CHALMERS

Health Care System Report
- Poland & Estonia

Master of Science Thesis

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CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2012
Report No. EX002/2012

Thesis for the degree of Master of Science in Biomedical Engineering

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- Poland & Estonia

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March 2012

Abstract

This paper constitutes a health care system report, compiled for Vamed Group in Vienna, Austria. Vamed was founded in Austria in 1982 and has since then finalised more than 500 projects worldwide. It operates in the field of health care in which tools of consulting is used both in the project development and in the total realisation model in which Vamed perform everything from the initial planning to a finished project. After project completion Vamed also offer support such as facility management and IT solutions.

Two of Vamed's spot countries of special interest are concluded in the report. On one hand there is Poland, where Vamed already is operating and on the other hand Estonia, where Vamed hopefully in the near future will realise projects.

The aim of the study is to answer following research questions in respective country;
- What is the health care system structure and how is it organised?
- Who are the decision-making bodies and how is the power shared between them?
- How is the health care financed? How is a health care institution contracted?
- What are the different health care institutions?
- What is the hospital structure and what main emphasis has it?
- What is the ambulance service structure and extent?
- Which important equipment do the hospitals have, regarding radiation equipment, linear accelerator etcetera? How is the equipment distributed between public and private sources?

Acknowledgements

My project is a theoretical report, carried out at Vamed in Vienna Austria in the fall of 2011. This section of the report is aimed to thank all the people who have helped me along the process of my work.

First of all I would like to thank my examiner at Chalmers University of Technology; professor Yngve Hamnerius for his guidance and support during the path of the fall. Thank you for always being eager to help and assist in answering my questions. Second I am also thankful to mister Stefan Zöser my supervisor at Vamed as well as engineer Gerhard Arthold, the Vamed medical technology department head.

Further I would like to thank near and dear ones for all the help and support given to me.

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1. Introduction

This introduction of the study comprehends the parts including the background and purpose of the thesis as well as the scope and important research questions involved in the study. Furthermore central definitions are defined and the thesis disposition with the different chapter content is described.

1.1. Background

Vamed is a leading, internationally operating company in the field of health care. It was founded in Austria in the year of 1982 and has since then finalised more than 500 projects worldwide. Vamed works with a total realisation model in which it combines professional consultancy, project management, financial engineering and management know-how to make their projects successful, in which comprehensive services and solutions in the field of health care are generated. Vamed is present the entire way from the initiation with project development over planning and erection to facility management and total management all indicated by the Vamed slogan; “Everything from one source“.

The report contributes to an in depth knowledge about the current health care systems in the countries of Poland and Estonia, regarding its structure, health care decision makers and financing scheme. Furthermore the different health care institutions are comprehended with a more thorough part about the hospital structure and organisation as well as the ambulance system and an overall medical technology capacity of the respective countries.

1.2. Purpose

The task of the report is to present up to date, reliant and neutral information from public and governmental sources. Research articles about the current health care system status in Poland and Estonia are also going to be used. This in order to create yet an overall but also profound compilation and analysis of the most important feature about the overall system as well as a deeper insight in which medicine technology devices the country possesses.

The Estonian part of the report is the first step in getting the knowledge about the country health care system. This in order to find out the potential of project profitability on the local health care market, in which a new market area could be opened to Vamed where projects could be realised. In Poland there is right now a huge potential for health care projects and there is already a branch office on site. This part of the report will give the necessary up to date report to help the Vamed decision makers to make confident and well knowledge based decisions about the current situation in which new project openings can be considered and in this way expanding the business area of Vamed.

The aim of this report is therefor to present the system as well as to giving Vamed the necessary information, in order to decide upon the possibility in accessing new market shares.

1.3. Scope

The scope of this report is first of all confined to the health care in the countries of Poland and Estonia, and second of all to the question formulation written under 1.4. Research Questions.

1.4. Research Questions

The study has been focused on answering the following questions.

- What is the health care system structure and how is it organised?
- Who are the decision-making bodies and how is the power shared between them?
- How is the health care financed? How is a health care institution contracted?
- What are the different health care institutions?
- What is the hospital structure and what main emphasis has it?
- What is the ambulance service structure and extent?
- Which important equipment do the hospitals have, regarding radiation equipment, linear accelerator etcetera. How is it equipment distributed between public and private sources?

1.5. Definitions

Consumer Price Index (CPI) – "CPI is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services" (Bureau of Labor Statistics, 2011)

Gross Domestic Product (GDP, purchasing power parity) /Capita – "Value of all final goods and services produced within a nation in a given year". "A nation's GDP at purchasing power parity (PPP) exchange rates is the sum value of all goods and services produced in the country valued at prices prevailing in the United States" (The World Factbook, 2012). This value is then divided by the population.

GDP, real growth rate – "GDP growth on an annual basis adjusted for inflation and expressed as a percent" (The World Factbook, 2012).

