

DISSERTATIONES MEDICINAE UNIVERSITATIS TARTUENSIS

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**STRUCTURE AND OUTCOME OF FAMILY  
PRACTICE QUALITY IN THE CHANGING  
HEALTH CARE SYSTEM OF ESTONIA**

**RUTH KALDA**

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## 1. LIST OF ORIGINAL PUBLICATIONS

This thesis is based on the following original publications referred to in the text by roman numerals.

- I **R. Kalda**, M. Lember. Setting national standards for practice equipment — presence of equipment in Estonian practices before and after introduction of guidelines with feedback. *International Journal for Quality in Health Care*, 2000; 12: 59–63.
- II **R. Kalda**, H.-I. Maaros, M. Lember. Motivation and satisfaction of primary health care doctors working in different settings in Estonia. *European Journal of General Practice*, 2000; 6: 15–19.
- III **R. Kalda**, G. Sontak, M. Hapunova, H. Sarapuu, M. Lember. Tartu linna 2 aasta vanuste laste vaktsineerimiste kvaliteet. *Eesti Arst* (submitted).
- IV **R. Kalda**, K. Põlluste, M. Lember. Eesti elanikkonna hinnang esmatasandi tervishoiu aset leidnud muutustele. *Eesti Arst*, 1999, 3, 269–273.
- V K. Põlluste, **R. Kalda**, M. Lember. Primary health care system in transition: the patient's experience. *International Journal for Quality in Health Care*, 2000; 12: 503–509.
- VI **R. Kalda**, M. Lember. Choice of a personal physician — impact on patient satisfaction with care (manuscript).

## 2. ABBREVIATIONS

CI	confidence interval
DD	district doctors (district paediatricians and district doctors for adults)
DTP	diphtheria-tetanus-pertussis
ECG	electrocardiography
FD	family doctor
GP	general practitioner
MMR	mumps-measles-rubella
OPV	oral poliomyelitis vaccine
OR	odds ratio
PHC	primary health care
SD	standard deviation
SPSS	Statistical Package for Social Science
WHO	World Health Organisation



### 3. INTRODUCTION

One of the corner stones of Estonian health care reforms has been the reorganization of primary level medical care. It was started in 1991 by commencing training for family doctors (Maaroos, 1994; Lember, 1998). Since 1993 the list of medical specialities in Estonia contains also the speciality of family doctor, and by the present time more than half of the required family doctors have been trained. In 1998 a new financing scheme for family doctors came into force, which foresees establishment of patient lists, introduces a combined payment mechanism and a partial gatekeeping function for family doctors as well as renders the status of an independent contractor to family practitioners (Lember, 1998).

The aim of the reforms has been to establish accessible, high quality health care based on fully responsible physicians. It has been demonstrated in previous studies that majority of preconditions for family doctors' work (educational, organizational, personal) have been satisfied (Lember, 1998). However, it has been necessary to overcome certain resistance and to dispel doubts on whether the quality of the care provided by family doctors is at least not lower than the quality of care guaranteed by the previous system.

During the 1990s problems of health care received increasing attention, which led to the recognition that quality is the key word in health care. As in connection with health care reforms, the issue of quality has become especially important in all East-European countries, including Estonia, the present work attempts to evaluate changes that have taken place in primary level health care with respect to their influence on quality.

## 4. REVIEW OF THE LITERATURE

### 4.1. Concept and definition of quality in health care

There are many definitions of quality in health care, ranging from doing the right things in the right way to giving a patient what he needs and wants (Roland, 1999; Berwick *et al* 1992, Baker 1990). In 1980, Donabedian defined high quality care as such kind of care which is expected to maximize patient welfare, after one has taken account of the balance of the expected gains and losses that accompany the process of care in all its aspects (Donabedian, 1980). Emphasising the complexity and variability of this issue, it has been suggested that several formulations are possible, depending upon which aspect of patient care is regarded, who is evaluating the quality in what setting and with what kind of specific goal. In 1984, the American Medical Association defined high-quality care as the care which contributes to the improvement or maintenance of quality and/or duration of life. Specific attributes of care that should be examined in determination of its quality were identified: health promotion, disease prevention, timeliness, informed participation of patients, efficient use of resources etc.

Since it is common that health care professionals tend to define quality in terms of the results of provided care, traditional definitions have usually emphasized the technical aspect of care: “make the right decisions”, “do the right thing right”, “to act in accordance with guidelines” etc. (Blumenthal, 1996; Harteloh and Verheggen, 1994).

According to the modern concept of quality, care must correspond to the preferences and values of the consumers; in several definitions the view of patients occupies the first place, and quality has been defined as the ability to meet the needs of customers (Berwick *et al*, 1992) or as the properties or characteristics of a service or a system that determine its ability to meet demands (Olesen *et al*, 1996).

The traditional definition has also been called an “absolutist” definition and the modern definition, an “individualized” definition. The balance of absolutist versus individualized care in the daily management of the sick can sometimes lead to complex ethical dilemmas (Wilson, 1986), because the patient’s views of quality are not always consistent with physician’s views. For the patient, other things matter: ease of access, choice of doctors, sympathy and friendliness in the delivery of health care (Boerma *et al*, 1997; Parasuraman *et al*, 1985). It is believed that the patient has usually a limited knowledge of what constitutes technical quality (Blumenthal, 1996).

To define what the quality of health care really is, appears to be more complex due to fact that society at large, purchasers and financial administrators

will have a third set of priorities. From their point of view, quality health care is the care that meet the needs by lower costs (Harteloh and Verheggen, 1994).

In summary, quality in health care services fully meets the needs of those who need the service most, at the lowest cost for the organisation, within the limits and directives set by higher authorities and purchasers (Overtveit, 1992).

## 4.2. Quality dimensions, aspects and indicators

### Quality dimensions

Depending on the beholder quality can be assessed from three perspectives: health professionals, customer and politicians — decision makers, which are summarized by Overtveit (Overtveit, 1992). According to his concept quality has three dimensions.

**Professional quality** refers to whether a health care system meets the needs as defined by providers and referrers, and whether procedures, which are believed to meet the patients needs, are technically correctly performed.

**Patient quality** refers to what patients want from service, meeting patient's expectations and needs.

**Organisational quality** refers to the most efficient and productive use of resources.

The growth of competition and changes in the health system, as well as limited resources require that health care workers and managers evaluate constantly procedures, services and technology in order to make the system more patient-centered and in order to use the resources reasonably. Therefore, it is necessary to merge the three dimensions of quality.

### Quality aspects and indicators

According to the classical concept there exist three aspects of care quality: structure, process and outcome of care (Donabedian, 1966).

**The structural component** of medical quality includes human, material and organizational resources. Structure is taken to comprise the characteristics of personnel and facilities, including their financing and organization, that either increase or decrease the probability of provision of good care. The data of

structure represent a characteristic of physicians and hospitals for example, physician's speciality, surgery's premises, equipment, medical records and other aspects of practice management (Donabedian, 1980). Structure is considered as the easiest of the three aspects of health care to be measured. The most difficult problem in the assessment of structure is the recognition of which structural aspects are essential and which are optional? Which factors influence the quality of care and which are irrelevant? It has been acknowledged that the success of preventive care is related to formal programmes, good record system, doctors' qualification etc. (Fleming *et al*, 1985). The appointment system should facilitate the doctor-patient contact, the staff should have a welcoming attitude to the patient, the building should be accessible and pleasant to use (Marinker, 1990).

**Process components** in medical quality are the the components of the encounter between the physician or another health care professional and the patient (for example, test ordered, communication). The synonym for process is actual performance, defined as what a doctor is doing in daily practice in medical care and in communication with patients (Rethans *et al*, 1991). Process would include records, the frequency of use of particular instruments, investigations carried out in referral to other health care personnel, the number and type of drugs prescribed, etc. The number of processes that can be measured in relation to any particular aspect of medical care is considerable, and choices must be limited by the resources available for measurement and interpretation.

**The outcome component** in medical quality refers to the patient's subsequent health status (for example, an improvement in symptoms or mobility (Brook *et al*, 1991). This can be defined as changes in the patient's current and future health status that can be attributed to the past health care, and that are the ultimate target of quality of care (Rethans *et al*, 1991). It can also be described as the product of structures (available resources) plus processes (activities of health care providers).

By combining modern and traditional quality concepts these three quality aspects can be evaluated in each quality dimension (Donabedian, 1980; Ovretveit, 1992) (Table 1).

**Table 1.** Concept based relationship between quality dimensions and quality aspects with examples of indicators

<b>1. Quality for patient</b>		
<b>Structure</b> <ul style="list-style-type: none"> <li>• characteristics of medical personnel: education, motivation, satisfaction</li> <li>• cleanliness and convenience of environment and health care facilities</li> <li>• functioning equipment</li> <li>• access to health care</li> <li>• appointment system, organisation of first aid</li> </ul>	<b>Process</b> <ul style="list-style-type: none"> <li>• aspects of patient- medical personnel encounter: friendliness, politeness, punctuality etc.</li> <li>• information system for patient</li> <li>• possibility to choose the most suitable method of cure etc.</li> </ul>	<b>Outcome</b> <ul style="list-style-type: none"> <li>• patient satisfaction</li> <li>• improvement of health quality</li> <li>• improvement of life quality</li> <li>• suppression of pain</li> </ul>
<b>2. Professional quality</b>		
<ul style="list-style-type: none"> <li>• good co-operation between team members</li> <li>• use of medical record system</li> <li>• appropriate and necessary equipment</li> <li>• availability of auxiliary workers</li> <li>• motivation and satisfaction with job</li> <li>• willingness to perform tasks</li> </ul>	<ul style="list-style-type: none"> <li>• right diagnostic process (in accordance with guidelines)</li> <li>• right treatment strategy</li> <li>• high quality procedures</li> <li>• good co-operation between different specialities</li> <li>• good co-operation with auxiliary workers</li> </ul>	<ul style="list-style-type: none"> <li>• good clinical results:</li> <li>• decrease in morbidity and mortality, decrease in clinical infections</li> </ul>
<b>3. Organisational quality</b>		
<ul style="list-style-type: none"> <li>• adequate (sufficient) resources (not only material but also human)</li> <li>• sufficient information</li> </ul>	<ul style="list-style-type: none"> <li>• rational use of resources</li> <li>• rendering of services in accordance with guidelines</li> </ul>	<ul style="list-style-type: none"> <li>• decrease in the cost price of services</li> <li>• decrease in the mean cost of care per patient</li> </ul>

The relationship between aspects and dimensions is rather conventional and the above presented scheme serves only as an example. Furthermore, there exist indicators that belong to different aspects of care, patient satisfaction being one of them. A clear understanding of the chain of events to be assessed is more important than the knowledge of what each juncture is to be called precisely (Donabedian, 1980).

It must be emphasised that there does not always exist a correlation among the three aspects. The relations between the pairs are only probabilities, not certainties, and thus an assessment of one separate aspect does not provide direct information about quality as a whole.

There exist several approaches to the judgement about what to measure in order to assess the quality of health care:

- to use elements of all three aspects, especially if the purpose is constant surveillance leading to corrective action (Donabedian, 1980)
- to define areas in which improvement is needed (Grol *et al*, 1993)
- to choose areas in which clearly defined standards or indicators already exist (Lawrence and Olesen, 1997)
- to use indicators which have proved useful. A valid indicator will change if the quality of provided care changes (Lawrence and Olesen, 1997)

All these approaches are reasonably good for application. However, in a changing health care system as that of in Estonia, it is most important to define areas, where improvement is needed and to monitor changes after the establishment of a standard. As there exist also several indicators reflecting the quality of doctor's work, whose reliability has been proved, they serve as a good starting point for quality assessment.

### **4.3. Quality in family medicine**

#### **4.3.1. Specific characteristics of family medicine**

Family practice can be defined by its tasks. According to the Leeuwenhorst's statement the FD will integrate physical, psychological and social factors in his/her considerations about health and illness. Also, the FD will make an initial decision concerning each problem which is presented to him/her as a doctor, will undertake continuing management of his/her patients with chronic, recurrent or terminal illnesses and will know how and when to intervene through treatment, prevention and education with the aim to promote the health of his/her patients and their families. Besides this, FD has a professional responsibility to the community (Heyrman and Spreuwenbergh 1987). The more recent definition of the World Organisation of Family Doctors emphasises that family practice is first-contact, continuous, comprehensive, and coordinated care provided to populations undifferentiated by gender, disease, or organ system. The family doctor functions as the general medical expert within the area of primary care, he/she occupies a central position in the practical provision of care and fulfils an important coordinating role (WONCA, 1991).

Following these definitions, family medicine is characterised by several important differences from specialist as well as hospital care.

Family doctors occupy a unique position in provision of preventive care by early diagnosing of serious diseases and by identification of habits and developments which can affect patient. Thus, health promotion and preventive care are the essential components of their work (Baker, 1988). Family doctors should act as educators and effective communicators in this field of activity (Draper and Smits, 1975).

Providing care to the patient, the family doctor consults secondary or tertiary care level specialists, but differently from specialists, he has a long-term responsibility for their patients.

In contrast to hospital care, it is patients who initiate sequences of ambulatory care (Palmer, 1989). Patients are the first to identify a need for some kind of care. This may lead to some unnecessary family practice visits, which is very rare in hospital care. Differently from hospital care, in family practice the time shared by the patient and the family doctor is short — merely some tens of minutes. Anything missed should be taken up again if and when the patient returns.

Patients decide themselves whether they attend the recommended visits or consultations, whether they take medicine or whether they accept the advice given by the doctor (Scott *et al*, 1997). Patients' outcomes can be improved only by influencing their health-related activities between visits.

Unlike in other specialities, the health status of the patient in family practice is related to social conditions rather than to the care provided by the family doctor. Another important characteristic of family practice is that patients visiting the doctor are the so called "unsorted" category. Patients admitted to hospital arrive at least with a differential diagnosis.

And finally, many family doctors work on one's own, and cannot discuss the patient with other colleagues, as is usually done in hospital settings.

### **4.3.2. Quality assessment methods in family medicine**

There are several methods used for evaluation of quality in primary care. According to the classical concept of quality, the following aspects of assessment can be distinguished: structure, process, outcome (Donabedian 1980).

#### **Structure**

One of the earliest studies of quality of family practice was conducted in 1954. This study was concerned with office facilities, equipment and practice characteristics (Palmer, 1989). In contemporary terms, this would be assessment of the structure of care. The first optional accreditation programs for ambulatory care, concerning mostly with standards of the quality of medical records and practice

facilities were developed in the 1970s. Assessment of the quality of records, which forms a part of the assessment of practice as well as of other structural components of care (premises, equipment and staff), is often included in the inspection of practice.

The quality of structure depends among other things, on the availability of the family practitioner and the accessibility of the practice as well as on the qualification of the medical staff. Therefore minimum requirements for these components are often described by professional associations and adherence to these standards is observed (Board of Icelandic College of Family Physicians, 1993; Commissie Practijkvoering NHG, 1989).

### **Process**

Reviewing the literature on process focused quality measurement in family practice, the use of records audit appears to have become a well established method of process assessment. The earliest study of this kind dates to the late 1950s and the early 1960s (Kroeger *et al* 1965; Morehead 1967). Although it is understood that medical records are often incomplete and inaccurate and reflect the quality of recording process rather than the quality of care itself, this method is continuously popular (Gibson 1984; Fleming *et al* 1985) because of the easiest way to obtain data on process.

Another well known method of the study of process is the recording of consultation by video or direct observation. One of the first method related analyses of consultations was undertaken in 1976 by Byrne and Long. In this study, nearly two thousand consultations were recorded, and a temporal framework for analysis was designed. Consultation assessment is especially important because patient satisfaction is evidently related to the content of consultation (Treadway, 1983). Video recording is now in common use in the training of family doctors and has become a preferred method of the investigation of consultations (Pendelton 1984; Smith *et al*, 1981, Brown *et al*, 1986).

Since patient health is often influenced by several factors, including social conditions, some authors have argued that family practice should be assessed by using measures that have a clear link with outcomes, or that evaluate implementation of known effective processes: immunization uptake, cervical smear uptake rate etc. Often such examples have been identified as intermediate outcomes. When effective process is followed by good outcome, then it is unimportant which is examined, as effective process guarantees good outcome, or good outcomes indicate effective process (Baker, 1992).

### **Outcome**

Several authors find that health outcomes represent an example of a class of indicators that are generally unsuitable for assessment of PHC (Roland 1999). They are often too difficult to measure; important changes may take years to develop; they may be insensitive to PHC intervention and require adjustment



for case-mix because many factors are responsible for them. Still, measures of performance appear necessary. Therefore some authors suggest patient evaluation as one of the principal methods for obtaining data about care quality in primary care (Abramowitz *et al*, 1987; Nelson and Niderberger 1990). Despite persistent doubts on the reliability of patient satisfaction, this method is among the most popular assessment of the outcome of health care.

The earliest relevant study in this field, conducted by Cartwright in 1964, demonstrated the importance of awareness of the patient's point of view (Cartwright, 1967). Interest in patients' opinions developed with growing the sociological interest in interpersonal relationships. Several studies in this period were carried out with the aim to follow patients after treatment (Brook and Stevenson, 1970; Brook *et al*, 1971; Hulka *et al* 1970; Risser 1975; Franklin, 1967). In Hulka's study the physician as well as practice characteristics were reviewed in relation to the quality of the doctor-patient relationship in primary medical care. This relationship was defined in terms of communication between physicians and patients, patient satisfaction with care and physician awareness of patient concerns. Several tools for assessing of patient attitudes were worked out (Hulka, 1975; Mushlin, 1980). More recently, new instruments for obtaining patient data have been worked out and several questionnaires for measurement of patient health status as well as measures of patient satisfaction with different aspects of care including access, have been developed (Tarlov *et al* 1989, Ware 1983).

In the 1990s, a trend emerged to render primary health care more responsive to consumer expectations. The importance of taking into account patients' views when planning or changing services, as well as the growing role of patient surveys in clinical audit, have been emphasized. Several studies have been conducted to establish aspects prioritized by patients (Jung *et al* 1997; Laine *et al* 1996; Baker 1995; Concato *et al* 1997).

#### **4.4. Indicators of the structure of care**

##### **4.4.1. Access to the family doctor**

Good access is basic to any service. Access is quite a wide concept and includes usually practice location, appointment system, organisation of surgery hours, home visits, telephone access and out-of-hours services. The time elapsing between an appointment and a consultation is a major determinant of access and availability of care (Boerma, 1997) and deserves commonly severe criticism in family practice (Marinker, 1990). Several studies have shown that access to the doctor is one of the most important determinants of patient satisfaction with care (Bolivar, 1999; Grumbach *et al*, 1999). Although priorities regarding dif-

ferent aspects of general practice vary significantly among different countries, the absolute requirements for good general practice as reported by patients are: the possibility of making appointments within short time, quick service in urgent situations, a general practitioner (GP) who really takes his/her time to listen and talk during consultation. All these priorities refer particularly to accessible clinical care (Grol *et al*, 1999).

#### **4.4.2. Family practice equipment**

##### **4.4.2.1. General aspects**

Although adequate equipment and premises are commonly considered important indicators for family doctors' (FD) work, the relationship between the level of practice equipment and the process or outcome of care is very seldom investigated. However, in a recent study, the availability and use of equipment correlated significantly with the medical performance of family doctors (Ram *et al*, 1998). Some structural features certainly affect process and outcome, for in their absence certain procedures are not feasible. For example, the otoscope is needed to examine ear drums, special strips are necessary for determination of blood glucose level, etc. Therefore, since adequate equipment appears to be an essential tool in the process of patient care, it is necessary to stimulate FDs to invest in diagnostic and therapeutic equipment. Procedures performed by skilled and well equipped FDs not only reduce health care costs but can limit the inconvenience of delays in seeing a specialist and possibly obviate hospitalisation (Lairson *et al*, 1980).

##### **4.4.2.2. Factors related to practice equipment**

What kind of equipment is used in family practices is often related to family doctors' skills and education. Therefore, the level of equipment reflects indirectly the range of services provided by family doctors. Primary care doctors in the previous system of health care in the countries of Central and Eastern Europe have been described as having a limited job description and a limited level of skills (Barr and Schmid 1996). Some of the common characteristics of the health care systems of former socialist countries were underfinanced facilities and shortage of equipment and supplies needed to provide quality medical care (Zarkovic, 1994). It was demonstrated in the European Survey of the Task Profiles of General Practitioners that use of medical practice equipment is related to the role of GPs in the first contact with a health problem (Boerma, 1992). In countries where this involvement was low, the presence of different kind of medical equipment was proportionally low. Estonia was among such countries in 1992.

Compared with district doctors, FDs are trained for more comprehensive work. However, until 1992 there was a shortage of many kinds of equipment and supplies in primary care facilities in Estonia. Setting standards is one possible method to encourage doctors to improve the quality of their working conditions, as is shown by the Icelandic Association of General Practice (Board of Icelandic College of Family doctors, 1993). Still, the topic of the standards of practice equipment is seldom highlighted, and only few attempts have been made in this field (Comissie Practijkvoering NHG, 1989). Job description together with office standards have become especially important in health care systems which are (re)introducing family medicine into health care (Nabialczyk, 1997). In Estonia, a standard for practice equipment together with the family doctors' job description was worked out in 1997 and was approved by the Ministry of Social Affairs (Riigi Teataja, 1997).

### **4.4.3. Physician's motivation and job satisfaction**

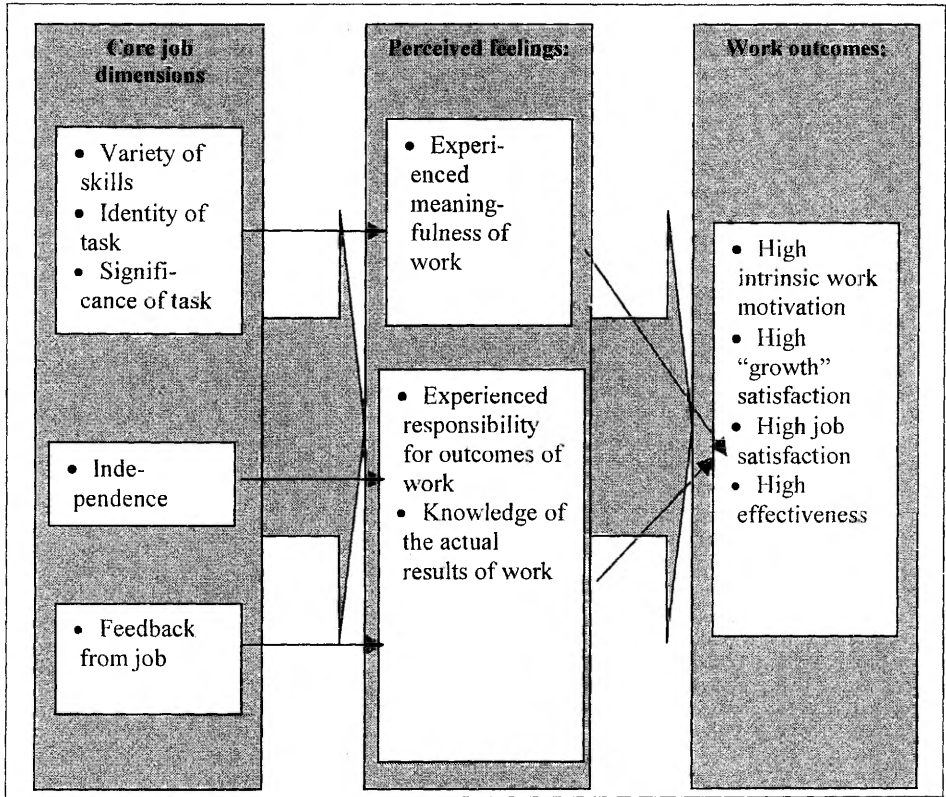
#### *4.4.3.1. General aspects*

Although job motivation and job satisfaction have rarely been included in the quality measurement, and a traditional concept of quality (Donabedian, 1980) does not include provider satisfaction, there are still good reasons for doing so. No organized system of health care will succeed without the support of its physicians. It is a well known fact that the most important source for quality work is the workers' intrinsic motivation to work well (Barr, 1996). Satisfaction with work reflects fulfilment of intrinsic needs (possibility to develop, autonomy in decision, etc). The relationship between job satisfaction and job performance is an issue of continuing debate. The content theories of motivation assume a direct relationship between job satisfaction and improved performance (Maslow, 1987; Herzberg 1959). Process (or expectancy) theories, however recognize the complexity of this problem (Wroom, 1982). The results of twenty studies revealed no direct relationship, and only a low moderate correlation (0.14), between job satisfaction and job performance was found (Wroom, 1982). A probable relationship between satisfaction and performance has been established for such workers who are deeply involved in their work (Argyle, 1974).

A popular and comprehensive model of job characteristics shows that jobs with a high score of core dimensions were associated with high levels of personal and work outcomes (Figure 1).

Many studies have been carried out in order to investigate the relationship between physician's job satisfaction and patient satisfaction with care (Suchman *et al*, 1993). It has been proved that in the relationship between service providers and service recipients, the behaviour of each party affects the outcomes of the interaction for the other. The existing evidence supports the understanding that organisations that appropriately structure professional roles

and meet the needs of professional staff will promote a climate in which providers deliver service to clients more effectively, and in which clients will perceive providers as highly service-oriented (Weisman, Nathanson, 1985). Therefore, prior to attaining of the high quality of work, the needs of workers should be met (Skolnik *et al*, 1987).



**Figure 1.** A job characteristics model of work motivation (Hackmann JR, Oldman GR 1980)

Several studies have suggested that job dissatisfaction among FDs has serious implications in terms of patient care. Satisfaction was associated with openness to patients and to greater attention to the psychosocial aspect of complaints, whereas frustration and tension were related to increased prescribing and decreased tendency to provide explanations to patients (Grol *et al*, 1985; Melville, 1980). Study of the relationship between the job satisfaction and the quality of prescribing revealed that FDs with a lower level of satisfaction tended to prescribe more drugs that were under debate at the time either because of

possible interactions or because of the risk of addiction. Another interesting finding was that FDs with a lower level of satisfaction prescribed more often drugs without the actual face to face contact with the patient (Haaijer *et al*, 1987).

The finding that physician satisfaction influences not only the quality of patient care but affects also students' attitudes to medicine and their choice of the speciality to be pursued is of no less importance (Linn *et al*, 1985; Blankfield *et al*, 1990).

