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The milestones of reforming primary health care in Estonia

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The Milestones of Reforming Primary Health Care in Estonia

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Lancet Global Health Commission on Financing Primary Health Care

The Lancet Global Health Commission on Financing Primary Health Care (2020 – 2022) is committed to drawing on robust, evidence-based knowledge to generate useful findings and actionable recommendations to inform decisions made by governments and partners that shape the effective financing of primary health care. Our work is focused on enhancing, protecting and enabling the appropriate resourcing of primary health care as a critical engine for the achievement of universal health coverage.

Country case studies

The Commission organised 10 case studies. Each country lead consultant and team undertook a scoping review to identify 'hot topics' in the financing of PHC in the respective countries. The teams then chose a 'deep dive' topic on which to undertake primary research. The 10 case studies were undertaken in: Brazil, Chile, China, Estonia, Ethiopia, Finland, Ghana, India, New Zealand and the Philippines.

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Executive summary

Estonia has been hailed for its successful health system reforms since the early 1990s. One of the most influential parts of the reforms has been the implementation of a primary health care (PHC) system centred on family medicine.

Despite the fact that Estonia has a fairly young PHC system, it successfully implemented a new family medicine speciality and training, new organizational structures of private practitioners, user choice of family physicians, new payment methods, service contracts for family physicians, broader scope of services and several initiatives to improve quality of care supported by innovative e-health solutions. All these changes have been well institutionalized.

The driving factors behind the strong PHC system in Estonia are:

- maintaining the same targets and not changing policy objectives during the reform process;
- using financial support from donors to achieve predefined health system targets;
- implementing comprehensive capacity building strategies;
- using financial incentives to drive additional organizational change;
- focusing on improving quality with the support of digitalization.

This case study aims to describe the key steps that led to PHC reform, and the most important accelerators and barriers to the reform itself. It also presents developments following the reform up to the current challenges that the system faces. The chapter on impact assessment includes the most relevant statistics on PHC and funding developments indicating increased patient satisfaction, service utilisation and funding for primary care. Considering Estonia's PHC reforms over the past 30 years, five key lessons have been depicted. The case study was compiled based on literature research, qualitative interviews with stakeholders and data analysis.

1. Country context

Estonia is a high-income country with 1.3 million people and an aging population (1). It is a parliamentary republic, which gained independence in 1918. In 1940, the country was occupied by the Union of Soviet Socialist Republics. Independence was restored in 1991 when radical economic reforms started to take place. Since then, the reforms have brought consistent economic growth, temporarily interrupted by the 2008 economic crisis and the current COVID-19 related crises. Estonia was a lower-middle income country from 1994 to 1996, but since 2007, economic growth increased GDP enough for it to be recognized as high-income country (2)[1]. Estonia joined the European Union (EU) and the North Atlantic Treaty Organization (NATO) in 2004, and the Organization for Economic Co-operation and Development (OECD) in 2010. In 2019, Estonia's GDP was 31 billion and 23,723 per capita in current USD (3).

In 1940, Soviet occupation interrupted initial development of the health system and led to the introduction of the Soviet Semashko system. Healthcare was funded from the state budget and directed by the government through central planning (4). The new government launched several significant reforms soon after regaining independence including the establishment of a national health insurance fund (EHIF) in 1991, financed through a 13 percent wage tax, which now accounts for two-thirds of all health expenditure. Other reforms include decentralizing the responsibility for health service delivery; reducing hospital bed capacity; and initiating reforms to strengthen PHC. The reforms were undertaken partly in response to the changing needs of the Estonian population and - given the state of the economy - partly in response to concerns about financial sustainability. Despite the lack of resources, the most significant health system reforms were initiated during the period when Estonia was still a middle-income country.

Today, the Estonian health system is hailed for achieving good outcomes at low costs. Estonia attains health outcomes at levels similar to other high-income countries (life expectancy at 78.82 years in 2019 (5)), but spends significantly less on average (6.69 percent versus 8 percent of GDP in 2018 (5,6)). The dominant source of health financing is public, constituting approximately three-quarters of total health expenditures. Out-of-pocket expenditures form approximately 24 percent of total health expenditures (5).

Despite the health system's strong performance, the underfunding of health services has led Estonia to have the highest self-reported unmet health care needs in the EU, affecting individuals across income groups. Waiting times for specialist care are the main cause for the high level of unmet need (7). This indicates a need for deeper reforms to strengthen PHC to meet the needs of an aging population.

[1] According to World Bank country classification

2. Three phases of the PHC reform in Estonia

This chapter summarizes a timeline of PHC reforms in Estonia. It highlights the main facilitators and barriers to reforming the healthcare system from a disease specific and highly specialist centred system to a PHC centred system (see also Annex 1. PHC milestones). Three different phases of PHC reforms are defined. Firstly, the impact of the pre-reform period is described by highlighting the most important factors leading to the major reform in 1997. Secondly, the concept of the reform is introduced. Thirdly, the developments following the reform, and in recent years in PHC tackling the current health system challenges, are summarized.

2.1 The time before PHC reform 1990 to 1996

This subchapter is divided into three main reform drivers in the 1990s. Firstly, it describes the structural changes including the introduction of the health insurance system in 1992 and adopting the 1994 Health Service Organizational Act. Secondly, it focuses on the education and training programs that were introduced. Lastly, it describes the role of development partners in the reform process.

2.1.1 Health system reforms: laying the groundwork

Estonia had a tradition of general practice during the first period of independence from 1918 to 1940. During the Soviet period, an excessive hospital network was developed and polyclinics, comprising various specialists, were introduced into PHC. Although district doctors were supposed to be the first point of contact with the health system, patients were able to access specialists directly at polyclinics. The nature of the healthcare system was disease- and specialist-oriented, with district doctors mostly acting as gatekeepers. The polyclinics and village clinics were owned by the municipalities. Any medical school graduate could work in a health centre without additional specialist training. Average earnings among district doctors, paediatricians and nurses were low compared to earnings among specialists (8,9). In addition, the modest equipment that district doctors had at their disposal was inadequate to meet PHC needs (10).

Even before regaining independence, there was growing consensus to reform the healthcare system and improve the health of the population. This provided an opportunity for the development of the PHC system. In the early 1990s, the country was in the process of major economic reforms which evaded the attention of politicians and the wider public. Key informants have stated that health was not very politicized then, which allowed "under-the-radar" developments until the very late stages of the reform when it was already difficult to stop (11).

Besides the political window of opportunity, health system financing reforms played a key role in making it possible to initiate a transition towards a PHC centred health system. Preparations for health financing reforms started in Estonia in the late 1980s when more opportunities for local decision-making were arising within the Soviet Union (12). These were mostly driven by medical professionals and healthcare providers who were

interested in developing a sustainable financing system that would guarantee stable, earmarked funding for health. By that time, plans were underway to structure the economy and the social insurance system, earmarking 13% of social tax on labour to health. This generated more funding for health than had previously been available.

Reforms began in 1991 with the establishment of a social health insurance model, where funds were collected through earmarked taxes instead of the state budget. The Health Insurance Act established the health insurance system and its basic principles have remained the same until today, with a contribution rate of 13% of salary or earnings. This act replaced the Soviet-style health system with a mandatory and universal system of health insurance administered by regionally organized, non-competing sickness funds. The first draft of this act was prepared in 1989 and approved in the parliament before political independence had been achieved. In 1994, some changes were made to the legislation to centralise planning and organisation. At that time, the health system financing, based on labour tax, created enough stability in the funding system to support the start of major healthcare reforms (13,14).

In 1992, medical staff lost their civil service status and began to work under private labour regulations. The hospital network capacity was restructured and decreased substantially in the first half of the 1990s. In 1991, Estonia had about 120 hospitals with 18,000 beds. Since then, the number of hospitals and beds has fallen dramatically. By 2001, there were 67 hospitals with about 9,100 beds. The process resulted in a Hospital Master Plan, commissioned by the Ministry of Social Affairs (MoSA/The Ministry). An international tender was prepared to develop the plan, which was won by a Swedish consultancy and published in April 2000. The Master Plan set targets for the optimal number of acute hospitals and beds be further reduced to 21 acute hospitals and 2 acute beds per 1,000 population. In spite of negative publicity surrounding the plan, the MoSA used it as a basis for further discussions with local politicians and provider associations. For example, it enabled the MoSA and Tallinn Municipality to restructure previously separate smaller secondary and tertiary hospitals and polyclinics into four hospital management networks. The specialist associations were asked to evaluate the plan and to develop their own specialist plans. After a series of consultations and some compromises, a milder version of the original Hospital Master Plan was approved by the government in April 2003. This version envisaged 21 hospitals (rather than 15) being eligible for long-term contracts with the EHIF and state investment. The approved plan, together with the specialist association assessments and development plans, were taken into account in developing criteria for hospital licensing and for regulating the types of services that hospitals at different levels were allowed to provide (13).

Also in the early 1990s, the health services financing system was changed from line-item budget-based funding, where hospitals were paid according to bed count and how well they could justify the investment needs to Ministry, to a fee-for-service (FFS) system. Hospitals were paid on the basis of "bed days" (cost per inpatient day). The costing and service utilization data was collected by the EHIF and used to calculate rates for services. The FFS system naturally encouraged hospitals to over provide services (15). Consequently, the system was altered in the mid 1990s whereby a small budget for a "preparedness fee" was introduced to hospitals. However, the majority of the services remained financed on a FFS basis. Discussions were also held on implementing Diagnostic Related Groups (DRG) as a mechanism for financing inpatient care. The use of a FFS financing system created the

need to look for more efficient ways to finance health services. Nevertheless, up until today, the FFS system is used for most secondary and tertiary care in combination with DRGs and a small share for "preparedness fee".

The Health Services Organization Act was adopted in 1994, laying the foundation for the new organizational structure. This act regulated the responsibilities at different administrative levels, decentralizing the planning and organization of primary and secondary care to the municipal level. It also triggered a process of transferring ownership of health care providers from the state to municipalities. It set out the responsibilities of the state and municipalities for funding maintenance and capital. However, it has been assessed that the Act remained superficial and the system it established was too diffuse, with a poorly specified system of regulation and licensing (13). During the restructuring process, challenges arose in reorienting the highly specialist centred system as a basis to introduce family medicine.(16)

Additional attempts to introduce more detailed regulation of primary care were made by family doctors. The Primary Care Act was prepared from 1993 to 1995 by family doctors, stipulating the financial and organizational responsibilities, functions and rights of the various stakeholders involved in delivering PHC. However, this was never presented to parliament because the justification to rise PHC above all other specialities with its own law was not acceptable at that time. PHC reform was eventually launched through two ministerial decrees describing requirements for equipment and a job description for family doctors (13). The preparation of these documents officially began in 1997 when a working group of The Estonian Association of Family Doctors and Ministry was compiled to establish national standards for practice equipment for family medicine. Previous studies on practice equipment, and a job description defining basic as well as optional tasks for family doctors, were used as a basis. (10).