Inpatient care – "A patient who is admitted to a hospital or clinic for treatment that requires at least one overnight stay" (Medical Dictionary, 2012).

Outpatient care – "A patient who comes to the hospital, clinic, or dispensary for diagnosis and/or treatment but does not occupy a bed" (Medical Dictionary, 2012).

Out-of-pocket payments – "An expense incurred and paid for by an individual for personal use" (Investopedia Dictionary, 2011)

Total health expenditure – "Is the final consumption of health goods and services plus capital investment in health care infrastructure" (OECD Health at a Glance: Europe, 2010).

1.6. Disposition

The study is divided into four chapters. This part defines and describes them.

Chapter 1 – Introduction

This chapter (i.e. current chapter) presents the background to the study as well as purpose and scope of the report. Furthermore the research questions are defined and definitions described.

Chapter 2 – Theory

In chapter two, the theories behind inter alia the structure and financing of national hospital systems is presented. Further the hospital payment scheme is described.

Chapter 3 – Result

The chapter three contains the result of this report. It is subdivided into two parts; Poland and Estonia. Within each part, the result is represented as a compilation of current knowledge status, considering the health system. The chapter begins with a country overview to give a quick summary about the demography, economy and political situation. Moreover its structure and organisation scheme along with its decision making bodies and financing scheme is described and defined. Further the health care institutions, hospital function, ambulance service and medical technology is presented.

Chapter 4 – Analysis and future aspects

In chapter four, the theme is discussed and trends are indicated.

2. Theory – General Health Care System Knowledge

In this theory chapter, the theoretical framework of the report is presented. This chapter gives a more general knowledge of the health care systems in Europe. The most important topics are given concerning the structure and financing part of the health systems.

2.1. Structure

The main actors for countries using mandatory health insurance systems in the health care consist of the population, third-party payer and providers (figure 1). The population of a country pays prepaid contributions in the form of taxes, social health insurance contributions and voluntary insurance to a third-party payer, who pools the expenditures and allocates them to providers according to premade contracting processes between providers and state. The social health insurance is a mandatory health insurance. Providers are also paid privately directly from the population mostly in the shape of out-of-pocket payments (Saltman et al., 2004).

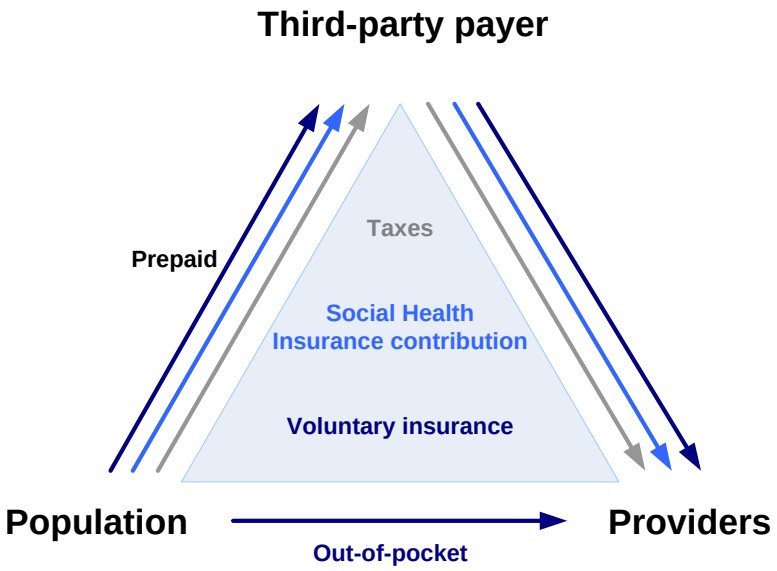

Figure 1. Main actors in the health care system (Redrawn from Saltman et al., 2004).

In Western Europe the share of expenditures are on average in the span 65-85 percent public, 10-20 percent out-of-pocket payments and less than 10 percent consist of a voluntary insurance (Saltman et al., 2004).

Private health insurance (PHI) is offered by public and quasi-public bodies as well as offered by for-profit and non-profit private organisations. It can have three different characters; substitutive, complementary or supplementary. The substitutive PHI is underwritten by persons excluded from a statutory coverage, the complementary PHI is meant to complement for services, who are either excluded or not fully covered by the social health insurance. Further the supplementary and third type gives the opportunity for a faster access to health care treatment as well as an increased possibility for choice of provider (Saltman et al., 2004). The share of PHI of the total health expenditure is growing but it still remains a small part of it (Joint Report on Health Systems, 2010).

2.2. Financing

The total health expenditure average in the EU in 2008, including both public and private expenditures, amounted up to 8.3 percent of GDP. Out of this number, a significant part, 6.2 percent was devoted to public expenditure (OECD Health at a Glance: Europe, 2010). There are many factors influencing the health expenditure. It is thought to increase over the years. Factors being the basis of the growing demand are inter alia; an ageing population, technological development, growing patient expectations, climate change and globalisation (Joint Report on Health Systems, 2010). Furthermore the amount of health spending depends on an interaction of both the demand and supply of health services as well as how effectively the health system is organised.