#### ***4.4.3.2. Factors related to physician's job satisfaction***

The satisfaction of physicians and other health care professionals has not received as much attention as the patient satisfaction. According to literature data, some important factors, which are closely interrelated should be stressed.

##### *Practice size*

It has been found that physicians working in larger organisations were less satisfied than those working in smaller (Sutherland and Cooper, 1992). The reason seems to be similar patient satisfaction studies. Usually personal interaction in large organisations is fragmented and not so close, there occur more problems with auxiliary services, etc. Regarding the ability to make decisions about the management and policies of their practice, physicians in solo and small group practices were more satisfied than physicians in large groups (Breslau *et al*, 1978). Nevertheless, family doctors in group practices of three or more physicians, when compared with physicians in practices with less than three physicians report lower dissatisfaction with the time requirement of their practice, their opportunity for contacts with colleagues and their opportunity for continuing medical education (McCranie *et al*, 1982; Breslau *et al*, 1978). Solo practitioners tend to have problems with the aspects of work organisation and paperwork as well as with vacation arrangements. The another important findings is, that solo practitioners tend to be more dissatisfied also with their income (Skolnik *et al*, 1993). Most probably, this is a reflection of the high workload which is not adequately compensated for income.

##### *Autonomy*

Although some studies reveal no differences between solo practitioners and group practices (Cooper *et al*, 1989), majority of studies suggest that the most favourite practice type is a small group practice. The system of vacations, division of labour and the like items can be organised best in this type practices. At the same time, autonomy, which is defined as the extent to which a job provides freedom, independence and discretion in planning the work and determining how to undertake it, is not affected. It is supposed that jobs which

require high devotion are not so stressful in case there is more autonomy (Mullins, 1990). In medical practice there exist two types of autonomy: bureaucratic and clinical. Bureaucratic autonomy is concerned with the structure of work and includes scheduling of working hours and home visits as well as the number and types of patients to be seen. Clinical autonomy involves control over actual decisions in patient care and includes ordering of tests and treatment. (Engel, 1969).

### *Workload*

Objective workload is defined as the amount of time needed for performing certain activities. In general, the work of family doctors can be divided into patient related activities and other activities. Fleming's report on the Practice Activities Analysis distinguishes two patient related activities: patient services (such as repeat prescriptions and telephone calls) and consultations (office visits and home visits) and three groups of other activities: continuing education, health service administration and practice administration. The subjective aspect of workload includes a sense of job dissatisfaction or job stress rather than direct questions whether physicians feel overworked (Makin *et al*, 1988 ; Branthwaite and Ross, 1988). In general, the workload of FDs is influenced by list size as well as by the characteristics of the practice population served and health problems presented (Fleming, 1989).

The relations between workload and job satisfaction have not been studied systematically. The most important sources of dissatisfaction seem to be: interruptions of daily routine, administrative workload and routine work (McCraine *et al*, 1982) as well as time pressure in practice, management of emotional problems, financial costs of practice and paperwork. The last two problems were more often mentioned by family doctors who worked in a solo practice (Makin, 1992).

The issues of workload and job satisfaction are important because they might affect the work style of family doctors and the quality of their work. The relevant aspects of work style include the type of interventions performed during consultations, the communication style of the FD, referrals, prescriptions and repeat consultations (Groenewegen, 1991).

In addition to workload, professional autonomy and practice size, there are other factors that have been shown to affect physicians' satisfaction: relationship with patients, relationship with other professionals, perceived professional status, continuity of care (Stevens, 1992). It has been demonstrated that varied and complex tasks will lead to greater job satisfaction than routine and repetitive tasks (Breslau, 1978).

## **4.5. Indicators of the outcome of care**

### **4.5.1. Level of children's immunisation**

The study of immunisation levels in a real population serves as an excellent starting point for quality assessment. It is a perfect example of a service rendered by a doctor, which has a proven and unarguable benefit to the patient (Marinker *et al*, 1998). Its advantage is also that if gaps in provision have been identified it is possible to take some action to improve performance. Besides, there exist indicators accepted worldwide for measurement of immunisation level: immunisation coverage and up-to-date vaccination (American Academy of Pediatrics, 1988). A regulation of the Ministry of Social Affairs of Estonia foresees, that vaccination coverage for diphtheria-tetanus and poliomyelitis as well as for measles-mumps-rubella (MMR) must attain a level of 95% and for pertussis, 90% (Riigi Teataja, 1996).

Although it is not proved, if full immunisation alone reflects accurately whether children have received all aspects of preventive care, some authors agree that children who are under-immunised often have not received other aspects of child care either (Bordley *et al*, 1996; Rodewald *et al*, 1995). Some studies have found that private primary care practice may lead to undervaccination, including missing vaccination opportunities during office visits, and use of inappropriate vaccine contraindications (Szilagy *et al*. 1993; Orenstein *et al*, 1990).

Until 1993, when the first family doctors started work in primary health care, children's immunisation was the task only of paediatricians in Estonia. Although in their preventive work with preschool children, FDs are guided by the same rules as paediatricians (Riigi Teataja 1995), it has not yet been studied whether their work quality is comparable to that of paediatricians.

### **4.5.2. Patient satisfaction with care**

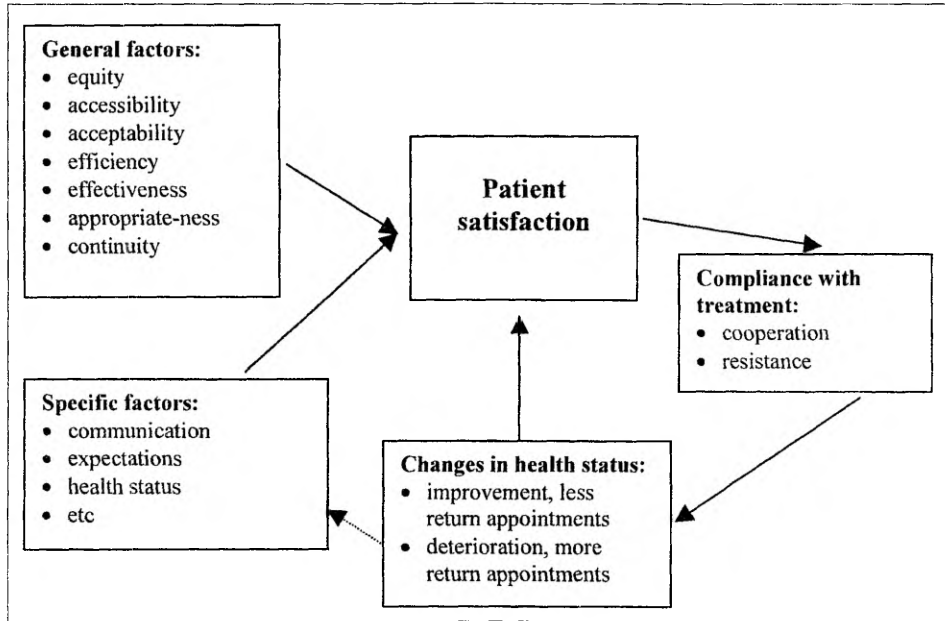
#### ***4.5.2.1. General aspects***

Patient's satisfaction with his or her care represents evaluation on received care. As such, satisfaction is an outcome of care and can be used to assess how well the care process is working, i.e. it is an intrinsic measure of outcome of care or output measure (Healy *et al*, 1995). Measurement of patient satisfaction fulfils several distinct functions: understanding of patients' experiences in health care, promotion of cooperation with treatment, identification of problems in health care and evaluation of health care (Sitzia, 1997). Evaluation of health care is regarded as the most important function of patient satisfaction in many studies (Bond and Thomas, 1992). Several models of evaluation of health care have been proposed, among them evaluation of specific treatment, evaluation of

organisation (hospital or primary care centre), evaluation of health system, etc. Satisfaction studies have proved valuable in all these fields.

Satisfaction ratings themselves reflect three variables: personal preferences of the patient, patient's expectations and actual care. In this way, satisfaction rating is both a measure of care and a reflection of the respondent. As expectations are subjective, "quality" may be seen as essentially subjective (Hopkins, 1990). Recognising this problem, Redfern and Norman emphasized in 1990 that quality health care must also incorporate considerations of equity (care being fairly distributed), accessibility (being available and not restricted by time or distance), acceptability (satisfying reasonable expectations of patients and providers), efficiency (resources not being wasted on one person to the detriment of another), effectiveness (achieving the intended benefit for the individual and the community) and appropriateness (meeting the actual needs of individuals, families and community). Although satisfaction is evidently affected by several factors, including personal factors, there exists evidence that care which is less satisfactory to the patient is associated with a higher degree of non-compliance with treatment and return appointments, poor understanding and retention of medical information (Fitzpatrick, 1991). Since satisfaction and acceptability contribute to the success of future care, they also can be considered the features of structure or inputs. Satisfaction can be directly related to improvement of the patients' health status. It has been found that patients who experienced better fulfillment of medical expectations and who were satisfied with the care provided by physicians and nurses, were more likely to have better physical and mental health-related quality of life (Fitzpatrick *et al*, 1983; Guldvog, 1999). On the contrary, the less satisfied patients were with care, the more they tended to miss appointments, change physicians, ignore the treatment plan and given advice (Figure 2).





**Figure 2.** Factors related to patient satisfaction

#### *4.5.2.2. Factors relating to patient satisfaction with primary care*

Patient satisfaction represents complex relations (Figure 2) between the patient's perceived needs, expectations and experience of care (Avis *et al*, 1997). In the last 30 years, patient satisfaction has been studied extensively with various survey instruments. The academic literature provides evidence of the impact of access to care, the interpersonal nature of care, and the continuity of care on patient satisfaction (Cleary *et al*, 1988; Davies and Ware, 1988).

#### *Access to care*

Access to the care includes such aspects as being able to make an appointment with one's physician when one wishes, not having to wait for a long time in the physician's office, and being able to speak to one's physician on the telephone (Barr, 1996) as well as parking problems, transport to the clinic etc. (Abramovitz *et al*, 1987). Several studies suggest that patients place a great emphasis on this aspect of care, and that access is most closely associated with patient satisfaction (Jung *et al*, 1997; Hagman and Rehnstrom, 1985; Hyatt, 1980). In the current work access to care is investigated as one indicator of the structure of care.

### *Continuity of care*

Continuity is one of the fundamental and most important concepts of primary care (Hjortdahl, 1992). This can be defined as medical care over time provided for the patient by one health care worker regardless of the presence of specific pathology (Starfield, 1980). According to the opinion of Barr care continuity should be seen as reflecting a spectrum of relationships rather than a particular phenomenon (Barr, 1995).

The dimensions of continuity of care have been described by several authors. (Hennen 1975; Rodgers and Curtis, 1980; Banahan and Banahan, 1981; Chao, 1988; Hjortdahl, 1992). According to their view the most important components of continuity are:

- longitudinal component — implying that patient care is provided over time. Implicit in this concept is accumulated knowledge of the patient.
- comprehensive component — implying that care is taken of the wide array of medical problems encountered in general practice.
- personal component — implying empathy and personal involvement with the patient, lasting over time.
- responsibility component — implying longitudinal attitude and willingness the physician to take on the responsibility for taking of care, or coordinating the care related to different medical needs of the patient.

Closely related terms are “personal doctor” or “my family doctor” or “having a regular doctor”. Without availability of a “regular” or “personal” doctor, continuity of care is inconceivable.

It has been shown that the higher is continuity, the higher is patient satisfaction (Hjortdahl, 1992). Some studies have established the most important variables influencing patient satisfaction with continuity of care as well as with accessibility is presence of a personal list system (Baker and Streatfield, 1995).

### *Free choice of the doctor*

The issue of the cause-effect relation between the free choice of personal doctor and patient satisfaction requires further research. Only a few studies have been conducted in this field. A study of Schmittiel and co-authors confirmed that there exist strong relationship between free choice and satisfaction with care (Schmittiel *et al*, 1997). Some studies have shown that choice is important for mutual trust, because patients have more confidence in physicians whom they themselves select (Davis *et al*, 1995). While the success of medical care depends significantly on patients' trust in their physician, free choice of a personal doctor seems to be an important precondition for gaining good medical outcomes. However, patients in different cultures and health care systems may have different views on several aspects of primary care.

### *Nature of personal interaction between the patient and the physician*

The nature of personal interaction between the patient and the physician also affects patient satisfaction a great deal. This interaction is influenced by the physician's personal style and communicative style. The positive relationship between physician friendliness, social conversation, personal manner of the doctor during consultation and patient satisfaction has been reported in series studies. (Korsch *et al*, 1968; Freeman *et al*, 1971). An large number of studies have investigated the relationship between patient-centeredness in doctor and patient satisfaction. It was found that physician behaviours significantly associated with the high level of patient satisfaction are: "asking for opinions", and "asking for help". The more time a physician spends discussing patients' specific questions and providing explanations and patient education, the more patients are satisfied (Robbins *et al*, 1993). However, provision of information to patients during in medical history has also been found to be related to higher satisfaction. The more possibility patients were afforded to describe their illnesses and related circumstances in their own words, the higher was their satisfaction (Stiles *et al*, 1979). It was found that positive outcome depends on physician behaviour which is facilitating rather than dominating. Physician care that is personal in nature and thus more satisfying to patients has been found less prevalent in larger organizations than in smaller practice settings.

### *Technical aspects of care*

The perceived technical quality of care seemed to play a lesser role in affecting satisfaction. Furthermore, there exist some doubts on whether patients can assess the technical component of care adequately (Hall *et al*, 1988; Weingarten *et al*, 1995). Several authors argued that patients' views about the technical skills and medical competence of doctors are primarily determined by the extent to which the doctor was friendly and reassuring, but not by technical quality itself (Ben-Sira, 1976; Rubin, 1990; Stimson and Webb, 1975).

Patients' evaluations of health care provision may be related to specific features of the health care system (Grol R *et al*, 1999). A comparison of ten western countries suggested that an effective primary care system was positively related to the high satisfaction of patients with health care. Nevertheless, there existed several important differences between different countries, for example, regarding the possibility to see the same doctor during each visit or guidance in specialist care from a GP. The findings suggested that patient expectations must be different in different countries and that the background of culture, traditions, etc., should be taken into account in order to assess health care quality.

## 5. SUMMARY OF THE LITERATURE

The literature has pointed out various ways to evaluate quality. It is important to take into consideration the needs of both service providers (physicians) and consumers (patients), as well as those of purchasers (sick fund). There is no universal indicator enabling to provide a unified evaluation on the quality of a health care system as a whole. Also, it is impossible to define a certain number of quality indicators that could be used in any situation and that would give an adequate overview of health care quality. Therefore, at first areas which are the most problematic or which deserve greater interest should be located and indicators, suitable and simple to use, should be identified.

The high quality of a health care system is guaranteed first of all by the staff who work in it as well as by availability of necessary equipment and well organised work process. This, according to the classical concept of quality, represents the structural aspect of quality. The concept of family practice in Estonia implies that family physicians should possess, besides improved medical skills and higher management skills, also greater responsibility for the patient as well as for one's own practice. Can changes in training process lead to changes in everyday work? Are doctors, who have worked in a polyclinic system for a long time and have not made independent decisions concerning management of their practice? Will they be satisfied with their work? These issues have not yet been studied. But these questions are vital also for other East and Central European countries where similar reforms are taking place.

High quality health care system is characterised also by objective changes in the servicing of patients and in their satisfaction with the health care system. According to the classical concept of quality this is the outcome aspect of quality. Because outcome in primary health care is often difficult to measure, it has been suggested to use well-known and well-defined indicators such as immunisation rate, cervical smear uptake rate, etc. Often these indicators are termed as intermediate outcomes, as they are obviously linked to long-term outcome.

The modern concept of quality emphasises the importance of consumer opinion. Since patient satisfaction has been proved to be the most useful outcome indicator, relevant studies are common in countries where family practice has a long tradition. At the present time only little studies have been performed in East European countries, among them Estonia, which include patient satisfaction data. As a result of several important changes in primary health care, information about how people evaluate the PHC reform has proved necessary in order to avoid dissatisfaction of patients. This appears especially important in the light of literature data indicating that patients' evaluations of health care provision may be related to specific features of the health care system.

## 6. AIMS OF THE STUDY

The aim of the present study was to assess the structure and outcome of care as the aspects of the quality of family practice in Estonia. The specific objectives of the study are:

1. To investigate accessibility of family doctors as a quality indicator of structure.
2. To assess whether the job description has any impact on the family doctors' practice equipment and whether family doctors adhere to the standard of practice equipment.
3. To examine whether there are differences in motivation and job satisfaction as well as in the willingness to fulfil the tasks of the family doctor between family doctors and district doctors in Estonia.
4. To study the quality of children's immunisation as an example of a quality indicator of preventive care.
5. To find out how Estonian people evaluate changes in primary health care and how they perceive acceptability of the PHC system.
6. To evaluate factors related to population's satisfaction with primary care as a quality indicator of outcome.

## 7. SUBJECTS AND METHODS

In order to evaluate the structural aspect of care, two different studies have been performed.

1. A study on family doctors' practice equipment, 1998
2. Studies of the opinions and attitudes of Estonian primary health care doctors'
  - a) 1997
  - b) 1999

The former study analyses objective indicators, such as changes in the acquisition of equipment for family doctors and adherence to the equipment standard fixed in their job description. The latter study presents an overview of subjective indicators, such as the motivation of different primary care doctors, satisfaction with work and willingness to perform tasks described in the job description of family doctors (Table 2).

To evaluate accessibility and its adherence to the standard, fixed in family doctor's job description the data of the population study were used.

**Table 2.** Theoretical framework of the study

Quality aspects: Type of measures:	Structure	Outcome
Subjective measures	Physician satisfaction with different aspects of job (7 indicators)	Patient satisfaction with different aspects of primary care (10 indicators)
Objective measures	Access to care, adherence to the official standard Adherence of practice equipment to the official standard	Level of child vaccination: <ul style="list-style-type: none"> <li>• Appropriate timing</li> <li>• Coverage</li> </ul>

In order to assess the outcome of care two different studies were performed:

1. Immunisation study of 2-year old children of Tartu in 1999
2. Study of Estonian adult population in 1998

Approach was similar to that used in the evaluation of structure: adherence of clinical outcome to the standard as an objective indicator. Coverage of children's immunisation and appropriate timing of vaccination were selected as particular indicators. A subjective indicator here is the patient's evaluation of changes and his/her satisfaction with primary health care (Table 2).

## 7.1. Study on family doctors' practice equipment (I)

In 1998, a survey of all 376 family doctors practising as independent contractors in Estonia, was made by using a postal questionnaire. The questionnaire included items of equipment belonging to the official national standard from 1997 as well as items from a similar questionnaire executed in 1992. FDs were asked to record which kind of the listed items of equipment they had at their disposal. The response category for the items describing availability of equipment was "yes" or "no".

As the questionnaires for family doctors were delivered and collected by their county health authorities, all doctors responded. Of the doctors, 43% (N=163) worked in rural practices and 57% (N=213) in city areas; 49% (N=185) had a single practice and 51% worked in group practices; the mean age of FDs was 43±8 years. Of the independently working doctors of this study 44% (n=167) had completed retraining courses for family doctors and the rest had participated in such courses.

To evaluate changes that have taken place in Estonian family doctors' practices, the data of a similar study from 1992 were used.

## 7.2. Studies of opinions and attitudes of Estonian primary health care doctors' (II)

The survey in 1997 was undertaken in order to find out how many vocationally trained family doctors started to work as FDs after completion of appropriate training, to establish what they value in their everyday work as well as to follow their job satisfaction. In the survey a Warr-Cook-Wall questionnaire was employed, which consisted of several parts. The first part focused on the *importance* attached to different aspects of work in general. This part contained 15 questions to which answers were ranked on a seven-point scale, from *not at all important* to *extremely important*. These aspects were considered factors motivating work.

Another part included 16 questions to measure work satisfaction. Answers were given on a six-point scale from *I am extremely dissatisfied* to *I am extremely satisfied*. The last part was aimed at obtaining data on respondents' age and sex, the character and size of their practice and the length of the period they had worked as doctors.

The questionnaires were delivered by mail to all 160 doctors who had completed an retraining course for family doctors. Graduates' names and addresses were obtained from the Centre for Postgraduate Medical Education. Persons who did not respond within three weeks were sent a note of reminder with a new questionnaire. The number of responses was 105 (return rate 67%).

The aim of the study in 1999 was to investigate the willingness of urban primary health care doctors to work as family doctors as well as their job motivation and job satisfaction. The doctors were inquired about how they valued different aspects of their work and how satisfied they were with work. They were also asked to estimate the share of the listed activities in their everyday work as well as to carry out self-evaluation of their willingness to perform work activities. The questionnaire was distributed among all primary health care doctors in Tartu, Pärnu, Narva and Tallinn. The names and addresses of the doctors were collected with the help of county doctors.

The doctors' distribution with respect to subgroups, number of respondents and response rate is presented in Table 3.

**Table 3.** Subgroups, number of respondents and response rate (%) of PHC doctors

Subgroups	Study groups (N)	Respondents (N)	Response rate (%)
PHC doctors in Tartu	67	35	52
PHC doctors in Pärnu	33	18	55
PHC doctors in Narva	45	35	78
PHC doctors in Tallinn	257	219	85
Total	402	307	76

Of the respondents 25% had graduated as FDs (N=77), the rest were district pediatricians (33%) and district doctors for adults (42%). Of the respondents 94 (31%) had been working as independent contractors, the others were employees of polyclinics. The mean age of the respondents was 45 years, mean length of work experience was 20 years.

### 7.3. Children's immunisation study (III)

The study was carried out in 1999 in Tartu. All children born between January 1996 and January 1997 were eligible for this study. The data of the children and their personal doctors were received from the sick-fund database. From 1036 eligible children, 518 were randomly selected for the study. These children were listed with 30 FDs and 12 paediatricians. A retrospective review of immunization records of 2-years old children was performed. The outcome variables were immunization coverage at age 24 months and up-to-date immunization.

Children were considered up-to-date immunized if the delay of vaccination was less than one months comparing with recommended shedule. The delay of the first re-vaccination was allowed to be less than three months. If the incomplete vaccination status as well as delay of vaccination for more than two



months was documented, the reason from medical record was obtained or the personal doctor of the child was questioned.

#### **7.4. Study of Estonian adult population (IV, V, VI)**

In October 1998, a random sample of Estonian residents, aged 15–74 years (n=997), were personally interviewed by using a pre-categorised questionnaire which was worked out in cooperation with a study group of the University of Tartu and the market research company EMOR.<sup>1</sup> The sample of this study was formed by self-weighting: a proportional model of the total population aged 15–74 years, where all respondents represent the equal number of respective persons in the population, was used. Two-stage stratification was used to form the sample. First, the population was divided into six strata on the basis of territorial residence, sample size in each stratum was based on the proportional division of the population. Then two-stage selection was made in each stratum. Primary sampling units were settlements (towns, small towns, county centres and villages). Sampling points (a total of 63) were chosen randomly according to settlement size (number of residents who qualified for the survey's age group) on the basis of proportional probability. In each primary sampling unit, secondary sampling units, individuals, were selected. Face-to-face interviews were carried out by interviewers of EMOR. To obtain a sample of the required size, 1895 contacts were made with respondents. The number of interviews conducted was 997.

The questionnaire included demographic data, self-assessment of health status and various aspects related to primary health care: registration in the patient list, preferences in presenting to doctors (PHC doctor or specialists), access to care, perception of changes in PHC, and overall satisfaction with the family doctor. Ten questions focused on the patient-practitioner relationship and comfort of the environment.

The structure of interviewees by age, gender, nationality and place of residence is presented in Table 4. The sample is representative of the Estonian population.

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<sup>1</sup> EMOR is the biggest full service market information provider in the Baltics and has long term experience in the field of marketing surveys and consultation.

**Table 4.** Structure of respondents of the Estonian adult population study

		n	%
<i>Gender</i>	Female	527	53
	Male	470	47
<i>Age</i>	15–24	191	19
	25–34	184	18
	35–49	285	29
	50–64	221	22
	65–74	116	12
<i>Nationality</i>	Estonians	649	65
	Non-Estonians	348	35
<i>Residential place</i>	Capital	310	31
	Urban area	411	41
	Rural area	275	28

## 8. STATISTICS

The data of the family doctors' job satisfaction studies were analysed with the statistical program SPSS (Statistical Package for the Social Sciences). To evaluate the statistical significance of differences between the groups, the Chi-square test and the Mann-Whitney U-test were used. The role of different factors in the level of satisfaction with job was found by logistic regression analysis.

In the children's immunisation study, timeliness of vaccination, i.e. fitting in the limits of allowed delay, was calculated. In order to compare the vaccination regimens performed by paediatricians and family doctors, Chi-square test was used.

In the population study, the respondents were grouped by health status, age (five age groups), gender, place of residence (capital, urban and rural), and registration in the patient list. Differences between the groups were tested using Chi-square tests. To estimate the relations between the variables, the Spearman correlation coefficient was calculated. The role of different factors in the model of satisfaction with different aspects of primary health care was established by logistic regression analysis. The model was developed using the following procedure: the dependent variable was taken as aspect of satisfaction (1=very much satisfied, 0=other) and independent variables represented social-demographic aspects (gender, age, education, etc.), practice and health condition. All statistically nonsignificant variables were excluded from the model. For statistical analysis, the SPSS was used.

## 9. RESULTS

### 9.1. Access to family doctors (IV, V)

The waiting time for the family doctor's appointment was short for most respondents. The doctor admitted 59% of the respondents on the day of making the appointment, 14% of the respondents were admitted in 1–2 days, 2% of respondents were admitted in 3–4 days. Of the respondents 23% did not know the length of the waiting time. There were no significant differences between different regions of Estonia with respect to waiting time (Table 5).

**Table 5.** Respondents' answers to the question "How long does it usually take to be admitted by your family doctor?" (% of respondents)

	Tallinn	Harju, Järva and Rapla counties	Western Estonia	Jõgeva and Tartu counties	Southern Estonia	Viru county	Average in Estonia
Same day	54	66	56	55	69	64	59
1–2 days	16	9	15	23	11	10	14
3–4 days	3	2	3	3	1	1	2
a week	0	2	5	2	1	0	2
more than one week	0		0	1	0	0	0
Do not know/did not visit the doctor in the previous year	27	21	21	17	19	25	23

### 9.2. Changes in family doctors' practice equipment and adherence to the official standard (I)

Compared with 1992, the availability of items relevant for the tasks of the family doctors has increased significantly. While in 1992 the availability of equipment for gynecological, otorhinolaryngological, minor surgical and paediatric work in district doctors' offices was very occasional, then in 1998 majority of FDs had at their disposal the following devices: otoscope, gynaecological instruments, ophthalmoscope, tuning fork, tables for testing vision, ECG equipment, reflex hammer, etc. In 1992, the availability of a

computer was very rare: only 2% of primary health care doctors used it in their everyday work. In 1998, their proportion had increased to 76%.