2.1.2 Training of family doctors

A peculiarity of a small country is that all medical doctors in Estonia graduate from the same institution – the University of Tartu. Thus, there is high interpersonal "connectivity" in the medical community. The support of the university, the single training institution with a progressive orientation, in a small and relatively homogenous country, was the basis of the health system reform. Having the required competence and motivated staff, the university became the logical and valued implementing body for rolling out PHC reforms (17). Furthermore, key individuals played a major role in driving change within the University of Tartu, by championing the concept of PHC and the need for health system restructuring. This led to the changes in medical training and thereafter the initiation of PHC reform (11,18).

Reorganization of the PHC system started in the early 1990s and retraining courses for working doctors were developed in 1991. The content and organization of the 2-year in-service courses were discussed with Finnish colleagues, who also participated as lecturers in the initial years. The courses aimed to retrain the medical doctors to practice family medicine. The start was slow and only 30 doctors who had worked as ward doctors or paediatricians registered for the first course. Despite that, these progressive doctors immediately founded the Estonian Association of Family Doctors in 1991 (16,17).

The early establishment of a strong Association supported the whole process, bringing together champions to drive the reforms and build partnerships with international associations and programs. Estonia's proximity to Scandinavia meant it had widespread exposure to Western media and values, even during the Soviet period. The multiple observation visits that Estonian health professionals and politicians made to the progressive health systems of other countries (e.g., Finland, Netherlands) also had a strong influence on the direction and pace of system change. Estonia shares certain cultural expectations with other Scandinavian countries, including relatively transparent and evidence-based decision-making (18).

Influenced by other western countries, the Faculty of Medicine supported the establishment of family medicine as an academic speciality, and in 1992 a professorship and department of family medicine were established. It was defined that the professorship of family medicine was not, as previously assumed, merely the mechanical sum of several disciplines (internal medicine, paediatric diseases, gynaecological diseases, nervous diseases etc), but was instead a medical specialty with its own specifics (19). Residency training programs were renewed for all other specialities and were compiled in a manner that took the role of family medicine into account.

Setting up a training program for family medicine played an influential role because it introduced the concept that family medicine and having a personal family doctor for the whole life course, is a virtue. Without additional training programs and just directing the district doctors to work independently from the polyclinics, there would not have been a critical mass of newly specialised family doctors to adopt the PHC system.

The ability to conduct research in family medicine is considered one of the main success factors in introducing the speciality to the country (8,16,20). Several research projects were initiated and played an important role in implementing and assessing PHC reforms. Studies on the organizational aspects of family medicine and patient satisfaction were carried out in the early 1990s, indicating the need for reform. For example, a study in 1993 aimed to assess patient satisfaction with the existing out-patient healthcare systems. The majority of the survey participants felt that the existing PHC polyclinics should be improved, and high expectations were placed on family doctors. Long waiting times, the absence of appointment systems, unsatisfactory conditions at the polyclinics, the location of the polyclinics, the lack of doctors who could deal with different problems simultaneously, and insufficient attention paid by medical staff towards their patients, highlighted a desperate need for reforms at the PHC level.(21)

Nevertheless, the initial creation of the specialty was a challenge for the leaders of family medicine, who had no previous experience. The bold decision of the Faculty of Medicine differed from the notion of creating a specialty prevalent in many other countries, and the corresponding academic specialty, e.g., undergraduate teaching at university, did not yet exist in many European countries at that time. The lack of research in family medicine that would have met the academic requirements, meant that professorships in family medicine were often not opened (16,17).

Despite the challenges, family medicine became a priority specialty in Estonia. It also began to be part of the basic education program for all medical students (it was added to

the curricula of medical students' in the second and sixth years), and thus all doctors who graduated with a medical degree needed to study the basics of family medicine (16). The residency and doctoral programs in family medicine followed. Family medicine was designated a medical specialty in 1993, and a new three-year postgraduate training program was set up. When creating the new specialty, an attempt was made to follow international examples, and the lecturers of the new institute and the family doctors acquiring the specialty made visits to the countries with world-famous family medicine in Finland, UK and the Netherlands (17). The programs for undergraduate, residency, doctoral studies and retraining courses were evaluated by international experts during 1993, 1994 and 1995 World Bank missions. The creation of a "centre of excellence" in family medicine, with robust training and research functions, as well as links to similar international centres, helped to build legitimacy and give family medicine equal status to other medical specialties (17).

In the mid 1990s, some of the frontiers of the reform started to practice family medicine outside of the polyclinics as self-employed doctors. They were supported by the progressive Tartu city council. Already at the start of the pilot program, the long-term aim was to cover Estonia as a whole with a network of family doctor centres close to the patients' homes (22).

2.1.3 The role of development partners

As in most middle-income countries, the input of foreign organizations was a big supporting factor. The World Organization of Family Doctors supported family medicine in many countries, launching projects between countries from Eastern and Western Europe. For Estonia, cooperation between the universities of Tartu, Turku and Tampere (Finland) served as an important partnership (13).

In the 1990s, Estonia also took two loans from the World Bank. The first loan in 1992 included a health care component of US $3 million, which was used to buy essential drugs and high-technology hospital equipment. A second loan from the World Bank was received in 1995 to support health care reforms. The total amount of US $18 million was mainly invested in a new building for the University of Tartu Faculty of Medicine, was supplemented by bilateral and multilateral donor-financed development programmes and state budget resources, within the framework of the overall World Bank Estonia Health Project. It has been assessed that supporting the overall health care reforms was important in three ways. First, the project combined existing initiatives, such as the introduction of health insurance and the retraining of family doctors, into a general health sector reform framework. One of the main emphasis of the project was on supporting the development of an academic Department of Family Medicine and the Department of Public Health at the University of Tartu. The framework that was developed to support ongoing reforms helped to provide oversight of the various reform agendas, and to create an objective-oriented management and accountability structure for health care reform within the Ministry and other institutions involved in reform planning and implementation. Second, the World Bank loan helped to ensure government commitment to health care reform at a times when there was limited political will to proceed with reforms. Third, having an overall framework for reform helped to coordinate the activities of other donors and projects (13). The success of the World Bank Estonia Health Project has been widely

recognized. In Estonia, the Bank was able to bring appropriate international experience and high-quality expertise and to act as an "honest broker" employing highly respected local experts. According to key informants, the success of this cooperation also set in concrete the policy aims, that were already developed but needed financial support (18).

Since Estonia had already expressed an interest in joining the EU in the early 1990s, the European Commission (EC) also supported Estonia's progress towards improving its public health. Since the mid-1990s, the EU accession process influenced policy and development priorities in all sectors including health. Harmonization of legislation and procedures with those of the European Union was given priority in all legislative developments, drawing increasing attention to public health and occupational health and safety issues (13). The overall objective in the collaboration with the EU was that "Estonia has in the year 2000 a modern, effective and sustainable health sector, which provides the best possible service to the population with at the same time efficient allocation of resources, and which comply with European Union regulations". For this, the EC provided support in the form of international consultants working closely with the ministry at their premises. Additional funding and/or technical support was provided to conduct study tours, training, procurement of equipment and compiling several policy working groups and meetings (23).

The World Health Organization (WHO) also played a key role in raising the profile of public health. In 1996, the Estonian Government accepted the principles contained in the Ljubljana Charter (24), developed by the WHO on reforming health care. The Green Paper of Estonian Health care stated that the Government was committed to implementing the principles of the Charter, where it is stated that, "health care systems need to be oriented toward primary health care." In addition, the Government also committed to the WHO strategy document called "Targets for health for all". The Government accepted the targets because it wished to improve the health status of everyone and committed to work towards the recommended targets (15). WHO Euro provided continuous consultancy to Estonia throughout the planning of health care reforms and also primary care reform.

To summarise, the pre-reform era can be seen as the time to learn from the western world and build capacity within the country. Being a relatively small and homogeneous country allowed the single teaching institution to start shifting the mindset of the healthcare system and teach the concept of family medicine. This, aligned with a supportive political and economic environment and stable funding directed to healthcare system, initiated the step to reintroduce PHC.

2.2 PHC reform from 1997 to 2003

PHC reform started in 1997 when the MoSA issued two regulations: the regulation of the Ministry on the improvement of PHC, and the regulation of the Ministry on the task description and new contracts for family doctors (13). The final step to make the reform official was triggered when there was a critical mass of family doctors working independently. There was a need to establish a system that defined each family physician's service and patient list and an independent funding mechanism that gave more independence to providers.

Therefore, the Ministry formulated the aims of PHC reform as follows (25):

1. An effectively operating PHC system should be developed in Estonia by 2003 (a 5-year transition period was defined).
2. The reformed healthcare system should be accessible in residential areas, ensure continuity of medical care, and be implemented by well-educated and skilled family doctors who are committed to, and accountable for, their practice.
3. Management and functioning of the PHC system should follow common principles all across Estonia.
4. The reorganized PHC should pivot around family doctors who should meet most of the primary care needs of the population, co-coordinate care and operate as gatekeepers, referring patients to higher levels of the health system when necessary.

The basic tasks for family doctors were as follows:

1. Create a list system so that the population could register with a family doctor.
2. Account the PHC doctor an independent contractor status.
3. Introduce a combined payment system for PHC doctors.
4. Introduce a partial gate keeping system.

Implementing these changes through Ministry level acts enabled the initiation of reform without the need for Parliamentary debate and approval, which might have been influenced by large polyclinics and specialist care providers (11).

By that time, Estonia had developed a health governance system that was able to uphold the necessary leadership to go through with the reform. Although the MoSA still needed continuous support by the championing family doctors and from international organizations, the main policy objectives to be achieved with the PHC reform were established within the Ministry, who took responsibility of the reform's success. There were also changes made in EHIF management to ensure sufficient support to the reform aims. Good co-ordination between policy and operational level ensured that guidelines and a set of minimum requirements for facilities were ready to be adopted and acceptable to family doctors. The EHIF was tasked with developing a contracting, patient registry and payment system that would support the policy objectives. Initially there was some reluctance to trust individual PHC providers and the EHIF held back funds, but ultimately, it was understood that the financing system would be important for motivating PHC providers to go along with the reform. So EHIF played a key role in attracting family doctors to start work as single practitioners.