The main payment method is called prospective global budget, which means that there is a defined volume of health services with a maximum budget defined every year. The buyer of care then contract with providers according to the amount in the budget (Joint Report on Health Systems, 2010). All European countries have a system in which vulnerable groups in the society are concluded in the health coverage even though they are not contributing to it. The countries are trying to get a universal health care system where all its population have the right to get health treatment (JRoHS, 2010). The health expenditure consists of three parts; public, private and other expenditures (figure 2).

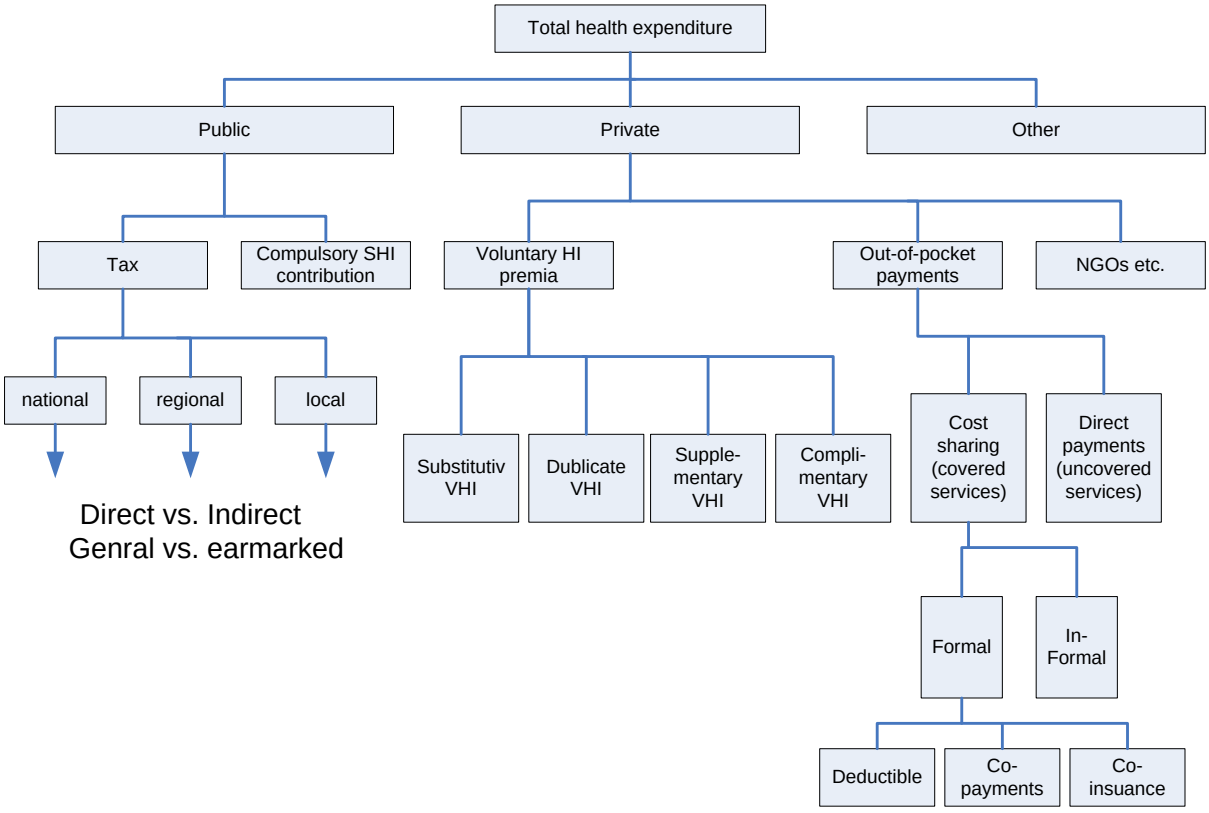

Figure 2. Chart over the parts of the total health expenditure (Redrawn from Saltman et al., 2004).

The public expenditures are further divided into taxes and compulsory health insurance contributions. Furthermore the private expenditures are divided into voluntary health insurance, out-of pocket payments and contributions from non-governmental organisations. The figure 2 can be connected with the figure 1 in which the three entries; taxes (national, regional, local), compulsory

health insurance and voluntary health insurances (substitutive, duplicate, supplementary, complimentary) are prepaid resources. The out-of-pocket payments are divided into cost sharing and into direct payments and together with the Non-Governmental Organisations (NGO) they are expenditures paid directly from the population to the providers (Saltman et al., 2004).

