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# Implementation of Social Health Insurance in Estonia

– A Case Study –

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## **Part I. Background**

### **I.1 Geographic and socioeconomic characteristics**

Estonia is a democratic parliamentary republic situated in the northern region of the Baltic States, bordering Latvia, Russia and the Baltic Sea. It has a population of 1.34 million (2009), with about one third living in rural areas. The nation regained independence from the Soviet Union in 1991 and began the transition from a centralized to a market economy. Estonia's economy is characterized by a conservative fiscal policy and a liberal economic policy with a simple flat-rate personal income tax and a balanced budget. After contracting between 1992 and 1995, the GDP has grown annually at a higher rate than the European Union (EU) average. However, the economy contracted in 2008 by 3.6% due to the global economic crisis. In 2008, the per capita GDP was \$17,531.

The Worldwide Governance Indicators released by the World Bank show high scores for Estonia on government effectiveness (worldwide percentile rank 84), rule of law (85), regulatory quality (92), and control of corruption (79), all of which are significantly higher than the Eastern European averages. Transparency International ranked Estonia 28<sup>th</sup> in the world on its Corruption Perceptions Index (CPI) scale.

### **I.2 The pre-reform health system**

Estonia's health system prior to independence was based on the Soviet Semashko model. This system was highly centralized and financed through general revenues. Like systems of most former socialist nations, it was underfunded compared to those of Western European countries. In 1992, Estonia's total health expenditure amounted to approximately 4.3% of GDP (WHO 2009). In the same year, the EU average was 7.8%. Although health care coverage was virtually universal in terms of its breadth, in reality insufficient health funding caused the depth of coverage to vary widely among population groups.

The health care delivery system had a predominantly curative focus, which over time led to an over-emphasis on specialized hospital care. The primary health care level was fragmented, with adult, children, and women's polyclinics and specialized dispensaries. Polyclinics were staffed by internists, pediatricians, gynecologists, and subspecialists. Patients frequently bypassed primary care physicians to directly access emergency and specialist services in hospitals. At the beginning of the 1990s, an estimated 70% of individuals taken to medical facilities by ambulance were treated as outpatients (Campos 1995). Patients had no choice over primary care physicians, but instead were assigned one according to residency or workplace.

All providers were publicly owned. The government managed facilities through rigid bureaucratic rules that led to significant inefficiencies in the health system infrastructure. In 1990, Estonia had an average of 9.2 acute care hospital beds per 1,000 population, compared to an EU average of 5.1 (WHO 2009). Several tertiary and secondary care hospitals were overcrowded, while others were less than 60% occupied (Campos 1995).

Moreover, poorly planned hospital facilities generated inefficiencies in maintenance, heating, lighting, cleaning, and safety. In many specialties clinical practice and technologies lagged behind practices in Western European countries.

Similar inefficiencies were present in human resource management and supply. Health personnel were salaried public employees. In 1991, there were 3.5 physicians per 1,000 population in Estonia, compared to 1.6 in UK, 2.4 in Finland, 2.6 in Sweden, and 3.0 on average in the EU countries (WHO 2009). Many physicians were unemployed or underemployed, which led to unnecessary patient visits, overtreatment, and extended hospital stays (Table 1). General practitioners had an inferior status and lower pay than specialists and served more as a referral point for specialists than as gate keepers. The specialty of family medicine was not officially recognized, and so family physicians were almost non-existent. There was an excess of certain specialists such as obstetrician-gynecologists, pediatricians, and neurologists, and an insufficient supply of gastroenterologists, anesthesiologists, clinical pathologists, and nephrologists (Campos 1995).

These system-wide inefficiencies and low quality of health care, coupled with perverse physician incentives, were reflected in poor health outcomes. Life expectancy at birth had changed very little between 1960 and 1990, from 64.3 years to 64.7 for men, and from 71.6 to 74.9 for women. This slow improvement in health status compares poorly with advances in Western Europe. The differences are even more marked when one takes into account that in 1960 life expectancy in Estonia was already lower than that in Western European countries. During the next 30 years, there was a 40% rise in deaths due to circulatory diseases and injuries, and a 15% rise in those due to cancer. In 1990, Estonian age-standardized death rates from circulatory diseases for males were 72% higher than in

**Table 1.** Health services utilization data - Estonia and selected countries, 1990

Country	Outpatient contacts (per capita)	Inpatient care admissions (per 100 pop.)	ALOS, all hospitals (days)	Bed occupancy rate, acute care hospitals (%)
<i>Estonia</i>	<b>7.90</b>	<b>18.48</b>	<b>17.4</b>	<b>74.2</b>
EU15 average	6.53	16.87	13.8	76.8
Latvia	8.10	22.53	17.3	n/a
Lithuania	9.60	18.68	17.9	n/a
Belarus	10.20	24.87	15.3	81.3
Bulgaria	6.60	19.02	13.7	n/a
Slovakia	13.61	16.41	14.7	77.2
Czech Republic	13.90	18.06	16.0	69.6
Germany	n/a	20.00	16.5	86.4
Denmark	5.70	20.73	8.2	78.5
Netherlands	5.50	9.90	16.0	73.3
Norway	n/a	14.87	n/a	77.0
Finland	3.90	22.35	18.2	74.2
Sweden	2.80	19.57	18.0	72.2

Notes: EU15 = the 15 European Union member states (pre-2004)

Source: WHO Health for All Database, June 2009.

Finland, 83% higher than in Germany, and more than twice higher than those in Sweden. Although infant mortality had decreased in 1990 to less than half the 1960 level, it was still 30% higher in Estonia than the OECD average (Campos 1995).