Planning, in terms of number and distribution of primary care providers, was initially devolved to municipalities. Since the municipalities previously owned the polyclinics and employed the formal district doctors, especially in more rural areas, there was already well-established communication between the new PHC providers and municipalities. However, problems arose from the fact that some functions had been decentralized to levels that were unable to ensure efficient performance. Most municipalities were too small and lacked sufficient financial resources to manage the process. Therefore, in 2000 the planning and supervision of primary care was moved from the municipal to the county level. Thereafter, responsibility for primary care planning was shared by the Ministry at the national and county levels. The Ministry regulated the overall number of family doctors per

county based on population numbers and geographical density. The county governor planned the division of geographical areas within the county. Every family doctor had a defined service area (mostly an area of local government), determined by the county governor, and maintained a patient list (13). Therefore, municipalities and country governments played a key role in the PHC reform and supported or hampered the process.

From 1997, people were expected to register with their PHC provider: a family doctor, general internist or paediatrician. A new system was created for the PHC providers to gather the applications of registering people and send this information to EHIF, who used the information for payments. All registered persons had the right to re-register on another list during October of each year. The place and procedure for re-registration was determined by local municipalities. In the case of changing residence, it was also possible to change provider outside of the regular annual timeframe. The family doctor would start receiving capitation for a new patient the following quarter of the year. The average list size was around 1,780 (1,900 +/-400) and the initial planned number of total patient lists was 807 (13). Soon after the reform in 2001, the maximum list size was reduced to 1,600±400, because it became clear that the workload of family doctors was excessive. It evidently showed that every step of planning needed analysing in order to introduce necessary and timely corrections (26).

The right of patients to choose a provider ensured competition among providers to attract patients. Administrative assignment was only used if patients had not made a choice. Naturally, the registration process proceeded at a different pace in different regions in the country: in some cases, municipalities or county governors themselves registered patients who had not made a choice, but the patients were later allowed to change the registration. Assignment of patients to a healthcare provider was conducted on the basis of patients' place of residence or availability at the nearest doctor's patient list (9). EHIF managed the patient lists and used this as a basis for the payments.

In 1998 family doctors started to work as private practitioners contracted by the EHIF. The family doctors were financially separated from the polyclinics who were not allowed to provide primary care. The family doctors could only merge with other companies providing PHC, and they could not be partners or shareholders of companies providing specialized medical care and vice versa. Doctors that were eligible for the new type of contract included doctors who had passed specialist training and received a certificate and district internists and paediatricians that had completed specialized training in family medicine through the retraining program by 2003 (13). This step was a part of the policy to separate family doctors from the polyclinics. The contract with the EHIF was used as a financial incentive.

Certainly, family doctors had reservations towards independent contracting, but many of them recognized the potential of promoting the development of PHC. Self-management and a change in status from an employee to an employer meant that doctors had new responsibilities, for example in meeting standards and requirements, which previously had been the role of municipalities (9). Organizing one's own work and entrepreneurship were also new qualities needed from doctors. Professionally, doctors had to adapt to a much broader arena of patients' problems as the referral routes became more complex. According to their job description, family doctors needed to provide general,

comprehensive, continuous, and coordinated care. During the transition period from the previous system, children's health also gradually became the task of family doctors. A study conducted in the late 1990s indicated that 80% of newly qualified doctors started to work according to the new family doctors job description. The main motivating factors included increased freedom, better income, the ability to work independently and better working conditions (27,28).

The new contractual arrangement was combined with a new payment scheme involving capitation, FFS, basic allowance and additional allowances, and bonuses. It was assumed that the new combined funding system of family doctors would be more efficient than the previous FFS system. As a middle-income country with GDP per capita equivalent to a half or one third that of economically advanced nations, accompanied by low health spending as a proportion of GDP, Estonia was forced to cope with a tight budget. Therefore, efficiency in using health resources become more and more important (29).

Initially, one of the strategic policy decisions was to keep the financing model simple. Considering the background of the doctors having mostly worked as employees, and not being used financial risk, the most modest form of integrated capitation was selected by incorporating an amount of funding to cover defined expenditures, such as laboratory tests and examinations (9). See the Box 1 for a detailed description of the five components in the payment scheme.

BOX 1. PAYMENT DESIGN FOR FAMILY DOCTORS

- Capitation fee was initially implemented in 1998 as a flat rate of 0,96 euro (15 EEK) as a monthly prepayment, but revised to be age adjusted in 1999 with 3 age groups (up to 2, 2 to 70, over 70 years). The capitation aimed to cover the costs for the salary of a family doctor and a nurse and a defined set of equipment and certain laboratory tests. It was paid based on the providers patient list characteristics. The capitation sums were re-calculated on quarterly basis.
- FFS payment is used for investigations and some procedures, according to defined list which is agreed with the Estonian Association of Family Doctors. Some of the services could be provided by family doctors themselves (minor surgical procedures), but most needed to be requested by the family doctors from a laboratory or medical institution (e.g. gastroscopy). The budget for FFS payments was capped as certain % out of total capitation amount. At the start of the reform this cap was agreed to be 18%. The FFS payments were transferred to the family doctor once a month upon receiving bills for services rendered.
- Basic allowance was a monthly prepayment to cover the costs of equipment, facility and transportation.
- Bonus payments were paid to providers having a specialist certificate.
- A lump sum to cover the expenses of family doctor in rural areas working 20-40 km and more than 40 km from nearest specialist care provider.

The decision to use a mixed payment model, combining capitation, FFS and a basic allowance, was based on practical, basic cost-calculation assumptions and international practice. However, the prices calculated for the capitation were not cost-based, meaning that no specific cost data was collected to calculate the rates at the beginning of the reform. Instead, EHIF used the cost data from polyclinics' ambulatory visits as a basis for initial capitation calculations. The cost of salaries and essential equipment was calculated into the capitation and basic allowance. The cost of laboratory tests was added to the FFS investigation fund. Family doctors were consulted on the rates, and the final rates were assessed to provide sufficient motivation for them sign the contract with EHIF.

Acquiring necessary equipment as listed in the national standard was considered essential, and the payment model aimed to cover the costs for equipment over two years (10). A study indicated that by the end of the transition period, the presence of necessary equipment in doctors' offices had significantly improved (29,30). This was certainly incentivised by the EHIF who at the early stages of the reform had collected invoice data from the family doctors about their expenditures on equipment.

Overall, the payment system for family doctors was designed to incentivise them to take more responsibility for diagnostic services and treatment, to provide continuity of care and

to compensate for the financial risks of caring for older people and working in more remote areas. The new system increased pressure on doctors to carry out basic laboratory tests themselves as the cost of these procedures was included in the capitation fee. EHIF used the opportunity to include some of the laboratory tests in the capitation to limit their over provision. Later, this was changed, and additional services were added to the fund. A family doctor's income started to depend mostly on the size of his or her patient list but also on performance, so that any money spent on unnecessary analyses and procedures would lower his or her income. Nevertheless, the small FFS component represented limited fundholding by the PHC providers.

Capitation-based funding was a big shift from the previous FFS payment mechanism where doctors and health care institutions benefited financially from a large number of investigations (9). The shift was made possible because it was introduced with a new organizational and contractual mechanism in PHC that increased freedom and independence for PHC providers. Funding for secondary care remained mostly on a FFS basis. It was hoped that the shift from FFS to a capitation-based model would lead to efficiency gains in the long term, and there was limited discussion about the disadvantages of capitation e.g., difficulties in collecting service utilization data.

By 2003, capitation made up around 73% of the total payment, 12% was for FFS and 12% was basic allowance. The distance allowance and bonus payments had a small role (3%) (see Figure 4 in chapter 3).

Direct access to some specialists remained (gynaecologists, dermato-venerologists, psychiatrists, ophthalmologists, specialists for tuberculosis, traumatologist/ surgeons in the case of traumas and dentists). The reason for this decision was that previous district doctors had no experience in these specialities, which created resistance to take them on board, e.g., psychiatric histories of patients were very much protected and mental health problems were not publicly recognized. There was also strong resistance among paediatricians. Children could be registered with a family doctor or a district paediatrician working with a family physician until 2003, but this opportunity was mainly used in the capital city of Tallinn and was finally abolished. Nevertheless, in some cases retrained family physicians started to deliver care for adults when their patients reached adulthood.

In addition to providing PHC services, family doctors also started to control access to specialist care. Patients needed to be referred from a family doctor to see most specialists or to be admitted as a non-emergency inpatient. Initially, there was considerable resistance to this requirement from both specialists and patients. However, resistance reduced as specialists better understood the role of the family doctor and after the government introduced regulations concerning specialist visits without family doctor referral. Followingly, patients had to pay out of pocket for any visits to specialists made without referral from their family doctor. The new system was intended to support the family doctors' gate-keeping role and ensure continuity of care (13).

On other aspects, the implementation of the reform did not go as smoothly as anticipated. The reform was carefully planned to start in more rural areas where opposition would be smaller and access to healthcare services, especially specialist care, was more limited. Rural district doctors were used to working alone in a single practice, and their way of working, other than financial arrangements, did not need to change much. Thus, the

reforms were introduced without substantial difficulty in most regions except Tallinn and the north-eastern part of the country where there was greater opposition from the municipality, polyclinics and some specialities. Speeding up the reform avoided strong opposition from polyclinic specialists. Only at the point where it reached North-Estonia and the capital, did PHC reform became a hot issue for political debate. Municipalities in the north-eastern region did not want to allow staff to work as independent contractors; however, by that time, it was already late because the majority of Estonia already had implemented substantial and irreversible changes (18). Despite the fact that large polyclinics employing salaried district doctors without patient lists continued to operate in Tallinn until 2002, the reforms were incrementally introduced in a series of pilot programs (20). The final transformation took place when the patients of the few remaining district paediatricians were allocated to family doctors. By the end of 2003, the EHIF had signed contracts with family doctors for every patient list (11,13).

A very strict policy was followed on separating PHC doctors from the polyclinics. The process was particularly difficult to some PHC doctors who were dismissed from the polyclinic premises and needed to find an opportunity to finance and build a completely new infrastructure. At the early stages of the reform, family doctors were instructed to start working as self-employed. Although in some locations the providers merged into bigger groups, they were all individually contracted. The majority of providers started to work as single practitioners or in groups of two, and it was only at the later stages of the reform, that the option of creating group practices was allowed.