Countries with a social health insurance system have different strategies in which the contribution is collected. It can be collected by insurers, sub-national branches of a national insurance fund or it may also be collected by a central office of a tax authority. A national, regional or local tax office may collect the taxes. The total health funding is allocated among the providers in different regions of a country. The distribution is based on inter alia the number of people living in a region as well as on their age-structure and morbidity patterns (Joint Report on Health System, 2010).

2.3. Hospital Payment System

The hospital care often has the largest share of health expenditure. Therefor it holds a key position for politicians trying to improve it (Joint Report on Health Systems, 2010). Diagnostic Related Group (DRG) is the most common hospital payment system in industrial countries (Schneller-Kreinsen et al., 2009). There are different types of DRG system applied in different countries. However the all are build up on the same important two mechanisms; patient classification system and a payment rate setting mechanism. The first mechanism defines different product categories in which different hospital services depending on inter alia diagnostic procedures related to hospital resource consumption are placed in different groups. These groups are then in the second mechanism, the payment rate setting mechanism, assigned different cost weights according to the first mechanism (Cylus & Irwin, 2010). In figure 3 the essential building blocks of DRG systems are shown. As described the hospital products are according to patient diagnosis and procedures as well as to the severity of the treatment placed in different DRGs. These are updated according to continuous data collection updates. Both the patient classification system and the data collection influence the price setting, which can be cost weights, base rates, tariffs and average prices. The price setting is used in the calculation of the actual hospital reimbursement. (Geissler et al., 2011).

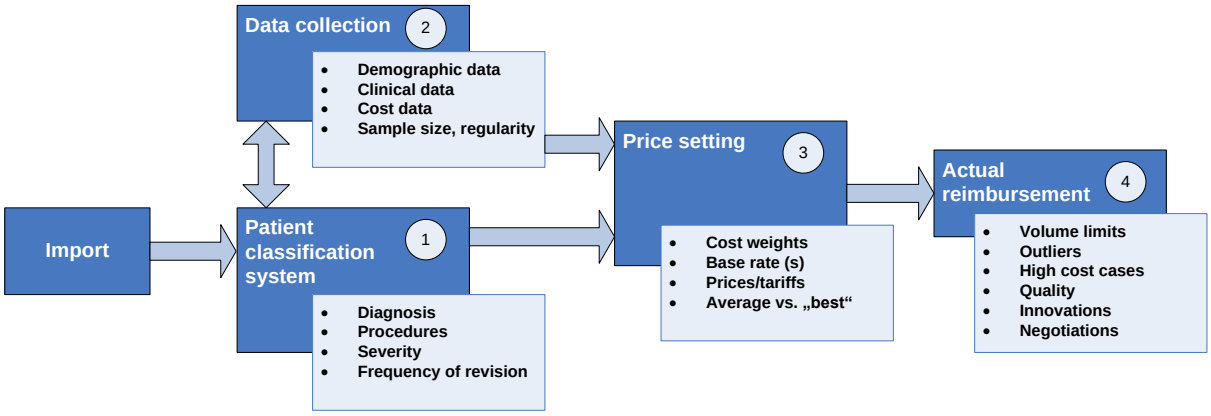

Figure 3. Main building blocks of DRG system (Redrawn from Geissler et al., 2011).

The data collection is done continuously and is both used for improvements, developments and updates of the DRG system as well as for calculations and negotiations of DRG weights. These

weights are based on the average resources needed to treat a patient in the DRG assigned to this weight (Geissler et al., 2011).

Countries who start to use a DRG system usually import a system already in use in another country, since the patient classification system is very extensive to elaborate. When having their own data it is common for the country to make advancements and improvements adjusting the system to better fit the individual country's health system (Schneller-Kreinsen et al., 2009).

The DRG system allows an increasing transparency in which hospitals performance and resource consumption in different regions and countries can be compared. Further the system encourages efficiency and the system makes it easier for a fair provider reimbursement. The necessary hospital documentation supports the hospital managers in their decision-making (Schneller-Kreinsen et al., 2009). One negative aspect with this payment system noticed is the possibility for hospitals to upgrade certain patients to a DRG having a higher reimbursement rate. Another negative aspect would be a relatively high administrative cost coherent with the data collection and price calculations (Cylus & Irwin, 2010).

The DRG-based payment system is usually carried out together with other payment methods such as for example Fee-For-Service (FFS) and per diem payments. This is done in order to make the payment method more secure in which the risks with the different methods are spread (Geissler et al., 2011). FFS significant a payment system when providers are paid a certain amount for each service provided, as its name indicates (Health Insurance, 2010). Per diem is Latin and means "per day". Here the hospitals are reimbursed for the amount of days a patient stays in the hospital.

3. Result

The result chapter constitutes the main part of this project. The health care system in the two countries of Poland and Estonia are examined. First the Polish system is presented.

