Does Equal Availability of Geographical and Human Resources Guarantee Access to Family Doctors in Estonia?

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Aims. To describe allocation of posts of trained family doctors geographically; to assess the patients' consultation rate and family doctors' workload geographically; and to evaluate comprehensiveness of the work of family doctors.

Methods. Data for the description of training in family medicine and the system of primary health care in Estonia were drawn from the health statistics of the Ministry of Social Affairs of Estonia and from data of the Estonian Health Insurance Fund. The comprehensiveness of work was expressed as the percentage of newborn babies on the practice lists of family doctors out of the total births in Estonia during 1999-2002.

Results. Altogether 979 doctors became family medicine specialists during 1991-2004, which corresponds to Estonia's need – one family doctor per 1,600 ± 400 inhabitants. The rate of visits to family doctors has increased during recent years and in 2002 one inhabitant made 2.7 visits per year on average. Family doctors received an average of 22 visits per day throughout 2002. The number of home visits increased: in 2002 every fifth person and almost every second child in Estonia was visited by a doctor. According to the registration of newborns on family doctors lists, the comprehensiveness of family practice rose: in 2002, 83% of all newborns were registered with family doctors.

Conclusion. The allocation of family doctors geographically according to population density ensures access to medical services in their localities. The registration of newborns with family doctors shows the comprehensiveness of the work of family doctors. Elaboration of the indicators for the analysis of accessibility of family doctors services, using national statistics, helps evaluate the development and further planning of the primary health care system.

Key words: family practice; house calls; office visits; physicians, family

The availability of medical services depends on different factors, including geographical distribution of general practitioners, closeness of the location of their practices to their patients, as well as staffing of all practices with trained family doctors (1,2). Geographical distribution of practices, which is laid down in public health policy, serves the task of allocating health care resources in the best possible way (3). Historically, family doctors have gained recognition as providers of curative first line continuous care (4,5).

Estonia has a tradition of family medicine, which dates back to the 1930, but was disrupted by World War II (6) and reintroduced in 1991. According to the Health Services Organization Act (7), the family doctors in Estonia have to complete specialized training and become certified. They work in the reorganized health care system as independent contractors with the Estonian Health Insurance Fund, being partial gatekeepers. They have their offices close to the patients' residential sites or, if they are working at joint outpatient clinics, they do not depend on the central administration. They are the patients' personal doctors; and patients are free to choose their family doctors. Patients' access to primary health care is free, with no visit fee, whereas secondary care involves referral from primary care. Free access to some specialists, such as gynecologists, ophthalmologists, psychiatrists, traumatologists, pulmonologists, and dermatovenerologists was retained (8). According to their job description, family doctors provide general, comprehensive, continuous, and coordinated care, including health examination of children (9). During the transition period from the previous system, where general internists, pediatricians, and other specialists also provided primary health care, to the family medicine system, children's health examination gradually became the task of family doctors (Table 1).

The aims of this paper are: 1) to describe the geographical allocation of posts of trained family doctors; 2) to assess the patients' consultation rate and family doctors workload geographically; and 3) to evaluate the comprehensiveness of the work of family doctors.

Methods

The data for the description of training in family medicine and the system of family medicine in Estonia were drawn from...
the official statistics and studies conducted during 1993-2002. The availability of family medicine services was assessed by analyzing the health statistics of the Ministry of Social Affairs of Estonia (10) and the data of Estonian Health Insurance Fund. The system of indicators for the evaluation of the primary health care reform was elaborated (11). The indicators of resource allocation efficiency used in this paper were the following: cumulative number of trained family doctors during 1993-2003 and number of family doctors per 100,000 population. The indicators of technical efficiency included: 1) average number of all outpatients’ visits and visits to family doctors per 100,000 inhabitants in 1998-2002; 2) average number of visits per person registered on the practice list by counties; 3) average number of practice visits and home visits to adults and children 1998-2002; and 4) daily average number of visits per family doctor by counties in 2002. The comprehensiveness of work was expressed as the percentage of newborn babies registered on the practice lists of family doctors out of the total births in Estonia during 1999-2002.

Results

Distribution of Practices and Family Doctors by Geographical Location

Taking into consideration the nature of work of family practitioners – their additional duties and quality of their work, it was first necessary to define the number of family doctors needed in Estonia and, secondly, to determine the average number of patients on one list. According to the 2001 regulation, the total number of practices in Estonia by the year 2007 should be 840 and the distribution of family practices in counties dependent on the county population (Fig. 1). The patients’ lists should include not more than 1,600 ± 400 people; any deviation must be allowed by county governors, depending on possible unique characteristics of the area, and approved by the Estonian Health Insurance Fund. There were 701 family doctors with a practice list available in Estonia at the end of 2002 and all posts of family doctors were filled in only 4 counties (Fig. 1). All provided primary health care at that time: family doctors, district doctors, and pediatricians (Table 1). The analysis of the number of family practitioners per 100,000 population indicated that it increased from 22 to 51 during 1998-2002 (Fig. 2). Observing the necessary number of family practitioners to achieve the objectives of the health care reform, the training of family doctors was planned through in-service retraining courses and in residency (Fig. 3).