Altogether, 979 doctors became family medicine specialists between 1991-2004, covering the needs of the population. The initially slow process of re-educating professionals as family doctors was accelerated by the introduction of a special fee for family doctors in 1998, and the provision of EHIF funds to family doctors with a diploma (see also Box 1). A robust family doctor cadre was created, with family medicine becoming the single largest medical specialty in Estonia and family doctors central to the restructuring of the health system (9,28).

The fact that during the transition period former district doctors could acquire a new profession in addition to their existing job, considered to be equivalent to their profession acquired during their residency, made the transition flexible. In most cases there was no opposition because no one lost their job. Furthermore, when completing the residency program or retraining program, the medical doctors gained a specialist recognition accompanied with an increase in salary. Such a transition method was used by several Central and Eastern European countries (Croatia, Romania, the Czech Republic, Latvia, Lithuania, etc.), following the example of Estonia (9).

The reform was supported by several evaluations which showed that primary care had become more relevant to the people and that satisfaction with the patient–doctor relationship and amenities had increased. Furthermore, there was not a fall in quality or access to services due to the high-quality compulsory training program for practicing family medicine, as well as well-developed requirements and job descriptions for family doctors. More details on the reform outcomes are summarized in the chapter 3. This naturally also built trust in the ongoing process. One of the key success factors was maintaining the initial target throughout the early years of the reform: despite a difficult political environment, the narrative of establishing a PHC centred system did not change.

Estonia was the first former Soviet Union country to reintroduce a PHC centred system (31). The reform was successful due to strong leadership, good co-ordination between policy and operational level and a practical approach, implementing simple solutions. A well targeted and coordinated approach to reform from changes in legislation; organizational restructuring; modifications to financing and provider payment systems; creation of incentives to enhance service delivery; and investment in human resource development were the key to a successful reform. Right strategic political decisions also helped to manage resistance from the opposition.

2.3 PHC reform of the next generation from 2004 to 2021

The PHC reform of the next generation aimed to conclude all the PHC developments following the initial reform. This subchapter begins by describing the developments and regulation of the PHC system, then it introduces the concept of PHC Centres. Next, it describes the most influential changes in the PHC funding model. In the years following the PHC reform, improving the quality of services became increasingly important. Furthermore, the developments in digitalization helped to support the increasing role of PHC. Finally, the chapter briefly summarises the important role of PHC providers in the current COVID-19 crises.

2.3.1 PHC organizational model

PHC reform was formally completed in 2003 when almost 80% of Estonians had their own family doctor whom they could choose, and family medicine gained the same legal status as other specialties. The following chapter describes most important landmarks for PHC in Estonia post the reform period. The current legal framework is based on the same ministerial decrees adopted at the start of the reform, which have since been written into law when the Health Services Organizational act was renewed in 2002 (32).

Several changes have been made in the governance of PHC. County governors were responsible for coordinating PHC until 2013 when this function was centralized to the Health Board[2], an agency operating directly under the Ministry. Whilst PHC policy remained a responsibility of the Ministry, PHC access and organisation became the responsibility of the Health Board, which was required to make sure that there were enough patient lists, every patient list had a family doctor, and that every patient was enrolled on a list. The Health Board also organized substitutions for PHC providers if the need arose.

Regulations for patient enrolment have remained the same: every family doctor has a defined service area determined by the Health Board[1] (before 2013 by the county governor); the practice list is not expected to be less than 1,200 or to exceed 2,000; and, once this limit is reached, an assistant doctor should be hired. Figure 1 depicts the changes

[2] The Health Board is responsible for licensing health care providers and registering health professionals, organizing primary health care, ambulance services and occupational health care, ensuring the safety of medical devices, health sector preparedness for emergencies and managing poison information.

in the number of patients on each list and changes in the number of patient lists from 2001 to 2020.

Figure 1: Average number of patients in the patient list and the number of patient lists from 2000 to 2020

Source: EHIF

Patients have the right to change their family doctor at any time by submitting a written application to a new family doctor. In some cases, the family doctor can refuse to register a person – either when the number of enrolled patients exceeds 2,000 people, or when the place of residence of the applicant is not in the service area of the family doctor concerned. However, a new person may be registered if the list already includes a family member of the applicant.

All family doctors with a patient list are required to work with at least one family nurse although at the early stages of the reform this criteria was often not met (29). Therefore,

financial incentives were implemented and providers with no family nurse were paid 80% of the capitation. The role of the family nurse has become more important within PHC teams. A shift in responsibility from family doctors to nurses has taken place; for example, in managing chronically ill patients and healthy neonates. In 2012, the family nurse's role was defined, and compulsory individual visiting hours were implemented for them. Since 2013, an additional allowance for a second nurse per patient list was introduced. Expanding the role of nurses has had a big impact on access to PHC services (see section 3). Nurses have also been granted permission to prescribe certain medications if they have completed required training, and there are ongoing discussions to allow nurses to assess patients for sick leave. However, these developments have been opposed by the National Medical Doctors Association even though the Estonian Association of Family Doctors has always been in favour of granting nurses a greater role in the healthcare system.

Minimum standards for rooms and equipment in practice premises, scope of services and accessibility criteria are still specified by regulation of the Ministry. The scope of services and access criteria were renewed in 2012. Practices are required to schedule at least 20 hours a week for family doctor and nurse appointments. Every working day, the practice reception must be open between 08:00 and 18:00 and the practice premises open for at least eight hours, with at least one day a week until 18:00. Patients with an acute condition must be provided with an appointment with a family doctor on the same day, and in non-acute cases within five working days. If these requirements are not met, there may be financial penalties enforced by the EHIF or instructions made by the Health Board. However, these penalties are rarely used because there is no good monitoring system in place, and actions are mostly taken as a result of patient complaints. The EHIF can only monitor practice standards according to their contract. In reality, the EHIF assesses access criteria by checking opening hours when they conduct visits on premise; however, as providers are informed prior to these visits, there is likely to be a bias in the results. The Health Board does assess whether doctors have met the requirements when granting licences to the healthcare providers. To operate, every provider needs to have a licence. Nevertheless, the requirements are only assessed when applying for the licence and follow up is done only when there are patient complaints.

All these factors illustrate the important role of EHIF in PHC developments in addition to financing PHC services. EHIFs role has expanded over the years including enhancing and monitoring the quality of services (see also chapter 2.3.4) and assessing access. As mentioned before, the latter is conducted as part of monitoring adherence to the financing contract. Overall, the EHIF played a major role in developing and supporting PHC policy developments as the only body with the capacity to offer financial incentives supporting any reform.

In 2015, 74% of PHC providers contracted by EHIF worked as solo practitioners (33). This created various challenges including in ensuring the sustainability of services by finding substitutions, lack of mentorship to facilitate quality improvements, and large workloads from managerial tasks. The high number of solo practices has been highlighted as one of the main barriers to strengthening PHC (34); and, although the need to incentivize group practices to improve quality and increase efficiency has been recognised since 2003 (25), no progress has been made. When the initial PHC model was developed, it was assumed that doctors would choose to merge into large group practices to save on costs of

equipment and utilities, however, a study conducted in 2015 indicates that being a solo practitioner is more profitable (35).

It has been acknowledged that not enough emphasis was put into motivating doctors to develop group practices during the initial reform. Since the easiest form of entrepreneurship was self-employment in the 1990s, most PHC doctors started to work individually, with the freedom to manage their own visiting hours and finances. This is one of the main barriers to developing multidisciplinary team-based care, because many providers are not willing to give up their freedoms to work in a team with other PHC doctors.

The challenge of ensuring a sustainable system and of ensuring equality in access to PHC services across regions has been magnified by the aging workforce. Almost one third of doctors are between 60 to 69 years old and one in ten are over 70 years old. In 2020, the average age of a family doctor was 57 (36). Although emphasis is put on practicing in rural areas during their training, young doctors have limited interest to work there. In addition, Estonia has been influenced by healthcare workforce migration to Finland where salaries are higher, working conditions are often better and general practitioners are able to provide PHC without residency training. In the recent years, there have been many cases where the Health Board has not managed to find a permanent substitution for retiring or leaving doctors. In 2020, discussions re-emerged around the possibility of using county hospitals to take on the responsibility of ensuring access to PHC in extreme cases. Although this has been strongly opposed by PHC providers, the Ministry has proposed legislative changes to the Parliament. Conceptually, this may be a step towards integrating the services with county hospitals for the sake of ensuring access to PHC to the population.

Up until today, family doctors in Estonia exercise only a partial gatekeeping function. The exceptions to the gatekeeping rule, where patients can bypass PHC and access specialists without a referral, have not changed. According to EHIF data, the specialties without compulsory referral also tend to have the longest waiting times. It has been widely recognised that strengthening the gate-keeping function is an important policy perspective (37). EHIF has initiated discussions on introducing referral to these specialties, but the discussions often lead to a dead end, because of the resistance of family doctors as well as some of the specialties. One of the main challenges, highlighted by the family doctors, is the lack of training in these specific fields. For example, implementing ophthalmology into the residency program on a wider scale would acquire additional funding and may extend the study period. Furthermore, PHC centres may need additional costly equipment. Some progress has been made in psychiatric care, where a referral system was piloted in Tartu region. The Ministry is not convinced of the population's willingness to accept gatekeeping in some specific fields e.g., gynaecology. Decisions to exclude certain specialties from compulsory gatekeeping at the start of the reform have shaped the system in subsequent years in such a direction that makes it extremely complicated to change. For example, this has led to a peculiarity in the Estonian healthcare system where early maternity care is outside the scope of the majority of PHC providers. Although there has always been the possibility of monitoring pregnancies by PHC providers, it is rarely done so, and instead, midwifes working in hospitals are the primary contact for pregnant women.

One of the most immediate challenges is to introduce some level of gatekeeping for emergency care. Currently, hospitals' emergency care departments act as a direct door to

specialists and all the necessary investigations that may not be accessible at PHC level. There is an expectation from the population to increase access to out-of-hours PHC services (see chapter 3), but no progress has been made in this regard despite EHIF implementing a special fee for out-of-hour services. A family advisory line was introduced in 2005 to grant access to nurses and doctors' advice over the phone 24 hours 7 days a week, to limit the pressure on emergency rooms. Nevertheless, in 2018, the state audit office assessed that the heavy workload of emergency departments depends on the functioning of primary care (38). This is partially created by the current financial incentives that pay emergency departments mostly on FFS basis, limiting their motivation to decline PHC patients. EHIF has made changes to the financing system in recent years, but thus far the effect has been limited. This may also be the case, because there are no PHC services available out of the regular working hours. In 2016, WHO recommended that Estonia implement an out-of-hours system for PHC, but the developments have stalled (37). The current COVID-19 crisis though, has raised the importance of this development once again.