3.1. Poland

The Polish health care system is framed and described in this subchapter. The research questions are answered regarding the current health care status in Poland, concerning the structure, decision makers and financing scheme. Further health care institutions are presented as well as the hospital structure, ambulance scheme and medical devices used in the country.

3.1.1. Poland Overview

This first section is aimed to give a quick overview about important numbers and figures as well as indicators about the country, including demographic, economic and political indicators.

3.1.1.1 Demographic Indicators

With regard to Poland's population of 38,440,000 persons and the surface area of about 312,690 m^2, it is the biggest country in Eastern Europe (PPRI, 2007). The Polish labour force amounts to 17.66 million people (The World Factbook, 2011). Further Polish demographic numbers and indicators are shown in table 1.

Table 1. Selected demographic indicators (The World Factbook, 2011).

Demographic Indicators in 2011	
Inhabitants	38,440,000
Population Density	122.9/km^2
Age Groups 0-14 15-64 65+	 14.7% 71.6% 13.7%
Birth-rate Death-rate Children Born/Woman	10.01 births/1,000 people 10.17 deaths/1,000 people 1.31 children
Life expectancy Female Male	76.05 years 80.25 years 72.10 years

3.1.1.2 Economic Indicators

During the 2008-2009 economic downturns, Poland was the only country in the EU to maintain positive Gross Domestic Product (GDP) growth. As shown in table 2 Poland had in 2009 a real GDP growth of 1.6%. The United States-based financial services company Standard & Poor's (S&P) rated Poland as A- in the third quarter of 2011 (UniCredit, 2011). The consumer price index is defined under 1.5. Definitions. Its values given in the third column, are taken at the end of the period.

Table 2. Economic indicators (UniCredit, 2011).

Year	Real GDP Growth Rate in %	GDP/Capita in EUR	Consumer Price Index (eop*)	Unemployment rate in %
2009	1.6	8.134	3.5	11.0
2010	3.8	9.277	3.1	12.1
2011	4.0	9.878	3.8	11.8

*End of period.

Poland is a member of the EU since 2004. This has given its economy a major upswing since it was allowed access to the EU structural funds (World Health Organisation, 2009). Over the next years the real GDP growth rate is expected to stabilise at circa 4% (World Bank, Poland Partnership Program Snapshot, 2011). Apart from EU Poland is also a member of the United Nations (UN), the Council of Europe, the Organisation for Economic Co-operation and Development (OECD), the Central European Free Trade Association (EFTA) and the Central European Initiative (CEI) (Turowiec et al. 2010).

The Polish government spent in 2008, 11.7 percentage out of its budget on health expenses. This number corresponded to a smaller share of resources compared to other OECD countries (OECD Government at a Glance, 2011). The respectively state budget shares are shown in in figure 4.

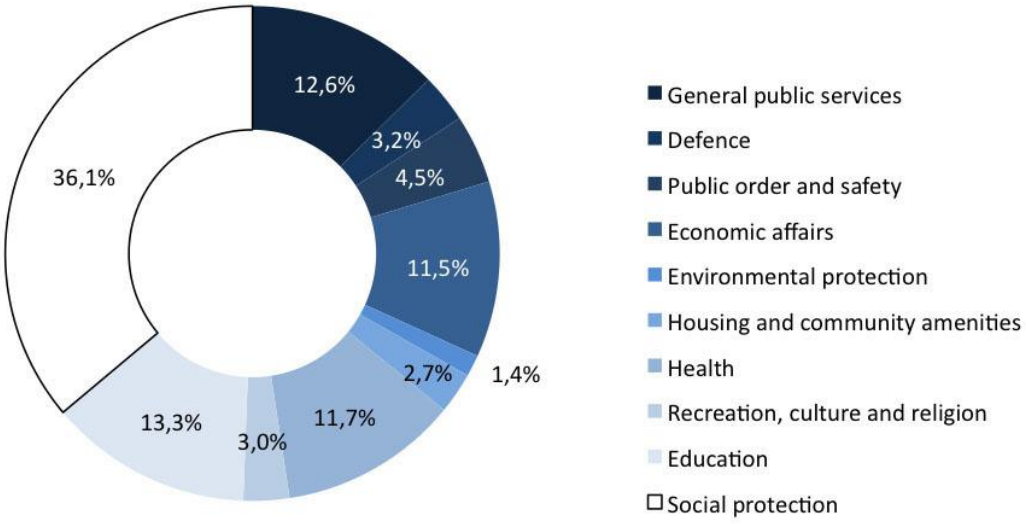

Figure 4. Government expenditures by function in 2008 (OECD Government at a Glance, 2011).

3.1.1.3. Political Indicators

Poland has a parliamentary democracy with a president. In each regional part (Voivodship) there are administrative regions with elected local authorities. The president has a representative function as well as takes part in the legislation work. The Parliament also takes part in the legislation process and also nominates the Prime Minister (PPRI, 2007).