### **I.3. Overview of the health care reforms**

At the beginning of the 1990's, the broad aims of the reforms were to secure adequate funds for health care, to improve the quality of care (partly by adopting modern medical technologies), and to provide increased patient choice as part of achieving a more patient-centered system. Faced with stringent financial constraints, Estonia implicitly sought to improve resource allocation and technical efficiency of health care in order to increase the availability of health services.

Estonia initiated major health reforms in 1991. Preparations, however, started in the 1980s, even before Estonia was independent. Reforms in the early stages consisted of radical changes, but prepared and implemented with short deadlines, and thus were not planned out in minute detail. This left considerable space for later fine-tuning and regional innovation in implementation, without creating instability primarily due to the small size of the country (Koppel et al. 2008).

In 1991, Parliament passed the Health Insurance Act, which set the basis for a new financing source for health care. This system was based on a simple Bismarckian framework with 22 non-competing sickness funds collecting earmarked income taxes and contracting with providers. However, the scheme initially lacked centralized revenue-pooling mechanisms. Equally important, the separation of purchaser and provider roles was introduced to improve quality and efficiency through transparent contractual agreements. Physicians lost their civil service status and began working under private labor regulations.

Efforts were also made to eliminate major structural inefficiencies. The parallel delivery systems providing health care to the police, railway workers, and others were integrated into the national health system, except those for the armed forces and prisons. Nearly 4,000 acute beds were eliminated through closures and downsizing and, as of 1993, acute beds had been reduced to 9.5 per 1,000 population. Steps were also taken to downsize and reorient the health workforce. In 1994, the University of Tartu, the only school of medicine in Estonia, decreased admissions by more than half and started re-specialization courses for family physicians (Koppel et al. 2008). There was also some modest initial progress in reducing the average length of stay (ALOS), from 17.4 days in 1990, to 16.2 in 1992.

A new reimbursement system for prescription drugs was also introduced, which made the latest medicines available with limited out-of-pocket (OOP) payments. This was an important change towards expanding the depth of coverage.

Reforms in the mid-1990s were marked by efforts to strengthen the financing system and reorganize the provider network. The Central Sickness Fund was established in 1994 to oversee regional sickness funds. The revenue collected was pooled centrally and reallocated to the regions on a capitation basis. The number of regional sickness funds

was cut to 17 in an attempt to improve the efficiency of resource utilization. Changes were also made to the health insurance eligibility criteria by defining more clearly the groups eligible without contributions.

The Health Services Organization Act and the Family Practice Act in 1994 introduced a shift of focus towards primary care by establishing a gate-keeping function and by changing the physician payment and training structure. By 2000, Estonia had become the first of the newly independent states<sup>1</sup> (NIS) to successfully scale-up a primary health care initiative. Hospital reform and public health infrastructure strengthening accompanied primary care reorganization.

Finally, the most recent reforms aimed primarily to fine-tune previous changes. These included increasing provider autonomy by appointing new hospital management teams with full power to ensure good clinical practice and financial performance (in 2002), updating pharmaceutical market regulations (2004), giving patients free choice of provider (in 2006), and shifting attention to monitoring and improving performance of the system as a whole.

### **QUESTION:**

**Assume you are an Estonian policymaker in 1991. What institutions would you establish to organize and manage the health insurance system with the functions presented above? How would those institutions alter the current role of the government? How would they interact with the government to insure a balance of power and the stability of the health system?**

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<sup>1</sup> The countries that until 1991 were constituent republics of the USSR, including Armenia, Azerbaijan, Belarus, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, Estonia, Latvia, and Lithuania.

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## **Part II. Restructuring the Health System**

The health system in Estonia has transformed concurrently with the national economy and state governance. After the more radical reforms established the broad principles of the new system, changes were made to facilitate a better alignment between the system structure and its intended functions.