The minimal standard of equipment as well as its availability at family doctors' offices in 1998 is presented in Table 6.

About half of the FDs (52%) reported that they had all the 38 instruments listed in the standard, and more than 2/3 of doctors had all basic instruments needed in everyday work (stethoscope, sphygmomanometer, scales, dressings, bandages, infant scales, otoscope, ECG equipment, tables for testing vision, equipment for testing blood sugar, etc).

There existed differences in the level of equipment between doctors who had completed retraining courses and those who had not (Figure 3).

Doctors who had been assigned the specialty of family doctor possessed significantly more instruments the use of which requires more specific skills and tasks, e.g. gynaecological instruments, infant scales, ear syringe, ophthalmoscope, instruments for minor surgery, etc.

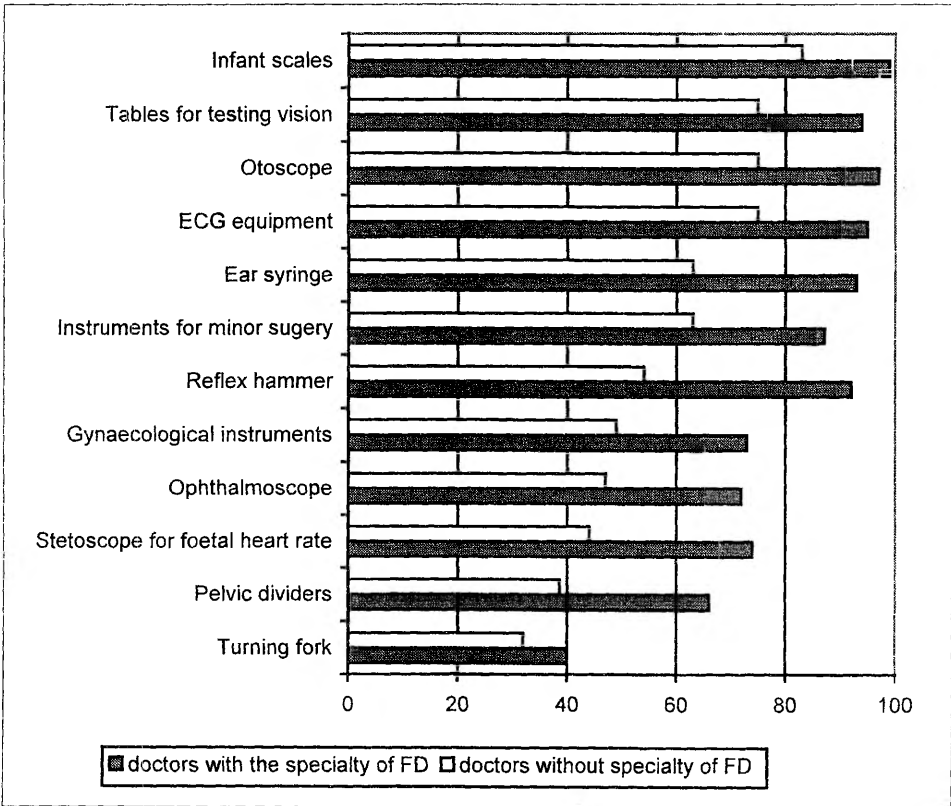


Figure 3. Availability of medical equipment at doctors' offices (percentage of doctors who had the listed items of equipment at their disposal)

**Table 6.** Items of equipment needed at family doctors' offices and the percentage of primary care doctors who had the listed equipment at their disposal.

Items of equipment	Percentage of doctors (N= 376) who had the listed items of equipment at their disposal in 1998
Sphygmomanometer	100
Stethoscope	100
Thermometer	99
Tongue depressor	98
Syringes, needles	98
Tape measure	95
Scales	93
Torniquet	93
Device for height measurement	92
Dressings, bandages	91
Infant scales	90
Possibility to use a car *	90
Kidney-shaped basin	87
Otoscope	85
ECG equipment*	84
Tables for testing vision*	83
Equipment for blood sugar tests*	81
Urine strips	78
Personal computer	76
Instruments for enema	76
Basic instruments for minor surgery *	74
Ear syringe*	74
Reflex hammer	72
Splints	69
Nasal-specula	66
Catheterization trays	63
Gynaecological couch*	63
Transfusion systems*	62
Gynaecological instruments*	60
Tables for testing color-vision*	60
Ophthalmoscope	59
Peak flow meter	59
Stethoscope for fetal heart rate	58
Instruments for gastric lavage*	58
Equipment for hemoglobin measurement	52
Pelvic dividers*	49
Emergency kit	48
Tuning fork	35
Aspirator*	20
* instruments required per practice	

## **9.3. Family doctors' job motivation, job satisfaction and willingness to fulfil the tasks set for family doctors (II)**

### **9.3.1. Study of 1997**

In general, the most important aspects of work were good organisation of practice, high quality equipment and the opportunity to learn new things, but also the freedom to choose one's own method of work and the opportunity to expand the range of abilities. There was no relation between the ratings for job motivation factors and demographic factors of the practice. District doctors (DD) valued somewhat lower the opportunity to make their own decisions as well as the opportunity to fulfil personal ambitions ( $p < 0.01$ ).

Most FDs as well as DDs were satisfied with their work in general. Of the 105 respondents, 76 (72%) reported that they were highly satisfied with their work generally, 24 doctors (23%) were somewhat satisfied and 5 doctors (5%) were dissatisfied. The respondents were most satisfied with relationships with their patients and with the varied nature of work, as well as with the possibility to attend continuing education courses. They were least satisfied with income and with recognition.

It was found that private practitioners had higher satisfaction with income ( $p < 0.01$ ), with freedom to choose their own working methods ( $p < 0.05$ ) and with work organisation compared with doctors-employees ( $p = 0.01$ ). There were observed no differences with respect to age or the type and location of the practice.

### **9.3.2. Study of 1999**

The study carried out among PHC doctors in urban areas, shows that almost all listed aspects of work, except for variability of work, were highly valued by most PHC doctors. There were revealed no significant differences between family doctors and district doctors (Figure 4). Statistically significant differences occurred when comparison between family and district doctors was made in relation to the level of satisfaction with the same job characterizing aspects (Figure 4). The levels of importance and satisfaction with the same job aspects brought out three related clusters of job factors: a) The cluster of factors which were considered relatively important and in which there existed a statistical difference in satisfaction level between FDs and DDs: "possibilities to develop", "work organisation" and "modern equipment".

b) The cluster of factors which were considered to be relatively important and which revealed no statistical difference in satisfaction level between FDs and DDs: "good possibilities for specialist consultation" and "work conditions".

c) The cluster of factors which were considered relatively less important, but for which there occurred statistical differences in satisfaction level between FDs and DDs: “autonomy” and “variability of work” (Figure 4).

The most prominent conflict in DDs work occurs between importance and satisfaction with such aspects as work organisation, possibilities to develop in work and availability of modern equipment. However, the possibility to use modern equipment in work deserved lower satisfaction also on the part of FDs. On the contrary, autonomy and variability of work, which were not rated as the most important work aspects, deserved significantly higher satisfaction on the part of FDs.

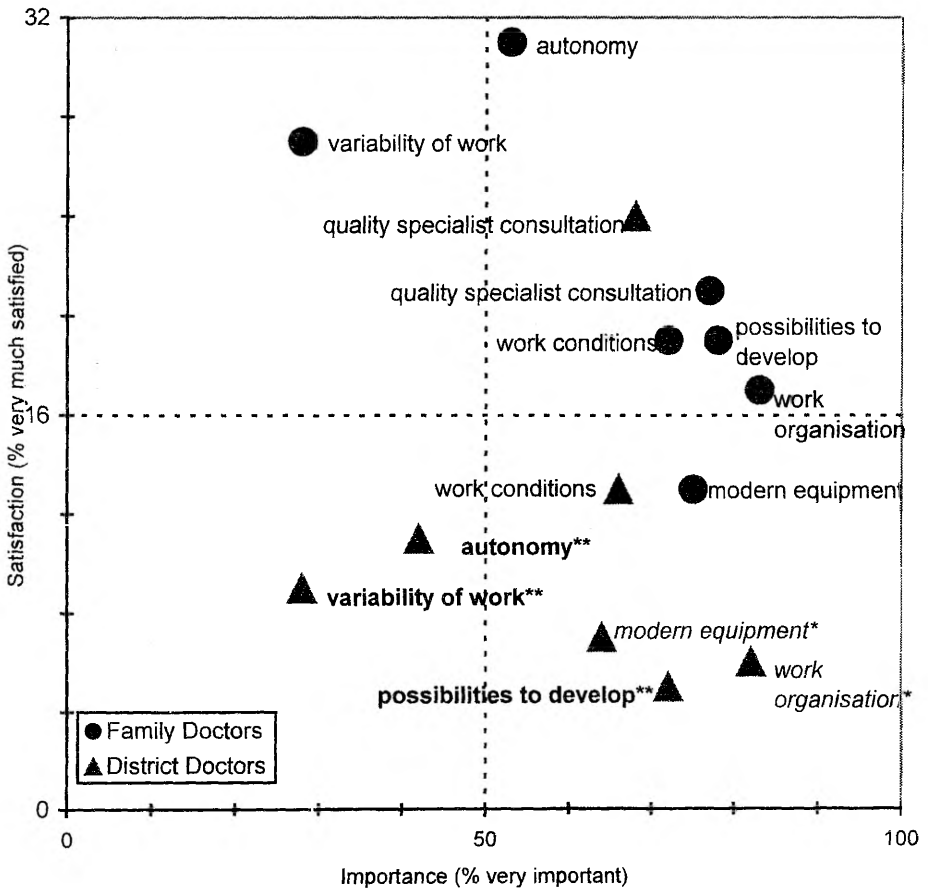


Figure 4. Relation between the importance of and satisfaction with various aspects characterizing work (\* p < 0.05; \*\* p < 0.01)



Comparison of the occurrence of certain tasks in everyday work and the willingness to perform these tasks revealed some significant differences between DDs and FDs: a) Compared with DDs, FDs reported significantly more often that they often take care of different age groups in their everyday work ( $p < 0.01$ ), provide comprehensive care ( $p < 0.01$ ) as well as out-of-hours care, deal with practice management ( $p < 0.01$ ) and communicate with local authorities, sick-fund, etc ( $p < 0.05$ ) (Figure 5).

b) At the same time, FDs showed more willingness to provide all the listed tasks ( $p < 0.01$  in most cases), while working with patients according to a fixed list was the only exception.

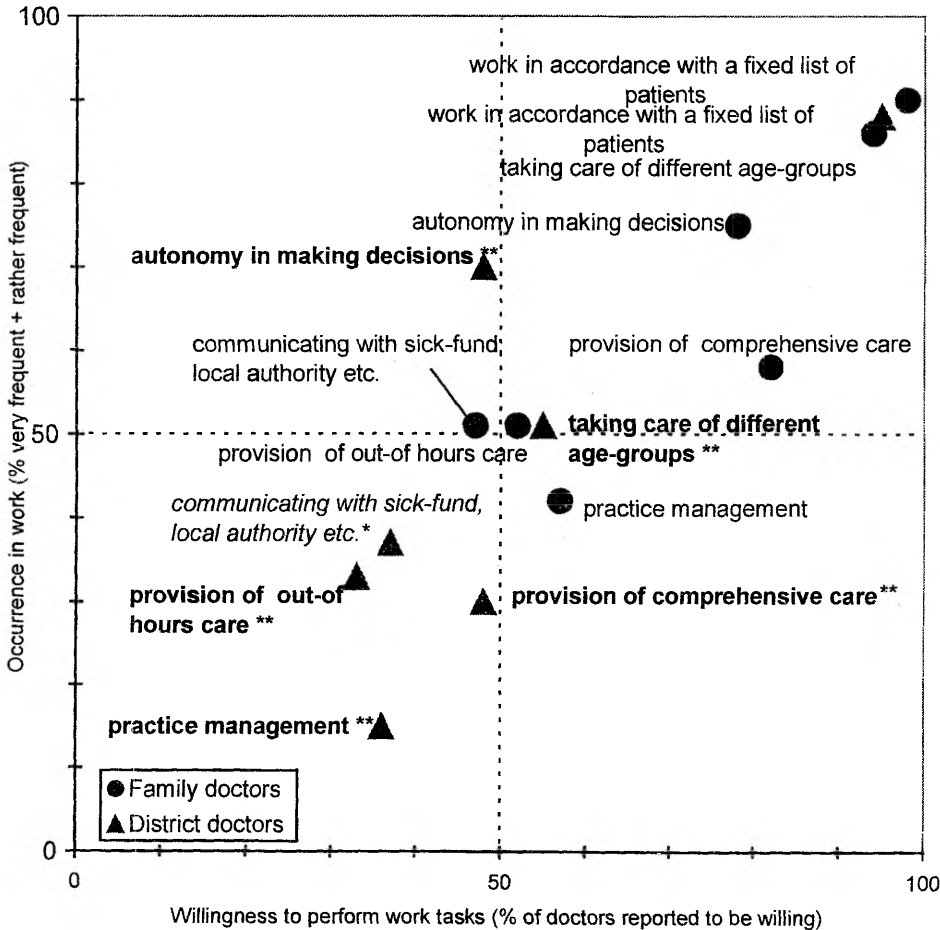


Figure 5. Relation between the willingness to perform different work tasks and their actual occurrence in the work of family and district doctors (\*  $p < 0.05$ ; \*\* $p < 0.01$ )

#### **9.4. Immunisation level of 2-year- old children (III)**

It was found that 54% of the 2-year-old children in Tartu are included in the list of family doctors and 46% are registered with paediatricians.

About 90% of the children who received timely their first vaccination (DTP1+OPV1), 76%, their second vaccination (DTP2+OPV2) and 66%, their third vaccination (DTP3+OPV3). Of the children 64% were vaccinated timely against measles-mumps-rubella (MMR). Vaccination coverage at age 24 months was 95% for DTP+OPV and 92% for MMR. There exist no significant differences between the vaccination regimens performed by family doctors and paediatricians ( $p>0.05$ ).

Of the children 8% (N=37) were incompletely vaccinated. The reasons for the delay for vaccination and incomplete vaccination status were noted in 137 cases. Among them the most important reasons were common cold and respiratory infections (29%), followed by parents non-attendance (28%) and contraindications for vaccination (13%). There existed no differences between family doctors and paediatricians with respect to provision of immunisation.

#### **9.5. Estonian adult population's acceptance of PHC system for and satisfaction with changes in PHC (IV, V)**

A population survey, carried out among Estonian adult population in October 1998, revealed that about 68% of the adult population has chosen their personal doctor. When the population of the capital of Tallinn is excluded, the percentage is even higher. About half of the respondents were quite well informed of current changes in primary health care, but the other half were not. The most problematic areas were the capital and eastern Estonia.

The study demonstrated that people preferred first to see the family doctor rather than a specialist. In responses to the question: "Whom would you prefer to visit first with your health problems?", FDs were significantly more preferred than specialists, Tallinn being the only exception. When the child falls ill or has health problems, 44% of the respondents usually present to the family doctor, 47%, to the district paediatrician, and 3%, to the specialist.

In the opinion of one-fourth of the respondents' the situation in the PHC system has improved, and only one-tenth of the respondents found that the situation became worse. Slightly less than half the respondents did not perceive any changes.

Of the respondents 41% were highly satisfied with their PHC doctor and 27% were quite satisfied, about one-fourth of the respondents lacked a personal opinion while the rest of the respondents (7%) were not satisfied. The most

frequent reasons for dissatisfaction were long waiting time at physicians' offices, lack of modern equipment, inconvenient offices and inadequate attention from the part of medical personnel.

## 9.6. Analysis of factors related to population's satisfaction with primary care (VI)

Most social-demographic variables (gender, education, nationality, place of residence, income) were excluded from the model due to their weak power to predict satisfaction with particular aspects. The only social-demographic factor related to satisfaction was respondents' age. It was found that increase in age increased satisfaction with cleanliness and comfort of the clinic and availability of modern equipment (Table 7, Figure 6). Respondents' health condition predicts satisfaction with the physician's ability to understand and with physician's competence. In both cases poorer health condition leads to lower satisfaction.

The most common predictors of satisfaction were related to the practice: absence of the family doctor and size of the health centre. Patients who had not chosen their personal doctor were less satisfied with the location, cleanliness and comfort of the practice, with physician's punctuality and understanding, effectiveness of prescribed therapy, clarity of physician's explanations; also, their overall satisfaction with the physician was much lower (Table 7, Figure 6). Large practice size was negatively correlated with satisfaction with some organisational aspects and with physician's punctuality and understanding (Table 7, Figure 6).

**Table 7.** Multivariate logistic regression analysis of demographic factors, practice type, health status against satisfaction level: 1=very much satisfied 0=other, (only statistically significant predictors are listed)

Item of satisfaction/predictor	Odds ratio (95% confidence interval)	p-value	B estimate	S.E.
<b>1. Location of the family practice centre</b>				
*Absence of personal family doctor	0.71 (0.52 to 0.98)	0.037	-0.34	0.16
<b>2. Cleanliness and comfort of the clinic</b>				
*Absence of personal family doctor	0.69 (0.50 to 0.96)	0.026	-0.37	0.17
*Practice type <sup>b</sup>				
Small (2-5 FD)	0.45 (0.22 to 0.89)	0.022	-0.81	0.35
Large (>5 FD)	0.33 (0.18 to 0.60)	0.0004	-1.12	0.31
*Age <sup>c</sup>				
25-34	1.07 (0.67 to 1.7)	0.79	0.06	0.24
35-49	1.17 (0.77 to 1.80)	0.47	0.16	0.22
50-64	1.68 (1.05 to 2.68)	0.03	0.52	0.24
65-74	2.25 (1.26 to 4.00)	0.006	0.81	0.29

**Table 7. Multivariate logistic regression analysis (continued)**

Item of satisfaction/predictor	Odds ratio (95% confidence interval)	p-value	B esti- mate	S.E.
<b>3. Availability of modern equipment</b>				
<i>*Age</i>				
25-34	0.59 (0.35 to 0.97)	0.04	-0.53	0.25
35-49	0.86 (0.56 to 1.34)	0.52	-0.15	0.22
50-64	1.21 (0.76 to 1.93)	0.42	0.19	0.24
65-74	1.64 (0.95 to 2.85)	0.078	0.50	0.28
<b>4. Simplicity of access to appointment</b>				
<i>*Practice type</i>				
Small (2-5 FD)	0.83 (0.40 to 1.72)	0.61	-0.19	0.37
Large (>5 FD)	0.35 (0.19 to 0.65)	0.0009	-1.04	0.32
<b>6. Physician's punctuality</b>				
<i>*Absence of personal family doctor</i>	0.62 (0.43 to 0.89)	0.009	-0.48	0.18
<i>*Practice type</i>				
Small (2-5 FD)	0.83 (0.40 to 1.69)	0.60	-0.19	0.37
Large (>5FD)	0.48 (0.26 to 0.89)	0.02	-0.74	0.32
<b>7. Physician's ability to understand</b>				
<i>*Health status</i>				
Fair	0.61 (0.41 to 0.90)	0.012	-0.49	0.19
Poor	0.92 (0.59 to 1.45)	0.71	-0.09	0.23
<i>*Absence of personal family doctor</i>	0.44 (0.31 to 0.64)	0.000	-0.81	0.19
<i>*Practice size</i>				
Small (2-5 FD)	0.47 (0.21 to 1.05)	0.065	-0.75	0.41
Large (>5 FD)	0.41 (0.20 to 0.85)	0.01	-0.89	0.37
<b>8. Physician's competence</b>				
<i>* Health status</i>				
Fair	0.59 (0.41 to 0.84)	0.004	-0.54	0.19
Poor	0.94 (0.61 to 1.44)	0.78	-0.06	0.22
<b>9. Effectiveness of prescribed therapy</b>				
<i>* Absence of personal family doctor</i>	0.67 (0.48 to 0.94)	0.02	-0.40	0.17
<b>10. Clarity of physician's explanations</b>				
<i>* Absence of personal family doctor</i>	0.54 (0.38 to 0.75)	0.0003	-0.62	0.17
<b>11. Overall satisfaction with physician</b>				
<i>*Absence of personal family doctor</i>	0.63 (0.43 to 0.92)	0.037	-0.34	0.16

Coded as:

<sup>a</sup> baseline category: presence of personal family doctor

<sup>b</sup> baseline category: solo practice

<sup>c</sup> baseline category: 15-24 years

<sup>d</sup> baseline category: good health

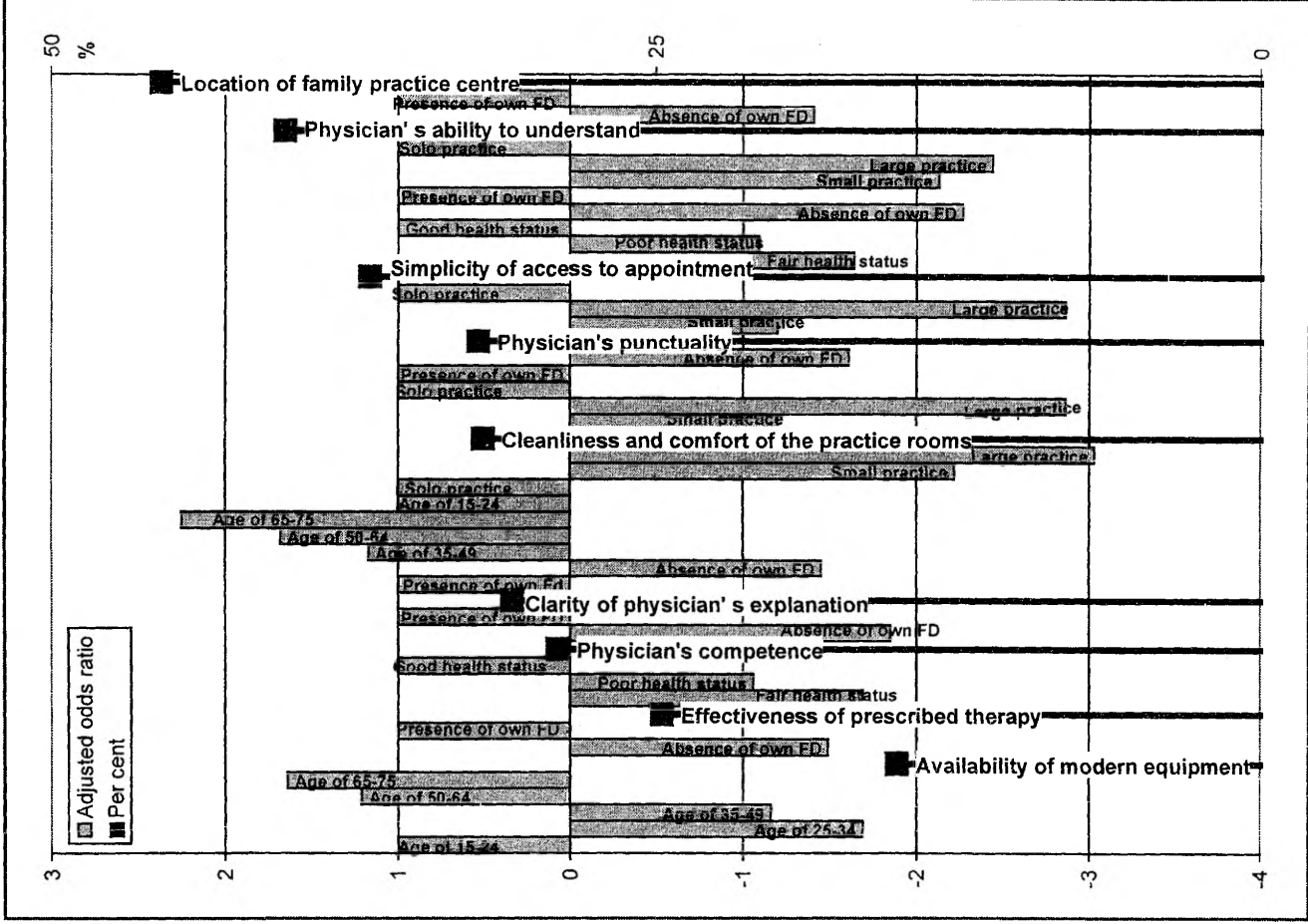


Figure 6. Satisfaction of adult population with different aspects of primary health care (% of "very satisfied" ) as depending on of the rate of statistically important predictors (adjusted odds ratio)

## **10. DISCUSSION**

### **10.1. Methodological considerations**

#### **10.1.1. Representativeness**

To evaluate the situation of level of practice equipment, a survey of all 376 family doctors, practising as independent contractors in Estonia, was conducted. The questionnaires for family doctors were delivered and collected by county health authorities, as a result of which the response rate was 100%. Because almost all family doctors worked as independent contractors in 1998, the data of the survey reflect well the real situation.

Family doctors' job satisfaction was studied twice. In 1997 the study included all doctors who had completed retraining courses for family doctors by this time. The response rate of 69% can be considered satisfactory for this type of studies (Overtveit, 1998), although there existed some differences between the structure of the samples of respondents and non-respondents. The findings of the study of 1999 represent the opinion of doctors in urban areas, who serve more than two-third of the Estonian population. Since the percentage of the respondents was remarkably lower for Tartu and Pärnu compared with that for Tallinn and Narva, their opinions are not so representative. Most of the district doctors investigated in the study worked also in Tallinn and Narva.

Data of 2-years-old children of Tartu were obtained from the sick-fund. Because all children are covered by health insurance and are included in the sick-fund list, the sample of children is representative of Tartu.

The population survey was carried out within the frame of a bimonthly EMOR Omnibus Study which is carried out among Estonian residents aged 15–74 years.

The structure of the respondents was representative of the general Estonian adult population by gender, age, nationality and location of residence.

#### **10.1.2. Data collection methods**

For collecting data about practice equipment, a self-administered questionnaire was used instead of practice visits because it is significantly less time and money consuming. Moreover, questionnaires are an accepted method when simple fact-based data are required (Overtveit, 1998). The questionnaire used in this study was developed for the purposes of the research. It contained items on equipment accepted as a minimal standard for family practices (Riigi Teataja, 1997).