3.1.2. Structure and Organisation

The structure and organisation of the Polish health care system has experienced significant changes since 1999. It shifted from a centralised state financed system with a national health service apparatus to a decentralised mandatory health insurance system with regional sickness funds. In 2003 these regional funds transformed into the single National Health Fund (NHF) (Turowiec et al. 2010). Since 2005 the stewardship, management and the financing functions are shared between the NHF, Ministry of Health and Territorial self-government administration (Turowiec et al. 2010).

The overall responsibility for the health care organisation, in which resources are allocated and health care planned, belongs to the Ministry of Health (Nowicki, 2010) (figure 5). It has managerial functions within the field of the State Medical Emergency Service, health resort treatment and the regulation of the medical professions.

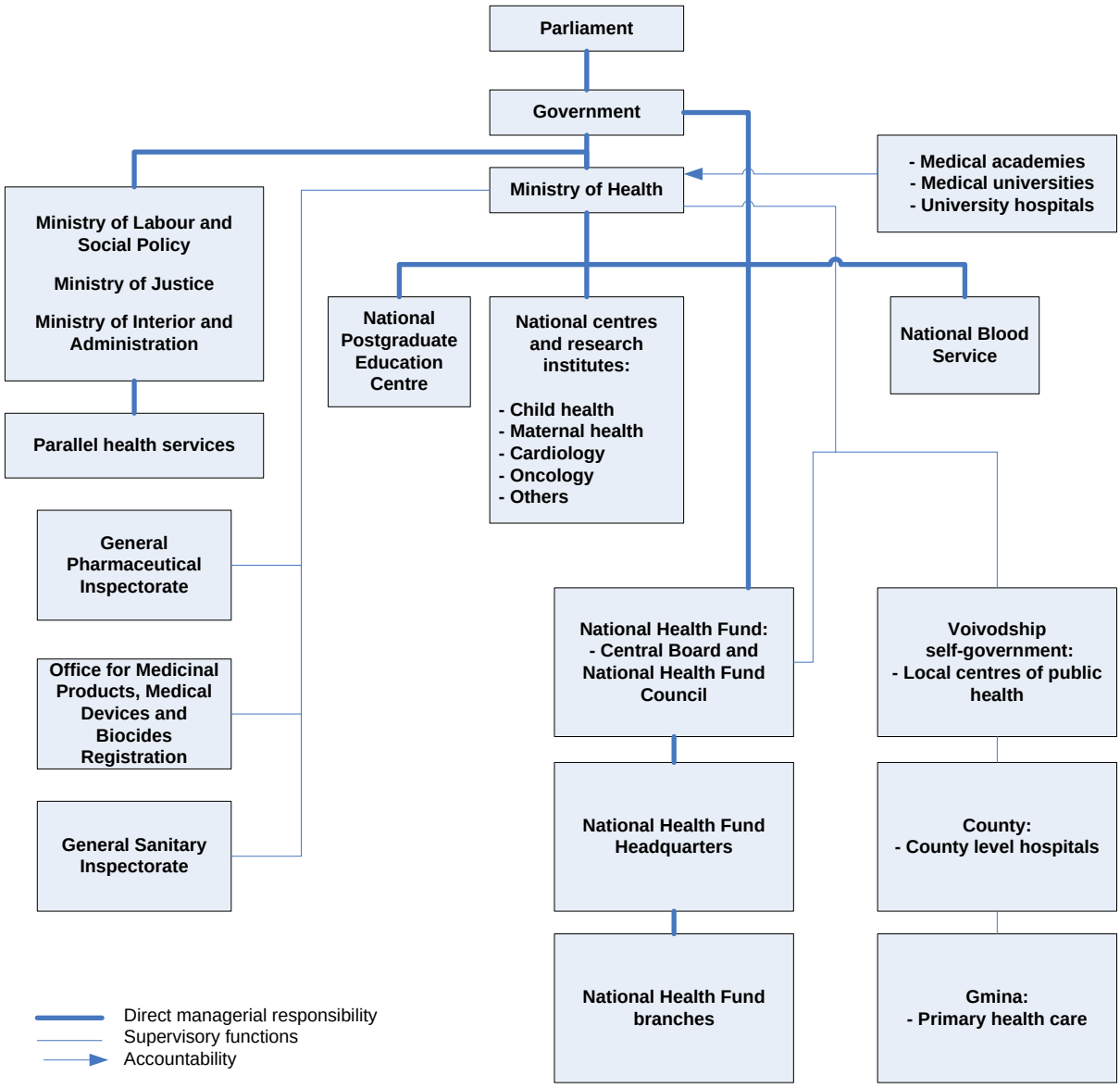

Figure 5. Structure and organisation of the Polish health care system (Redrawn from Kuszewski and Gericke, 2005).