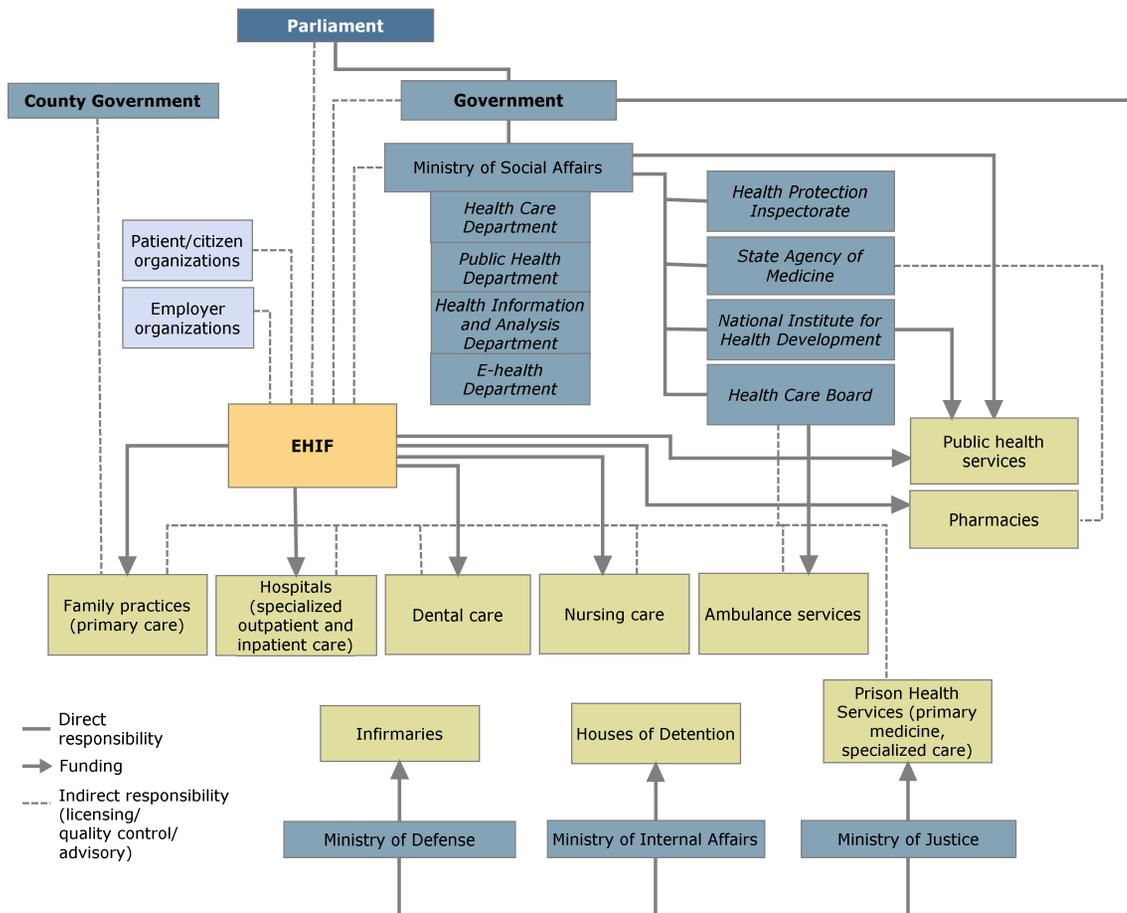
### **II.1 System-level organization**

The structure of the Estonian health system is depicted schematically in Figure 1. In 1993, Estonia reorganized its government and merged three ministries to establish a new one, the Ministry of Social Affairs (MSA), which governed health, social welfare and labor affairs. This consolidation was independent of introduction of health insurance and was part of major public sector reform (Jesse and Habicht 2009). The MSA has four departments dedicated to health, namely the Health Care Department, the Public Health Department, the Health Information and Analysis Department, and the E-health Department. In addition, four subordinate agencies now operate under the MSA:

- the State Agencies of Medicine, which registers and controls pharmaceuticals, including reimbursement rates, authorizes medical technology and assures the safety of blood transfusions and tissue transplants. Created in 2002, this unit took over the responsibility for setting drug reimbursement rates from the EHIF;
- the Health Care Board, created in 2002, which licenses providers and professionals, controls quality by addressing patient complaints, and funds government services such as ambulance services;
- the National Institute for Health Development which is responsible for applied research and analysis in public health, environmental health and communicable diseases and for public health monitoring and reporting. The Institute also has a training center and implements national and local public health programs;
- the Health Protection Inspectorate, which enforces health protection laws, conducts communicable disease surveillance, provides epidemiological services, and implements the national immunization program.

The Minister of Social Affairs governs the health system but collaborates with many other government entities, a common practice in many developed nations. Recently, intersectoral public health agencies have been established to bring involvement from other government departments such as agriculture, justice, and environment (Koppel et al. 2008).

The government's major role is regulatory and includes setting prices and making plans for hospital networks. The MSA also develops overall health policy legislation, supervises quality and access, examines population health, and determines the organization of the national insurance by shaping the scope of primary, secondary, tertiary and public health services. Financing is largely organized through the public, independent Estonia Health Insurance Fund (EHIF). However, the MSA does organize financing for certain state-subsided costs such as ambulance services and public health initiatives. MSA also plans and coordinates health sector investments, and controls

**Figure 1.** Organizational structure of the Estonian health care system.

Notes: EHIF = Estonian Health Insurance Fund

Source: Adapted from Koppel *et al.* 2008.

human resource supplies by developing medical education policy (Jesse and Habicht 2009). Although there are no apparent conflicts of competence or responsibilities between the institutions, there are occasional overlaps in activities, especially between those of the Health Care Board, the EHIF, and county governments in supervising primary care providers (Jesse 2008). The main powers and authority in Estonia's health system are divided as shown in Table 2.

## II.2 Health Insurance

In 2000, the Estonian Health Insurance Fund (EHIF) was established as the core independent public purchaser of health services. The EHIF administers Estonia's health insurance system. It contracts with providers, pays for services, reimburses pharmaceutical expenditures and pays for temporary sickness and maternity leave. Table 3 shows the essential elements guiding the regulation of health insurance in Estonia. Although the Parliament and the Government make important health policy decisions, in reality the EHIF drafts most legislation governing health insurance, and forwards the drafts to the MSA after the approval of the Supervisory Board (Jesse 2008).

**Table 2.** Main powers and authority in Estonia's health system

Health System Constituent	Role and Responsibilities	Powers and Authority	To whom it is accountable	Consequences for non-performance
Government	Policy-maker and regulator	Legislative initiatives to Parliament; Adoption of decrees; Adoption of national programs	Ministers to the Parliament	Mostly job loss and loss Parliament seats in next election; Court action is taken if criminal activity is suspected
Ministry of Social Affairs	Main policy-maker and regulator in health sector	Legislative initiatives to Government and Parliament; Adoption of ministerial decrees	Civil servants accountable to general secretary of Ministry	Loss of bonus or job Court action is taken if criminal activity is suspected
Health Care Board	Registration of Health Professionals; Licensing of providers; Supervision of compliance with licensing criteria	Issuance and withdrawal of licenses and registration; Issuance of orders to correct deficiencies found during supervision	To Minister of Social Affairs	Loss of job; Court action is taken if criminal activity is suspected
County doctors	Planning of primary care network and selection of PCP in case of vacancy	Announcement of vacancy and selection of provider	To county governors	Loss of job
EHIF	Administration of the health insurance system	Adoption of contracting principles; Selection and contracting of providers; Paying drug benefits; Paying sickness benefits	Representatives of the Supervisory Board accountable to nominating agencies; Management Board accountable to Supervisory Board	For MB and employees, loss of bonus or job In case of negligent non-performance ending in financial loss for EHIF, financial liability to SB and MB members
Professional Associations	Professional development; Assessment of professional competence	Advisory role for public-sector institutions	To members	Low representation of interests and low status compared with other specialists
Estonian Family Doctors Association	Professional development; Representation of interests in developing reimbursement, contracting policy, and legislative process	Advisory	To members	Change of management
Hospital Union	Representation of corporate interests in reimbursement policies; Contracting policy and health care legislative process; Management training courses	Advisory	To members	Change of management
Consumer organizations	Representation of consumer interests	Advisory	To members of respective organization	Withdrawal of representative from working groups, etc.