In studies focused on family doctors' job satisfaction, self-administered questionnaires were used for data collecting. The method of data collecting applied in the population study was the face-to-face interview based on pre-categorized questionnaire. Both methods are methodologically acceptable for collecting data on such sensitive issues as satisfaction, dissatisfaction, expectations, etc., especially when large group of people are investigated and when the number of measurement scales used is large (Ovretveit, 1998). For the population study the questionnaire was developed by a joint research team of authors and researchers of EMOR. For the non-Estonian population the questionnaire was translated into the Russian language.

In the family doctors' job satisfaction study, the Warr-Cook-Wall questionnaire was applied, which is a standardized and accepted questionnaire for measuring work attitudes and aspects of psychological well-being, is widely available and has been used in several studies in Britain (Chambers *et al.*, 1996; Sutherland and Cooper, 1992). The questionnaire was translated from English into Estonian.

Data on children's vaccination were collected by a retrospective analysis of immunisation records. Chart audit is a feasible and acceptable method for quality assessment (Marinker, 1984; Gibson, 1984). Since its value depends significantly on the quality of record keeping (Tuffo and Spiedel, 1971), immunisation was chosen as an example, because of the existing tradition to record correctly each vaccination.

## 10.2. Access to family doctors

Good access is basic to any service. Delay in seeing a doctor is a common problem deserving criticism in general practice (Marinker, 1997). In Estonia, access to family doctors, which was measured by the length of waiting time for an outpatient appointment, can be considered satisfactory. More than half the respondents were admitted on the day of request and the rest were admitted in 1–2 days. Only for 4% of the patients, waiting time was 3–4 days to one week. For example, in Finland, waiting time for 19% of non-acute patients was longer than two weeks (Lember *et al.*, 1998). Studies performed in different European countries show that in Sweden and Norway as many as 80% of GPs reported longer than three days' waiting time (Boerma, 1997).

The common policy in Estonian family medicine is that patients with urgent problems should be seen on the same day, while other patients should be granted an appointment in three days. These standard rules are fixed in the family doctor's job description. Our study demonstrates that in more than 90% of cases FDs adhere to the standard.

### 10.3. Changes in family doctors practice equipment and adherence to an official standard

The results of the study of 1998 reveal remarkable improvement of practice equipment within six years. During these years several important changes took place in Estonian primary health care, which all had an impact on the style of FDs' work and their practice organisation. In 1992, district doctors acted mostly as internists in primary care and most procedures were performed by specialists. This was characteristic not only of Estonia; in his study Boerma describes a similar situation in Central and Eastern Europe (Boerma, 1997). The situation where most procedures are performed by specialists was considered more economical (less need for special equipment) and ensuring higher quality (based on more experience) (Lember, 1998). Therefore it was common that the level of equipment at the disposal of Estonian primary care doctors was rather low.

In 1998, family doctors, acting as independent contractors, were primarily responsible for their practice organisation as well as for practice equipment. According to the job description, the family doctor in Estonia is a doctor who provides a wide range of services. In retraining programmes, great emphasis was placed on acquiring new skills and on the broadening of procedure related activity. Thus an important factor underlying the improvement of equipment is extension of the job description of Estonian primary care doctors. This is evidenced by the fact that the availability of gynaecological instruments, otoscopes, ophthalmoscopes, infant scales, basic instruments for minor surgery etc. was higher in the case of doctors who had completed retraining courses compared with those who had not. Another major factor is introducing a standard for equipment. This standard aims to harmonise the conditions of family practice and the tasks foreseen in the job description. A similar quality improving activity was undertaken by Icelandic FDs and they obtained good results: housing facilities and equipment were brought to a higher level than previously (Alles, Mäkelä *et al*, 1998).

The results of our study indicate that slightly more than half the family doctors had all items of equipment listed in the standard. This result can be regarded as good, considering that availability of traditional medical devices (sphygmomanometer, stethoscope, urine strips, otoscope, ECG equipment, equipment for blood sugar test, etc) was not significantly different from that reported from the Western countries (Boerma, 1997). On the bases of the study, recommendations were given to family doctors and local health care organisers. It was found that the costs of achieving the established standard can be covered from the basic practice allowance within two years.

Because adequate equipment and premises are the prerequisites of the quality of work, then as such they are commonly considered important indicators of practice assessment (Baker, 1992; van den Homberg *et al*, 1998). In Estonia, the standard of family doctor's practice equipment as an important



prerequisite for concluding or renewing a contract between the doctor and the sick fund is binding on each family doctor. The findings of this study serves as important comparable material for further monitoring.

#### **10.4. Family doctors' job motivation, job satisfaction and willingness to the fulfill tasks of the family doctor**

Introduction of family medicine has been of key importance for Estonian health reforms. Since 1991, the Tartu University has provided a retraining course on family medicine for respecialization of previous district internists and paediatricians. The reform is planned to proceed gradually: until 2002, district doctors are allowed to register patients, provided that they have started retraining courses. As the scope of the work as well as the working environment of rural district doctors have always been close to those of family doctor, then profound changes were necessary first of all in the work of polyclinic doctors in towns. In order to change the old system, motivation for doctors', willingness to perform the tasks foreseen in the family doctor's job description and job satisfaction are of key importance and hence these areas offer special interest.

It was found that in 1997, after completion of retraining courses, a large number of doctors reported that they had started working in adherence to the job description for family doctors. However, one-fifth of the respondents reported, that they continued to work as district doctors. Most of them were employed by urban polyclinics. In 1999, when more than half of the required number of doctors in Estonia had completed retraining, their number in towns was somewhat smaller, for example in Tallinn only less than one-tenth of PHC doctors acted as FDs.

The studies of 1997 and 1999 revealed that although both family doctors and district doctors valued similar aspects of work, family doctors' job motivation was higher compared with that of district doctors. The Herzberg theory of intrinsic and extrinsic factors suggests, that high satisfaction, especially with intrinsic factors, leads to higher motivation (Herzberg, 1954). This is important for creative work, where quality depends largely on workers' attitude and motivation. The higher satisfaction of family doctors compared with district doctors implies that the job of family doctors provides more freedom and independence in planning of work and in determination of how to perform it; that the job entails more activities and involves a range of different skills and talents, all of which were valued by both groups of doctors. Consequently, the job of family doctors grants a better fulfilment of both intrinsic and extrinsic needs. Physician's job satisfaction as an important precondition for patient satisfaction has been approved in several studies (Suchman *et al*, 1993; Grol *et al*, 1985; Melville, 1980; Haaijer *et al*, 1987). A regulation of the Ministry of

Social Affairs foresees that the family doctor is an independent contractor with the sick fund (Riigi Teataja, 1997) Therefore, the finding that independently working family doctors prove to be more satisfied with their career in general, working conditions, working freedom, work organisation as well as with their income, is highly valuable.

Differences were revealed in the willingness to perform the tasks of the family doctor. As the job description of Estonian district doctors was significantly more limited compared with that of family doctors in the Western countries (Lember, 1998), main emphasis in training process was placed on areas that remained previously beyond their everyday activity. Additionally, several courses were organised on the legal and economic aspects of practice management. The fact that within training courses, several lectures and seminars were dedicated to the ideology of family medicine is also noteworthy. (Maaroos, 1994; Lember, 1996) As a result, new tasks are more common in family doctor's work than in district doctor's work. Moreover, FDs reported being more ready to take care of different age groups, provide comprehensive care, take the responsibility about practice management and to communicate directly with the sick fund and local authorities, etc. Yet the number of family doctors who reported willingness to take the responsibility for practice management is not very large (57%), but this may be related to the large share of female doctors in family practice (95%). The low readiness to provide out-of-hours care can be associated with the same circumstance. Different studies suggest that out-of-hours care and high workload are important factors of stress, especially for female doctors (Frank, 1999; Hueston, 1998).

### **10.5. Quality of children's immunisation**

The study of primary health care doctors shows that family doctors are willing to provide care for different age groups including children. The results of the children's immunisation study revealed that more than half two-year-old children in Tartu are included in the list of family doctors (54%). This figure has increased in the last 2-3 years and reflects the growth of parents' confidence in family doctors on one hand, and the increase in the number of family doctors who are competent to take care of children on the other hand. The data of the study show that vaccination coverage for two-year-old children in Tartu is similar to that recommended by WHO and fixed in a special ministry regulation (Riigi Teataja, 1996). There were no differences between vaccination coverage and appropriate timing of immunisation between the children registered with family doctors and those registered with pediatricians. Regarding timeliness of single vaccinations, it seems that too often vaccinations have been postponed due to common virus infection, cough and running nose, which are

actually not contraindications for vaccination (American Academy of Pediatrics, 1996). By reviewing critically contraindications and by attempting better cooperation with parents (one-third of postponements were caused by parents' non-attendance), it is possible to attain the desirable level in vaccinations against mumps-measles and rubella.

### **10.6. Estonian population's acceptance of primary health care and satisfaction with it**

This study focused on the population's opinions about changes which have taken place in the PHC system of Estonia since the beginning of 1998. For the population, important changes were related to the introduction of the patient list system. In order to strengthen personal relationship with the doctor, patients were afforded the possibility to choose their own family doctor. People who did not choose their family doctor by registration for the patient list themselves, were included in the list according to their place of residence. Since this kind of free registration is unique, analysis of its relationship with patient satisfaction can provide important information for all countries where similar reforms are in process, e.g. Norway (Ostbye, Hunskaar 1997). Another change pertaining to the population was the introduction partial gate-keeping which restricted direct access to the specialist (Lember, 1998).

The findings of the study showed that the activity of registration process was high: eight months later most people had chosen their personal doctor. Majority of the respondents were satisfied with their family doctor, and number of people who found that the situation in primary health care has improved was 2.5 times as high as the number of those who thought that the the situation had become worse.

The data of the first population study in 1993 demonstrate that great expectations were placed on family doctors (Takker *et al*, 1995). Five years later almost half respondents confirmed that they would prefer to visit first the family doctor rather than the specialist with their health problems. Giving preference for the family doctor or the specialist depend on the number of practising and trained family doctors in the region. In the capital, where there are fewer trained FDs than in other regions of Estonia, inhabitants preferred to turn directly to the specialist with their health problems, while in the case of children a pediatrician was preferred. In other regions of Estonia family doctors were given a considerably higher preference compared with specialists. Some previous studies have also shown that patients living in larger urban areas prefer to consult the specialist first (Kulu-Glasgow, 1998; Tabenkin, 1998). Another reason for the preference of a specialist can be the fact that access to specialized medical aid is better in the capital than in rural areas.

The study confirmed the results of other similar studies which found out that evaluation of changes and satisfaction with the physician can depend on different factors: respondent's age and health status, size of the FD practice, etc. (Houts *et al*, 1986; Blanchard *et al* 1990; Barr, 1995). Although younger people recognised the FD more often as an appropriate doctor for managing the problems of the whole family, they were more critical of some aspects of primary care, for example the comfort of the practice, availability of modern equipment, etc. Older people and those who had more problems with health gave higher ratings for the same aspects. These findings are supported by literature data. It has been found that older people are less ready to criticize and have more modest expectations (Salvage *et al*, 1988). Another hypothesis is that since the elderly concentrate more on the care itself than on external factors, organizational factors do not have significant effect on their satisfaction (Hall, 1990). Although the respondents' age did not play any role in predicting satisfaction with aspects characterizing physician-patient interaction, patients with poorer health status were less satisfied with physician's competence and physician's ability to understand. This finding can be interpreted as the result of a person's lifetime experience that doctors can not always resolve all problems.

The data show that the person's opinion of changes as well as satisfaction with several organisational and interpersonal aspects of care was more favourable when the chosen doctor had a solo practice, and significantly less favourable when the doctor worked in a polyclinic system. It is quite understandable, because in large practices the size of staff is much larger and patients may not be familiar with all of them. Moreover, polyclinics differ a great deal from new family practices in furnishing and comfort.

Nevertheless, the most important predictor for satisfaction with care as well as for positive evaluation of changes was existence of a personal family doctor. The results show that people who had not chosen their family doctor gave lower ratings for organisational aspects of a care as well as for the aspects of patient-doctor interaction. On the contrary, people with a personal doctor gave positive ratings for same aspects. The existence of such relationship supports the results of other researchers who found that patients who had a personal doctor were more satisfied with the advice given by the doctor, with communication process, with prescribed therapy, etc. (Hjortdahl and Laerum, 1992; Schmittiel *et al*, 1997; Healy *et al*, 1995). It seems, that having made the choice the patient is less apt to complain, has more confidence and trust in the physician whom he/she has selected (Schmittiel *et al*, 1997).

As patients' opinions are an important tool in evaluation of a health care system, this all-Estonian survey has provided valuable information about people's attitudes to the reform and to the present situation.

## 11. GENERAL DISCUSSION

In Estonian health care as well as in the health care of several other East and Central European countries, profound changes have taken place within the last ten years. Reforms have mostly concerned primary level health care and the objective of the reforms has been to establish accessible, high quality health care based on fully responsible physicians.

One important indicator of structure quality is accessibility of medical care. The present study (Paper IV) shows that family doctors in Estonia are well accessible in comparison with the family doctors of other countries (Boerma, 1997; Lember, 1998), and that accessibility satisfies the requirements presented in the regulation for family doctors' work (Riigi Teataja, 1997). Almost all patients have been serviced within three days of their wish, and more than half of them have been serviced on the first day.

The issue whether the extension of job tasks brings along changes in the organisation of the practice has been little studied. As it has been established that equipment at the disposal of family doctors indicates the areas of their work and determines which problems they should manage by themselves and which problems should be referred to the specialist for further examination, standard equipment appears an important component of a health system. Our study (Paper I) showed that since 1992 several changes have taken place in the supply of family doctor's equipment: in most cases the list of family doctor's instruments satisfies the standard set in the regulation of the Ministry of Social Affairs (Riigi Teataja, 1997). The finding that the equipment of doctors who have completed family doctor's training and those who have not yet completed it reveals significant differences, proves that broader skills are related to the higher level of equipment.

The key to high quality work process is people themselves, their motivation and willingness to perform tasks (Barr, 1995; Owen 1995). Therefore it is important that the working environment offers opportunities for development, stimulates work and grants satisfaction for workers. Due to the specific features of primary care (first contact system, long-term responsibility, lone working, etc), the physician's opinion and satisfaction is of great importance. The survey of primary health care doctors (Paper II) demonstrated that family doctors are more satisfied with their work than district doctors working at polyclinics, and their willingness to perform a wider range of tasks is also higher. The group with the highest satisfaction is formed of independently working doctors who are able to make independent decisions, have independent responsibility, more opportunities for self development and use of skills. This result is important not only for Estonia, where primary level health care is regulated by the afore mentioned ministerial document which stipulates that family doctors conclude

direct contracts with the sick fund, but also for other East European countries where such reforms are still under way.

One of the objective indicators of work quality is high work outcomes and their adherence to the standard. The analysis of children's vaccination (Paper III) indicated that the coverage of vaccination is close to the standard set by the regulation of the Ministry of Social Affairs while corresponding for data family doctors and pediatricians are not significantly different. Vaccination is one of the important areas in preventive work among children and it has been shown that inadequately vaccinated children are often irregularly followed (Bordley *et al*, 1996; Rodewald *et al*, 1995). This study suggests that family doctors are willing to work with large population groups, including children, and that they are comparable to pediatricians with respect to immunisation which constitutes an important component of preventive work.

Speaking about health care quality one cannot disregard patient assessment on medical care. Moreover, patient satisfaction is one of the important indicators of outcome quality and is often used in continuous quality improvement (Nelson and Niderberger, 1990; Vuori, 1991). The attitude of the adult population of Estonia to changes in primary level health care is predominantly positively (Papers IV, V). The important fact is that people with their own family doctor are more satisfied with the aspects of primary level organisation as well with the relationship between patient and doctor. Differences in patients' opinions between different regions show that in regions with more family doctors changes are better adopted. As the transition period in the health care has been relatively short, this survey represents a first step to obtain the population's opinion, further research in this field appears necessary.

The results of the present study indicate that there exists a solid basis (the structure) for quality work in family medicine and that the outcomes of family doctors' work can be considered good.

## 12. CONCLUSIONS

1. Primary care provided by family doctors is easily accessible: most patients (59%) were admitted on the same day that they requested or in 1–2 days. Only 4% of patients were admitted in 3–4 days.
2. An extended job description of FDs requires that FDs acquire practice equipment needed for new tasks. Majority of practices adhere to the established standard, demonstrating improvement in areas beyond the scope of previous district doctors.
3. Compared with district doctors, family doctors have higher willingness to take care of different age groups, provide comprehensive care, be responsible for practice management as well as to provide out-of-hours care.
4. Family doctors have higher job satisfaction with respect to independence, work conditions, work organisation, equipment at their disposal as well as possibilities to develop, which all lead to higher motivation.
5. The study of children's immunisation revealed that immunisation coverage at age 24 months was 95% for DTP and OPV and 92% for MMR. Most children receive all foreseen vaccinations in time (delay less than one month against the recommended schedule). There were no differences in the immunisation coverage and appropriate timing of immunisation between children registered with family doctors and children registered with pediatricians.
6. The number of people who perceived an improvement of PHC was 2.5 times as large as the number of those who perceived a deterioration of the system.
7. The factors affecting population's satisfaction with primary care were: respondents' age, respondents' health, size of health centre and presence of a personal doctor. The last two factors proved the most important. Large practice (polyclinic) was negatively correlated with satisfaction, with cleanliness and with comfort of practice rooms, but also with easy access to appointment, with physicians' punctuality as well as with physician's ability to understand.
8. Persons who had not chosen their personal family doctors displayed lower satisfaction with organisational aspects of the practice (location of practice, cleanliness and comfort) as well as with the aspects of doctor-patient interaction (physician's punctuality, physician's ability to understand, effectiveness of prescribed therapy, clarity of physician's explanation). Also, their overall satisfaction with health care was lower.

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## SUMMARY IN ESTONIAN

### **Perearstiabi kvaliteet, struktuur ja tulemuslikkus Eesti muutavas tervishoiusüsteemis**

Arstiabi kvaliteet ning seda mõjutavad tegurid on olnud oluliseks teemaks kogu maailmas rohkem kui kahekümne aasta vältel. Eestis, nagu ka teistes Ida-ja Kesk-Euroopa maades on kvaliteediteema tõusnud tähelepanu keskpunkti seoses viimastel aastatel toimunud meditsiinireformidega. Üheks olulisemaks ümberkorralduseks Eesti esmatasandi meditsiinis on olnud perearstide tööleasumine. Aastaks 2001 on ümberõppekursuste ja residentuuri kaudu koolitatud üle 600 perearsti, mis on ligikaudu kaks kolmandikku Eestile vajalikust. Sotsiaalministri 1997. aasta määrustega määratleti esimese etapi arstiabi osutavad arstid, kinnitati perearstipraksise tegevusvormis töötavate arstide tegevusjuhend ja rahastamise kord ning anti esmatasandi arstidele võimalus asuda haigekassaga otselepingusse. See oli osa tegevuskavast, et ellu viia eesmärk luua viie aastaga efektiivselt toimiv, inimestele elukohajärgselt kättesaadav, järjepidevust tagav, koolitatud ja treenitud ning täisvastutust omavatel perearstidel põhinev, ühtselt korraldatud, kogu Eestit hõlmav esmatasandi arstiabi süsteem.

### **Uurimistöö eesmärgid**

Uurimistöö peamiseks eesmärgiks oli hinnata esmatasandi arstiabi kvaliteeti struktuuri ja tulemuse tasandil. Uurimuse kitsamad eesmärgid olid järgmised.

1. Anda hinnang perearstiabi kättesaadavusele kui ühele kvaliteedi indikaatorile.
2. Uurida, kas muutused perearstide töökohustustes on tinginud muutusi nende töövahenditega varustatuses ning hinnata varustuse vastavust kehtestatud standardile.
3. Võrrelda perearstide ja jaoskonnaarstide motiveeritust, tööga rahulolu ning valmisolekut töötada perearstina.
4. Uurida laste vaktsineerimiste hõlmatust ja õigeaegsust kui preventiivse töö kvaliteedi näitajaid.
5. Uurida, milline on Eesti täiskasvanud elanikkonna hinnang esmatasandi meditsiini muutustesse ning selgitada, kuidas ollakse rahul esmatasandi arstiabiga.
6. Analüüsida faktoreid, mis mõjutavad patsientide rahulolu esmatasandi arstiabiga.

## Uurimismetoodika

Käesolev töö põhineb neljal uurimisel. Perarstiabi kvaliteedi struktuuri ja tulemuse hindamiseks kasutati nii subjektiivseid kui ka objektiivseid indikaatoreid (tabel).

**Tabel.** Uurimuse kontseptuaalne ülesehitus

Kvaliteedi aspektid Indikaatorid	Struktuur	Tulemuslikkus
Subjektiivsed	Esmatasandi arstide tööga rahulolu ning motiveeritus	Patsientide rahulolu esmatasandi arstiabiga
Objektiivsed	Arstiabi kättesaadavus, võrdlus standardiga Perearstide töövahenditega varustatus, võrdlus standardiga	Laste vaksineerimiste kvaliteet <ul style="list-style-type: none"> <li>• õigeaegsus</li> <li>• hõlmatus</li> </ul>

### 1. Perearstipraksiste varustuse uuring.

1998. a. saadeti kõikidele perearstipraksise tegevusvormis töötavatele arstidele (N=376) perearstide tööjuhendiga kehtestatud standardvarustuse loetelu sisaldav küsimustik, kus arstidel paluti märkida, millist varustust nad omavad. Kuna ankeetide vahendamisel kasutati maakonnaarstide abi, oli vastanud arstide hulk 100%. 44% uuritud arstidest (n=167) olid lõpetanud perearstiks ümberõppe kursused, ülejäänud osalesid kursustel.

Varustatuse muutuste hindamiseks kasutati 1992. aastal Eesti–Soome ühistöö raames tehtud sarnase uuringu tulemusi.

### 2. Eesti esmatasandi arstide uuringud 1997. ja 1999. aastal.

1997. aastal küsitleti posti teel saadetud ankeediga kõiki selleks ajaks perearstikutse omandanud perearste (N=160). Perearstide nimed ja aadressid saadi Arstide Täienduskeskusest; neile, kes ei vastanud kolme nädala jooksul, saadeti meeldetuletus koos uue ankeediga. Ankeedile vastas kokku 105 arsti (67%), neist 84 (80%) väitsid, et töötavad perearstina, ülejäänud jätkasid tööd jaoskonnaarstina. Arstidel paluti vastata, mida nad peavad töös oluliseks ning kui rahul nad on oma töö eri aspektidega.

1999. aastal küsitleti posti teel saadetud ankeediga Narva, Pärnu, Tallinna ja Tartu esmatasandi arste (N=402). Perearstide nimed ja aadressid saadi maakonnaarstide käest. Pärast ühekordset meeldetuletust oli tagasi saadud ankeetide arv 307 (76%). 25% vastanud arstidest töötas perearstina, ülejäänud täiskasvanute jaoskonnaarstina või jaoskonnapediaatrina.



Arstidel paluti vastata, milliseid aspekte nad peavad töös oluliseks, kui rahul nad on samade aspektidega oma igapäevatöös ning milliseks hindavad oma valmisolekut täita perearstitöös ette nähtud ülesandeid.

3. Uuritavateks olid ajavahemikus 01.01.1996–01.01.1997 sündinud Tartu linna lapsed. Andmed 1036 sellesse vanusegruppi kuuluva lapse kohta saadi Tartumaa haigekassast ning neist moodustati juhuvalim (50% üldvalimist). Valimisse sattunud laste vaktsinatsiooni- ja ambulatoorsete kaartide alusel registreeriti iga lapse kaitsesüstimise täpne aeg, mille järgi hinnati kaitsepookimiste õigeaegsust. Lapse esimese eluaasta kaitsepookimiste, s.o. difteeria–teetanuse–lākakōha (DTL3+OPV3) ning leetrite-, mumpsi- ja punetistevastane vaktsineerimine (LMP1) arvati õigeaegseks, kui vaktsineeritud oli vähem kui ühekuuse hilinemisega, võrreldes ettenähtud ajakavaga. Difteeria–teetanuse–lākakōha esimese revaktsinatsiooni (DTL4) lubatud ajaks oli kolm kuud, alates lapse kaheaastaseks saamisest. Kui vaktsineeritud oli puudulikult, siis märgiti üles hilinemise põhjus ambulatoorsete kaartide sissekannete või arstide selgituste alusel. Vaktsineerimistega hōlmatust arvestati lapse 24 kuu vanuseks saamisel.
4. Ankeetküsitluse personaalintervjuudena tegi AS Emor 1998. a. oktoobris. Küsitleti kokku 997 Eesti Vabariigi alalist elanikku vanuses 15–74 aastat. Küsitletavate leidmiseks kasutati lähteadressi ja “noorte meeste reeglit” linnades ning süstemaatilise väljavōtu meetodit alevikes ja külades. Saadud valim vastas nii sooliselt, vanuseliselt kui ka rahvuseliselt struktuurilt Eesti elanikkonnale. Ankeet sisaldas küsimusi vastaja isiku, tervisliku seisundi ning esmatasandi arstiabi korralduse kohta ning koostati TÜ teadlaste ja ASI EMOR ühistöös.

### **Uurimistōō peamised tulemused**

1. Perearstiabi kättesaadavus patsientidele on hea. Üle poole patsientidest (59%) pääseb perearsti vastuvōtule samal päeval või 1–2 päeva jooksul. Vaid 4% patsientidest ootab vastuvōtule pääsu 3–4 päeva.
2. Perearstide laienenud tōōkohustused on tinginud muutusi perearstipraksiste tōōvahenditega varustatuses. Perearstipraksiste varustus vastab enamikul juhtudel perearstide tōōjuhendiga kinnitatud standardile.
3. Perearstide valmisolek täita perearstide tōōjuhendis ette nähtud kohustusi on suurem kui jaoskonnaarstidel. Võrreldes jaoskonnaarstidega, on perearstid rohkem rahul tōōvahenditega, tōō organisatsiooniga, tōōtingimustega, iseisvusega ning võimalusega areneda igapäevatōō käigus. See tingib ka perearstide tugevama motiveerituse.

