitants can be said to be close to optimal (average); on the other hand, the general practitioner services, but especially the general pediatric services of these settlements handle significant patient case numbers. Relatively many settlements with less than 1,000 inhabitants, most settlements with between 1,000 and 5,000 inhabitants, and some cities with less than 20,000 inhabitants typically have lower numbers of adult, child, but especially mixed practices per concerned age groups, which means larger districts and higher number of cases. The majority of small settlements with less than 1000 inhabitants (mostly in South and Western Transdanubia and Northern Hungary) are dominated by mixed general practices, and due to the small number of registered population in the districts, the workload of practices is lower. Most of the 139 small villages, mostly with less than 500 inhabitants, are distributed in Transdanubia, and in a much smaller proportion in the Northern Great Plain and Northern Hungary, where general practitioner care is divided according to age groups, and there is an exceptionally high number of adult and pediatric practices for the age group concerned, with a high specific general pediatric patient turnover. (It can be assumed that the

reason for the high number of pediatric cases in these settlements is that a large number of families living in nearby settlements residing in a mixed district register their children to one of the nearby general pediatric districts.) About four hundred settlements, mostly with less than 2,000 inhabitants, are fully substituted in terms of general practitioners and pediatricians: one-fifth of these settlements are located in Borsod-Abaúj-Zemplén county, but the rest of Northern Hungary and several counties in Western and South Transdanubia, as well as Szabolcs-Szatmár-Bereg county is also significantly affected by the problem.

5. In the district (micro-region)-level study, the clear correlation of the structural, demographic and developmental conditions that can be detected in the territorial dimension higher than the settlement level were proved, not only the structural, capacity and workload characteristics of primary care, but also the relationship between the former and the latter factors and the specific incidence of diseases, learning lessons on the preventive and health-preserving role of primary care. ***In doing so, it has been confirmed that socio-economic development is associated with population density, segregation of adult and child practices, and better health.***

In the sparsely populated areas, the operation of mixed general practitioner districts is more typical, and through the relationships outlined above, the presence of mixed districts is intertwined with peripheral existence. The high number of mixed districts in the affected micro-regions also entails a more frequent appearance of vacant status, in connection with which it is difficult not to notice the repulsive effect of the unfavorable socio-economic situation on the potential new general practitioners. The general practitioner care system is more reactive than proactive, suggesting that, in specific terms, more doctor visits do not mean fewer illnesses. Morbidity is lower in more developed micro-regions, so residents of densely populated, well-served areas will certainly have access to healthier goods, better care, and more/better information.

6. With regard to the vacant general practitioner and general pediatric districts, the dynamic spatial and temporal processes of the districts becoming vacant was explored; the differences between the type of districts according to the age group and the size of the districts (number of registered inhabitants) and the length of their vacant status between the groups according to the regional location and population size of the settlements providing the districts were highlighted. By extending the empirical research, synthesizing information not derived from the literature and statistical data with previous

analyzes, the reasons behind the vacancies of districts, experience with policy programs targeting the occupation of practices, and possible obstacles to efforts could be presented in a deeper context.

Based on all this, findings are as follows:

6 / a. The main differentiating factor in the quantity, size and duration of the substitution status of general practitioner districts is the type of district: mixed districts are most affected by vacant status, and significant territorial differences develop between them as well.

A deeper analysis of some of the parameters of the vacant districts showed that among the mixed districts the absolute number and proportion of those affected by permanent vacancy were also the highest. The spatial distribution of each district type is also followed by the size distribution of the base settlements of the vacant districts: the substituted adult and child districts are located in the larger settlements, while the mixed vacant districts are located in smaller settlements. Both adult and mixed districts are the most vacant in the Northern Hungary region. Between 2014 and 2018, the vacancy rates for adult and children districts were more intense nationwide than for mixed districts and accelerated particularly in 2018 and 2019. A significant number of mixed districts have been vacant for more than 5 years, the oldest one since 2004. In the average duration of the vacant status, there are significant regional differences in connection with the mixed districts: in Northern Hungary, the existing permanent vacancy is on average 5 years longer than in the Pest region. Based on the intervals set out in the government decree regulating the size of districts, three-quarters of adult districts are oversized, which is worrying given that the number of vacant adult districts is growing most dynamically. A fairly significant proportion of children and mixed substitute districts are undersized, which in any case raises the issue of sustainability. The average size of vacant mixed general practitioner districts is the largest in Pest County and the lowest in the Southern Great Plain. In the base settlements of vacant mixed general practices with less than 5,000 people, the average number of patients registered to the districts also increases with the increase of the population.

6 / b. The vacancy of general practitioner districts is a multi-channel process based on structural, training, funding, and personal factors.