Table 1. Primary health care specialties in Estonia

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*General practice – doctors are non-trained primary health care physicians.
†Family medicine – doctors are re-qualified and certified as family doctors.
‡Pediatrics – doctors are specialized as pediatricians, working only in primary health care.

Figure 1. Territorial map of Estonia (15 counties and capital city Tallinn). Maximum and available number of family doctors’ lists, the number of outpatient visits to family doctors per person and the average number of outpatient visits to a family doctor a day. Territorial map of Estonia. A – maximum number of family doctors’ practice lists by the counties of Estonia /available posts of family practitioners in 2002. Whole for Estonia 840/701. B – the number of outpatient visits to family doctors for one person by the counties in 2002. The average for Estonia is 2.66. C – the average number of outpatient visits to a family doctor a day by the counties in 2002. The average for Estonia is 21.

Availability of Family Doctors According to 1998-2002 Health Statistics

The workload of family doctors in Estonia has been increasing from year to year, owing to the well functioning system of family medicine and the delegation of more tasks from narrow specialist and social care to the family doctors. One indicator of the higher
workload is the number of patient visits to family doctors and its comparison with the whole number of outpatient visits.

The average number of outpatient visits per family practitioner rose from 18 visits a day (4,123 as a total average for the year) in 1999 to 22 visits on average per day (5,156 as total average) in 2002. The variation of average number of visits per family doctor per day by counties was from 17 to 26. It was higher in counties that had a number of vacant family doctors posts (Fig. 1).

The number of outpatient visits to all specialists has remained the same but the number of visits to family practitioners has increased, from 16% of all outpatient visits in 1998 to 45% in 2002 (Fig. 4). Statistically, one person visited a family practitioner 1.1 times on average in 1999 and 2.7 times on average in 2002 (Fig. 5). The distribution of average number of visits per person by counties in 2002 is presented in Figure 1.

A similar tendency was observed for home visits. In 1998, 46% of home visits were made by family practitioners, but in 2002 the percentage was already 85. In 1998, 34% of family practitioners’ home visits were made to children. In 2002, 81% of them were made. Every fifth person in Estonia called a doctor for a home visit in 2002, but the number of home visits to children increased noticeably – almost every second child in Estonia had a health examination performed at home in 2002 (Fig. 5).

Comprehensiveness of Family Medical Care in Estonia
The increasing field of work of family practitioners is characterized best by the number of newborn babies who have been added into their practice lists and whom the practitioners are monitoring. The percentage of newborn babies, registered on the family doctors’ lists, out of total number of births increased by 56% from 1999 to 2002, reaching a total of 83% (Fig. 6).

Discussion
It is important to recognize that the organization of health care guarantees accessibility of services and reflects health care behavior of the population (1-3). Great changes in the health care organization have re-
cently taken place in Estonia (6). Health Services Organization Act and different regulations of the Estonian Ministry of Social Affairs (7-9) stipulated that the number of family practices has to depend on the size of the population and its geographical distribution in counties. In 1997, there were supposed to be 807 family doctors’ practice lists and the maximum number of patients per list was 2,300. The planned number of people on these lists turned out to be too high. It soon became clear that the workload of family doctors was excessive and a new recommendation of the ministry about the list size had to be made. It evidently showed that every step of planning needs analyzing in order to introduce necessary and timely corrections. The distribution of practices, planned by health policy makers should ensure equal distribution of family physicians and provide the population with convenient family practice. Our study describes the real situation of accessibility of family doctors in different counties and demonstrates that the training of family doctors on the one hand, and the number of trained doctors, planned to provide every practice with a certified family doctor on the other, really fulfills this task. The system of indicators for evaluating the primary health care reform was elaborated (11) including the indicators of resource allocation efficiency and the indicators of technical efficiency on the basis of data from national statistics. One of the limitations of our study concerned the collecting of national data: the only more detailed data that were available separately for family doctors work were from 1998-2002. Before that, we had no data for comparison, separately for primary health care and specialists. The collection of yearly statistics was somehow influenced by quick changes in methods of collecting the health care data. Despite these limitations, we believe that the study reflects the realities of the access of family physicians services, patients’ visits to family doctors, and comprehensiveness of primary health care.

In Estonia, the transition period was necessary to ensure all practices with specialized family doctors while enabling other primary health care doctors to continue providing their services. In Estonia, it took 10 years since the launch of a specialized retraining program to staff all practices with certified family practitioners. Our approach to training of family physicians (6) has two main World Health Organization approved characteristics (12) specific for a transitional period: 1) in-service retraining of previous primary health care doctors was the main track and it ensured continuous care for the population; and 2) cumulative increase of number of family physicians allowed to involve practitioners as tutors into further training.