4. Teise eluaasta lõpuks oli difteeria-, teetanuse-, läkaköha- ning poliomüeliitdivastase kaitsesüstimise saanud 95% lastest; mumps-, leetrite- ja punetistevastase vaksineerimise 92% lastest. Perearstide ja lastearstide tehtud vaksineerimistes ei olnud olulisi erinevusi.
5. Eesti täiskasvanud elanikkonna hulgas on 2,5 korda rohkem neid, kes hindavad esmatasandi arstiabi süsteemi muutusi paremuse poole.
6. Faktorid, mis mõjustavad inimeste rahulolu esmatasandi arstiabiga, on järgmised: inimese vanus, tervis, perearstikeskuse suurus ning isikliku perearsti olemasolu. Kahel viimasel on rahulolu kujunemises kõige suurem tähtsus. Suured keskused (polikliinikud) tingivad madalama rahulolu tervishoiuasutuse ruumide puhtuse ja mugavusega, arsti vastuvõtule registreerimise lihtsusega, arsti poolt kokkulepitud aegadest kinnipidamisega ning ka arsti mõistva suhtumisega probleemi.
7. Inimesed, kes ei ole endale valinud perearsti, on oluliselt vähem rahul nii arstiabi organisatoorsete külgedega (tervishoiuasutuse asukoht, asutuse puhtus ja mugavus) kui ka arsti- ja patsiendi omavahelist suhtlemist kajastavate aspektidega (arsti poolt kokkulepitud aegadest kinnipidamisega, arsti mõistva suhtumisega, arsti määratud ravi efektiivsusega ning arsti selgituste arusaadavusega). Samuti on nende üldine rahulolu arstiabiga väiksem kui neil, kes on endale perearsti valinud.

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## **PUBLICATIONS**



**R. Kalda, M. Lember.**  
Setting national standards for practice equipment —  
presence of equipment in Estonian practices before and  
after introduction of guidelines with feedback.  
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# Setting national standards for practice equipment. Presence of equipment in Estonian practices before and after introduction of guidelines with feedback

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## Abstract

**Background.** During the last few years quality assurance has received increasing attention in Estonian health care as well as in family medicine, which is a new speciality in Estonia (since 1993). The modest equipment that district doctors (former primary care doctors) had at their disposal, appeared inadequate considering family doctors' work tasks.

**Aim.** To determine the type of equipment available in primary care practices before setting a standard, and 1 year after the minimal standard of practice equipment was introduced. To follow how well family doctors adhere to this standard.

**Method.** A questionnaire was sent to a random sample of district doctors ( $n=157$ ) in 1992 and to all family doctors practising as independent contractors in 1998 ( $n=376$ ). Quality of equipping was assessed against the standard set by consensus of the representatives of Family Doctors' Society, based on the country's needs and family doctor's job description.

**Results.** The level of primary care doctors' office equipment in 1992 was quite low. However, by the spring of 1998, substantial improvement of the equipment in family doctors' practices was estimated. The number of doctors possessing instruments for otorhinolaryngological, ophthalmological and gynaecological work as well as for taking care of children had increased two- to three-fold. About one-half of the family doctors reported that they had all the instruments listed in the standard.

**Conclusions.** Setting a national standard helps to improve practice equipment – an important structural aspect of quality of care. Although improvement of equipment alone cannot guarantee quality of care, it may provide an important first step towards promoting it.

**Keywords:** equipment, family practice, quality improvement

During the last decade quality assurance has received increasing attention in primary health care (PHC) and has currently become one of the most widely discussed topics in Estonian medicine. The Estonian Health Care quality policy document was devised around the principles of quality management and assurance, and responsibilities for different levels of the health care sector are defined. Quality of care can be assessed in different ways for different purposes. Quality assessment is directed partly to defining areas in which improvement is needed. Typically, quality development activities are based on performance review and setting of explicit targets for good clinical practice with the aim of improving the actual quality of patient care [1]. In the majority of cases standards and guidelines are seen as tools for

evaluating the process or outcomes of care, but not its structural aspects. However, according to Donabedian, structural preconditions are equally important for quality of care, as the way a health care system is set up and run shapes behaviour in that system [2]. Family doctors need adequate equipment and premises for their work. Therefore these are commonly considered important indicators for practice assessment [3,4]. In a recent Dutch study, presence and use of equipment correlated significantly with the medical performance of family physicians [5]. Still, the topic of the standards of practice equipment is very seldom highlighted, the standard of the Icelandic Association of General Practice being an exception [6]. Job descriptions and office standards have become important components of the health care system,

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Table 1 Changes in Estonian PHC since Estonian independence

	Former system of PHC	Current system of PHC
Doctors in PHC	District doctor for adults (primary care doctor in internal medicine), district paediatrician, gynaecologist, surgeon etc.	Family doctors with special education (half of doctors needed in primary care level, $n=401$ ), district doctors for adults and district paediatricians (currently learning in retraining courses)
Procedural activity of primary health care doctors	Low, depending on their speciality	Higher, according to their broader job description and education
Type of practice of PHC doctors	Doctors-employees, practising mostly in big polyclinics	Independent contractors since 1998, practising mainly in small group practices
Reimbursement of PHC doctors	Salary	Mixed payment system since 1998, based on capitation, fee-for-service, bonuses and basic practice allowance
Defined practice population	Geographically determined district	List system
Comprehensiveness of care	The task profile was limited by gender and age as well as by diagnostic category (depending on speciality of primary care doctor)	Not limited by gender, age and diagnostic category
Co-ordination of care	No gatekeeping, free access to different specialists	Partial gatekeeping system
Equipment of PHC doctors offices	Poor	Improving

which are (re)introducing family medicine into health care [7]. Family medicine is a new speciality in Estonia with its own under- and postgraduate training programmes, a university department and a professional society since 1993 (Table 1) [8].

Compared with previous district doctors, family doctors were trained for more comprehensive work. However, until recently, primary care facilities in Estonia were short of many kinds of equipment and supplies. Although improvement of equipment alone cannot guarantee quality of care, this may provide an important first step towards promoting it.

In order to launch a quality project aimed at improvement of equipment, a study was planned to assess the equipment that PHC doctors had at their disposal in the former system. After introduction of a standard, adherence of PHC doctors to it appears to be an important indicator for assessing quality improvement.

The aim of the current project was to find out what type of equipment was available in primary care practices before the setting of a standard and to follow how well family doctors adhered to this standard within 1 year after its establishment.

## Method

The process of quality assurance was analysed on the basis of the concept of the quality circle, which consists of the

following activities: description of the real situation of practice equipment and identification of the problem; formulation of the characteristics of 'good practice' (standard); evaluation of situation; provision of feedback and planning changes [9].

## Description of the situation before the standard

In 1992 a survey of a random sample of district doctors was carried out in the framework of a joint Finnish-Estonian research project on preconditions for family doctors' work in Estonia. One of the aims was to describe the real situation of practice conditions to be used as a basis for further quality improvement plans. A postal questionnaire was sent to 157 randomly selected experienced district physicians all over Estonia. Their names and addresses were drawn from the register of the Ministry of Health. The doctors were asked if they had the listed instruments at their disposal. The response category for the items describing availability of certain equipment was 'yes' or 'no'. The list of equipment was elaborated so that the most typical instruments used in primary care from different fields (e.g. gynaecology, minor surgery, otorhinolaryngology etc.) would be represented.

## Creating the standard

In 1997 a working group of the Estonian Society of Family Doctors, as well as representatives of the Ministry of Social Affairs, participated in setting a national standard of practice equipment for family practice. The results of the 1992 study



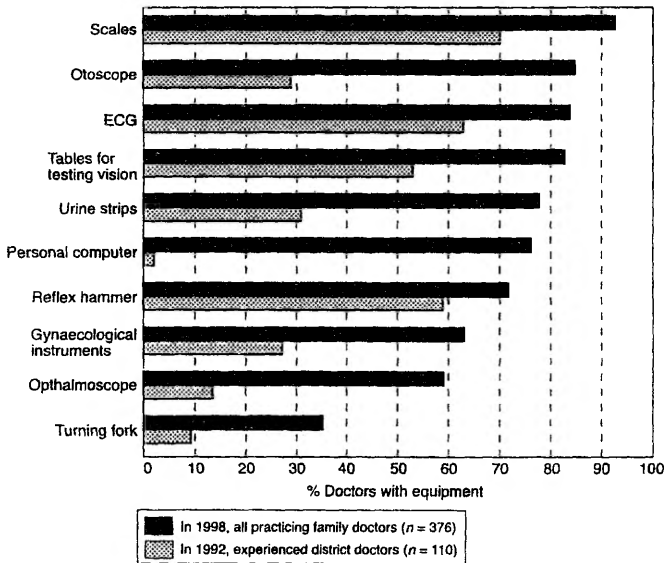


Figure 1 Availability of medical equipment at doctors' offices (percentage of doctors who had the listed items of equipment at their disposal).

and a job description defining basic as well as optional tasks for family doctors served as starting points. Based on these tasks, the standard of equipment reflects the range of common services that should be provided by our family physicians. Equipment was divided into two groups: that required by each family doctor and that required per group of doctors. This standard was approved by the Ministry of Social Affairs in 1997 as an official national standard and was distributed to all family doctors.

#### Evaluation of the situation after introduction of the standard

In 1998, another survey of all 376 family doctors, practising as independent contractors in Estonia, was conducted. The questionnaire included all items of the equipment belonging to the family practice standard as well as the items drawn from the questionnaire executed in 1992. Family doctors were asked to mark which of the listed items of equipment they had at their disposal. The response category for the items describing availability of equipment was 'yes' or 'no'.

#### Results

In 1992, after a reminding letter the response rate was 70% ( $n=110$ ). The mean age of doctors was  $48 \pm 5$  years and they had been practising on average 18 years.

The survey revealed that there were only four instruments that were possessed by each district doctor: stethoscope, sphygmomanometer, syringes with needles, and tongue depressors. Presence of equipment for gynaecological, otorhinolaryngological, minor surgical and paediatric work as well as for laboratory analysis was highly occasional. Only 27% of doctors had gynaecological instruments, 13% of district doctors had an ophthalmoscope and 9% had a tuning fork. About one-third of doctors had at their disposal urine strips for glucose and albumin assessment and an otoscope (Figure 1).

In 1998, when the questionnaires for family doctors were delivered and collected by county health authorities, all doctors responded. Of the doctors, 43% ( $n=163$ ) worked in rural practices and 57% ( $n=213$ ) worked in urban areas; 49% ( $n=185$ ) had a solo practice and 51% worked in group practices; the mean age of family doctors was  $43 \pm 8$  years.

Compared with 1992, the presence of items relevant for the tasks of the family doctor had increased significantly. The otoscope, gynaecological instruments, ophthalmoscope, tuning fork, tables for testing vision, ECG, and reflex hammer were at the disposal of the majority of family doctors (Figure 1). In 1992, availability of a computer was very rare: only 2% of PHC doctors used it in their everyday work. In 1998, their proportion had increased to 76%. The minimal standard of equipment as well as its availability at family doctors' offices in 1998 is presented in Table 2.

About one-half of the family doctors (52%) reported that they had all the 38 instruments listed in the standard.

**Table 2** Items of equipment needed at family doctors' offices and the percentage of primary care doctors who have the listed equipment at their disposal

Items of equipment	Percentage of doctors ( <i>n</i> = 376) who have the listed items of equipment at their disposal in 1998
Sphygmomanometer	100
Stethoscope	100
Thermometer	99
Tongue depressor	98
Syringes, needles	98
Tape measure	95
Scales	93
Tourniquet	93
Device for height measurement	92
Dressings, bandages	91
Infant scales	90
Possibility to use a car*	90
Kidney-shaped basin	87
Otoscope	85
ECC*	84
Tables for testing vision*	83
Equipment for blood sugar tests*	81
Urine strips	78
Personal computer	76
Instruments for enema	76
Basic instruments for minor surgery*	74
Ear syringe*	74
Reflex hammer	72
Splints	69
Nasal specula	66
Catheterization trays	63
Gynaecological couch*	63
Transfusion systems*	62
Gynaecological instruments*	60
Tables for testing colour- vision*	60
Ophthalmoscope	59
Peak flow meter	59
Stethoscope for foetal heart rate	58
Instruments for gastric lavage*	58
Equipment for haemoglobin measurement	52
Pelvic dividers*	49
Emergency kit	48
Tuning fork	35
Aspirator*	20

\* Instruments required per practice.

## Discussion

The aim of this study was to determine what type of equipment was available in primary care practices before the setting of standard and to follow how well family doctors adhered to this standard 1 year after its establishment. This was the first step towards organizing quality improvement activities in Estonia.

In the current study, a survey method instead of practice visits was used to assess availability of equipment in primary care practices. As both studies, conducted in 1992 and 1998, used similar questions and response categories the results allow certain comparison. The issue we addressed was the poor equipment of primary care doctors' offices in 1992. This corresponded to the real situation, where district doctors acted mostly as internists in primary care. The situation where most of procedures were performed by specialists was considered more economical (less need of equipment) and ensuring higher quality (based on more experience) [8]. Within 6 years there has occurred remarkable improvement of practice equipment in Estonia. Slightly more than one-half of family doctors reported that they had all of the items of equipment listed in the standard. It appears that the most important factor underlying improvement of equipment is broadening of the job description of Estonian primary care doctors. The rate of availability of gynaecological instruments, otoscopes, ophthalmoscopes, infant's scales and basic instruments for minor surgery in 1998 indicates that primary care in the mentioned areas belongs to the responsibility of family doctors. Another major factor is introducing a standard for equipment: the new funding scheme established in 1998, according to which a certain amount of money – the basic practice allowance – is allocated for raising the practice standard. Compared with the previous system, where premises and equipment were in public ownership, and in which doctors were employed by polyclinics [10] family doctors – as independent contractors – are now responsible for meeting their practice standard themselves. With these resources, they now have the possibility to acquire all of the necessary instruments and devices (ECG, computers, gynaecological couch and instruments, etc.).

Our results from 1992 are confirmed by another study from 1993 which showed that Estonia, together with other countries of Central and Eastern Europe, belongs to the group with the lowest involvement of general practitioners in the application of different medical techniques and with a low equipment standard of practices. On the other hand, Finland has been found to have the highest practice equipment standard and the widest scope of services provided by general practitioners [11]. However, in 1998 the availability of traditional medical devices (sphygmomanometer, stethoscope, urine strips, otoscope, ECG, etc.) in Estonia did not differ significantly from retrospective numbers of Western countries in 1992.

Based on the findings of the study, feedback and recommendations were given to family doctors, as well as to national and local health care organizers. It was found that the costs of achieving the established standard can be covered

from the basic practice allowance within 2 years. This standard of equipment is binding for each family doctor as an important prerequisite for concluding or renewing a contract between doctor and sick-fund.

It will take time before quality assurance becomes a self-evident and essential part of professional daily life and receives appropriate funding at the state level. However, concrete actions, aimed at the quality circle and taken by representatives of the profession itself, serve as a good example of how the problems identified can be solved. Moreover, this simple project could be an important starting point for quality improvement activities in the future.

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# Motivation and satisfaction among Estonian family doctors working in different settings

Ruth Kalda, Heidi-Ingrid Maaroo, Margus Lember

**Introduction:** As in many other Eastern European countries, the healthcare system in Estonia has undergone numerous changes, including the introduction of family doctors into a system previously dominated by speciality care. The success of these reforms depends on various preconditions and personal factors play a key role here, such as healthcare workers' motivation, willingness, ability to meet changes and job satisfaction.

**Aim:** The aim of this study was to find out how many vocationally trained family doctors had started working as family doctors and to investigate their job motivation and job satisfaction as related to their current employment status and work setting.

**Methods:** In March 1997, the questionnaires were posted to all 160 doctors who had completed an in-service training course for family doctors.

**Results:** 84 doctors (79%) out of 105 respondents reported that they had started work as family doctors. 21 doctors (20%) continued as district doctors for adults or as district paediatricians. 19% of 105 respondents were working independently as private practitioners and the rest were in the employment of the health service. A well-organised practice, good-quality equipment, friendly relationships with co-workers and the opportunity to learn new things were the most highly valued aspects of work by all doctors. In general, 72% of the doctors were highly satisfied with their work, 23% were somewhat satisfied and 5% were dissatisfied.

Independently working practitioners reported greater work satisfaction than employed doctors concerning 5 out of 16 measured items: direct working conditions, organisation of work, income, freedom to choose their own working methods and opportunities to use the skills to the maximum.

**Conclusion:** The findings of this study indicate that a large majority of newly trained family doctors are well satisfied with most aspects of their practice as well as with their career in general. Independently working practitioners reported higher satisfaction than employees in several aspects of work, including income, work organisation, freedom and opportunities to use skills to the maximum. This information may have implications for the organisation of the primary care practice in the country.

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**Key words:** family doctors, job motivation, job satisfaction

Estonia was one of the first Eastern European countries to start to introducing changes in the healthcare system in the 1990s. This reform includes the introduction of family doctors into a system previously dominated by speciality care. A doctor able to provide a wide scope of services has been regarded as the role model for family doctors in Estonia. The success of the reforms depends on various preconditions, several of which have been fulfilled: development of postgraduate training programmes, recognition of Family Medicine as an academic discipline, opening of a special university department, foundation of the Estonian Society of Family Doctors, starting up a system of continuous medical education, support from politicians etc.<sup>1,2</sup>

The first family doctors in Estonia started their work in 1993. With the setting up of their own practices, it has become indispensable to obtain information on how the doctors themselves feel in a new system, as well as how the new system meets the needs of the population.<sup>3</sup> Although

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**Table 1. Practice characteristics of the respondents (n=105).**

	Working independently		Employed		Total
	Solo	Group	Solo	Group	
Family doctor	14	6	19	45	84
District doctor	0	0	4	17	21
Total	14	6	62	62	105

satisfaction deserves great consideration in healthcare studies, the focus is mostly on patient satisfaction. Little is known about motivation and satisfaction of the physician, especially as it relates to different working settings. However, physician satisfaction has been shown to influence the quality of patient care.<sup>4,5</sup> It has been suggested that patient satisfaction and provider satisfaction are associated.<sup>6</sup> Physician satisfaction is especially important when a new system is implemented. Finding a model to predict the highest level of career satisfaction may influence the whole reform process.

The aim of this study was to find out how many vocationally trained family doctors had started working as family doctors and to investigate their job motivation and job satisfaction as related to their current employment status and work setting.

#### Subjects and methods

In the study, a Warr-Cook-Wall questionnaire was used, which has been proven to be a reliable and valid questionnaire for measuring attitudes to work, including job motivation and job satisfaction.<sup>7</sup> The questionnaires were posted in March 1997 to all 160 doctors who had

completed an in-service training course for family doctors at this time. Those who did not respond within three weeks were sent a note of reminder with a new questionnaire.

The questionnaire consisted of three sections. The first part focused on the importance attached to different aspects of work in general. This part contained 15 questions to which answers were ranked on a seven-point scale, from 'not at all important' to 'extremely important'. These aspects were considered as work-motivating factors.

The next part included 16 questions to measure work satisfaction. The answers were given on a six-point scale from 'I am extremely dissatisfied' to 'I am extremely satisfied'.

The last part was aimed at obtaining data on respondents' age and sex, the character and size of their practices and the length of the period they had been working as doctors. The data were analysed with the statistical programme SPSS. To evaluate statistical significance of differences between the groups, the Mann-Whitney U-test was used. To analyse the relation between high work satisfaction as a dependent variable and independent variables (doctors' ages, practice type, practice location, practice setting and employment status) a logistic regression analysis was carried out. Physicians' responses were dichotomised for this analysis: 5 ('very satisfied') and 6 ('extremely satisfied') were included in the 'highly satisfied' group, the rest in the 'not very satisfied' group.

#### Results

A total of 110 responses were received (return rate 69%). Of all completed questionnaires, 105 were valid for analysis.

#### Demographic and practice characteristics

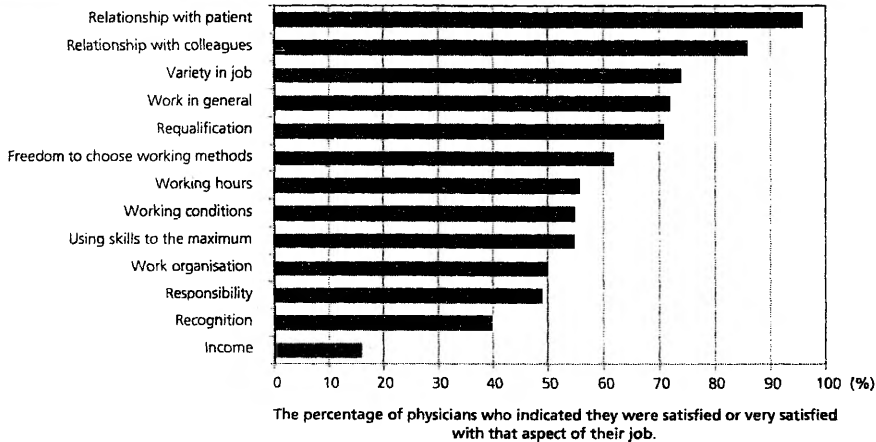
Of the 105 respondents, 84 (80%) reported that they had started work according to the task description of a family

**Table 2. Mean score ratings for work-motivation factors among Estonian family doctors. Average ratings on the scale from 1 ('not at all important') to 7 ('extremely important')**

Motivation items	Independent New setting (n=20)	Employed		Total (SD)
		New setting (n=64)	Old setting (n=21)	
Good relationship with co-workers	6.0	6.3	6.1	6.2 (0.74)
Good-quality equipment	6.1	6.1	6.0	6.1 (0.77)
Well-organised practice	6.2	6.1	6.0	6.1 (0.81)
The opportunity to learn new things	6.1	5.8	6.2	6.0 (0.83)
Extending your range of abilities	5.9	5.9	5.9	5.9 (0.82)
The opportunity to use your skills to the maximum	5.9	6.0	5.8	5.9 (0.74)
The opportunity to make your own decisions	5.8	5.6	5.1	5.6 (0.79)*
The freedom to choose your own method of working	5.6	5.7	5.3	5.6 (0.79)
The amount of variety in your job	5.5	5.5	5.2	5.5 (0.80)
Achieving something that you personally value	5.7	5.5	4.9	5.4 (0.95)*
High income	5.2	5.4	5.3	5.3 (0.89)
Challenging work	5.0	5.2	4.9	5.1 (0.93)
Your hours of work	4.9	4.9	5.1	4.9 (1.04)
Your chance of promotion	3.9	3.8	3.9	3.8 (1.18)

\*  $p \leq 0.01$

Figure 1. Level of satisfaction with aspects of practice



doctor, 21 (20%) reported that they were still working as district doctors for adults or as district paediatricians. The majority of the doctors (95%) were female. Of those who were working as family doctors, 24% had their own private practices on contract basis with the sick fund (health insurance). All those who continued working as district doctors were in employment, mostly working in large practices, usually polyclinics (table 1). Half of the respondents worked in urban areas (50%), the another half in the rural areas. The average age of the respondents was 42 years and the average previous work experience was 15 years. In comparison with the respondents, most of the doctors who did not respond to the questionnaire worked in urban areas, in large practice settings and they were employed doctors.

#### Job motivation factors

In general, the most important aspects of work were good relationships with co-workers, good organisation of the practice, good-quality equipment and the opportunity to learn new things, but also the freedom to choose one's own method of working, the opportunity to use one's skills to the maximum and to extend one's range of abilities (table 2). There was no relation between the ratings of job motivating factors and physician's age and practice demographic factors. Doctors who worked as employed district doctors valued the opportunity to make their own decisions as well as the opportunity to achieve personal ambitions somewhat less ( $p < 0.01$ ). Career prospects, working hours, challenging work, but also high income were considered less important by all doctors.

#### Job satisfaction

In general, most respondents were satisfied with their work. Of the 105 respondents, 76 (72%) reported that in general they were highly satisfied with their work, 24 doctors (23%) were somewhat satisfied and 5 doctors (5%) were dissatisfied. The respondents were most satisfied with relationships with their patients and with the varied nature of work, as well as with possibility to attend advanced training courses. They were least satisfied with income and with recognition (figure 1).

Using the logistic regression analysis, it was found out that the doctors who continued to work as district doctors reported significantly lower levels of satisfaction with their careers in general as well as with working conditions and with work organisation (table 3). Independently working practitioners had a sevenfold higher satisfaction with income, fivefold higher satisfaction with freedom to choose their own working methods and threefold higher satisfaction with opportunities to use skills to the maximum compared with employed doctors. No differences were observed concerning age, or type and location of the practice.

#### Discussion

It was found out that after completing the vocational training courses, a large number of the doctors (81%) started working according to the job description of family doctor. However, one-fifth of the doctors continued working as district doctors for adults or district paediatricians. The majority of these doctors continued working as they had before; they were employed by polyclinics in towns where organising their own work is much more



**Table 3. Results of logistic regression between satisfaction variables and practice characteristics (only statistically important factors ( $p \leq 0.01$ ) are presented in the table).**

Variable	Adjusted odds ratio (95% CI)	p value
Career in general		
• Work as family doctor	1.0 *	
• Work as district doctor	0.20 (0.07-0.62)	0.005
Working conditions		
• Work as family doctor	1.0 *	
• Work as district doctor	0.18 (0.05-0.62)	0.006
Working freedom		
• Employed	1.0 *	
• Independent	5.0 (1.34-18.34)	0.016
Income		
• Employed	1.0 * 0.001	
• Independent	6.85 (2.18-21.56)	
Work organisation		
• Employed	1.0 *	
• Independent	5.7 (0.06-0.89)	0.01

Values  $>1.0$  indicate that the factor is associated with increased satisfaction, whereas values  $<1.0$  indicate that the factor is associated with decreased satisfaction.

\* Reference variable

difficult than in small practices. Conversely, the scope of the work of rural district doctors as well as working environment have always been similar to the family doctor and therefore profound changes were not needed.

Since 1992, when Estonia replaced the state-financed medicine by compulsory health insurance, the healthcare providers (including family doctors) have had the possibility to enter into independent contracts with the sick fund and be reimbursed by fee for service. In 1996, when the survey was carried out, about one fifth of the family doctors had their own private practices.

This study shows that the evaluation of work motivation factors was quite similar in all groups of doctors (family doctors independently working in the new setting, family doctors in employment in new setting and district doctors in employment in old setting). In the professional sphere, all aspects that provide a structure for good and smoothly functioning practice were most valued: friendly relationships with co-workers, good organisation of practice, good-quality equipment and opportunities for continuous self-improvement. Employed district doctors valued somewhat less the possibility of making independent decisions, as well as the possibility of achieving personal ambitions. Compared with district doctors, the work of family doctors involved more responsibility, especially if the family doctor is an independent contractor. Apparently, not all doctors who have completed their training as family doctors are willing to work in the new way and take more responsibility.