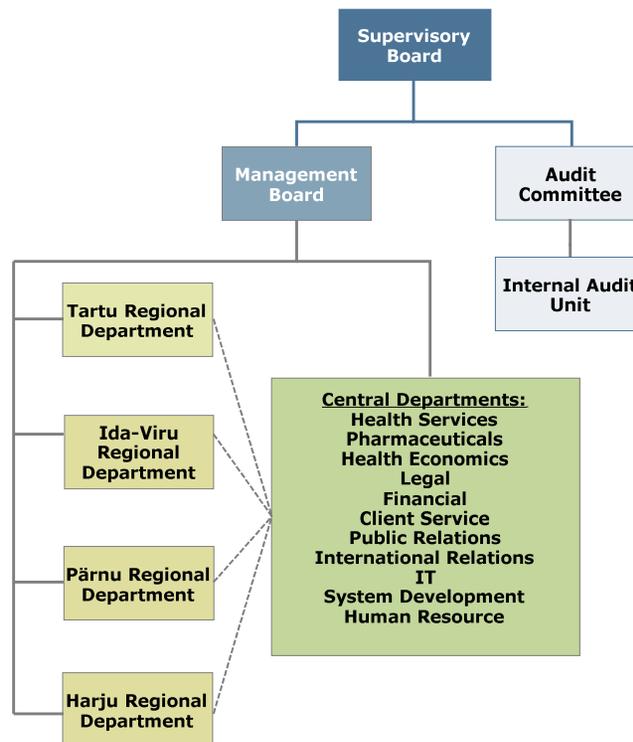
Source: Jesse 2008.

### II.2.1 Organization

The organizational structure of the EHIF is depicted in Figure 2. The EHIF is managed by a matrix principle, with the central departments leading strategic development, overall

planning, control of financial resources, and guiding and supervising regional departments in the respective areas. Restructuring plans in 2004 resulted in four regional departments coordinated by the central department. The responsibilities of regional departments have decreased over time, and currently include regional assessment of population health needs, contract drafting with providers in the region, claims processing, and client servicing. However, in 2006 the county offices of the regional departments were closed due to administrative inefficiency, and some of their client services functions are now contracted by the EHIF from the offices of the national post company (Jesse 2008).

**Figure 2.** Organizational structure of the Estonian Health Insurance Fund



Source: Adapted from Jesse 2008.

Administrative oversight of the EHIF is done by the Supervisory Board. The primary responsibilities of the Supervisory Board include approving EHIF's 4-year development plan and annual budget, producing regular reports, and developing criteria for selecting providers for contracts (Table 4). Decisions about insurance benefits are also made by the EHIF Supervisory Board, which collects the information and makes proposals to the MSA, which is ultimately responsible for the approval. Although there were attempts to establish the competency for developing the benefits package within the MSA, experience showed that the process was subject to significant provider lobbying and influence. Thus, since 2002, the EHIF is again responsible for making the recommendations to the MSA (Habicht 2009). Moreover, rotation of staff between the EHIF and the MSA and mutual training programs facilitate the cooperation between the two bodies (Jesse and Habicht 2009).

**Table 4. Competencies of the EHIF Supervisory Board**

<ol style="list-style-type: none"> <li>1. Approving the development plan of the EHIF</li> <li>2. After hearing the opinion of the Management Board, proposing to the Minister of Social Affairs to make a proposal to the Government of the Republic for establishment or amendment of the list of health services of the EHIF</li> <li>3. Approving the maximum length of a waiting list</li> <li>4. Proposing to the Minister of Social Affairs the establishment of a list of medical devices for EHIF</li> <li>5. Approving the standard conditions of contracts, the evaluation criteria for selective contracting and the term of the contracts provided</li> <li>6. Approving the EHIF budget in accordance with the state budget based on the recommendation of the Management Board</li> <li>7. Approving, based on the recommendation of the Management Board, the structure of the EHIF</li> <li>8. Approving the statutes of the departments of the EHIF</li> <li>9. Approving the statutes for the maintenance of the health insurance database based on the recommendation of the Management Board</li> <li>10. Approving the accounting procedures based on the recommendation of the Management Board</li> <li>11. Deciding on the acquisition, transfer and encumbrance of immovables and of movables that are entered or must be entered in the register and on the taking of loans, all based on the recommendation of the Management Board</li> <li>12. Appointing or removing the chair of the Management Board</li> <li>13. Appointing or removing members of the Management Board on their own initiative or based on the recommendation of the chair of the Management Board</li> <li>14. Deciding on entering into a contract of service with the chair of the Management Board and on entering into contracts of service with the members of the Management Board on the recommendation of the chair of the Management Board</li> <li>15. Deciding on the filing of proprietary claims against members of the Management Board</li> <li>16. Approving remuneration of and additional sums payable to the chair of the Management Board and members of the Management Board after hearing the opinion of the chair of the Management Board</li> <li>17. Approving reports submitted by the Management Board and the requirements set for the reports</li> <li>18. Designating an auditor for the EHIF and deciding on the amount of remuneration of the auditor after hearing the opinion of the Management Board</li> </ol>
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Source: Jesse 2008.