2.3.2 Introduction of the concept of PHC Centres

The first family medicine development plan was introduced in 2004 describing the main challenges and future opportunities for family medicine. The plan focused on quality improvements and working conditions and the increasing working loads of family doctors (39). Although this development plan centred on family medicine, in 2009 a new PHC development plan was established on request of the Ministry. It provided a new definition of family medicine and PHC, expanding the list of essential PHC services. For the first time, physiotherapy and midwifery services were mentioned as an essential part of PHC services. The concept of a PHC Centre was introduced, merging several family physicians into an interdisciplinary team of different specialists (40). In 2014, this approach was acknowledged and adopted into a political document describing the Health System Development Plan up to 2020. Compared to the development plan, the service package was extended with home nursing. It specified that generally at least 3-4 family doctors, 3-4 family nurses, a midwife, physiotherapist, and a home nurse should be included in one PHC team covering 4,500-6,000 patients. They should be contracted as a single legal entity, with the preferred service delivery model defined to be the PHC Centre. Centres should be located close to a nursing hospital, ambulance or specialist care provider and share infrastructure if possible. In county capitals, the infrastructure should be shared with the county hospital (41).

Many of the formal Semashko type systems were, and still are, challenged with regards to the future role of the big polyclinics and reluctance to acknowledge that in many cases the polyclinics should reorient to nursing or PHC services rather than providing secondary specialist care. Estonia has come far in restructuring the hospital network, nevertheless, there still is excess capacity. With this legal document, a first step was made to indicate that the future role of many of the current county hospitals may be more PHC oriented. Although, this was never announced publicly, it was not a welcomed idea by either the county hospitals or the family doctors.

The strategic document was used to apply for EU Structural Funds, to invest in the infrastructure of PHC centres. The investments were very much needed because the infrastructure of PHC providers was outdated and did not enable a scaling up of service

delivery and building multidisciplinary teams (40). Since many of the providers had already taken up loans and tried to manage on their own to build a modern PHC service, it has been argued that this investment was late and should have been available in the early 21st century to better support the initial reform. On the other hand, at that time the primary care concept, as a multidisciplinary team, was not widely acknowledged and any infrastructure built might not have supported the development of strong PHC centres.

Nevertheless, the aim of the EU Funding was to further strengthen the role of PHC by motivating single practices to cooperate and broaden the scope of services provided. It was hoped that this would result in a better performing PHC system, through better access and tackling the sustainability issue of solo rural practices. The initial political interest was to use this EU funding for specialist care infrastructure, but there was reluctance from the EU to invest further in the infrastructure. Only since building infrastructure was bound with PHC service delivery reform, was funding granted for 97.2 million euros. The preparation application period lasted up to 2017 followed by the implementation phase since 2018 (42).

In addition to primary care providers, the Ministry allowed hospitals and local municipalities to attain EU investments and build or refurbish infrastructure to rent out to PHC providers. This decision was debated with the Estonian Association of Family Doctors, who were not delighted to share the investments with hospitals. The PHC doctors expected that the state would undertake a bigger role in the process because PHC providers were not able to carry the financial risk and would have struggled to find funding for the co-payment. But strategically, the Ministry used this opportunity to encourage and improve the often-missing dialogue between primary and secondary care.

Eligibility for grants from the EU structural funds to construct or refurbish PHC centres was limited to groups of at least three family doctors in rural areas or at least six physicians in urban areas. The Ministry predefined the locations where the PHC centres could be built. To promote the development of multidisciplinary teams, the centres eligible for the investment were required to offer midwifery, home nursing and physiotherapy services, although provision of these services could be conducted in collaboration with specialist care providers. Doctors were also encouraged to collaborate with other service providers like social services, pharmacists and dental practitioners etc.

2.3.3 Development of the payment model

The simple PHC payment system implemented in the late 1990s has been refined to a more blended model covering a comprehensive set of services. Family doctors are still paid a combination of a basic monthly allowance, an age-weighted capitation fee per registered person per month, some FFS, and several bonus payments including additional payments based on distance to the nearest hospital, the newly implemented performance related payment, payment for out-of-hour services, and payment for a second nurse. The evolution of the payment design compared from 2003 to 2013 and 2020 has been described in chapter 3. The payment rates in 2021 are depicted in Box 2.

BOX 2. PHC PAYMENT RATES IN 2021

	Monthly payment in EUR (if not stated otherwise)	
	Single practice	Group practice
Capitation		
up to 3 years	9,96	
from 3 up to 7 years	7,31	
from 7 up to 50 years	4,33	
from 50 up to 70 years	6,14	
from 70 years	7,50	
FFS fund	39-43%	
Activity fund	no cap	
Therapeutic fund	3%	10%
Basic allowance	1846,45	4169,18
Working 20-40 km from a county hospital	823,41	
Working more than 40 km from a county hospital	1646,82	
Second nurse allowance	1922,59	1877,85
Payment for additional healthcare specialist (speech therapist, physiotherapist etc)		1798,27
Out-of-hour services for family doctor per hour	35,21	
Out-of-hour services for family nurse per hour	22,04	
QBS annual maximum payment	7172,08	

The capitation component is still at the core of the payment system making up around 50% of family doctors total revenue. Nevertheless, the importance of the capitation payment has decreased (Fig 5 in chapter 3). Ministry regulation specifies the activities, procedures, and tests covered through capitation (Box 3). Rates reflect the costs of labour, single-use medical supplies, devices and medication, multiple-use medical supplies and equipment, and other costs such as office expenses (e.g. phone costs, furniture etc.). The capitation rates differ by age group (five groups: <3, 3-6, 7-49, 50-69 and 70+). Capitation payments are prospectively made on the 5th of each month based on the number of patients on a patient list. The monthly payment is recalculated quarterly to account for changes in the practice list.

BOX 3. ACTIVITIES COVERED BY THE CAPITATION PACKAGE

- Carrying out outpatient consultations and home visits;
- Performing assessments of the state of health and capacity to work;
- Monitoring and counseling in the areas of child development, chronic conditions and uncomplicated pregnancies;
- Monitoring of risk factors, vaccination, carrying out screenings, health education sessions and providing medical advice;
- Providing diagnostic, treatment and referral services, including treatment of minor injuries, referral to specialist care and arranging transport to the hospital if necessary;
- Recommending and prescribing drugs; and
- Maintaining patient records.

FFS payments account on average for approximately 23% of family doctors' total revenue. FFS payments flow from three different funds. The diagnostic fund covers a list of pre-defined diagnostic procedures (e.g., laboratory tests, x-rays, etc.). The therapeutic fund covers therapeutic interventions in clinical psychology, speech therapy and physiotherapy. Although, the main aim of the FFS fund is to incentivize service delivery at PHC level, the diagnostic and therapeutic fund are capped for each family doctor. For the diagnostic fund, the cap has been raised to between 39%-42% of the capitation payment (compared to the initial 18%) - the actual level is dependent on family doctor's performance in the Quality Bonus System (QBS) (see following chapter). For the therapeutic fund, spending is capped for solo practices at 3% of the capitation payment. To encourage the development of multidisciplinary teams, the cap on the therapeutic fund was raised to 10% in 2017 for physicians practicing in PHC centres with additional specialists (e.g., physiotherapists). For the diagnostic and therapeutic fund, family doctors have the choice of providing or contracting out services. The caps used for the therapeutic fund are still considered to be low and the lack of availability of certain services in the diagnostic fund are limiting service provision at PHC level, which may result in over referring patients to secondary care. The diagnostic and therapeutic funds are complemented by a 'procedure fund', which covers a defined list of services including minor surgical and gynaecological procedures. There is no cap limiting the use of the procedure fund. Although, the services in the procedure fund have been financed on a FFS basis and some of the services are also included in QBS, provision of these services has remained low mainly because of low skills of family doctors. The service prices for all three funds are the same as those paid in outpatient specialist care. Payments are made retrospectively based on submitted bills.

The aim of the basic allowance has changed since the early stages of the reform when the plan had been to abolish the basic allowance completely after some years. It now covers the costs of practice infrastructure, utilities, transportation costs and the health information system. From 2016, the EHIF increased the share of the basic allowance and reduced the share of capitation in the payment scheme. The basic allowance has increased due to the inclusion of new items and increase in costs for items already listed (e.g., rent). Furthermore, in 2017 a new basic allowance was introduced for PHC centres to motivate individual PHC providers to form groups and provide a wider scope of services. The PHC Centre basic allowance includes additional funds for management, an additional nurse or other medical specialists (e.g., speech therapists, physiotherapy, midwives and home nursing services), IT developments and more spacious rooms. The PHC centres are eligible for this allowance when at least three family doctors, with 4,500 individuals on their list, work together in one location; they must also have extended opening hours (from the compulsory 8 hours to 10 hours per day). The renewed basic allowance, with newly defined requirements, formed the basis of the new contractual arrangement for PHC centres.

The second nurse allowance covers the costs of a second nurse per family doctor. To be eligible for the payment, the PHC provider needs to apply for funding and fill certain room and access requirements. Also, the second nurse needs to conduct individual visits for least 20 hours per week.

The concept of the distance allowances, implemented at the early stage at the reform, have not changed much. The allowance is still paid when family doctors operate in rural areas. A smaller allowance is paid to all providers operating outside of Tallinn and Tartu (Estonia's two biggest cities), and to family doctors working in adjacent municipalities. A higher allowance is paid to family doctors who operate in a location which is more than 40 km from the nearest hospital or on an island. In 2020, allowance amounts were doubled due to the challenges of finding providers to operate in rural areas. As a result of the changes, 400 family doctors will receive an additional distance allowance, which previously affected 179 family doctors.

Starting in 2014, family doctors have also received an allowance for overtime work, and offering nurse(s) appointments outside of working hours (before 8:00 or after 18:00). This payment is based on an hourly rate. It has not been widely accepted and has had a small impact in increasing access to services outside working hours. This may be because the application process for the funding is challenging, requiring a predefined time for when services are provided. It may also be proof that providers are unwilling to work after hours and the small sum of money may not have been a big enough incentive them to reorganize service delivery. Despite that, there is a need for out of hours care, with over half of patient surveys agreeing that PHC centres should be open after working hours at least once a week (43).