It was somewhat surprising that income, challenging work and chance of promotion were not reported as highly valued motivational aspects. One of the reasons can also be derived from the past when, due to the general cultural background, it was considered unethical to speak of money and career, especially among doctors. Another possible reason is the social rather than medical orientation of family doctors, especially female doctors.<sup>8</sup> It was revealed that those doctors with a social orientation to medicine tended to be less concerned about medical incentives. The high proportion of female respondents reflects a general situation in Estonian medicine where 75-77% of doctors are female, whereas male doctors more often work in technical specialities and in hospitals than in outpatient clinics.<sup>9</sup> Among Estonian family doctors, the proportion of females is even higher at 95%.

The study revealed that most of the vocationally trained family doctors (72%) were generally highly satisfied with their careers. This percentage of high satisfaction is comparable with that in similar studies, carried out in countries where family medicine has a long tradition.<sup>10,11</sup> The greatest sources of satisfaction were similar for all doctors (relationship with patients, opportunity to participate in advanced medical training courses and variability of work). Income was the most problematic aspect, causing dissatisfaction among 60% of the doctors. However, it is notable that doctors engaged in private practice were much more satisfied with their income than their counterparts who were working as employees. Since independent practitioners were also highly satisfied with the way their work was organised and the freedom to choose their own method of working as well as with the possibility to use skills to the maximum, all these opinions reflect underlying changes in the character of work.

The doctors who continued working as district doctors had a significantly lower level of satisfaction with their direct work conditions, organisation of work and job in general. Most of these doctors worked in large practice settings, which confirms the findings of Barr that increasing organisation size is associated with declined worker satisfaction.<sup>12</sup> Another reason for this lower satisfaction may be the result of the situation in the past. One of the common characteristics of healthcare systems of the former socialist countries was underfinancing and shortage of equipment in primary care.<sup>13</sup> Before the first vocationally trained Estonian family doctors started their work, a study was performed concerning family doctors' opinions of needs relating to equipment and selection of laboratory tests. The findings of the study were taken into account in the development of family medicine centres. As a result, family medicine centres differ from the previous primary health care institutions in that they are better furnished and equipped, with a greater degree of comfort, which are all regarded as advantages. Furthermore, possessing the necessary equipment allows family doctors to avoid unnecessary referrals and organise their work better and more effectively.

Although the study included all doctors who had com-

pleted the vocational training courses in this period, the study has some limitations. The authors are concerned about physicians who did not return the questionnaire. As a difference was found in certain aspects of work between employed and independently working practitioners, the different structure of respondents and non-respondents might have effect on the satisfaction level.

This is the first study of its kind in Estonia. The current report reflects the state of the art at the beginning of the reform period. In order to monitor the trends in the satisfaction issue, further studies are needed to analyse relationships between satisfaction of family doctors and the population.

#### Implications

Doctors' satisfaction and motivation are important preconditions for success of primary care reforms. Although a large majority of newly trained family doctors are well satisfied with their career in general, there are some important differences between the different work settings. So, first it is essential that there are good opportunities for retrained doctors to work in a new family-doctor setting. Independently working family doctors prove to be the most satisfied, therefore this practice setting should be stimulated. ■

#### Acknowledgements

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**R. Kalda, G. Sontak, M. Hapunova, H. Sarapuu, M. Lember.**  
Tartu linna 2 aasta vanuste laste vaktsineerimiste kvaliteet.  
Eesti Arst (submitted).

## TARTU LINNA 2 AASTA VANUSTE LASTE VAKTSINEERIMISTE KVALITEET

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**Võttesõnad:** vaktsineerimiste kvaliteet, vaktsineerimiste õigeaegsus, vaktsineerimis-  
tega hõlmatus

**Summary:** This study assesses immunization coverage as well as up-to-date immuniza-  
tion status among 2-years old children in Tartu. A retrospective review of immunization  
records of study children was performed. Data of the children were received from  
database of Tartu sick-fund.

We found that overall 90% of the children had received in time their first dose of  
diphtheria and tetanus toxoids with pertussis vaccine (DTP) and their first dose of oral  
poliovirus (OPV). After the first vaccination, rate of up-to-dately vaccinated children  
decreased. However, vaccination coverage of 2-years old children was similar of that  
recommended by ministerial decree. There exist no significant differences between  
vaccination regimen performed by FD and pediatricians.

Laste vaktsineerimine on esmatasandi arsti poolt tehtavas haiguste ennetamises kõige  
olulisem ning tõestatult efektiivne tegevus. Laste vaktsineerimist teostavad Eestis nii  
perearstid kui lastearstid sotsiaalministri kinnitatud ajakava alusel (1). Vaktsineerimise  
kvaliteeti iseloomustatakse enamasti kahe näitajaga: hõlmatus ja õigeaegsus (2).  
**Hõlmatus** iseloomustab laste hulka, kes on teatud vanuse künnise ületamisel saanud  
kõik ettenähtud vaktsinatsioonid. Kaitsva immuunsusfooni loomiseks on sotsiaal-  
ministri poolt seatud eesmärgiks saavutada laste teiseks eluaastaks 95%-line hõlmatus  
vaktsineerimisega difteeria, teetanuse, poliomieliidi ja leetrite, mumpsu, punetiste vastu,  
90%-line hõlmatus läkakõha vastu ning 95%-line hõlmatus revaktsineerimistega nendes  
vanuserühmades, mis on ette nähtud riigi vaktsineerimiskalendri alusel (1). Vaktsi-  
neerimise **õigeaegsus** näitab seda, kuidas peetakse kinni ettenähtud vaktsineerimise  
graafikust. Lapsi peetakse õigeaegselt vaktsineerituks, kui nad on saanud graafiku-  
järgse kaitsesüstimise mitte rohkem kui kuuajalise hilinemisega. Revaktsinatsioonide  
õigeaegsuse hindamisel on piirid laiemad, erinevate andmete alusel lubatakse hilinemist  
graafiku suhtes kolm kuud kuni aasta (2,3).

Riikliku tervishoiustatistika andmetel on Eestis ajavahemikul 1996–1999 laste  
vaktsineerimine intensiivistunud ning enamikus maakondades on saavutatud soovitud  
tase. Samas on viimastel aastatel seoses tervishoiu reorganiseerimisega mõnikord püü-  
tud väita, justkui tegelemine laste ennetusalase tööga ja sealhulgas ka laste vaktsinee-  
rimistega, halvenevat. Seetõttu oli käesoleva **töö eesmärgiks** uurida laste vaktsinee-  
rimistega hõlmatus ja õigeaegsust Tartu linna baasil ning võrrelda perearstide ja  
lastearstide poolt teostatud vaktsineerimiste kvaliteeti.

## Uurimismaterjal ja -metoodika

Uuritavateks olid ajavahemikus 01.01.1996.–01.01.1997. sündinud Tartu linna lapsed. Andmed 1036 sellesse vanusegruppi kuuluva lapse kohta saadi Tartumaa haigekassast ning neist moodustati juhuvalim (50% üldvalimist). Valimisse sattunud laste vaktsinatsiooni- ja ambulatoorsete kaartide alusel registreeriti iga lapse kaitsesüstimise teostamise täpne aeg, mille järgi hinnati üksikute kaitsepookimiste teostamise õigeaegsust.

Kuna Eestis puuduvad selgelt defineeritud kriteeriumid, millal lugeda laps õigeaegselt vaktsineerituks, võeti eeskujuks Ameerika Pediaatrite Assotsiatsiooni vastavasisuline dokument (2). Lapse esimese eluaasta kaitsepookimiste, s.o. difteeria–teetanuse–lõlakõha (DTL3+OPV3) ning leetrite, mumpsu ja punetiste vastase vaktsineerimise (LMP1) teostamine loeti õigeaegseks juhul, kui vaktsineerimised olid teostatud vähem kui ühe kuuse hilinemisega võrreldes ettenähtud ajakavaga. Difteeria–teetanuse–lõlakõha esimese revaktsinatsiooni (DTL4) lubatud teostamise ajaks antud töös oli kolm kuud alates lapse kahe aastaseks saamisest. Kui vaktsineerimised olid teostatud puudulikult, siis märgiti üles hilinemise põhjus ambulatoorsete kaartide sissekannete või arstide poolt antud selgituste alusel. Vaktsineerimistega hõlmatust arvestati lapse 24 kuu vanuseks saamisel.

Uuringu tulemused esitati kõigile uuringus osalenud pere- ja lastearstidele tagasiside korras.

## Uurimistulemused

Uurimisgruppi kuuluvast 518 lapsest kuulusid 54% perearstide ja 46% lastearstide nimistusse. Nende lastega tegeles 30 perearsti ja 12 lastearsti.

Esimese kaitsesüstimise on saanud õigeaegselt (lubatud ühekuuse hilinemisega) ligikaudu 90% lastest, teise kaitsesüstimise u. kolm neljandikku ning kolmanda kaitsesüstimise kaks kolmandikku lastest (joonis 1). Seega, vanuse kasvades, õigeaegselt vaktsineeritud laste arv väheneb. Mumpsu, leetrite ja punetiste vastase kaitsesüstimise olid saanud õigeaegselt samuti kaks kolmandikku lastest (joonis 2). Teise eluaasta lõpuks oli difteeria, teetanuse, lõlakõha ning poliomüeliidi vastase kaitsesüstimise saanud 95% lastest; mumpsu, leetrite ja punetiste vastase vaktsineerimise 92% lastest (joonis 2). Perearstide ja lastearstide poolt teostatud vaktsineerimiste õigeaegsust võrreldes olulisi erinevusi ei ilmnenu. Analüüsides väikelaste esimese revaktsineerimise toimumise aega, selgus, et 27. elukuuks on revaktsineeritud ligikaudu kaks kolmandikku lastest.

37 lapsel (8%) olid vaktsinatsioonid teostatud puudulikult. Vaktsineerimiste edasilükkamise või mitteteostamise põhjustest kolmandiku moodustasid lapse haigestumine (esmajoones ägedad infektsioonhaigused) ning teise kolmandiku lapsevanema arsti poole mittepöördumine. Lapsevanemate ebaregulaarne arsti külastamine ilmnis eriti peale lapse esimest eluaastat. Hilinemiste põhjustest järgnesid vaktsineerimise vastunäidustused raske haiguse tõttu (13%) ning lapse elukoha ning arsti vahetus (13%). Mitmel juhul ei omatud lapse vaktsineerimiste kohta täpseid andmeid, enamasti seetõttu, et lapse vaktsineerimine oli organiseeritud lasteaias ning sellekohased andmed

polnud arstile teada. Väga harva oli tegemist lapsevanemate keeldumisega (kokku vaid 4 juhtu).

Uuringu käigus selgus ka, et 9% valimisse sattunud lastest (n=48) ei olnud tegelikult registreeritud haigekassa poolt antud arsti nimistusse ning seega ei õnnestunud nende laste kohta ka täpsemaid andmeid saada.

## Arutelu

Teise eluaasta lõpuks on laste vaktsineerimistega hõlmatud Tartu linnas rahuldav. Lähtudes Maailma Tervishoiuorganisatsiooni poolt püstitatud ning Eesti Sotsiaalministri määruses sätestatud eesmärgist, on aga 95%-line hõlmatud mumps-i-leetrite-punetiste vaktsineerimises veel saavutamata. Siin on ülesanneteks kriitiliselt üle vaadata vaktsineerimiste mitteteostamise põhjused. Uurides üksikute vaktsinatsioonide teostamise õigeaegsust, jääb mulje, et liiga sageli on vaktsineerimised edasi lükatud tavalise viirusinfektsiooni, kõha ja nohu puhul, mis tegelikult vastunäidustusteks ei ole (2). Seega peaks teiseks oluliseks suunaks olema tervisekasvatuslik töö — lapsevanemate informeerimine ja mõjutamine. Paljudel juhtudel on probleemiks vanemate puudulikud teadmised vaktsineerimise tähtsusest, vaktsineerimise vastunäidustustest ning kõrvaltoimetest, aga ka vaktsineerimise ajagraafikust.

Revaktsineerimise näitajatega käesolevas töös võib rahule jääda, arvestades, et antud töös oli lubatud hiline mis kriteerium üsna range. Mõõdunud aastal Eesti perearstide ja lastearstide ühistööna valminud vaktsineerimise juhises on ära toodud, et revaktsineerimine loetakse õigeaegseks, kui hiline mis ette nähtud graafikuga on vähem kui kuus kuud (4).

## Kokkuvõte

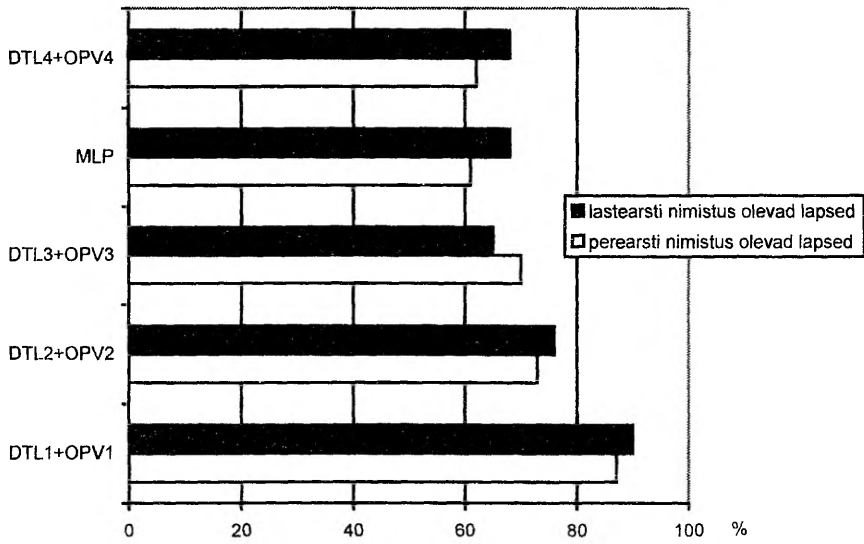
Kuigi laste vaktsineerimistel ei peeta mitmetel põhjustel väga täpselt kinni ettenähtud ajagraafikust, on teiseks eluaastaks vaktsineerimistega hõlmatud laste arv ligilähedane sotsiaalministri määruses sätestatud eesmärgile. Käesoleva töö tulemused on täiesti võrreldavad ka teiste samalaadsete rahvusvaheliste uurimustega (5,6). Perearstide ja pediatrite poolt teostatud laste vaktsineerimistes olulisi erinevusi ei ole.

## Kirjandus

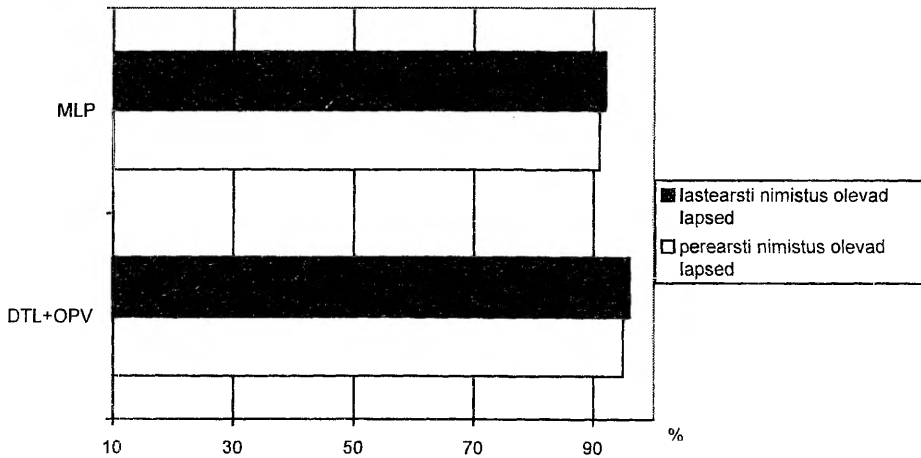
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Joonis 1. Õigeaegselt vaktsineeritud laste osakaal Tartu 1996-1997 a. sündinud 2 a. vanuste laste juhuväljavõttes (N=470)



Joonis 2. Kaheaastaste Tartu laste vaktsineerimistega hõlmatus (N=470)



**R. Kalda, K. Põlluste, M. Lember.**  
Eesti elanikkonna hinnang esmatasandi tervishoius aset leidnud muutustele.  
Eesti Arst, 1999, 3, 269–273.

## Eesti elanikkonna hinnang esmatasandi tervishoiu aset leidnud muudatustele

Ruth Kalda Kaja Põlluste  
Margus Lember

esmatasandi tervishoid, Eesti, muudatused, perearstid, esmatasandi arstiabikorralduse hinnang

Ümberkorraldusi Eesti tervishoiu alustati ravikindlustussüsteemi rakendamisega 1992. aastal. Esimesed diplomeeritud perearstid asusid tööle 1993. aastal (1, 3). 1994. aastal vastu võetud "Tervishoiukorralduse seadus" määratles arstiabi etapid ning omavalitsuste ülesanded arstiabi tagamisel (5). 1999. aastaks on ümberõppekursuste ja residentuuri kaudu koolitatud ligikaudu 400 perearsti, mis on pool Eestile vajalikust.

Sotsiaalministri 1997. aasta määrustega määratleti esimese etapi arstiabi andvad arstid, kinnitati perearstipraksise tegevusvormis töötavate arstide tegevusjuhend ja rahastamise kord ning anti esmatasandi arstidele võimalus asuda haigekassaga otselepingusse (6, 7). See oli osa tegevuskavast, et ellu viia eesmärk luua viie aastaga efektiivselt toimiv, inimestele elukohajärgselt kättesaadav, järjepidevust tagav, koolitatud ja treenitud ning täisvastutust omavatel perearstidel põhinev, ühtselt korraldatud, kogu Eestit hõlmav esmatasandi arstiabi süsteem (11). Elanike jaoks tähendas see eelkõige registreerumist omal valikul kindla esmatasandi arsti nimistusse ning paljude eriarstide vastuvõtule pöördumisel esmatasandi arsti saatekirja vajalikkust.

Käesoleva töö eesmärgiks oli teada saada, mida arvavad toimunud muudatustest

Eesti elanikud ja kuidas nad on rahul esmatasandi arstiabi korraldusega tervikuna.

**Uurimismaterjal ja -metoodika.** Ankeetküsitluse personaalintervjuudena korraldas AS Emor 1998. aasta oktoobris. Küsitleti kokku 997 Eesti Vabariigi alalist elanikku vanuses 15—74 aastat. Küsitletavate leidmiseks kasutati lähteadressi ja "noorte meeste reeglit" linnades ning süstemaatilise väljavõtu meetodit alevikes ja külad. Valim vastas nii sooliselt, vanuseliselt kui ka rahvusvaheliselt struktuurilt Eesti elanikkonnale. Ankeet, mis oli koostatud TÜ teadlaste ja AS Emori ühistööna, sisaldas küsimusi vastaja isiku, tema tervisliku seisundi ning esmatasandi arstiabi korralduse kohta.

**Uurimistulemused ja arutelu.** Küsitletuist 46% peab oma tervislikku seisundit üldiselt heaks. End terveks pidavate inimeste seas on enam mehi, samuti noori, alla 24-aastasi vastajaid. 33% küsitletuist arvab, et nende tervis on normaalne, vahetevahel peavad aga siiski arsti poole pöörduma. 21% küsitletuist peab oma tervist pigem halvaks, nad vajavad sageli arstiabi ja ravimeid, kõige suurema osa sellest rühmast moodustavad üle 65-aastased (60% selle vanuserühma vastajaist). Viimase 12 kuu jooksul on jaoskonnaarsti poole pöördunud 25%, perearsti poole 52% ja eriarsti poole 48% vastajaist. Haiglas on viibinud 16% küsitletuist. Aasta jooksul ei ole arstidega kokku puutunud vaid kolmandik 15—74-aastastest Eesti elanikest.

**Haigekassa kindlustust on** vastavalt küsitluse tulemustele 90%-l Eesti 15—74-aastastest inimestest. Et Eestis on kõigile kuni 18-aastastele elanikele ning pensionäridele ravikindlustus garanteeritud, on kindlustust omavate isikute arv Eestis siiski üle 90%.

Vastajaist 68% ütleb, et nad on end perearsti juurde registreerinud. Kõige rohkem on perearsti juurde registreerunud Saaremaal, Hiiumaal, Põlva-, Jõgeva- ja Tartumaal (96—100%), kõige vä-

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hem Tallinnas, kus perearsti juurde on end kirja pannud alla poole 15—74-aastastest elanikest (vt. joonis 1). Peaaegu pooled vastanuist registreerisid end perearstinimistusse ise ja vahetult arsti juures. Ida-Virumaal, aga ka Harju-, Järva- ja Raplamaal ning Tallinnas määrati inimene perearstinimistusse sageli elukohajärgses polikliinikus.

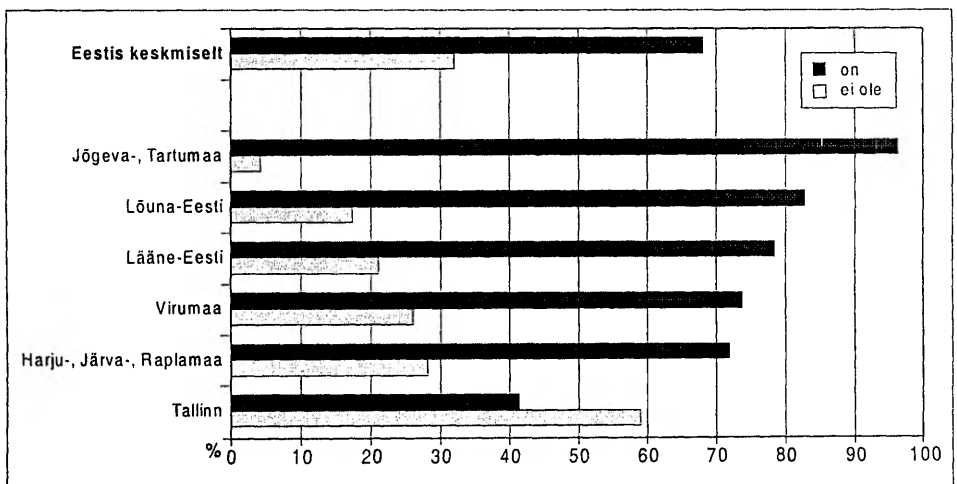
**Kuidas ollakse informeeritud perearstireformi käigus toimunud muudatustest?** Informatsiooni perearstisüsteemile ülemineku ja sellega kaasnevate muudatuste kohta omavad piisavalt või enam-vähem piisavalt ligikaudu pooled vastanuist. Piirkonniti on informeeritus erinev. Kui Tartu- ja Jõgevamaa vasta-jaist arvab kaks kolmandikku, et nad on muudatustega piisavalt kursis, siis tallinlastest arvab sama vaid üks kolmandik (vt. joonis 2).

Paremini arvavad end informeeritud olevat isikud, kes registreerisid perearstinimistusse ise arsti juures (78% neist ütleb, et neil on informatsiooni piisavalt või enam-vähem piisavalt). Ühelt poolt on ilmselt piirkondades, kus teavet on paremini jagatud, inimesed olnud teadlikumad ka võimalusest vabalt valida. Teisalt on vahetu kontakt arstiga omakorda

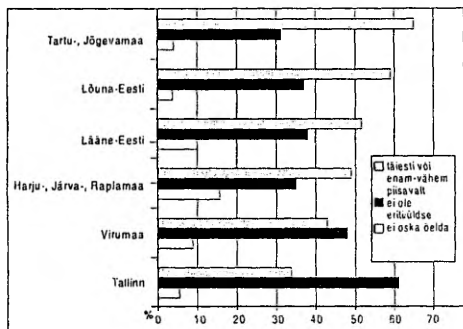
võimaldanud saada muudatuste kohta informatsiooni, niisamuti kui ka sõlmida isiklike kokkuleppeid.

**Kuidas on arstiabikorraldus muutunud seoses üleminekul perearstisüsteemile?** 45% vastanuist ei tunneta arstiabikorralduses erilisi muutusi, neljandiku arvates on see muutunud paremaks ja 10% arvates halvemaks. Seega neid, kes tunnetavad arstiabikorralduse paranemist, on kaks ja pool korda rohkem kui neid, kes arvavad vastupidist. Ülejäänud 21% ei oska midagi vastata. Enamik neist ei ole aasta vältel arsti juures käinud. Piirkonniti on hinnangutes olulisi erinevusi (vt. joonis 3). Seda, et arstiabikorraldus on paremaks muutunud, arvatakse rohkem Lõuna-Eestis ning Tartu- ja Jõgevamaal, vähem Harju-, Järva- ja Raplamaal.

**Kui ruttu pääseb perearsti vastuvõtule?** Enamik inimesi pääseb esmatsandi arsti juurde samal päeval või siis 1—2 päeva jooksul (vt. joonis 4). Väga harva tuleb järjekorras olla 3—4 päeva või rohkem. 23% ei osanud sellele küsimusele vastust anda. Põhjuseks on ilmselt isikliku kogemuse puudumine, sest suur osa neist ei olnud küsitlusele eelnenud aasta jooksul arsti juures käinud. Järjekorra pikkuses piirkonniti olulisi erine-



Joonis 1. Eesti 15—74-aastastest elanikest perearsti juurde registreerunud isikud (%).



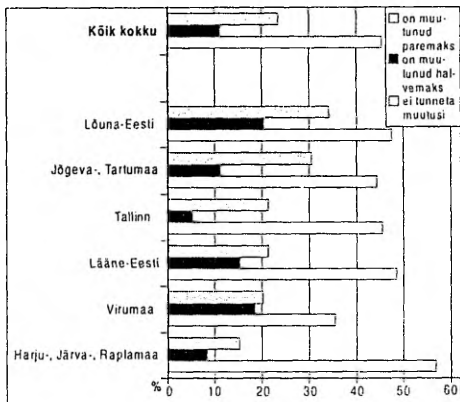
Joonis 2. Hinnang informatsiooni olemasolule seoses perearstisüsteemile üleminekuga kaasnevate muutustega.

visi ei ilmnenu. Nende tulemuste põhjal võib väita, et ligipääs esmatasandi arstiabile on igati hea, arvestades ka rahvusvahelisi näitajaid.

Võrdluseks: Soome esmatasandi arstide seas 1992. a. läbiviidud uuringust selgus, et 19%-l juhtudest oli mitteägedate probleemide puhul ooteajaks isegi kuni kaks nädalat (2). Isikliku arsti süsteemi rakendamise järgselt on praegu Soomes lepinguliseks kohustuseks tagada vastuvõtt kolme päeva jooksul ning samasugune täiendus on tehtud ka Eesti perearstide 1999. aasta tüüplepingusse.