The general practitioner profession is aging, with almost half of physicians over the age of sixties. The output of general practitioner graduates has been steadily and sharply declining until 2015 but has since gained strength but has not yet reached levels around 2010. Thanks to the Markusovszky Scholarship, the

emigration of those with a general medical qualification has slowed down. The Praxis-I and Praxis-II programs, operated by ÁEEK, provide care for many vacant districts in addition to training residents and retraining specialists, but only on a temporary basis, although experience has shown that a significant proportion of general practitioners remain in the former 'exercising' district. The settlement supports coordinated by NEAK undoubtedly curbed the increase in the proportion of vacant general practitioner districts (especially in 2016 and 2017), but they could not stop them, while the tenders for the purchase of practice rights tend to support the transfer of practices to larger, more developed settlements. The situation caused by vacancy is not helped by the fact that many municipalities do not seek to permanently fill the replaced areas and enter into long-term contracts, and may general practitioners consider the substitution as a supplement to their salaries. Opinions are divided on the extent to which merging districts would solve access to care. (The latter is a particularly sensitive issue in the context of vacant pediatric practices, as it is common practice to merge into a mixed district.) At the same time, there is a consensus on the range of professional opinions that consider the structure itself to be the main problem of the current general practitioner system, more specifically the small individual practices with limited capacity, competence and lack of resources in response to the increased needs of today's era. The primary healthcare of the future is prevention-oriented, integrated, i.e it works more closely together with specialist care and relieves the burden on it. Practice communities and group practices would serve to provide a larger mass of people with increased capacities and competence levels, where certain specialist care, therapeutic and health education tasks would also appear in addition to the horizontal cooperation of primary healthcare physicians.

5 Conclusions and recommendations

In Hungary, in the health care system following the principle of progressivity, primary healthcare represents the first level of the hierarchy of curative care, where citizens can exercise their right to receive health care for the first time; namely, close to their place of residence, by providers with a territorial care obligation. The currently known general medical care underwent significant changes compared to the district medical system of the socialist times after the change of regime. General practitioners, financed by social security on the basis of a per capita quota and adjusted by correction factors, have gradually evolved from civil servants to entrepreneurs who own their practice as a property right. Over time, the qualification level of general practitioners has improved a lot, in addition to the compulsory general medical examination, various further trainings ensure that knowledge is maintained and developed.

The effectiveness of general practitioner care is influenced by a number of factors. Although the level of funding has increased in recent years, many general practitioners report difficulties in extracting the money that underpins the maintenance of the practice, the salary of the employee(s), and the payment of public charges. To supplement their earnings, many general practitioners undertake weekend and night on-call work or substitution in other districts. Substitution is often maintained on a permanent basis through a joint 'agreement' between the general practitioner and the municipalities, and no steps are taken to occupy the district normally. Degression is discriminatory against general practitioners (i.e. reduction of per capita funding above a certain registered population), and the fact that they are currently unable to provide paid private care on demand. In connection with the vacancy of general practitioner care, which is becoming a shortage profession, the obligation to purchase the right to practice in the case of general practitioners providing territorial care is questionable both professionally and morally, even if a practice right purchase support program has been running for years.

In the professional and administrative environment surrounding general practitioner work, one of the most significant innovations of the last decade has been the introduction of an indicator system for general practitioners to encourage quality and efficiency. The system has been widely criticized for not inciting definitive care (which involves the patient's recovery) but the referral to specialist care; it reflects patient behavior much more than the quality of the general practitioner's work. The launch of the Electronic Health Services Area (EESZT) did not go as expected either: it imposes a high administrative burden on doctors, and the usability of the system is very limited. Least the purposes, rather the

conditions were controversial of the introduction of a medical cardboard for regular health status registration of patients, which is otherwise constantly postponed. The establishment of a collegial management system for territorial-professional coordination took a long time and was only successful in the second round of tenders.

The reasons for the ambiguous success or failure of all the above measures can be found in the division of the profession and the lack of proper professional coordination: the decisions made do not take into account the viability, resource requirements and feasibility of the introduced innovations, and the professional community has a limited ability to take a unified position and formulate constructive alternative proposals. In addition to neglecting the perspectives of physicians, the need of patients for the content, method and quality of care is even less apparent. Clearly, affordability and efficiency are the considerations, but the systems put in place must also serve the interests of the patient and the work of the doctor in everyday life.

One of the great challenges of Hungarian health policy is the human resources crisis in primary care. The number and proportion of substituted general practices is steadily increasing, the average age of the general practitioner community is rising, and the population registered to the districts is also aging, with an increasing number and severity of health problems and growing demand for care.