The EHIF Management Board consists of 3-7 members and is responsible for operational management. The Supervisory Board appoints the Chair of the Management Board through a competitive recruitment process, and then appoints the other members based on the Chair's recommendation.

### *II.2.2 Mechanisms of representation*

The EHIF Supervisory Board is comprised of fifteen members: five members representing patient organizations, five members of employer organizations, and five government-nominated members including a representative from the MSA. The Board is

chaired by the Minister of Social Affairs to assure political accountability. Three of the state representatives in the Supervisory Board are *ex officio* members: the Minister of Social Affairs, the Minister of Finance and the Chair of the Parliament Committee on Social Affairs. The fourth member is a member of, and appointed by, the Parliament. The fifth representative is an official of the MSA, appointed by the government. This provides mechanisms of government oversight over the operational activity of the EHIF. The other ten members are nominated by their respective organizations and appointed by the government. This tripartite constituency, with a carefully devised voting procedure, has provided stability and has helped to mitigate interest-group pressures. Employer organizations and organizations of the insured have an important voice in the Supervisory Board, contributing to the transparency and sustainability of the EHIF (Jesse 2008).

All Supervisory Board members must have permanent residence in Estonia, an impeccable reputation, and the necessary knowledge for their duties. The term of authority for non-*ex officio* members is three years.

### *II.2.3 Legal Status*

During 1992-1993, the 22 regional funds operated as separate public independent bodies. Over time, however, the legal status of the sickness funds became unclear as the framework laws for public administration changed. By the end of the 1990's, the legal ambiguity of fund status had started to adversely impact performance, especially in developing contracts with providers. The process of approving the health insurance budget by the Parliament had also proven too rigid and general for detailed needs-based planning and lacked transparency. Following a rigorous analysis of options for legal status, three different alternatives emerged: a state agency, foundation, or an independent public legal entity. The last option was chosen and established by the Estonian Health Insurance Fund Act in 2000. The working group charged with developing the legal framework for the Fund's operation drew on previous experience from other public independent bodies such as the national television and radio companies, while incorporating elements of best practice from the public sector (Jesse 2008).

The EHIF has full rights to enter into contractual agreements, and civil service regulations do not apply, allowing for more flexible recruitment and remuneration policies (Jesse et al. 2004). Thus, while the government oversees the functioning of the health system, the EHIF has been given sufficient autonomy to be an efficient purchaser. The Management Board has to publish an annual report describing relevant activities and financial situation and forecast, which has to be audited by an independent auditor selected by the Audit Committee of the EHIF. Since 2003, the annual report has received the annual Public Sector Transparency Flagship award from the independent Accounting Chamber for being the most transparent annual report in Estonia's public sector (Jesse 2008).

### *II.2.4 Ownership*

The EHIF owns its assets and can use them according to the procedures stated in the EHIF Act and the statutes of the EHIF, but not for other purposes. If the EHIF is dissolved, its assets are transferred to the state. Ninety-nine percent of the EHIF's revenue base is constituted by health insurance tax, which is collected by the Estonian

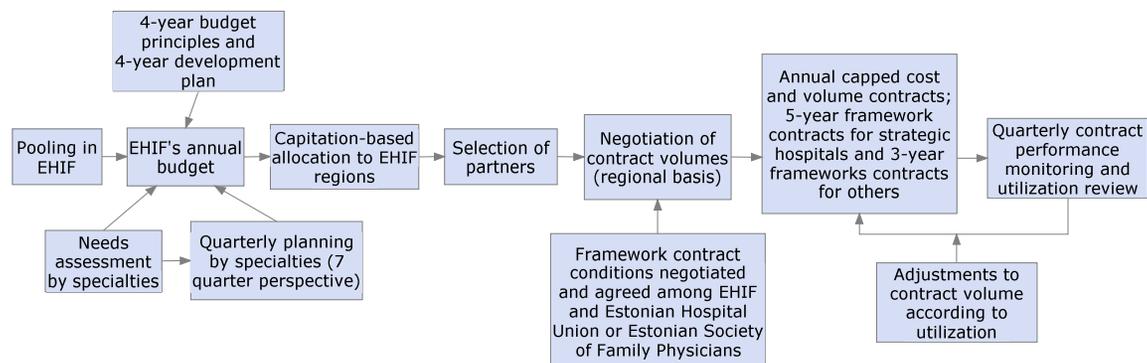
Tax and Customs Board since 1999 (Koppel et al. 2008). The EHIF cannot go bankrupt, and is fully liable for its obligations with all assets. However, there are situations when the state becomes responsible for EHIF's obligations, such as if health insurance tax revenue is lower than forecast, or if the government establishes prices or rates of benefits at levels that prevent the EHIF from fulfilling its contractual obligations. Although in theory there is some incentive to exceed the EHIF's budget, in practice this only occurred in 2004, although revenues were also higher and covered the excess spending (Habicht 2008). However, due to the significant impact of the recent economic crisis had on health insurance revenues, the EHIF is expecting to run a deficit for the next 3-4 years (Habicht 2009).

### II.2.5 Linking health insurance organization to health system goals

The organizational structure presented above was established during the development of the EHIF Act to promote social partnership, transparency, sustainability and efficiency and to ensure that EHIF management is depoliticized (Jesse 2008). Legislation already requires that EHIF objectives be linked to, and guided by, national health policy in terms of equity, quality, and access. To achieve this, lessons learned during the 1990s both in the administration of health insurance as well as more widely in the public sector were taken into account. To be sure, on more than one occasion, social partners such as employers and beneficiaries have not supported short-sighted proposals from some politicians that could have jeopardized the sustainability of the EHIF (Jesse 2008).