**Kelle poole eelistaksid patsiendid haigestumise korral esmalt pöörduda?** Ligikaudu pooled vastanuist (49%) eelistavad haigestumise korral pöörduda esmalt perearsti poole konsultatsioonile. Otse eriarsti juurde sooviks kohe minna 38% vastanuist; küsimusele ei oska vastata 13%. 1993. aastal, kui perearstid ei olnud veel tööle asunud, näitasid Tartus tehtud uuringu tulemused, et tartlaste eelistused arsti valikul jaotusid pere-, jaoskonna- ja eriarstide vahel enam-vähem võrdselt, kuigi perearsti eelistati pisut rohkem (10).

Käesoleva uuringu tulemustest ilmneb, et enam eelistavad perearsti need, kes on registreerunud perearstinimistusse ise (78%), samuti eelistavad perearsti üle 65-aastased isikud (57%). Ilmselt on vanemate inimeste puhul põhjuseks nii mitme haiguse üheaegne põdemine kui ka sot-



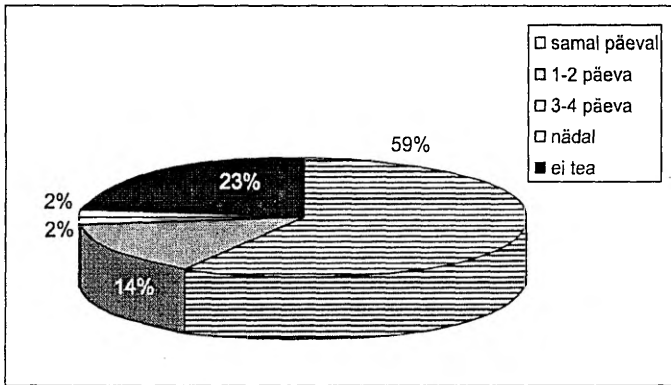
Joonis 3. Eesti 15–74-aastaste elanike hinnang arstiabikorraldusele seoses üleminekuga perearstisüsteemile.

siaalprobleemide sage lisandumine, mistõttu perearsti kui vahendaja ja ka ära kuulaja osa on eriti oluline (9). Mitut haigust korraga põdevad inimesed on ka varasema küsitluse andmeil eelistanud pöörduda oma probleemidega perearsti poole (10). Eelistuste erinevused arsti valikul tulevad ilmsiks ka piirkonniti (vt. joonis 5).

**Missuguse arsti poole pöörduetakse tavaliselt lapse haigestumise korral?** Sellele küsimusele paluti vastata nendel 422 inimesel, kelle leibkonnas kasvas alla 16-aastasi lapsi. Vastused jagunesid perearsti ja jaoskonnalastearsti vahel enam-vähem võrdselt (vt. joonis 6).

Sagedamini pöörduetakse perearsti poole Jõgeva- ja Tartumaal (69%), Lääne-Eestis (68%) ja Lõuna-Eestis (66%). Vastused kajastavad üsna selgelt olemasoleva arstiabi struktuuri: piirkondades, kus esmatasandil töötab rohkem perearste, neid rohkem ka eelistatakse.

**Kas ollakse rahul valitud perearstiga/oma jaoskonnaarstiga?** Valdavalt on inimesed oma arstiga rahul (vt. joonis 7). Perearsti juurde registreerunute ja mitteregistreerunute hinnangutes erinevusi ei ole, küll aga hindavad ise perearsti valinud inimesed oma arsti kõrgemalt (rahul 84%) kui need, kellele arst on määratud kas elukohajärgselt polikliini-



Joonis 4. Vastuste jaotumus küsimusele: "Kui kaua kulub Teil tavaliselt aega perearsti/jaoskonnarsti juurde pääsemiseks?"

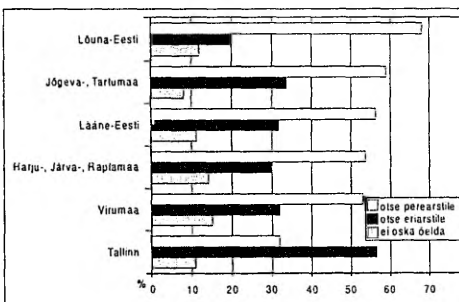
kus (rahul 70%) või kelle eest on valiku teinud keegi teine (71%). Sama on kinnitust leidnud ka mõningates teistes riikides tehtud uuringute varal (8). On leitud, et ise valides on patsiendi usaldus arsti vastu suurem, samuti on võimalik leida mõlemad pooli rahuldavad kokkuleppe tingimused (eriti aktuaalne koduvisiitide ja väljaspool tööaega antava abi osas), mistõttu hilisemaid rahulolematuse juhte on vähem.

Neljandik vastajaist ei oska oma arsti kohta hinnangut anda. Enamik neist ei ole aasta jooksul arsti poole pöördunud.

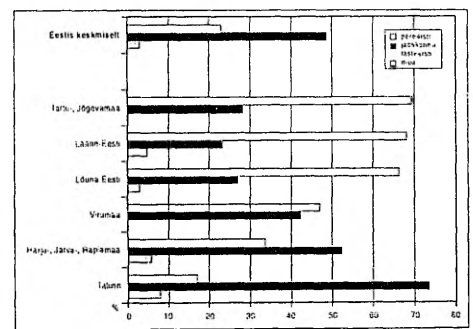
Küsitluse lõpul paluti inimestel vabalt vastata küsimusele: **Mis häirib Teid kõige enam praeguse arstiabikorralduse juures?** Vastanud häiris kõige roh-

kem pikk ooteaeg vastuvõturuumi ukse taga (kokku 16% vastajate hinnangul); moodsa meditsiintechnika puudumine: eelkõige Virumaa (21%) ja Lääne-Eesti elanike (18%) arvates; arstide ükskõikne suhtumine: rohkem Tallinnas ning Harju-, Järva- ja Raplamaal (18% nende piirkondade inimeste arvates) ning polikliinikute ja haiglate vilets seisukord: eeskätt 13% virumaaelaste ja 12% tallinlaste arvates.

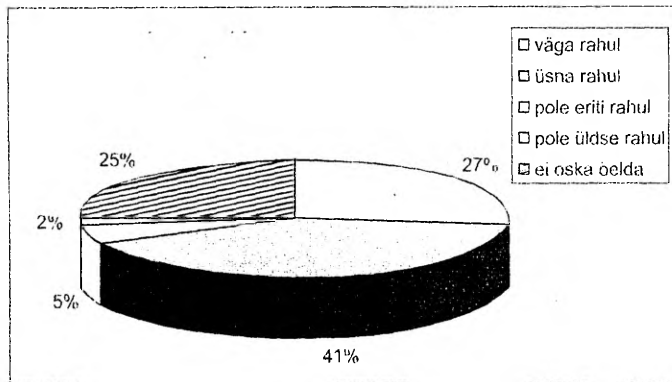
**Kokkuvõte.** Elanikkonna arvamuse küsimine on tervishoiusüsteemis toimuvate muudatuste hindamise üks võimalusi (4). Käesoleva uuringu põhjal võib väita, et kuigi piirkonniti ilmnevad teatud erinevused, on perearstisüsteemile üleminek Eestis tervikuna senini kulgenud rahul-



Joonis 5. Vastuste jaotumus küsimusele: "Kelle poole eelistaksite pöörduda enda haigestumise korral?"



Joonis 6. Vastuste jaotumus küsimusele: "Kelle poole pöördu te tavaliselt lapse haigestumise korral?"



Joonis 7. Rahulolu valitud perearstiga/jaoskonnarstiga.

davalt. Enamik inimesi on end perearstinimistusse registreerinud ja oma arstiga ollakse valdavalt rahul.

Uuele süsteemile ülemineku protsessis on tähtsal kohal elanike informeerimine esmatasandi tervishoius toimuvatest muudatustest. Elanike informeeritus võiks olla parem eeskätt Tallinnas, Harju-, Järva- ja Raplamaal. Piirkondades, kus inimestel on piisavalt teavet perearstisüsteemi kohta, on perearstinimistusesse registreerunute osa suur (Lõuna-Eesti, Jõgeva- ja Tartumaa ning Lääne-Eesti) ning enda ja oma laste haigestumise puhul eelistatakse pöörduda kõigepealt perearsti vastuvõtule.

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## Summary

**Evaluation of changes in primary health care by the Estonian general population.** The aim of the work was to find out whether the Estonian adult population (15–74 years) is informed on as well as satisfied with the reforms in primary health care. Most of the persons have chosen their personal physician and were satisfied with him. About half of the population was quite well informed on current changes in primary health care, but another half was not. Although there existed differences between different regions, it can be concluded that the primary health care reform in Estonia has been felt as successful by population.

*Uurimus on valminud EV Sotsiaalministeeriumi tellimisel ja Eesti Tervishoiuprojekti toetusel*





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Primary health care system in transition: the patient's experience.  
International Journal for Quality in Health Care, 2000; 12: 503–509.

# Primary health care system in transition: the patient's experience

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## Abstract

**Objective.** To find out how Estonian people evaluate the changes in primary health care (PHC), how they perceive the acceptability of the new PHC system, and to assess patients' satisfaction with their primary care doctor.

**Design.** Face-to-face interviews using structured questionnaires.

**Setting.** Estonia.

**Study participants.** A random sample of Estonian residents aged 15–74 years ( $n=997$ ).

**Main measures.** Acceptability of PHC system (accessibility, the patient–practitioner relations, amenities, and patient's preferences) and patients' satisfaction with primary care doctor.

**Results.** Of the 997 respondents, 46% were sufficiently informed about the transition to the general practitioner (GP)-based PHC system; however, 45% of respondents had not personally experienced any changes. Of the 997 persons interviewed, 68% were registered on the patient list of a GP, and 62% of those who had health problems preferred to consult the primary care doctor first. The waiting time for an outpatient appointment was brief (0–2 days). Of the 997 respondents, 68% were satisfied with their primary care doctor. Satisfaction was dependent on: (i) how patients evaluated the competence of the physician; (ii) comprehensibility of doctor's explanations; and (iii) comfort of the clinic. The right of patients to choose their own primary care doctor and having sufficient information about the changes in PHC system had a positive influence on the level of satisfaction.

**Conclusions.** Patients' opinions are important in the evaluation of PHC. To increase the level of satisfaction, people need to understand the nature and intent of the primary care reforms. Personal choice of primary care doctor and good patient–doctor relationships are important factors too.

**Keywords:** acceptability, general practitioner, patient satisfaction, primary health care reform

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Estonia had a tradition of general practice during the first period of independence (1918–1940). During the Soviet period (1940–1991) an excessive hospital network was developed, and polyclinics with various specialists were introduced into primary health care (PHC). The emphasis was on the specialization of physicians: district doctors for adults and district paediatricians were the main doctors in primary care. Direct access to polyclinic specialists existed too. District doctors were trained as general internists, whose main task was to diagnose the disease and provide treatment. District doctors were supposed to co-operate closely with sub-specialists of narrower specialities. The nature of the work of district doctor, as well as of the whole health care system, was disease- and specialist-oriented.

Major health care reforms began in the 1990s. Until 1992,

the health care system was financed by the state budget. In 1992, a health insurance scheme was introduced in Estonia and this marked the beginning of a new period in health care. At the same time reorganization of the PHC system was introduced. In 1993, the first doctors with special education in primary care started their work as general practitioners (GPs). In January 1998, the regulation of the Ministry of Social Affairs on the improvement of PHC came into effect, which regulated requirements for primary care doctors and principles of financing the PHC as well as the gate-keeping function of primary care doctors. In addition to the gate-keeping function, the most important change for the population was the introduction of patients' list system for GPs. Every person was expected to choose their GP by registering on a patient list [1]. They could register personally at the doctor's office,

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at the registration desk of the polyclinic or, be registered by a family member. Being included on a GP list is believed to improve patient-doctor communication and continuity of care, which are essential prerequisites for quality assurance [2-4]. By the Estonian health care laws, primary medical care is guaranteed to every person. Therefore, those people who did not choose their primary care doctor by registering on the patient list themselves were included on a list according to their place of residence, or on the lists of those doctors whose patient lists were not completed.

Health care quality is described by attributes such as effectiveness, efficiency, optimality, legitimacy, equity and acceptability [5]. Acceptability describes conformity to the wishes, desires and expectations of patients. It hinges on various properties: accessibility, patient-practitioner relations, amenities, and patient's preferences regarding effects and costs of care. The concept of quality is closely related to these features. Acceptability is an adequate criterion with which to assess the quality of health care from the patient's point of view and is an indicator of how people evaluate the changes and present situation in a health care system [2,5].

Understanding patients' needs and expectations and perceiving their active participation is essential for PHC providers to improve patients' health [6]. Some studies about ambulatory patient satisfaction demonstrate that courtesy and sensitivity, clinical quality and safety, as well as attentiveness are essential for a patient to be satisfied with the care provided. Having enough information about patient's health problems, allowing sufficient time during the consultation, making patients feel free to talk about their problems, and assurance that the clinician did everything that should have been done in treating the patient, helps to increase the level of satisfaction [7-9]. The main problems regarding patient satisfaction have been reported to be issues related to communication, lack of interest in patient information, lack of consideration and impoliteness by medical staff [8,10-12].

The level of satisfaction and the reasons for dissatisfaction with PHC vary in different countries [13]. Some studies in European countries with long tradition of GP-based PHC systems have demonstrated that people prefer specialists [14, 15]. On the other hand, there are studies which indicate that people who are satisfied with their primary care doctor, especially older people, prefer to consult the primary care doctor first [16]. At the present time there is no indication that PHC patient satisfaction studies are being carried out in Eastern and Central European countries; there is little research in Estonia that includes patient satisfaction data. To find out opinions on the existing out-patient system of health care and about the future expectations on health care, the first population survey was conducted at the end of 1993 in Tartu [17]. The majority of respondents felt that the existing PHC system in polyclinics should be improved and great expectations were placed on GPs. Long waiting times in polyclinics, absence of appointment systems, unsatisfactory conditions at the polyclinics, the location of the polyclinics, the lack of a doctor who could deal with different problems simultaneously, and not enough attention paid by the medical

personnel were most frequently mentioned reasons for dissatisfaction with the system.

The aim of this study was to find out how Estonian people evaluate the changes in PHC, how they perceive acceptability (accessibility, patient-practitioner relations, amenities, and patient's preferences) of the PHC system, and to assess people's satisfaction with PHC doctors.

## Subjects and methods

### Sample and study design

In October 1998, a random sample of Estonian residents aged 15-74 years ( $n=997$ ) were interviewed personally by using structured questionnaires. The sample was formed by self-weighting: the proportional model of the total population aged 15-74 years, where all the respondents represent the equal number of people in the population, was used. A two-staged stratification was used to form the sample. First, the population was divided by territorial domicile into six strata, the size of the sample in each stratum was based on proportional division of the population. Then, two-staged selection was done in each stratum. The primary sampling units were settlements (towns, small towns, country towns and villages). The sampling points (63 in total) were chosen at random according to the size of the settlement (the number of residents who qualified for the survey's age group) on proportional probability bases. In each primary sampling unit, the secondary sampling units - individuals - were chosen. The face-to-face interviews were carried out by the interviewers of the marketing and social research company EMOR. To obtain a sample of the required size, 1895 contacts were made with the respondents. The interview was conducted in 997 cases. In 446 cases nobody was home during the two visits, in 166 cases the person who was home did not meet the criteria of the study (he/she was younger or older), and 286 persons refused to answer.

### Questionnaire and outcome measures

The questionnaire was devised by the research group at the University of Tartu. It included demographic data (sex, age, nationality, education, income, place of residence), self-assessment of health status and various aspects related to PHC: size of the PHC institution, method of registering on their patient list, preferences of doctors (PHC doctor or specialists), access to care (waiting time), perception of the changes in PHC, and overall satisfaction with GP. Ten questions focused on patient-practitioner relationships and amenities: perceived competence of physician, effectiveness of therapy prescribed, understanding the patient's problems, comprehensibility of explanations given by the physician, modern equipment, punctuality of the physician, cleanliness and comfort of the clinic, waiting time in the GP centre/clinic, ease of access by appointment, and location of the GP centre/clinic. The reliability of the questionnaire was tested with Cronbach's alpha (0.80).

For health status, three categories were used: (i) generally

good; (ii) normal (medical aid is sometimes needed); (iii) rather poor (to maintain work fitness, medical aid and medicine are often needed for chronic diseases). The size of the PHC institution was measured by three categories: (i) solo practice; (ii) small group practice ( $\leq 4$  GPs practising together); (iii) bigger health centre ( $> 4$  GPs)/polyclinic. Overall satisfaction with the PHC doctor was measured on a 4-point scale: very satisfied, quite satisfied, quite dissatisfied, very dissatisfied.

To assess patient-practitioner relationships and amenities, respondents were asked to evaluate how relevant these aspects were for them, and how satisfied they were with those aspects. For measuring the relevance of these items and satisfaction with them, a 7-point scale was used (1, not at all relevant/very dissatisfied; 7, very relevant/very satisfied). The dichotomization point of the 7-point scale for the regression analysis was between 5 and 6.

Respondents were grouped by their health status, age, sex, place of residence (capital, urban and rural population), and registration on the patient list. The differences between groups were tested using chi-squared tests. To estimate the relations between variables the Spearman correlation coefficient was used. The role of different factors in level of satisfaction with the PHC doctor was explained by logistic regression analysis. Two separate regression models were tested with different sets of variables (set I 'formal characteristics' and set II 'amenities and patient-doctor relationships'). For the statistical analysis the SPSS (Statistical Package for the Social Sciences) was used.

## Results

### Sample description, health status

The structure of interviewees by age, sex, nationality and place of residence is presented in Table 1. The sample is representative of the Estonian population.

Of the persons interviewed, 46% evaluated their health as generally good and 33% as normal (medical aid was sometimes needed) and 21% of the respondents evaluated their health status as poor (they needed often medical aid and medicines).

In October 1998 when the survey took place, 68% of the interviewed persons were registered on the patient list of a GP. The methods of registration on the patient list were ( $n = 675$ ): (i) registration on the patient list personally (at the GP office), 39%; (ii) registration on the patient list at reception of the polyclinic, 27%; (iii) registered by other persons or by the receptionist of the polyclinic, 34%.

### Evaluating the changes in PHC

During the previous 12 months, 25% of respondents had visited the district doctor, 52% had visited the GP and 48% of respondents had visited a specialist. Almost one-third of the persons interviewed did not have a contact with any physician during the previous 12 months.

Of the persons interviewed, 45% did not perceive any changes with the transition to the GP-based PHC system; most of them had not visited the primary care doctor

**Table 1** Characteristics of respondents by sex, age, nationality and place of residence in comparison with the total population of Estonia (aged 15–74 years)

	Sample <i>n</i> (%)	Number of total population aged 15–74 years (1 January 1998) <sup>1</sup> <i>n</i> (%)
Sex		
Male	470 (47)	515 436 (47)
Female	527 (53)	587 350 (53)
Age (years)		
15–24	191 (19)	207 751 (19)
25–34	184 (18)	204 541 (18)
35–49	285 (29)	312 276 (29)
50–64	221 (22)	244 575 (22)
65–74	116 (12)	133 647 (12)
Nationality		
Estonians	649 (65)	700 216 (64)
Non-Estonians	348 (35)	402 570 (36)
Place of residence		
Capital	310 (31)	325 591 (30)
Urban area	411 (41)	452 773 (41)
Rural area	275 (28)	324 422 (29)

<sup>1</sup>Source: Statistical Office of Estonia.

**Table 2** Variations of respondents' opinions about the changes in PHC according to being registered on the doctor's patient list (%)

Respondents' opinion about the changes in PHC	Registration in patient list	
	Yes ( <i>n</i> = 675)	No ( <i>n</i> = 321)
Situation in PHC had improved	27	15
No change	48	39
Situation in PHC has become worse	11	7
Do not have personal opinion	13	38
Did not answer	1	1

during the last 12 months. Nearly one-quarter (23%) of the respondents thought the situation in the PHC system had improved, but one-tenth of the respondents found the situation had become worse, and 22% of the respondents did not have a personal opinion. The changes were often perceived by those persons who were registered on the patient lists (Table 2), the differences of opinions were statistically significant ( $P < 0.0001$ ).

The evaluation of changes is related to the age of respondents too ( $r = -0.13$ ,  $P < 0.01$ ): younger people found

more often than the situation in the PHC system had improved.

There was a weak, but statistically significant correlation between evaluation of changes in PHC and size of PHC institution ( $r = -0.13$ ,  $P < 0.01$ ). When the GP/PHC doctor had a solo practice or was working in a small centre, the evaluation of the changes was more positive.

### **Acceptability (accessibility, patient's preferences, the patient-practitioner relations and amenities) of PHC system**

#### **(i) Accessibility**

Almost one-half of respondents (46%) reported that they were sufficiently informed about changes that go along with the transition to the GP-based PHC system. The same number of respondents stated that they were informed insufficiently, or that they did not have any information at all about the changes. The female respondents were informed somewhat better. There were significant differences between capital and other areas. More than one-half (57%) of the respondents from rural areas and 50% from urban areas (except the capital) said that they had enough information, but only 34% of respondents from the capital agreed that they were sufficiently informed about the changes in PHC. Respondents who were registered on the patient list were better informed: 56% thought that they had enough information. On the other hand only 26% of those who were not registered on the patient list had sufficient information. Respondents whose GP/PHC doctors had solo practices or practised in small centres were better informed of changes in PHC. There was a significant negative correlation between size of institution and level of information among the population ( $r = -0.14$ ,  $P < 0.01$ ).

According to the respondents, most of GPs/PHC doctors (65%) practised in polyclinics or bigger health centres (with more than four GPs together). GPs/PHC doctors used to practice in polyclinics mainly in the capital and in urban areas (82%); 17% of GPs/PHC doctors had small group practices (up to four GPs working together); 10% of GPs had solo practices, mostly in rural areas (31%); and 8% of the respondents did not know where their GP practices.

The waiting time for an appointment to see the primary care doctor was short for most respondents. The doctor usually admitted 59% of respondents on the same day that patients requested; 14% of respondents were admitted during 1–2 days; 2% of respondents during 3–4 days; and 23% of respondents did not know the length of waiting time. There were no significant differences between the regions.

#### **(ii) Preferences**

Almost one-half of respondents (49%) with health problems and complaints prefer to visit the GP or PHC doctor; 38% of respondents would like to consult the specialist first; and 12% of interviewed persons did not have a personal opinion. There were no significant differences in preferences observed between male and female respondents, or between age groups. Statistically significant differences were found by comparing

the respondents' preferences of applying to the doctor by place of residence (Table 3). Rural populations mostly prefer to visit the GP/PHC doctor at first, and approximately one-half of the urban population (excluding the capital) would prefer to visit the GP/PHC doctor first. In the capital, only one-third of respondents would prefer to consult the GP/PHC doctor first. The choice of doctors was influenced by whether the respondent had registered on the patient list or not: of those respondents who had registered on the patient list, 62% preferred to visit the GP/PHC doctor first, whereas 30% of them would like to consult a specialist first. Respondents who had not registered on the patient list more often prefer to go directly to the specialist (56%), and only 22% of them preferred to visit the GP/PHC doctor first. These differences are statistically significant ( $P < 0.0001$ ).

When their child gets ill or has health problems 44% of respondents usually go to the GP; 47% to the district paediatrician; and 3% to the specialist. Statistically significant differences ( $P < 0.0001$ ) were found between urban and rural areas (Table 3) as well as between age groups. Younger people are more likely visit the GP when their child becomes ill, older respondents are more likely take their child to the district paediatrician.

#### **(iii) Patient-practitioner relationships and amenities**

Four items described the patient-practitioner relationships and six items described the amenities. Table 4 shows the evaluation of relevance and satisfaction. Both the percentage of respondents who considered these items relevant, as well as were satisfied with them, was rather high. The respondents considered most relevant the aspects that described the relationships between doctor and patient. Amenities were considered less relevant except for location of the health centre/clinic.

### **Satisfaction with GP/PHC doctor**

One-quarter of the respondents (27%) were very satisfied; 41% quite satisfied with his/her GP/PHC doctor; 25% of respondents did not have an opinion; and 7% of respondents were not satisfied. There was no statistically significant difference between male and female and rural or urban respondents' degree of satisfaction, but there was a difference between age groups. Respondents aged 65 years and older were considerably more satisfied than younger people. Respondents who had registered on the patient lists were more satisfied with his/her doctor than respondents who did not register on the list (Table 5).

Respondents who were more informed about the changes in the PHC system were more satisfied with his/her doctor as well ( $r = 0.29$ ,  $P < 0.01$ ). A correlation was found between satisfaction with the GP/PHC doctor and positive evaluation of changes in the PHC system ( $r = 0.26$ ,  $P < 0.01$ ).

To explain the role of different factors in the model of satisfaction with the GP/PHC doctor logistic regression analysis was used. Altogether nine factors were included in the analysis: waiting time, income, age, education, place of residence, health status, type of practice (solo practice, small

**Table 3** Respondents preferences for first visit to the doctor for own illness and for their child's illness according to the place of residence (%)

	Preference for consulting in own illness ( <i>n</i> =997)		Preference for consulting in child's illness ( <i>n</i> =422) <sup>1</sup>	
	GP	Specialist	GP	District paediatrician
Capital <sup>2</sup>	32	56	17	73
Urban area (excluding capital)	52	35	49	44
Rural area <sup>2</sup>	65	23	64	24

<sup>1</sup>Only respondents with a child. <sup>2</sup>The differences between groups are statistically significant ( $P < 0.0001$ ).

**Table 4** Evaluation of relevance and satisfaction with various factors characterizing amenities and patient-practitioner relationships

	Very relevant (%)	Very satisfied (%)
Patient-doctor relationship		
Perceived competence of physician	86	50
Effectiveness of therapy prescribed	85	49
Understanding the patient problem	82	62
Comprehensibility of explanations given by physician	78	55
Amenities		
Modern equipment	73	29
Punctuality of physician	68	54
Cleanliness and comfort of the clinic	63	57
Waiting time in the GP centre/clinic	61	49
Ease of appointment access	63	59
Location of the GP centre/clinic	46	63

**Table 5** Level of overall satisfaction with the GP/PHC doctor among respondents according to registration on the patient list (%)

Level of satisfaction	Registration on the patient list	
	Yes ( <i>n</i> =675)	No ( <i>n</i> =321)
Very satisfied	32	16
Quite satisfied	45	34
Not satisfied	6	7
Do not have personal opinion	17	43

group practice, or in polyclinic), method of registration on the patient list (in doctor's office, in the registry of the polyclinic, registered by other person), and information about the changes in PHC. Only two factors were found to influence the overall satisfaction with the GP/PHC doctor: the method of registration on the patient list, and information about the changes in PHC system (Table 6). When the respondent had personally registered on the patient list the level of satisfaction was higher. Respondents who were more informed were more satisfied as well.