The QBS element was introduced in 2006 to further motivate family doctors to widen their scope of services including preventive services, and to manage patients with chronic conditions - to avoid high expenditures, reduce hospitalization and patients' incapacity to work. It also aimed to reduce morbidity from vaccine-preventable diseases. EHIF's QBS payments made up approximately 3.7% of the average total revenue of family doctors in

2020. In addition, family doctors can receive separate additional FFS payments up to a maximum of 41% of their total capitation payment if they perform well according to the QBS standards. The maximum FFS payment rate for family doctors who do not attain the quality goals is 39%. These differentiated rates are used to provide incentives for family doctors, not only to participate but also to achieve good results and to promote improvements in quality of care (see more in the following section).

In 2019, EHIF also introduced financing requirements for providers who are affiliated with a larger PHC centre but operate on separate premises. In essence, a small, individual PHC provider can start a cooperation with a larger PHC centre as long as she or he works in the larger PHC centre at least four hours per week. The affiliate can provide midwife, home nursing and physiotherapy services, if these services are also provided by the PHC centre. One PHC centre can have several affiliates. The affiliate practices are supported as a way to improve services and ensure the sustainability of provision in rural areas.

The EHIF and the Estonian Association of Family Doctors have agreed on the terms of a framework contract for PHC centres and PHC providers for the five-year period. The financial part of the contract will be agreed annually and is revised four times a year, based on changes in the number of registered patients. The rates for the different payments will be negotiated annually using a simple Excel based costing model as a basis for defining all cost components and rates. In order to change the rates, an application needs to be made to EHIF by the Estonian Association of Family Doctors and, followingly, cost data is collected to assess if the level of funding should be increased.

Although by 2023, the majority of the PHC doctors in Estonia will work in new or refurbished facilities, doctors are not mandated to change their legal status and contract with EHIF as a solo practitioner (although it was recommended in the 2020 Development plan). Naturally, the PHC providers who have managed to build up their own independent successful practice are not keen to give this up and start again working under someone else's influence. Furthermore, for many of the doctors, it serves as a painful reminder of being kicked-out of policlinics and struggling to survive independently, potentially undermining their trust in the policy process. Therefore, no policy changes were adopted to increase service delivery by multidisciplinary teams and the regulatory framework has stayed the same.

Despite efforts by the Ministries, developments towards multidisciplinary PHC have been limited. As of 2021, more than two years after introducing the contract for PHC centres, EHIF contracts only 40 PHC centres, comprising 225 family doctors and covering 30% of total patients in the country. Although EHIF has introduced financial incentives in parallel to EU funds for infrastructure, the policy aims stated in the initial development plans have stalled. There are several reasons for this including challenges to implementing any new legislative changes that would give legal basis for the reforms, PHC providers' unwillingness to give up their freedom as single practitioners, a lack of interest of specialists to start working at the PHC level, or a lack of funding for these services at the PHC level. It is evident that further motivation is needed to increase the role of PHC.

A World Bank Group study (34) initiated wide-scale discussions about the integration of care between different service providers in light of the ageing population and increasing numbers of people with (multiple) chronic conditions. The need to develop new service

delivery and financing models is now broadly acknowledged and some smaller-scale initiatives have been piloted. One example is the pilot project initiated by the MoSA for better integration of social and health care services in cooperation with Viljandi County Hospital. The project aims to develop an integrated model of welfare, PHC, and county hospital services. In addition, in 2017, the EHIF, in cooperation with the World Bank, undertook a pilot project on enhanced care management of high-risk patients by family doctors (44). Depending on a successful evaluation, the project is planned to be rolled out to more PHC practices. The goal is to enhance integration across levels of care to improve the health outcomes of patients with chronic diseases and complex needs by better care management. Furthermore, it would serve as a basis to make the next step forward and introduce risk-based capitation. Even so, it will probably take several years to see system level changes and any impact of greater integration (45).

2.3.4 Quality enhancement

Following the completion of the PHC reform in 2003, emphasis was put on quality enhancement and performance monitoring considering the variable backgrounds of the family doctors. For example, when Estonia became a member of the EU in 2004, the entire training program of family doctors was made compliant with EU requirements. Prior to this, from 1993, there had been two options to acquire family medicine training: the retraining program and the residency program. Before eliminating the retraining program in 2004, both programs were assessed to comply with the EU standards, confirming the high level of both programs.

Quality improvements of the PHC have mostly been driven by the Primary Care Association, who has put the quality of health services on the agenda in the whole health care system. Previously, health services quality was not widely discussed. When quality monitoring was better recognised, EHIF led quality management by taking responsibility for developing clinical guidelines, performance monitoring and developing quality indicators. Quality management has been a parallel task for EHIF and has not always aligned well with or input into purchasing healthcare services, with the sole exception of PHC.

Estonia introduced a voluntary QBS for PHC providers in 2006. The main goals were to promote family doctors' active involvement in disease prevention, to ensure more effective management of patients with chronic diseases, and to motivate family doctors to provide a broad range of services to the insured. This was a landmark for financing the Estonian health system because, up until today, it is the only system that rewards quality.

The cost of the scheme, about 3.7% of the PHC budget, is relatively small, therefore the payment has been increasing in recent years to make it more attractive. A detailed description of the program, which has evolved in time, is described in the Box 4 (45, 46).

BOX 4. QBS DESIGN IN 2006 AND 2021

2006	2021
1st domain: "prevention" •0-2 age children's vaccination •Follow-up of development of child 0-2 •Preschool examination of child •CVD screening •Breast cancer screening •Cervical cancer screening	1st domain: "prevention" •0-2 age children's vaccination •Follow-up of development of child 0-2 •Preschool examination of child •Colon cancer screening •conducting HIV test for a predefined list of patients
2nd domain "management of chronic diseases" •2nd type diabetes •Hypertension	2nd domain "management of chronic diseases" •2nd type diabetes •Hypertension •Hypothyroidism •Myocardial infarction
3rd domain "broader activities" and competence •Follow-up of pregnancies, gynecological examination, minor surgery	3rd domain "broader activities" and competence •Follow-up of pregnancies, gynecological examination, minor surgery (threshold set by minimum volume of procedures) •family doctor and family nurse have completed recertification training •Conduct e-consultations at least once per year and share of e-consultations from all referrals •PHC center has received accreditation from Estonian Association of Family Doctors

The QBS is a joint initiative of the Estonian Association of Family Doctors, the EHIF and the Ministry, with family doctors mostly leading the process. When implementing the QBS, the UK system was used as an example (48). As with the capitation model, the aim was to keep the system simple in the beginning and not put much administrative burden on providers. That is why a key precondition to implement the QBS was a system of collecting billing data electronically (see chapter 2.3.4). This enabled monitoring family doctors' activities without the need for additional data collection.

Since its introduction, the number of participating family doctors has risen quickly from 50% in 2006 to 97% in 2014, reflecting its broad acceptance. Since 2015, participation in the QBS has been obligatory for all family doctors and individual results are publicly reported.

Though the QBS, EHIF has also emphasized the importance of continuous education and provides a bonus for providers having completed their recertification (for doctors and nurses). The continuous education programs are provided by the University of Tartu and the two schools to educate nurses. The program needs to be passed every five years to acquire the status of a recertified nurse or doctor.

In 2016 a separate payment was introduced in the QBS for accredited[3] providers, although the accreditation of PHC providers had been led by the Estonian Association of Family Doctors a long time before implementing it to the QBS. The accreditation of family doctors is a unique program that is led by a medical society in Estonia to assess the quality of service provision among members. The accreditation is based on the quality indicators described in the Estonian Family Practice Quality Guide, which was initially developed in 2009 by the Association and updated in 2018. The process is based on a defined set of indicators, mostly to do with the organization of service delivery, e.g., having a recorded team meeting once a month to discuss patient cases etc. To receive the accreditation, providers need, firstly, to make a self-assessment based on the defined indicators, which is then followed by a visit from the independent audit team to assess the accuracy of the self-assessment. The program aims to support the individual progress of each provider and to motivate self-improvement. The list of providers receiving the accreditation is announced and they often receive high recognition. The program has initially been implemented due to the strong leadership of the Association of Family Doctors and financial support from Ministry and EHIF is a recent development.

A study confirms that QBS has had a notable impact on the workload of primary care teams and their members. Paying more attention to detecting chronic diseases in their early stages, recalling patients for general health check-ups, and immunizing children, may have an effect on health status, but also requires increased staff levels (49).

Several improvements have been made to the QBS scheme in recent years, in part due to recommendations from the World Bank (34,50–52). Most importantly, the shift from awarding provision of single services to requiring a full range of services for a condition and patient (i.e., administering all necessary vaccinations for children up to 3 years old rather than doing a single vaccination). EHIF, together with the Estonian Association of Family Doctors, is also planning a program to review the activities and provide guidance to family doctors who failed to achieve a specified level of QBS points.

Despite these processes, the current model of PHC is not well suited to meet the needs of an increasingly elderly population with multiple non-communicable diseases (NCD). Several weaknesses persist that impact on the integration of care. For example, despite of the QBS, there is still low coverage of preventive services as recommended by clinical guidelines for diabetes and hypertensive patients (e.g., annual HbA1c test, cholesterol tests,

[3] The licensing of PHC providers is a separate process from accreditation in Estonia. Accreditation is a family doctors self-led individual development initiative.

etc.). The scope of PHC has remained limited and access to care, particularly in rural areas, is often not adequate.

2.3.5 Digitalization

Estonia is widely known as a highly digitalised and innovative country. This has also been beneficial for the improvements in the PHC system.

One of the major reasons why Estonian health care providers were quick to launch electronic data management in the 1990s was the need to submit medical bills to EHIF electronically. PHC providers and the EHIF had an interest in using a medical billing system to gather data on services delivered because capitation on its own did not automatically provide service activity data, in contrast to FFS payment. Therefore, a system was set up whereby providers were required to submit so called "0-bills" with service provision data. Providers who were initially reluctant needed to submit billing data electronically to receive funding. The number of physicians who used a computer in their daily work was outstanding already at 98% in 2000 (29). This increased the process of developing information systems for healthcare providers. Nevertheless, since these systems were initially aimed to serve primarily billing purposes, today they lack the needed functionality to support care management.