Since EHIF cannot directly influence its revenues by changing the tax rate, which is set legislatively by the Parliament, increasing system efficiency is the only way to improve user access within the revenue limits. This is done primarily by changing provider payment methods and refining contracting practice (Figure 3). The same applies for the MSA, whose alignment with the overall “balanced budget-no deficit” policy in the public sector had a role in preventing excessive control by provider interests. Thus, hard budget constraints can be used successfully as a tool to improve operational efficiency (Habicht 2008). Of the three internationally defined health system goals, EHIF has set an explicit objective only for responsiveness, which is monitored through annual satisfaction surveys. Financial protection depends on political decisions on co-payments and national-level resource allocation, thus falling under the domain of the MSA. Since 2002, the

**Figure 3.** Contracting process of the EHIF



Source: Koppel et al. 2008.

maximum co-payment limits are set by law, but it is left to the provider's decision to set actual values within those limits (Jesse and Habicht 2009). The level of health and equity in health were deemed to have too many confounding factors to be set as objectives to which EHIF can be directly held accountable.

### *II.2.6 Politics of health reform*

It is important to analyze not only the restructuring of the Estonian health care system, but also how reform was achieved politically. Research revealed that political stability in the years following independence was an important factor for the success of reform. Although system reform benefited from the consensus and commitment of political parties, health reform was not initially a high political priority, as the debate was focused on economic reforms (Atun et al. 2006). This created a window of opportunity for policy makers to introduce the reforms with minimal opposition from politicians.

The re-established Estonian Medical Association (EMA) played a significant role in the successful initiation and implementation of health insurance reform. EMA leaders and doctors recognized that a health insurance system had the capacity of ensuring sustainable funding for medical care in a new economic environment. Although many EMA doctors left practice to become involved in politics, in general policy making was not controlled by provider interests (Atun et al. 2006).

Resistance to change was encountered mainly in the capital, Tallinn, where heads of polyclinics opposed the primary care reforms. In this case, reform leaders used an "encircling strategy" by fully scaling up family medicine in rural areas before introducing it in Tallinn through pilot programs. This approach helped prevent strong resistance from narrow interest groups. At the same time, the explicit aim to keep new payment systems and contracts simple was critical to ensuring buy-in from stakeholders. Finally, strong leadership, collaboration, and early investment in training and involvement of doctors in the policy dialogue guaranteed a critical mass of system actors for rapid policy implementation (Atun et al. 2006).

### *II.2.6 Conclusions*

The current organizational mechanisms have been largely appropriate for the objectives established and led to a well-functioning system in the Estonian context. Managerial capacity, limited corruption, a clear and simple vision, and the ability to continuously learn from early experience were critical factors of success for the Estonian reforms. Incremental changes and a balance of powers facilitated the dynamic equilibrium that characterized the Estonian health system since 1991. It remains to see how the system will adapt to the increasing financial stress created by the economic downturn, new technologies, and provider pressures.

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## Part III. The Current Health System

Estonia's current health system follows the principles of social solidarity and focuses on primary care, modern hospital care, and increased public health efforts.

### III.1 Financing

In 2007, Estonia spent 5.4% of GDP on health care, equivalent to a per capita spending of €18. Approximately two-thirds of Estonia's health care is funded publicly by mandatory health insurance contributions through earmarked social payroll tax, reflecting the goal of a solidarity-based system (Table 5). Public spending on health accounts for 75% of total health expenditures. Mandatory contributions towards social health insurance are linked to employment and are passed along to dependents. Approximately 96% of the population is covered under the health insurance system. As mentioned previously, health insurance contributions are pooled to account for regional differences in income. Employees are required to contribute 13% of their wages (approximately €78 per month), but special populations such as students, people with disabilities, children and retired military are covered but not required to contribute. These special populations have their health care subsidized by the rest of the population instead of the government. The government does add contributions for only about 3% of the covered population, including parents on leave with children under 3, the unemployed, and caregivers for people with disabilities. Emergency care for the uninsured, ambulances, and public health programs are financed separately through taxes, not through the statutory insurance budget. The rules for the benefit package covered by SHI are based on four standards: medical efficacy, cost efficiency, availability of financial resources, and appropriateness and compliance with government policy.

One quarter of expenditures is paid privately out-of-pocket largely for co-payments for dental care and pharmaceuticals (on average €3.20 per outpatient prescription plus a percentage of the pharmaceutical ranging from 0-50%). However, between 1995 and 2002 out-of-pocket payments increased rapidly, accounting for a growing share of health spending and threatening to place a higher financial burden on low-income families (Habicht et al. 2006). Private health insurance is minimal and composed primarily of medical travel insurance.

### III.2 Payment and Incentive Structure

The EHIF contracts with providers through a bidding system that sets the requirements on access, quality, reimbursement conditions, reporting, and liability if the stipulations are not followed. Hospitals and the EHIF negotiate a capped cost and volume contract at the beginning of each year. The hospital payment system varies by specialty and length of stay, but the payment is fixed nationally by a price list determined by the EHIF and does not vary by hospital characteristics such as being a teaching hospital. The price list includes a mix of payment mechanisms (Table 6). For example, outpatient specialist care payments are a mix of fee-for-service (FFS), per diem, and diagnosis related group (DRG).

FFS includes per diem payments covering the cost of basic exams, planning, nursing, meals, simple procedures, lab tests and medications. The per diem varies according to

**Table 6.** Price list expenditures for different types of care, 2005

<b>Payment method</b>	<b>Outpatient care (% of total)</b>	<b>Inpatient care (% of total)</b>
Fee-for-service	83	24
Complex prices	10	10
Per diem	0	31
DRG	6	35

Source: EHIF 2007.

specialty and length of stay. If admission lasts for longer than the set duration, additional days are reimbursed at a lower rate, which has lowered ALOS over the last years.