Statistically significant correlation was found between overall satisfaction with the doctor and satisfaction with all 10 factors which described amenities and patient-doctor relationships. The overall satisfaction correlated strongly with factors that described the patient-doctor relationship ( $r = 0.38-0.48$ ). Satisfaction with amenities had weaker correlation with overall satisfaction ( $r = 0.10-0.28$ ).

Overall satisfaction with the GP was also investigated using logistic regression. Altogether three factors were included in this model: (i) perceived competence of physician; (ii) comprehensibility of explanations given by physician; and (iii) cleanliness and comfort of the clinic (Table 6).

## Discussion

This study focused on the population's opinions about the changes which have taken place in the PHC system in Estonia since the beginning of 1998. In the PHC reform process the notable change was related to the introduction of the patient list and the right to choose one's own doctor. Another change was introduction of partial gate-keeping, which limited direct access to specialists.

Our study demonstrated that 10 months after the beginning of the PHC reform and introduction of the patient lists, a lot of people have registered with their GP. However, a lot of people have not yet perceived particular changes in PHC. The first reason may be that the period of the reorganization of PHC in Estonia has been quite short, and the second may be that they had visited a doctor more than 1 year earlier.

Table 6 Factors included in the model of the overall satisfaction with GP/PHC doctor: formal characteristics and amenities/patient-doctor relationship

Variable	B	SE	d.f.	P	R	Exp(B)	95%CI for Exp(B)
Information about the changes in PHC							
Sufficiently informed about the changes (basic level)	1		3	0.0000	0.2149		
Informed to some extent	-1.0953	0.2338	1	0.0000	-0.1508	0.3344	0.2115-0.5288
Informed insufficiently	-1.5481	0.2485	1	0.0000	-0.2048	0.2126	0.1307-0.3461
Not informed	-1.7938	0.3401	1	0.0000	-0.1716	0.1663	0.0854-0.3239
The way of registration on the patient list (the category 'personally registered' was chosen as the basic level)							
Registered at the registration desk or by a family member	-0.4536	0.1833	1	0.0133	-0.0685	0.6353	0.4435-0.3239
Perceived competence of physician	1.0872	0.3020	1	0.0003	0.1263	2.9660	1.6410-5.3607
Comprehensibility of explanations	0.8610	0.2881	1	0.0028	0.1005	2.3656	1.3449-4.1607
Cleanliness and comfort of the clinic	0.4835	0.2282	1	0.0341	0.0602	1.6217	1.0369-4.1607

Nevertheless, the present study showed that the evaluation of the changes might depend on: (i) respondent's age; (ii) size of the PHC institution; and (iii) registration on the patient list.

A lot of the GPs still work in the polyclinics or health centres, but when the chosen doctor worked in a smaller centre or had a solo practice, opinions were more positive and patients were better informed about the changes. In rural areas, where most primary care doctors practice individually or in small centres, the people were better informed about the changes than in urban areas. These findings suggest that in smaller institutions the contact, and thus, communication between patient and doctor is better. To be included on the list of a doctor of one's own choice should improve patient-doctor communication, continuity of care, more active participation of the patient in treatment process as well as patient's satisfaction with the care provided [2-4]. Two-thirds of the adult population in Estonia, who had chosen their personal doctor, were more satisfied with their doctor than unregistered respondents. They also had more information about the changes in PHC, and they found that the situation in PHC had improved more often than the unregistered persons did.

Access to PHC, which was measured by the length of waiting time for an outpatient appointment can be considered as good. More than one-half of respondents were admitted on the same day they requested or 1-2 days later. For example, in Finland, the waiting time for 19% of non-acute patients was longer than 2 weeks [18].

The first study about primary care patients' satisfaction in Estonia demonstrated that a lot of people's expectations were placed on GPs [17]. Five years later almost one-half of the respondents confirmed that they would prefer to visit the GP/PHC doctor first with their health problems, whereas 38% of the respondents would prefer the specialist first, mostly in the capital. When their child was ill, the respondents turned equally to the district paediatrician and to the GP.

The paediatrician was particularly preferred among respondents from the capital. Some previous studies about PHC patients' preferences have shown that patients who were living in larger urban areas prefer to consult the specialist first [15,16]. One of the reasons why inhabitants from the capital preferred to visit the specialists might be that the number of trained GPs in the capital is lower than in other regions in Estonia and most primary care doctors have not yet passed the special GP training (they practice as district internists and district paediatricians). This reason for preferring specialists has been reported in the literature as well [16]. Another reason for the preference of a specialist can be the fact that access to specialized medical aid in the capital is easier than in rural areas. For many years, the district paediatrician dealt with children's health problems, and as shown in our study, older people also consulted the paediatrician in case of their child's illness. On the other hand, younger people more often accept the GP as the appropriate doctor to deal with their child's health problems. Younger respondents demonstrated more positive attitudes to the PHC reform: they found often that the situation in PHC had improved; and they were more satisfied with their PHC doctor. The evaluation of PHC changes and level of information obtained depended on whether the respondent had registered on the patient list or not. Persons who had chosen their own doctor were more likely to visit the GP first than the specialist with their health problems.

A survey conducted in Estonia 5 years ago indicated that absence of amenities when visiting the doctor was often reported as a reason for dissatisfaction with PHC [17]. In general, at the present time, most respondents were satisfied with their primary care doctor, and those people agreed that the situation in the PHC system has improved as well. The results of the present study demonstrated that the factors related to patient-doctor communication were considered more important than amenities. Patient's evaluation of the doctor's competence, comprehensibility of explanations given



by the doctor, and cleanliness and comfort of the clinic were factors which significantly influenced degree of satisfaction. Some other patient satisfaction studies have demonstrated similar results [7–11]. In addition to the three factors above, higher levels of information about the changes in PHC and personal registration to the patient list promoted higher satisfaction with the primary care doctor as well.

Patients' opinions are an important tool in evaluation of health care systems. In the first year of the implementation of the PHC reform, this all-Estonian survey has given valuable information about the people's attitudes to the reform and the present situation. Their preferences of consulting the primary care doctor or specialist depend to a great extent on the number of well-trained GPs practising as well as on the availability of specialized medical care. When a person has chosen his/her own primary care doctor, he/she most likely prefers to consult their chosen doctor first. Personal choice of the primary care doctor, sufficient information about the current changes, and good patient-doctor relationships have an important role in developing satisfaction with the primary care doctor system.

On the other hand, the short transition period means that this is a preliminary evaluation of the reform. Many people have not yet perceived notable changes. Almost one-third of the persons interviewed had not had a contact with any physician during the previous 12 months, and their evaluation is based on public opinion, not on their personal experiences.

The results of this study demonstrated that there are a number of activities which should be implemented for successful PHC reform:

- (i) There is a need to continuously offer more information about the PHC reform at the national level. The essence of the GP-based PHC system should be explained, and particularly the importance of choosing one's own GP and registering on their patient list.
- (ii) GPs should know what are the important predictors of their patients' satisfaction. In the training program for GPs more attention should be paid to patient-practitioner communication and relationship.
- (iii) Primary care doctors might themselves pay more attention to their patients' opinions and introduce patient satisfaction studies in their practice group.

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**R. Kalda, M. Lember.**  
Choice of a personal physician — impact on patient satisfaction with care  
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# CHOICE OF A PERSONAL PHYSICIAN — IMPACT ON PATIENT SATISFACTION WITH CARE

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## ABSTRACT

**Objective** — To evaluate how choosing one's own primary care doctor affects patient satisfaction with primary health care.

**Population** — A random sample of Estonian adult population (N=997).

**Study design** — Cross-sectional study using a pre-categorised questionnaire which was compiled by the research group of the University of Tartu and the research provider EMOR.

**Results** — Altogether 68% of the respondents had been listed in their personal physician. Their overall satisfaction with the physician as well as satisfaction with several aspects of primary health care were significantly higher compared with those of unregistered respondents.

Although some other factors (practice size, patient age, health status) also influenced patient satisfaction, presence of a personal physician appeared the most important predictor of high satisfaction with physician's punctuality and understanding, effectiveness of prescribed therapy, clarity of explanations given by the physician as well as with overall satisfaction with the physician.

**Conclusion:** Personal doctor system had an important impact on patient satisfaction with different aspects of care.

**Key words:** list system, choice of personal physician, patient satisfaction

## **Introduction**

It is well documented that a patient list system guarantees better continuity of care, contributes to health promotion and illness prevention activities, as well as helps to avoid duplication of services and create efficient referrals (1). Among the characteristics of practices which might influence patient satisfaction with care are presence of a list system and practice size (2, 3). Continuity of care has also been shown to improve patient satisfaction (4, 5). Patients' perception of care presents increasing interest, particularly in a situation where major changes have occurred in health care system. Following fundamental changes in society in the countries of Central and Eastern Europe, remarkable reforms in health care were undertaken at the beginning of the 1990s. Most of these countries changed from state-budget-funded centralized systems to insurance based liberal fee-for-service payment systems (6). In the late 1990s, several of these countries have made attempts to introduce capitation payment system and patient lists in order to restrain soaring health care costs. During the last 7–8 years analogous changes have taken place in Estonian health care: changing of the funding system of health care from the state budget to the health care insurance fund in 1992, and moving from highly specialised medical providers to a primary care oriented system. Family medicine was seen as a possibility to build up a more effective and better coordinated health care system. At the centre of primary care reform were: 1) recognition of family medicine as a speciality with its own under- and postgraduate training programmes in 1993 2) change of the contracting and remuneration system of primary care doctors together with introduction of a list system for family doctors in 1998 (7). Patients were offered an opportunity to contact the physician directly to be entered in the list – this was seen as a tool for strengthening personal relationship with doctor. There is limited evidence concerning the effects these changes exert on patient satisfaction as an indicator of quality of care. It has been demonstrated that in a large centralized Health Maintenance Organisation, whose members reported having chosen their personal physician were substantially more satisfied with their physician than those who reported having been assigned (8). However, patients in different cultures and health care systems may have different views on several aspects of primary care, among them also on the possibility to see the same GP at each visit (9,10).

The aim of this study was: 1. to investigate whether having a personal physician affects patient satisfaction with different primary health care aspects 2. to compare satisfaction with primary health care in those who chose their doctor on their own initiative and in those who were directed to the list by the medical staff of a local polyclinic.

## **Method**

In October 1998, a representative sample (n=997) of the Estonian population aged 15–74 was investigated by using a questionnaire. The interviewer introduced the questionnaire to the respondents and completed it according to given answers. The questionnaire was compiled by a research group of the University of Tartu and the research provider EMOR, and it included questions about patient demographics, health status as well as about various aspects related to primary health care. Ten questions focused on satisfac-

tion with specific elements of care and one was about overall satisfaction with the physician. Patients rated satisfaction with each specific element on a 7-point scale (1= extremely dissatisfied, 7= extremely satisfied). Overall satisfaction was measured on a 4-point scale (very much satisfied, quite satisfied, not quite satisfied, very much dissatisfied). Patients were also asked whether they were registered with their personal doctor and how they chose their physician. Basing on answers we divided the patients into three groups: those who had chosen their doctor on their own initiative, those who had chosen the doctor at reception and those who had been registered by medical staff.

Data were analysed by using SPSS (Statistical Package for the Social Sciences). Chi-square test was used to compare the demographics, health status and satisfaction of the patients who had chosen their personal doctor and of those who had not. Categorical survey responses were dichotomized (eg. extremely satisfied/very much satisfied versus all other responses on a 7- point satisfaction scale). A multiple logistic regression model was used to predict the reporting of high satisfaction with care.

## Results

The survey was completed by 997 patients. The sample represents the Estonian population (Table 1).

Of the respondents 68% (n= 675) were entered in the list of their personal physician. There existed some differences in demographics and health status between the patients who had chosen a personal family doctor and those who had not.

Patients who had registered with a personal doctor were more likely to be women or persons who considered their health status poorer compared with the others ( $p < 0.05$  by Chi-square test). More than 3/4 of the urban population and 4/5 of the rural population had registered with their personal family doctor versus less than half of the population of the capital ( $p < 0.001$  by Chi-square test).

### *Satisfaction with primary health care*

The data of this study revealed that patients who had registered with their personal doctor were more satisfied with different aspects of primary care than those who had not (Table 2).

In the group of patients who had registered with a personal doctor, overall satisfaction with the physician, with waiting time at the family practice centre and with cleanliness and comfort of the clinic as well as satisfaction with simplicity of access to appointment, with physician's punctuality, understanding and clarity of explanations were significantly higher than in the other group.

The mode of patient registration was different in different practices: some had a possibility to contact the physician before registration, some chose the physician at reception, while others were assigned to the list. Patients who chose their physician on their own initiative rated their satisfaction significantly higher than the others. (Table 3).

Persons who had chosen their doctor on their own initiative were more likely to rate their satisfaction as "extremely satisfied" or "very much satisfied" concerning eight items of the listed eleven.

### *Predictors of satisfaction*

To analyse the relationship between dependent variables (high satisfaction level) and predictive factors (patient demographics, health status, practice type and presence of a personal family doctor), multiple logistic regression analysis was carried out (Table 4).

The results of the analysis indicated that presence of a personal family doctor was significantly predictive for high levels of satisfaction with location of practice, with cleanliness and comfort of practice, with physician's punctuality and understanding, with effectiveness of prescribed therapy, with clarity of physician's explanations as well as with overall satisfaction with the physician (Table 4). Solo practice was positively related to high satisfaction with some organisational aspects as well as with physician's punctuality and understanding. The other factors predictive of the high level of satisfaction were old age and good health status.

### **Discussion.**

In January 1998 a list system with mixed remuneration (capitation, fee-for-service, basic practice payment and bonuses) was established in Estonia. All people were asked to register with a regular physician: family doctor, general internist or pediatrician. The right to choose one's own physician and to contact the physician directly to be entered in the list was considered important. Our findings show that nine months later, 68% of the Estonian population reported having a personal physician. Although this figure is not yet comparable with the data of Denmark, UK or Portugal where 97–85% of the people are registered with the family doctor (11), it suggests that most Estonian citizens wish to receive care from a regular personal physician, who knows them and is familiar with their problems. Besides, in rural areas, where the personal doctor-patient relationship was much more expressed already in the past, almost all people had registered.

During this study a random sample of Estonian adult population was investigated. As the structure of the sample corresponded to the general structure of the Estonian population with respect to age, gender, nationality and territorial distribution, the results of this study can be regarded as representative.

The results of this study revealed that patients who had registered with their personal physician were more satisfied with some organisational aspects of primary care as well as with several aspects of patient-physician interaction compared with those who had not registered. Among the patients who had their own family doctor, those who had chosen the doctor on their own initiative were more satisfied both with the physician and several aspects of primary health care. The existence of such relationship between the choice of a physician and satisfaction confirms the results of Schmittziel *at al* (8) and can be explained in different ways. The patient can choose the physician who will particularly suit his/her needs; having made the choice the patient is less apt to complain; the patient has more confidence and trust in the physician whom he/she has selected. Interpersonal trust was found to be a prerequisite of many aspects of effective health care, including patients' acceptance of prescribed therapy or investigations (12, 13).

Although some other factors (practice size, patient age, health status) influenced patient satisfaction at a certain level, existence of a personal family doctor was still the

most important predictor for satisfaction with physician's punctuality and ability to understand, with effectiveness of therapy, clarity of explanations as well as with the quality of premises (comfort, location). It is known that the sense of responsibility of a physician for his/her patients is stronger in a personal doctor system than in an alternative system. Doctors who know their patients better are willing to make more effort (4). They pay more attention to patients' problems, and spend more time on listening and on explanations, which leads to increased patient satisfaction. Moreover, it seems that patients who are highly satisfied with their physician tend to give higher ratings also for the structural aspects of primary care (14).

Another important factor influencing patient satisfaction was the type of practice. Patients whose doctors were working in large polyclinics were less satisfied with premises and access to appointment as well as with some aspects of patient-physician interaction. This confirms the findings that the process of providing care, which in the traditional physician's office involves only a few persons with shared responsibilities, becomes fragmented in larger organisations. The aspects of care not involving the physician, such as registration, telephone advice, and ancillary diagnostic services, become dispersed throughout the organisation. Moreover, there is more staff in large practices compared with small ones, so that patients are less likely to encounter staff members familiar to them (3, 15).

Our study showed that older patients tend to express more satisfaction with respect to premises and waiting time in the clinic, which is in accord with the results of some other studies on patient satisfaction (4,16). Although the relationship between age and reported satisfaction is more complex, it is evident that older patients, who have more diseases and visit the doctor more frequently, concentrate more on care itself rather than to external factors. The results of the study performed in Israel have shown that senior patients, who had usually several health related as well as social problems, preferred the services of a personal family doctor rather than specialist care (17). The results of a three-year pilot project of a list system in Norway confirmed that collaboration with hospitals and specialists and coordination of services relating to the individual patient functions much more smoothly than before (18). All this is important in case of specific patients groups (disabled patients, patients with several problems etc.).

Measurement of patient satisfaction is a way to evaluate the outcome of care. The most important conclusion of our study is that there is a link between personal choice and patient satisfaction. It remains to be investigated whether the relationship is interdependent or not: whether higher satisfaction level with care determines patients' decision to choose one's own doctor personally, or whether personally chosen doctor results in higher satisfaction with care.

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Table 1. Structure of respondents

		n	%
<i>Gender</i>	Female	527	53
	Male	470	47
<i>Age</i>	15–24	191	19
	25–34	184	18
	35–49	285	29
	50–64	221	22
	65–74	116	12
<i>Nationality</i>	Estonians	649	65
	Non-Estonians	348	35
<i>Residential place</i>	Capital	310	31
	Urban area	411	41
	Rural area	275	28

Table 2. Comparison of satisfaction of patients who had chosen their personal doctor vs those who had not (% of patients who were extremely satisfied or very much satisfied with the following aspects of care)

Satisfaction item	Patients who had registered with a personal doctor (N=675)	Patients who had not registered with a personal doctor (N=321)
<i>1. Organisational aspects of care</i>		
Location of the family practice centre /clinic	72	64
Cleanliness and comfort of the clinic	71	58**
Availability of modern equipment	42	37
Simplicity of access to appointment	75	63**
Waiting time in the family practice centre /clinic	62	55
<i>2. Some aspects of patient-doctor interaction</i>		
Physician's punctuality	74	61**
Physician's ability to understand	81	64**
Physician's competence	71	63*
Effectiveness of prescribed therapy	67	58*
Clarity of physician's explanations	73	61**
<i>3. Overall satisfaction with physician</i>		
	77	50**

\*  $p < 0.05$ \*\*  $p < 0.01$ ;  $df=1$

Table 3. Patient satisfaction with different aspects of care according to the mode of registration (% of those who were extremely satisfied or very much satisfied with the following aspects of care).

Satisfaction item	Patients who had chosen their doctor on their own initiative (N=263)	Patients who had chosen their doctor on reception (N=182)	Patients who were assigned to a roster (N=230)
<i>1. Organisational aspects of care</i>			
Location of the family practice centre/clinic	79	65	69**
Cleanliness and comfort of the clinic	78	63	68**
Availability of modern equipment	49	40	35*
Simplicity of access to appointment	80	67	74**
Waiting time in the family practice centre/clinic	68	52	61**
<i>2. Some aspects of patient-doctor interaction</i>			
Physician's punctuality	77	72	72
Physician's ability to understand	83	81	78
Physician's competence	79	66	65**
Effectiveness of prescribed therapy	73	64	63
Clarity of physician's explanations	80	73	66**
<i>3. Overall satisfaction with physician</i>			
	84	71	72*

\*  $p < 0.05$

\*\*  $p < 0.01$ ;  $df=2$

Table 4. Multivariate logistic regression analysis of demographic factors, practice type, health status against satisfaction level: 0=less satisfied, 1=very satisfied (only statistically significant predictors are listed)

Item of satisfaction/predictor	Odds ratio (95% confidence interval)	p Value	B Estimate	S.E.
<b>1. Location of the family practice centre</b>				
*Absence of personal family doctor <sup>a</sup>	0.71 (0.52 to 0.98)	0.037	-0.34	0.16
<b>2. Cleanliness and comfort of the clinic</b>				
*Absence of personal family doctor	0.69 (0.50 to 0.96)	0.026	-0.37	0.17
*Practice type <sup>b</sup>				
Small (2-5 FD)	0.45 (0.22 to 0.89)	0.022	-0.81	0.35
Large (>5 FD)	0.33 (0.18 to 0.60)	0.0004	-1.12	0.31
*Age <sup>c</sup>				
25-34	1.07 (0.67 to 1.7)	0.79	0.06	0.24
35-49	1.17 (0.77 to 1.80)	0.47	0.16	0.22
50-64	1.68 (1.05 to 2.68)	0.03	0.52	0.24
65-74	2.25 (1.26 to 4.00)	0.006	0.81	0.29
<b>3. Availability of modern equipment</b>				
*Age				
25-34	0.59 (0.35 to 0.97)	0.04	-0.53	0.25
35-49	0.86 (0.56 to 1.34)	0.52	-0.15	0.22
50-64	1.21 (0.76 to 1.93)	0.42	0.19	0.24
65-74	1.64 (0.95 to 2.85)	0.078	0.50	0.28
<b>4. Simplicity of access to appointment</b>				
*Practice type				
Small (2-5 FD)	0.83 (0.40 to 1.72)	0.61	-0.19	0.37
Large (>5 FD)	0.35 (0.19 to 0.65)	0.0009	-1.04	0.32
<b>6. Physician's punctuality</b>				
*Absence of personal family doctor	0.62 (0.43 to 0.89)	0.009	-0.48	0.18
*Practice type				
Small (2-5 FD)	0.83 (0.40 to 1.69)	0.60	-0.19	0.37
Large (>5FD)	0.48 (0.26 to 0.89)	0.02	-0.74	0.32
<b>7. Physician's ability to understand</b>				
*Health status				
Fair	0.61 (0.41 to 0.90)	0.012	-0.49	0.19
Poor	0.92 (0.59 to 1.45)	0.71	-0.09	0.23
*Absence of personal family doctor	0.44 (0.31 to 0.64)	0.000	-0.81	0.19
*Practice size				
Small (2-5 FD)	0.47 (0.21 to 1.05)	0.065	-0.75	0.41
Large (>5 FD)	0.41 (0.20 to 0.85)	0.01	-0.89	0.37
<b>8. Physician's competence</b>				
* Health status				
Fair	0.59 (0.41 to 0.84)	0.004	-0.54	0.19
Poor	0.94 (0.61 to 1.44)	0.78	-0.06	0.22

Item of satisfaction/predictor	Odds ratio (95% confidence interval)	p Value	B Estimate	S.E.
<b>9. Effectiveness of prescribed therapy</b>				
* <i>Absence of personal family doctor</i>	0.67 (0.48 to 0.94)	0.02	-0.40	0.17
<b>10. Clarity of physician's explanations</b>				
* <i>Absence of personal family doctor</i>	0.54 (0.38 to 0.75)	0.0003	-0.62	0.17
<b>11. Overall satisfaction with physician</b>				
* <i>Absence of personal family doctor</i>	0.63 (0.43 to 0.92)	0.037	-0.34	0.16

Coded as:

<sup>a</sup> baseline category: presence of personal family doctor

<sup>b</sup> baseline category: solo practice

<sup>c</sup> baseline category: 15–24 years

<sup>d</sup> baseline category: good health

# CURRICULUM VITAE

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Born: April 16, 1965 in Antsla, Estonia  
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1972–1983 Vastseliina Secondary School  
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1989–1990 Internship in internal diseases at Tõnismäe Hospital  
1994–1995 Internship at Maarjamõisa Hospital  
1995–1999 Postgraduate student at the Department of Polyclinic and Family Medicine, University of Tartu

### *Special courses*

1996 Training in family medicine, Washington  
1997 Training in family medicine, Turku  
1999 Introductory course in research methodology in family medicine/general practice, Budapest  
2000 Advanced course in research methodology in family medicine/general practice, Ljubljana  
2000 Course for teachers of family medicine: How to teach prevention, Paris, l' Ecole de Riom

### *Professional employment*

1999–2000 Researcher at the department of Polyclinic and Family Medicine, University of Tartu  
2000– Assistant at the Department of Polyclinic and Family Medicine, University of Tartu  
2000– Family doctor at MTÜ Ülikooli Perearstikeskus  
2000– Researcher at the Department of Internal Medicine

*Scientific work*

Research fields: Development of family medicine in Estonia, including family doctors motivation and job satisfaction, population satisfaction with primary health care, family doctors' work quality.

8 scientific publications, 27 presentations at international conferences.

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Estonian Society of Family Doctors, board member

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### *Erialane täiendus*

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1995 Peremeditsiinialane täiendus Turus  
1999 Uurimistöö meetodika peremeditsiinis, sissejuhatav kursus  
Budapestis  
2000 Uurimistöö meetodika peremeditsiinis, jätkukursus Ljubljanas  
2000 Preventsiooni õpetamisest peremeditsiinis, kursus peremedit-  
siini õpetajatele Pariisis

### *Erialane teenistuskäik*

1999–2000 TÜ polikliiniku ja perearstiteaduse õppetooli teadur  
2000– TÜ polikliiniku ja perearstiteaduse õppetooli assistent  
2000– TÜ sisekliiniku teadur  
2000– MTÜ Ülikooli perearstikeskuse perearst



### *Teadustegevus*

Peamiseks uurimisvaldkonnaks on esmatasandi arstiabi analüüs, sealhulgas perearstide tööd ja tööga rahulolu mõjutavate faktorite uurimine, perearsti töö kvaliteedi analüüs ning Eesti elanike esmatasandi arstiabiga rahulolu uuring. Ilmunud kaheksa teadusartiklit, 27 ettekannet rahvusvahelistel konverentsidel.

### *Erialaorganisatsioonid*

Eesti Perearstide Selts, juhatuse liige  
EGPRW (Euroopa esmatasandi uurimistööga tegeleva ühenduse) liige

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