The high quality of billing data also lay the basis for introducing the QBS system. It also allowed further improvements of quality indicators assessed in the program. Estonia also started to use e-prescriptions in 2010, making it possible for the EHIF to assess whether family doctors prescribed medications in accordance with clinical guidelines (an indicator in the QBS).

In 2013, the EHIF started remunerating new innovative e-consultations, in which family doctors consulted with specialists through the health information system without sending patients to the specialist care provider. The e-consultation aimed to support family doctors in taking more responsibility for patient care and to improve cooperation with specialists. Moreover, it was expected to lower the demand for specialist care and relieve the long waiting times for some specialties. In the rural areas it also helped to save patients a trip to a specialist care provider. The e-consultation must follow a standardized format (by specialty), which should better enable specialists to give adequate advice. Conducting e-consultations does not include additional payment for PHC providers, but the specialist care providers are paid FFS basis for each consultation. Nevertheless, conducting e-consultations is included in the QBS system. Although EHIF has put great emphasis into developing the e-consultation system and promoting it among providers, its use has remained limited. There has been a rapid increase from 122 consultations in 2013 to 30,000 consultations in 2019, but this still only accounts for less than 1% of total specialist care ambulatory visits (4 million) (53,54).

Starting from 2020, Estonian PHC physicians and nurses have been able to use the Clinical Decision Support System (55). The system aims to speed up decision-making and improve patient safety by highlighting patient-specific recommendations and reminders to support the work of physicians and nurses. The Decision Support System provides physicians with evidence-based treatment recommendations based on patient health information and should help to prevent treatment errors.

Although Estonia is quite advanced with regards to its e-health solutions and services, such as electronic health records, digital images, e-prescriptions, digital-registration, clinical decision-making and e-consultations, there is room for improvement to enable better use of the data for service integration and outcome measurement. The functionality of PHC IT systems has remained low and does not consider the changing and widening role of PHC providers. Therefore, a part of the EU structural funds is also used to describe the need for a new IT platform at PHC level (42).

2.3.6 Role of PHC in the COVID-19 crises

PHC providers have played a leading role in the current healthcare crises. The Estonian Association of Family doctors, jointly with the Institute of Family Medicine and Public Health, have been actively involved in developing necessary guidelines for testing, providing sick leave, issuing requirements for quarantine and providing vaccinations. Estonian family doctors are responsible for defining the need for COVID-19 tests and advise people on the need to quarantine or self-isolate. Most of vaccinations for at-risk groups are also being given at PHC centres, which are reimbursed through FFS, outside of the regular payment model.

During the first wave of COVID-19, the PHC providers also received additional funding for:

- restructuring and adaptation of premises;
- additional PPE;
- data communication costs;
- additional staff costs.

Family physicians needed to restructure their premises to ensure “clean areas” for patients with no COVID-19 risk, such as check-up visits for infants etc. The Health Board did select providers that would act as “emergency centres” and take over the patients when any of the family doctors got sick or any of the patients did not have a family doctor to turn to (e.g., uninsured population). Overtime working hours were paid based on the preestablished out-of-hours fee (56).

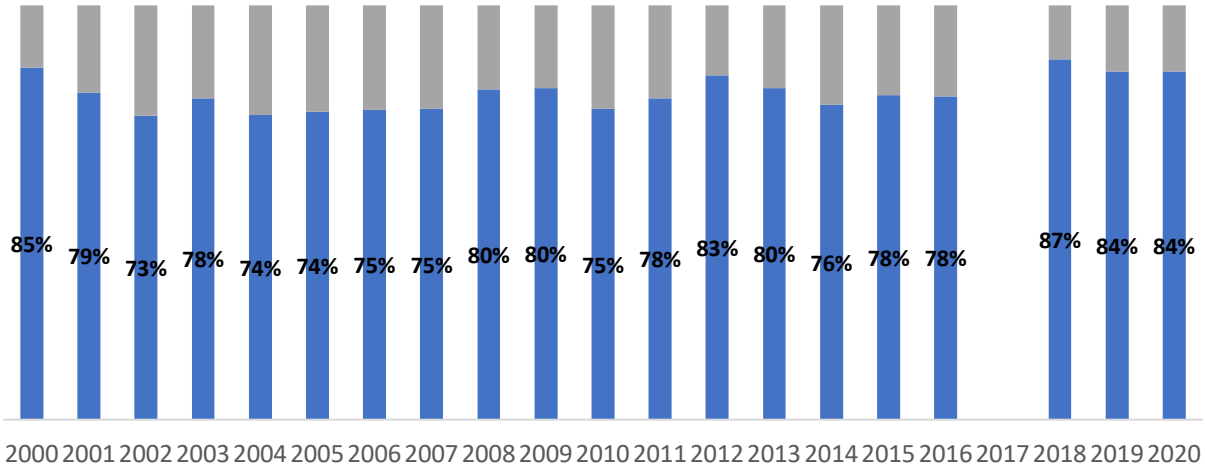
3. Impact assessment

There have been multiple descriptive and analytical studies undertaken during the introduction of family medicine and the PHC reforms in Estonia, with the main aim to support evidence based decision making during the planning phase (19,21,57), but also to assess the first steps into the reform (9,10,58,59) and outcomes straight after the reform (11,25,28,29,60). Assessments have explored changes in efficiency, access and user acceptability and satisfaction, which mostly indicate a wide acceptance of the PHC centred system within the healthcare system and among the population. Continuous assessment of the process helped to drive progress. For example, a study conducted at the early stages of the reform indicated that patients' assessments should be evaluated. It highlighted that one of the most important factors for patient satisfaction was being informed about the reform. Patient satisfaction was also shown to increase when they were allowed to choose their own doctor, making them more likely to consult that doctor. Furthermore, it is a basis for creating a good patient-doctor relationship. (27)

The new PHC model was accepted by the majority of the population from the very early stages of the reform. Studies undertaken by EHIF show that 85% of people surveyed in 2000 and 79% in 2001 were either very satisfied or generally satisfied with PHC services (Figure 2). Only 14% had changed their doctor previously, mainly because of change of residence (61).

Up until today, satisfaction with PHC services has remained high. Major reasons for not being satisfied with the service include not accepting the advice provided, the attitude of provider has not been appreciated, or challenges in access to care. Despite this, 8 out of every 10 Estonians are convinced that their PHC provider can help them with most medical needs (43).

Figure 2: Share of patients very satisfied or generally satisfied with PHC services 2000 to 2020.

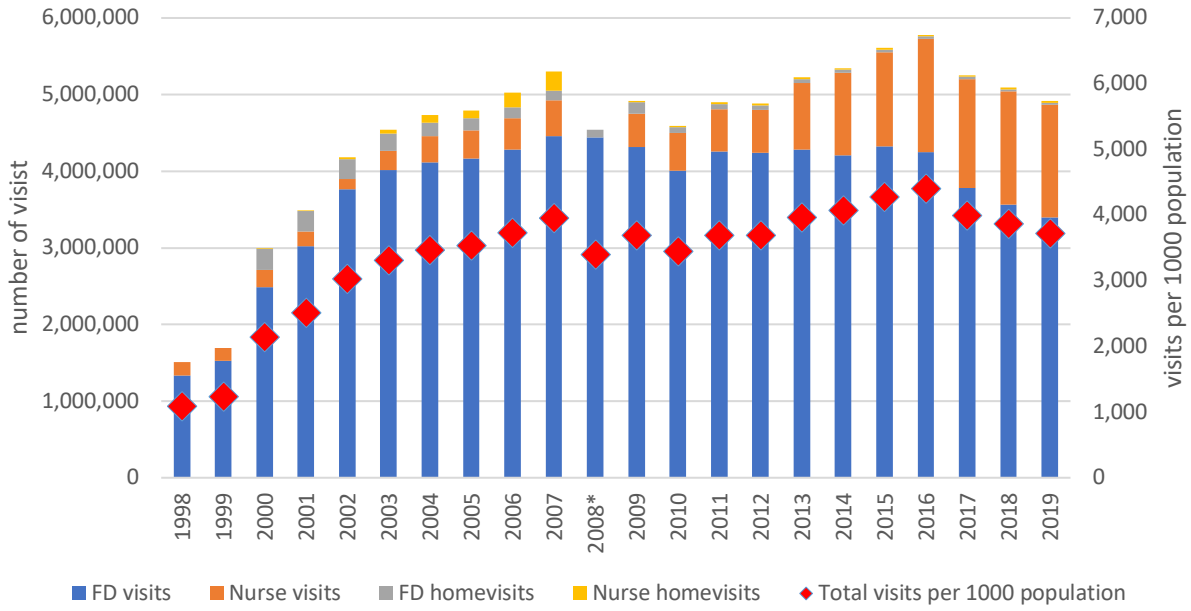


Source: EHIF, NIHD, * no survey was conducted in 2017

The number of patient visits to PHC providers increased continuously up to 2008 (Figure 3). The annual increase in service utilization was due to the well-functioning system of family

medicine and the increasing delegation of tasks from narrow specialist fields to family doctors, reflecting the wide acceptance of the population towards PHC.

Figure 3: Family doctor and nurse visits and total visits per 1000 population from 1998 to 2019



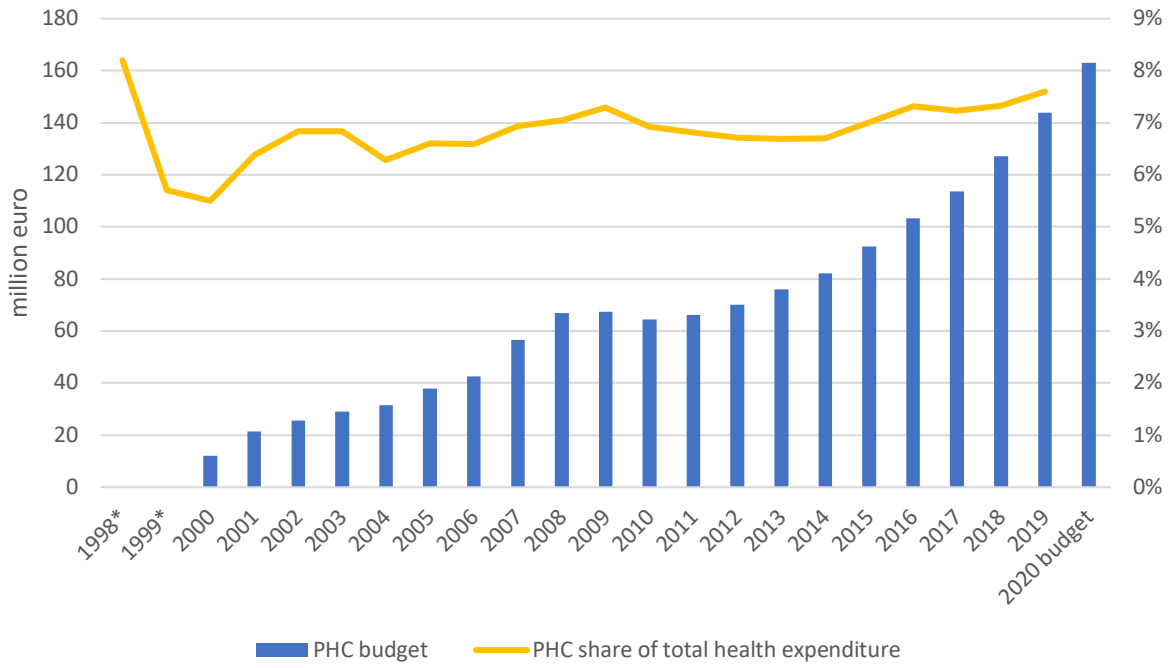
Source: Ministry and NIHD, *data for nurse visits is missing.