Further the Ministry of Health also coordinates the health policy programmes. Moreover it is administratively responsible for Poland's Postgraduate Education Centre as well as for the National Centres and Research Institutes. Further it supervises the heads of the General Pharmaceutical Inspectorate, the Medical Products, Medical Devices and Biocides Registration and General Sanitary Inspectorate. There are also parallel health services that are supervised by the Ministry of National Defence, the Ministry of Interior and Administration and the Ministry of Justice (Kuszewski and Gericke, 2005).

The NHF finances and plans, since it was founded in 2003, health care to its insured members. It is a third-party payer in Polish public health care. Its central office is in the capital of Warsaw (PPRI, 2007). Further it has 16 Voivodship regional branch offices, originated from the previous regional sickness funds, and local representatives of the Voivodship branches (ZUS, 2011). The Minister of Health nominates the President of NHF Executive Committee, who must also be approved by the Prime Minister (PPRI, 2007).

NHF plans the amount of health care contracts needed in which health service delivery plans are elaborated based on national health plans approved by the Minister of Health. The volume and the scope of health services in different regions according to its given population are stated in these delivery plans. Further they ought to contain the characteristics of the health status and to identify the health needs of a population in a specific area. Moreover the policy to meet the health needs wherein improvements of the overall health status in the area is undertaken.

The financing is carried out through a contracting process in which NHF contracts with service providers, that in turn provides the health services (Kuszewski and Gericke, 2005). NHF has a positive list of approved health care services, which it reimburses. The NHF Department of Health Services in corporation with experts in respectively medical fields sets this list. Only these health care services in the approved list are allowed to be contracted. Pharmaceuticals are also reimbursed by the NHF according to a pharmaceutical list, decided by the Ministry of Health in coaction with NHF, the Ministry of Finance, Ministry of Economy and National Consultants (PPRI, 2007).

NHF is not allowed to be part of profit-making activities, operate or own health care institutions nor is it permitted to have ownership rights over legal organisations operating health care institutions or pharmacies. Nor is NHF allowed to have shares within companies managing health care institutions. The Fund Council supervises the NHF as well as chooses its President. The Prime Minister nominates its nine members for a period of five years (Kuszewski and Gericke, 2005).

The comprehension of the health care system benefits in Poland is found in the law on health care benefits financed by public funds, approved on the 27th of August 2004 (ZUS, 2011). It contains a "positive" list of health care services included in the benefit system as well as a "negative" list with health care services not included and therefor not reimbursed by the public health insurance. In Poland, administration and governance is divided in territory levels of regional, provincial and municipal levels (further described below under Decision making bodies). At each of these levels responsibilities of the health authorities comprises general strategy and planning according to the

needs in a given region, health promotion and management of public health care institutions (Kuszewski and Gericke, 2005).

It is possible to underwrite an additional voluntary health insurance with private companies (PPRI, 2007). Persons not included in the mandatory NHF insurance system, may join on a voluntary basis, in which 9 percent of the persons income is paid. Though the payment may not be lower than the Polish average monthly earning (ZUS, 2011).

3.1.3. Decision Making Bodies

The regulatory management has two main bodies in Poland; the Ministry of Economy and the Government Legislation Centre (GLC). The Ministry of Economy has the leading role of the regulatory policy and GLC has the responsibility over the quality of the legislation in Poland and reports direct to the Prime Minister (OECD Government at a Glance, 2011). Other main actors of the regulation are the state and self-government administration, NHF and professional chambers (Kozek, 2006).

The administration in Poland is made up of four levels, in which it is governed; national (central), regional (voivodship), provincial (powiat) and municipal (gmina). There are 16 voivodships, partitioned into local governments, consisting of 314 provinces and 65 urban provinces. The number of gminas is 2478, which are both the smallest legal entity and smallest unit in the polish system. Voivodships are at the second position in the administrative hierarchy and are regional self-governing communities, powiats at the third position are the local self-governing communities and the gminas are found at the lowest hierarchy position, which provide the main part of the public services. Health authorities in different geographical areas are at each level responsible in three fields; general strategy and planning, health promotion and the management of public health care establishments (Turowiec et al. 2010). Kozierkiewicz describes in his article “Benefit package and costs of services” the regulative factors as well as decision makers in the social health insurance system, which is visualised in the table 3.

Table 3. Regulative factors in the social health insurance system (Kozierkiewicz (1), 2005).

	Social Health Insurance System		
Legal Status	Law	Regulation	Administrative document/ contract
Decision-Maker	Parliament	Ministry of Health	NHF
Purpose	Entitlements	Reimbursement	Purchasing
Updating	Occasionally	Occasionally/ regularly	Regularly
Criteria*			
Need	x	x	x
Costs			x
Effectiveness	x	x	
Budget			x
Other: lobbying		x	x

*Used for defining benefits.