The vacancy of the practices cannot be independent of the structural, organizational, financing and training peculiarities of the primary healthcare of general practitioners, as well as of the different endowments of the settlements and regions enclosing the individual districts. Typically, age group-based (adult and child) districts operate in larger settlements; while in areas with a small village settlement structure, mixed districts are typical, which supply several settlements at the same time, because only in this way can a district with a sufficient number of patients and sustainable financing be operated. Mixed districts usually have a smaller specific patient traffic, so their performance-based compensation is also lower. General practitioner surgeries in small settlements tend to be smaller, more modestly equipped, and often in poorer condition than urban practice rooms.

There are significant regional differences in the capacity and workload of the general practitioner and general pediatric services, which differences can be explained primarily by the settlement structure peculiarities of each region. In the smallest settlements, mixed practices dominate, with sparsely populated districts and low specific patient turnover. The districts of many small, but rather larger

villages and districts of the smallest towns are large in number, with a high number of per practice cases. District sizes are optimal in most of the largest municipalities and cities, but the number of cases per practice is high in adult and pediatric general practitioner districts. In a separate group of settlements comprising around one hundred and forty small villages, the districts are organized along age groups, with average specific case load in general practitioner care and higher specific case load in pediatric care. (Presumably due to the re-registration of children of families belonging to a mixed district according to their place of residence). In peripheral districts with less favorable development indicators - also in connection with the size dimensions of the settlements in them - mixed districts are in the majority, vacancies are more common and morbidity rates (i.e. the number of diseases per thousand inhabitants) are higher.

The correlations outlined above, as well as a separate analysis of vacant districts, also revealed that most vacant districts are of a mixed type; vacant mixed practices have, on average, lower patient numbers than adult vacant practices, and the length of vacant status expressed in years is also the highest for mixed districts. Regionally, Northern Hungary has the highest proportion of vacant general practitioner districts, and there are also the districts that have been replaced for the longest time. In the case of small, underdeveloped districts with often significantly disadvantaged (Roma) populations, the probability of being able to delegate a general practitioner to continue the practice after their vacancy is the lowest. Behind the ÁEEK practice programs, the principle is excellent, but medical training is unlikely to issue enough residents to supply the districts locally everywhere. The increase in the proportion of vacant districts has only temporarily come to a halt, but has not stopped, thanks to subsidies for settlement and the purchase of practice rights. It is a worrying process that in the years 2018-2019, the vacancy of adult and child districts accelerated, with dynamics that also exceeded the vacancy of mixed districts. (According to the representatives of the general pediatric profession, the scenario to avoid after the vacancy of pediatric practices is to avoid their merging into the mixed district, as primary healthcare physicians with pediatric specialization have been proven to be the most suitable for the care of the young and adolescent population.)

Thus, the compulsion to renew and increase the attractiveness of primary healthcare is not limited to the small mixed districts of the most disadvantaged areas, but also due to vacant practices that are becoming more and more prevalent all over the country, also in district centers, the capital and its agglomeration.

It is clear from all this that the crisis of the general practitioner profession and the solution of the problem of areas with limited access to care cannot be

solved by additional funding only and by the deployment of physicians in training/retraining. The exclusivity of individual practices jeopardizes the effectiveness of care, therefore, in addition to traditional practices, group practices with increased competence and performing specialist tasks and organisationally streamlined practice communities could work together in the future, in accordance with territorially differentiated needs and it should be possible to operate paid private practice. The issue of a comprehensive structural transformation of the health care system goes well beyond the scope of the present dissertation; however, the issue of group practices and specialist care practices cannot be separated from the need to integrate primary care: the need for primary healthcare with an expanded level of knowledge and resources would not only be aimed at more efficient performance of traditional primary healthcare tasks but the relief of specialist care, the reduction of avoidable hospital admissions, and the comfort of the patients.

In the areas of small rural settlements most affected by vacant status, the most urgent need is to support the development of group practices and the necessary investments in buildings and equipment, modification of district boundaries for optimal sizing of the new supply model, and thereby increasing the number of patients registered in care in one district and building a system of patient transport between settlements. However, in order to do so, in addition to strengthening the general perspective of living and medical development in general medicine and creating appropriate working conditions, municipalities and substitute general practitioners who are deliberately providing substitute care should be encouraged to review their usual practices. As part of the internship programs, general practitioner resident and retrained specialists could also be placed in group practices; and settlement grants could favor concentrated settling in order to create a group practice. The future vision of digitalized telemedicine is promising. The process of digitization therefore does not stop at the electronic storage of patient data (EESZT), but increasingly has to rely on the use of smart devices and assumes that the patient is treated as an equal partner.

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