Prices for services are calculated using activity-based costing (ABC) starting with 2003. ABC was implemented as a result of dissatisfaction among providers, who claimed that EHIF's price list was not reflecting actual service costs. In an attempt to counter the strong pressure from physicians and to make pricing as transparent as possible, EHIF used this model as a way to involve all providers actively in the process while obtaining practice cost information (Habicht 2009).

The Estonian DRG scheme is based on the Nordic DRG version and was implemented in 2004 primarily in hopes of reducing expenditures. Originally, the proportion of DRG payment per case was 10% in order to pilot the program, but now the proportion paid under a DRG scheme is approximately 40% for inpatient care and 30% for day care.

Since the EHIF is not required to enter a contract with all providers but can select better performing ones, there is a limited amount of competition – for about 15% of outpatient care. This selection usually happens for specialist ambulatory services in areas and specialties where there is an excess of providers and for dental care. The selection criteria are qualification, user charges, proximity to patients, and price (Habicht 2009).

Family physicians and nurses working through an EHIF contract are also paid by a combination of capitation (comprising about 70% of remuneration and based on age and list size) and other methods of payment (FFS and a set allowance for transportation and accommodation costs which both are approximately 14% of total payment) to form a budget for each practice paid on a monthly basis. The goal is to encourage family physicians to provide more care at the primary level. Since the implementation of primary care reform, general practitioners have received an additional bonus if they are trained and certified in family medicine.

In 2006, the HIF and Estonian Society of Family Doctors launched a voluntary quality-based financial incentive system. In the first year, 60% of family practices joined the program, and by the end of 1008 enrollment rose to 78% (EHIF 2008). Measured areas include vaccinations, mammograms, diabetes, high blood pressure and blood lipid and glucose measurement. New conditions are added yearly, as reliable quality indicators are developed. Enrolled physicians must provide electronic reports detailing achievement, or

lack of achievement, of performance indicators. The quality initiative is expected to pay physicians an additional €256 per month (Table 7). An EHIF assessment revealed that the health status of patients whose physicians participate in the pay-for-performance system was better than that of physicians who don't participate (EHIF 2008). This was found to be true for both preventive activities aimed at children and adults and for monitoring chronic diseases.

**Table 7.** Payment of family doctors in EEK and Euro, 1999-2008 (selected years)

Cost category	1999		2003		2008	
	EEK	€	EEK	€	EEK	€
<b>Basic monthly allowance</b>	<b>5000</b>	<b>319.6</b>	<b>5290.0</b>	<b>338.1</b>	<b>11955.0</b>	<b>763.9</b>
<b>Capitation per person per month</b>	<b>72</b>	<b>3.4</b>	<b>91.6</b>	<b>4.7</b>	<b>232.2</b>	<b>13.1</b>
0-2 years	20	1.3	27.6	1.8	107.0	6.8
2-69 years	16	1.0	21.0	1.3	44.4	2.8
>70 years	18	1.2	24.6	1.6	53.8	3.5
Fee-for-service (max % of capitation sum)	18	n/a	18.4	n/a	27.0	n/a
<b>Additional monthly payments</b>	<b>3100</b>	<b>198.1</b>	<b>3100</b>	<b>198.1</b>	<b>9418</b>	<b>601.8</b>
Working 20-40 km from a county hospital	700	44.7	700	44.7	1400	89.5
Working >40 km from a county hospital	1400	89.5	1400	89.5	4018	256.7
Family doctor training	1000	63.9	1000	63.9	n/a	n/a
Quality bonus	n/a	n/a	n/a	n/a	4000	255.6

Notes: EEK = Estonian Kroon

Source: EHIF 2008.

### III.3 Organization

Hospitals can be either non-profit or for-profit institutions. Most hospitals, however, are currently owned by local governments. In 2002, legislation decreed that all hospitals were private entities with supervisory boards that represented the public's interests (Jesse 2008).

Primary care practices are either set up as joint-stock companies or private companies owned by the physicians or local municipalities. The practices must stay within 1,200 to 2,000 registered patients (the average is 1,800) and must be split into two practices if they exceed the upper limit (Koppel et al. 2008).

### III.4 Persuasion and public health

Although most public health initiatives are government funded, the Health Insurance Fund also has a special budget that covers public health and health promotion activities, which include school health, screenings, and reproductive health. Public health has been receiving increased attention and in 1997, Estonia established the National TB Program

(NTP) financed by the Ministry of Social Affairs. Physicians were trained in TB treatment, thus patients suspected of having TB could receive care at any health facility including primary care offices. A 2007 study showed that the median TB diagnostic delay was 19 days, which is comparable to that of other nations (Pehme et al. 2007).

Smoking rates have historically been very high, with 58% and 26% of males and females aged 30-59 smoking daily in the mid-1990s. The government has been imposing stricter regulations on smoking by establishing smoke-free zones and banning direct advertisements (Lai et al. 2007). Thus, the prevalence of daily smoking has decreased steadily since 1994.

Another public health problem is the increasing alcohol consumption. The amount of pure alcohol consumed by people older than 15 has doubled since 1997, reaching 13.4 liters per capita, almost 50% higher than the EU average of 9.1 liters per capita (Koppel et al. 2008).

### **III.5 Reform effects and remaining challenges**

There is a general consensus among both stakeholders and health policy experts that health reforms in Estonia have largely been successful in creating a stable and functional system that efficiently achieves system goals. Despite this, there are some challenges that need to be addressed.

#### *III.5.1 Intermediate system measures*

##### ◆ *Access*

Estonian providers are required by contract to guarantee access to agreed services during the contract validity period, and to provide care according to agreed maximum waiting times. These limits are: 3 days for primary health care, 4 weeks for outpatient specialist care, and up to 8 months for inpatient care, with longer times for expensive elective procedures. Providers also have to request additional funding if maximum waiting times are exceeded, and present quarterly data on elective care waiting times (Habicht 2009).