It is evident that the workload of PHC doctors and nurses increased rapidly in the early 21st century. Workloads were highly influenced by the large share of home visits, comprising up to 11% of total family doctor visits in 2000. In 2019, they accounted for less than 1% of appointments. Also, according to EHIF data, the service mix in PHC has changed with increases in phone, email, and follow–up (vs initial) consultations (62). Starting in 2013, visits to family doctors have decreased or remained at the same level while nurses visits have increased, giving nurses a greater role in PHC service delivery. The increase in nurse visits since 2013 has also been influenced by adopting the additional allowance for a second nurse. The total number of visits per 1,000 population started to decline again after a peak in 2016. This is due to a change in methodology because, since 2017, the renewal of prescriptions is not counted as a visit.

The increase in visits at the early stages of the reform was also party due to the gradual shift in children's health care from paediatricians to family doctors. An early study indicated that family doctors were able to vaccinate children with the same accuracy as paediatricians, also proving high trust and service quality (58). Furthermore, several assessments have revealed that while utilization of PHC increased, inpatient admissions have fallen. Healthcare utilization for certain chronic conditions including diabetes, depression, ischemic heart disease and hypertension has shifted to PHC (28,63). Despite this shift, the most burning need to consult patients on risk behaviour (smoking, alcohol and drug abuse), is still a challenge for providers. A study indicates that despite the fact that family doctors are becoming increasingly more aware of their role, they need to improve their instruments for handling lifestyle related and psychosocial problems (64).

The increase in service provision has continuously been supported an increase in PHC funding. Figure 4 shows the PHC budget and the share of PHC budget from total health expenditure and within the EHIF budget since 1998.

Figure 4: PHC funding and share of total health expenditure and within EHIF budget from 1998 to 2020



Source: EHIF annual reports, Meiesaar 2004, *The methodology of calculations may have differed.

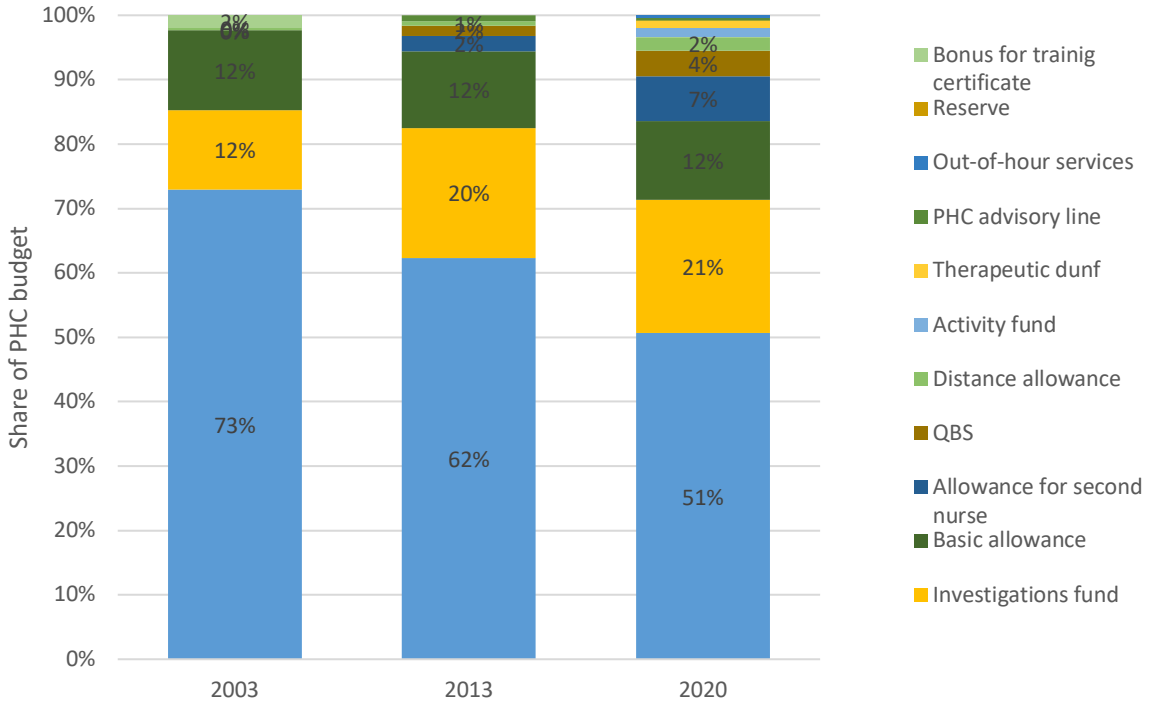
Although the budget itself has increased, only with the exception of the 2008 economic crisis did the share of total health expenditure allocated too PHC significantly increase following the initial reform. This indicates that there has been a very stable funding base for PHC and the budget has been adjusted with the general price increase in the healthcare system. The stable increase in funding has been assessed as an important factor in supporting the reform process (11,25,29). When health service tariffs were reduced by 6% due to the economic crisis in 2009, outpatient care, including PHC, was prioritized over inpatient care and tariffs had a smaller decrease (65). Nevertheless, the non-changing share of PHC costs in the overall health expenditure has not supported the main policy priorities to increase the role of PHC within the healthcare system.

The major driver of increases in PHC costs is usually the salary rate, which is negotiated every second year between the Estonian Medical Association, the Family Doctors Association, the Nurses Union and the Hospital Association. Renewal of the excel based payment model to adjust costs according to newest data, has also had an impact.

Figure 5 depicts changes in the budget composition in 2003, 2013 and 2021. As explained in chapter 2.2, the initial payment model was intended to be easy to understand, although being a blended model having only 5major components. Over time, the share of capitation

in the budget has decreased, the share of basic allowance has remained the same and the share of FFS has increased. In 2020, the budget is much more diversified and complex.

Figure 5: PHC budget composition in 2003, 2013 and 2020



Source: EHIF annual reports

Some of the incentives have been revised over time. For example, as sufficient providers had already acquired training, the additional bonus to complete the training was unnecessary. This funding stream was redirected to develop the QBS system so as to continue improvements in quality.

In recent years, the increasing share of FFS funds has been explained by the natural changes in healthcare development, where more decisions are based on laboratory tests and investigations. EHIF has increased the cap of the FFS fund and the list of services paid on a FFS basis. The target of the increase has been to incentivize increases in the delivery of particular services at PHC level.

The blended-payment model has supported the stable budget increase throughout the years. The different components of the budget support different policy priorities, and by increasing any of the components, certain incentives were built (e.g., payment for the second nurse to increase service provision by nurses, increasing distance allowance to motivate service provision in rural areas etc).

Despite the fact that Estonia has a fairly young PHC system, it has been listed as a strong system in Europe (66). Estonia has successfully implemented and scaled-up PHC reforms, including new organizational structures, user choice of family physicians (FPs), new payment methods, specialist training for family medicine, service contracts for FPs, broadened scope of services and evidence-based guidelines. Furthermore, all these

changes have been institutionalized. PHC effectiveness has been enhanced, as evidenced by improved management of key chronic conditions by FPs in PHC settings and reduced hospital admissions.

Key lessons

Considering Estonia's success in creating a strong PHC system over the past 30 years, the following key lessons have been drawn:

- Successful implementation of the PHC system in Estonia is based on a robust capacity building strategy, which started with the development of family medicine as a new specialty that is considered to be equally important to any other specialty. The formation of a strong Family Doctor Association at the very early stages of the reform ensured that there were PHC champions to promote for change from the bottom-up. One can say the reform was very much conducted and planned by doctors themselves.

- Strong leadership of the Ministry and support by the EHIF during the PHC reform had a crucial role. Most importantly, Estonia managed to maintain the same target and not change the policy objectives during the reform process or allow it to be influenced by political pressure. This was possible thanks to a clever strategy of reforming the system 'under the radar', starting with the regions where there was less opposition and changes could be easily adopted. In particular, rural areas were targeted where the easiest gains could be made in terms of access. Furthermore, a very simplistic solution was chosen (e.g., the financing model) which could be quickly adopted and not stall the process. Speeding up the process helped to persuade the opposition during later stages because there was already a critical mass of PHC doctors successfully working independently.

- The PHC reforms in Estonia have built evidence showing that there is a close link between changing how PHC is delivered and how it is financed: in Estonia's case, the changes were driven by supply side reforms and reinforced or supported by changes in financing arrangements. Health service developments and barriers for development are both influenced by the financing model. In Estonia, PHC development has been highly dependent on financial incentives. The payment system has often been used to drive additional organizational change (e.g., an allowance for family doctors completing family medicine training at the start of the PHC reform, or a basic allowance for PHC centers, introduced in 2017 as a fairly new incentive, to encourage the formation of multidisciplinary PHC teams).

- Estonia has been successful in using financial support from donors to achieve predefined health system targets. The success is partially explained by the wisdom to use external support (e.g., World Bank, EU) to achieve concrete policy objectives for which it would otherwise have been difficult to raise money within the country. Furthermore, foreign partners have played a key role in helping the Ministry to stick to the reform agenda and gain political support. Estonia has succeeded in leveraging international expertise from different organizations to strengthen the role of family medicine and primary care.

- The digitalization developments have been crucial in helping to improve the quality of PHC services. The widespread introduction of electronic data management systems as a critical part of the payment system advanced the collection of PHC performance data.

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Annex 1. PHC milestones