There are different methods for evaluating the accessibility of health care services (1,2). For this analysis we used national statistics that were elaborated for primary health care accountability. Because family doctors in Estonia work as personal first contact doctors for patients and every patient is free to choose their family doctor, the number of visits to family doctors is considered as a good indicator for the evaluation of the availability of health services for patients, and it also gives information about the acceptance of the system. The rising number of family doctors naturally raises the proportion of visits to family doctors within the total number of ambulatory visits and this finding was by no means a surprise. The better indicator for evaluation of patients’ behavior is the mean number of visits per patient. Although the whole number of outpatients’ visits per inhabitant was almost the same for the analyzed period, every patient visited a family doctor twice as many times in 2002 than in 1999. It follows that only the number of visits per person (including children) to family doctors increased. Same tendency was found in the UK (13). Our result is particularly significant with regard to accepting the family physicians as the first contact person in health care system both for adults and children. It also shows that family doctors’ gatekeeping role really exists in spite of the fact that in our primary health care, free access to some specialist-consultant service (gynecologist, ophthalmologist, psychiatrist, traumatologist, pulmonologist, and dermatovenerologist) was retained. During 1999-2002, the situation in specialist care was stable and we do not consider it as an important family doctor’s changing of the number of visits to family practitioners. However, the mean family doctor attendance per capita in Estonia compared with UK (14) and Australian data (1) is much lower. It might depend on a different job description of a family doctor in Estonia when compared to other countries or different use of primary health care services by the people.

Our study shows that the family doctor as the first contact person was similarly accepted in all counties of Estonia and the number of visits to family practitioners per person on their practice lists has been increasing all over Estonia during the last five years. At the same time, the number of outpatient visits per capita was not equal in all counties. Potential explanations could be different engagement of family practice posts in these counties and also the number of available secondary care specialists. This was only a suggestion as we could not obtain data concerning the specialists’ number and services from those areas. This is a limitation of our study. It has been shown that population density also influences the number of visits to a family doctor. According to the studies conducted in the UK, the general practices’ consultation rates were higher in areas of low population density, compared with higher density areas (14). One example in our study supporting this finding is the remote island of Hiiumaa with the lowest density of population and the highest number of visits to family doctors per inhabitant (3.7 per year). Reasons for this may include difficulties that a remote area population has in assessing other specialist services. Although the number of family doctors was set according to the total population of Estonia, no planning was made for other specialists and in some places there still existed vacant doctors’ posts at the time of analysis, which can influence the number of visits to family doctor. Further analysis of population density, specialist availability, and consultation rate is needed.

The Finnish experience shows that the number of practice visits of personal doctors has a tendency to increase (15). The analyzed period in Estonia coin-
cides with the time when the registration of patients into lists had already been completed and family physicians started working as the patients’ personal doctors. According to the rising number of visits, the patients accepted this. The number of outpatient visits per family doctor changed in 1999 and 2002, increasing each year. During 2002, the average number of outpatient visits slightly leveled, and there were no marked differences between different localities. There was a rather good correlation between outpatient visits per family doctor and the number of family practices. It shows that in Estonia people prefer to visit their family doctor first and they do not oppose gatekeeping. It differs from the study in Australia where rural Australians were prepared to travel farther than necessary, often bypassing the closest general practitioner and less than one-third of Australian patients indicated proximity as the main reason for choosing their doctor (1). Most likely it depends on the social and economic situation of the country and also on organizational principles such as gatekeeping.

In Estonia, the number of family doctor home visits out of all home visits and home visits per person increased during 1999-2002. The increase of the number of home visits is related to the increase in the number of family doctors both in the counties and in Estonia as a whole. As in bigger towns in Estonia the family doctors started working side by side with pediatricians, it was just the number of home visits to children that increased their workload, since a family doctor made 80% of all home visits to children. A decrease in the number of home visits can be forecasted in the future, since a similar pattern has been observed in several countries (16). This is due to ever increasing mobility of people, on the one hand, and the ease of conducting various diagnostic procedures in outpatients’ clinics on the other. People have also been able to consult their family doctors over the phone and solve many problems in this way. Thus, the latest tendency of decrease in family doctors’ home visits may be related to the positive developments in family medicine and the society as a whole: physicians are more available in the family doctors’ centers and so is the necessary diagnostic equipment, telecommunication; transport facilities have been improved as well.

According to their job descriptions, one of the family doctors’ obligations is to check the health of newborns (9). Hence one indicator of comprehensiveness of the family doctors’ work is the registration of newborns on their lists. This indicator has a tendency to increase and in 2002 83% of all newborns were registered on the family doctors’ lists in Estonia. It seems that children’s health examination has gradually shifted from being a pediatrician’s duty to being a family doctor’s duty. In our experience, family doctors are able to vaccinate children with the same accuracy as pediatricians (17). Delegation of all children’s health care on the primary health care level needs a transitional period from the previous health care system to the family-doctor-based health care. Hayes et al (18) showed that it is possible to ensure a high quality health examination of children by trained professionals other than pediatricians in general practice and use pediatricians as consultants.

Conclusion

The decision to equally allocate trained family doctors according to population density all over Estonia leads to desired results since it provides the patients with an access to medical services, ie the ability to visit family doctors in their localities. Comprehensiveness of the work of the family doctor has been increasing to include visits to children and the registration of newborns. Elaboration of the indicators for analysis of accessibility of family doctors services, using nationwide statistics, helps evaluate the development, and assists further planning of the primary health care system.

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