However, long waiting times have been a widespread concern among the population. Patients with chronic diseases are more likely to complain about difficulties in accessing specialists, although evidence from a random survey suggests that there are no organizational barriers in their access to health services (Põlluste et al. 2007). According to the study, most respondents waited 1-2 days to see their family doctor and about 1-2 weeks for a specialist, well within the limits set in provider contracts. Moreover, in 2005, Estonia established a 24-hour primary care call center and implemented the quality-based financial incentives. It also added information technology that includes online registration and prescriptions and increased the range of primary care services, demonstrating a sustained responsiveness to patient needs and expectations. This reflected in an increased population satisfaction with access to care, with the percentage of the population rating the access as good doubling (Habicht 2009).

##### ◆ *Quality*

The quality of primary care is rated highly by both health professionals (Atun et al. 2006) and patients (Põlluste et al. 2004). Although the accreditation and quality assurance of the

Estonian health system are concerned with assuring an acceptable level of inputs, few quality management tools focus on processes and outcomes. Moreover, the implementation of such tools has been done without high-level coordination, mainly due to the lack of commonly agreed quality indicators to monitor processes (Polluste et al. 2006).

The EHIF has the right to conduct clinical audits on providers. For example, in 2007, it conducted five audits focused on the quality of diagnosis and treatment of glaucoma and acute pancreatitis, the quality of internal care management and oncology continuity in general hospitals, and the quality of in-patient long-term care. The results of the audits were discussed with the involved hospitals, demonstrating the continuous efforts towards transparency and collaboration in Estonian health care quality improvement (Habicht 2009).

Since 2005, Estonia has undertaken a national effort to improve information technology including electronic health records and digital prescriptions, imaging and registrations. A population-wide E-Health system is almost in place. This will create a centralized database that will aid in provider monitoring, as well as patient diagnosis and treatment. Estonia is now viewed as having one of the most advanced health information technology systems in Eastern Europe.

#### ◆ *Efficiency*

Estonia continuously restructured its health system to eliminate inefficiencies in resource supply, by licensing fewer, but more modern, hospitals and primary care facilities, and by focusing on family practitioners and nurses. Between 1995 and 2006, Estonia eliminated approximately one third of its hospital beds. In 2007, it had about 5.57 beds per 1000 population, of which 69.7% were acute care beds (WHO 2009). Simultaneously, primary health care was expanded resulting in a 53% increase in GP consultations from 2000 to 2003 (Atun et al. 2006). In 2006, there were approximately 3.3 physicians and 6.6 nurses per 1000 population, compared with 3.2 and 7.5, respectively, in the EU. Following a worldwide trend, Estonia faces nursing shortages and an uneven placement of specialists (Koppel et al. 2008).

These structural changes have been accompanied by some gains in process efficiency. For example, in 2006, the average hospital length of stay was just under 8 days, less than half of that in 1990. Although hospital occupancy rates have stayed relatively constant, this suggests much better hospital efficiency considering the high number of beds eliminated.

### *III.5.2 Health system goals*

#### ◆ *Population health status*

Although it is difficult to attribute changes in health status solely to health reforms, Estonia has experienced noteworthy progress in overall health status. The life expectancy is 78.1 years for women and 67.3 for men, and has been steadily rising over the past few years. Infant mortality has dropped from 12.3 in 1990 to 5.4 in 2005 (WHO 2009), although it is still higher than the EU average of 4.6.

Ongoing challenges include reducing inequalities in health-related behavior and status, and reducing the incidence of HIV/AIDS. The HIV/AIDS epidemic was declared the most serious health problem in 2001 and by the end of 2007, 0.47% of the population was diagnosed as HIV-positive. The leading cause of death is cardiovascular disease (47.1% of deaths among women and 54.9% among men), followed by cancer. The burden of disease falls disproportionately on the working-age class and is primarily caused by lifestyle choices such as tobacco use, alcohol use, obesity and little exercise (Koppel et al. 2008).

◆ *Financial protection*

Data from national household surveys indicates that the Estonian health system has provided adequate protection from catastrophic health costs to the vast majority of the population. In 1995, after GDP had contracted for three years after independence, 0.3% of households faced catastrophic expenditures (Habicht et al. 2006). This number compares fairly well with 2.8% in Latvia (1997-1998), 1.3% in Lithuania (1999), and about 10% in countries such as Brazil or Vietnam, but is below 0.1% in several Western European countries (Xu et al. 2003). However, there is evidence to suggest that financial protection has eroded between 1995 and 2002, mainly due to insufficient safeguarding against out-of-pocket expenditures, even among the insured population. In 2002, 1.4% of the population fell below the poverty line due to out-of-pocket medical costs (Habicht et al. 2006). In 2003, the Estonian government changed co-payments policy in many respects, by increasing the proportion of prescription drugs reimbursed under health insurance and introducing reference prices for pharmaceuticals.

Although in the early years of health insurance there were weak incentives to rigorously define the benefits covered, recent financial pressures have led to an increased interest in introducing explicit benefits packages. However, this is very difficult, since the cost-effectiveness of all medical interventions is not known. Although the health service price list is equalized to the benefits package, it is hard to insure that only the services included in the package are provided to patients through EHIF financing.

◆ *Patient satisfaction*

In addition to monitoring health services and data such as waiting times, the government and HIF perform population satisfaction surveys which are available to the public. Results from a 2002 survey showed that the majority of respondents believed family doctors use better diagnosis and treatment methods than the district doctors under the old system (Pölluste et al. 2004). Patients have a better understanding of how the system works and accept the family doctor as the first point of care in non-emergencies, although younger and more educated patients tended to prefer the freedom to see a specialist without referral. In general, patient satisfaction has increased significantly since 1998 (Pölluste et al. 2000).

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