The legislative actors, central and voivodship state administration and the municipal administration are important decision making bodies. The legislative actors in Poland are the Parliament, the Senate and the President. They have the authority to change laws regarding health care, decide on health care expenditure volumes within the state budget and to regulate tax rules. Furthermore they hold the power to determine the level of health insurance fees. The policy-making and regulation function belong to the central and voivodship level state administration, where the Ministry of Health, as mentioned before, has the overall national health policy responsibility, as well as determines important investments and medicine research policy. Further it directly manages the State Medical Emergency Service and regulates the medical professions (Kozek, 2006).

In table 4 a list of different types of regulatory instruments used in the work of decision makers according to Kozek are shown (Kozek, 2006).

Table 4. Instruments of the health care regulation (Kozek, 2006).

Type of Regulation	Insurance Budgetary System	Free Market of Health Care Services
Financing means	Contracting of services: negotiations; Plan of health needs	Open market sell-buy decision
Law regulations of access to the labour market	Regulated professions, obligatory membership in chambers, professional self governments	Regulated professions obligatory membership in chambers, professional self-governments
Law regulations of access to the service market	Meeting conditions of performing the service: registered health care units	Meeting conditions of performing the service: registered health care units
Regulations by means: concerning health care services performed	Catalogue of medical services	
Regulations by means concerning prices	Prices negotiated on the basis of NHF proposals; pricing of services in points; estimated value of one point	Free market prices only
Law regulations concerning control	Control held by NHF, obligation to conduct detailed documentation of the service; in regard to professional responsibility control held by professional chambers	Obligations to conduct detailed patient' documentation; in regard to professional responsibility control held by professional chambers. Keeping financial documentation for tax revenue offices

In corporation with the Chief Pharmaceutical Inspector, the President of the Office the Medical Products, Medical Devices and Biocides Registration, the Ministry of Health monitors medical treatment standards and carries out many supervisory functions. Municipal administration in Poland plans the regional general health care strategies as well as the outpatient health care. More specific, the communal authorities have the responsibility for primary health care, the county make decisions on the basic specialised care and the voivodship deals with highly specialised health care (Kozek, 2006).

3.1.4. Financing

Health care expenditure as a percentage of GDP amounted up to 7.01 percentage in 2008 (table 5). Approximately 72.2 percentage of these health expenditures was public expenses. Out of the private health expenditures, the main part consisted out of OOP payments (Central Statistical Office, 2010).

There is a mixed system for public and private health care financing in Poland (Kuszewski and Gericke, 2005). The primary and public finance sources in Poland are the central government, regional governments, local governments and the NHF, wherein the NHF contributes to the major part of public financing. The central government funds health care services, medical emergency and infrastructural activities. Financing tasks of the regional governments involve preventive health programmes regarding certain diseases, health promotion programmes in medicine, establishment and coordination of Independent Public Health Care Facilities, rehabilitation activities as well as the distribution of funds granted to disabled people. The NHF pays for health services and medicines given to the covered population through the mandatory health insurance (Turowiec et al. 2010). The private funding constitutes of prepaid plans and informal as well as formal payments. Further, discussions are held about the possibility for the public to underwrite a private or complementary health insurance (Nowicki, 2010).

The greater part for health care financing is gained as contributions from personal income. Specifically is the obligatory health care contribution set to 9 percentage (Turowiec et al. 2010) of an employee's salary, which is paid by the employer directly to the Social Insurance Institution (ZUS) or to the Agricultural Social Insurance Fund (ZUS, 2011) before the salary is disbursed to the employee. 7.5 percentage of the 9 percentage is deductible from the employee's personal tax. The health care contributions as well as personal income taxes are collected by the Social Insurance Institution (ZUS). The money is then transferred to the central office of NHF, where it is divided and further transferred to its regional offices (PPRI, 2007). In 2010 the NHF transferred 51.9 billion PLN from the ZUS and 3.1 billion PLN from the Agricultural Social Insurance Fund (ZUS, 2010).

The state budget of Ministry of Health dedicated for health care is set by the Parliament at the end of every year. More thorough its financing tasks are devoted to highly specialised procedures such as organ transplants or other complicated and cost worthy treatments (PPRI, 2007). Health protection financing tasks include epidemiological and pharmaceutical supervision and to support preventive health programmes comprising prophylactic vaccination programmes, the National Programme of Counteracting Drug Addiction, the National Programme for HIV Prevention and Care for People Lining with HIV/AIDS, national health programmes of heart protection and medical schooling. The state pay treatment costs for a part of the non-insured population in Poland for example; children

under 18 years, pregnant women, drug and alcohol addicts as well as persons with low income. The state budget also pay contributions to the mandatory health insurance for individual farmers and their family members, unemployed persons and persons receiving social assistance allowances (ZUS, 2011). Parts of the central budget are divided between the regional Voivodship offices and used for administratively tasks. The local Voivodship government budget is meant to be spent on preventive actions and to subsidise service providers with medical equipment and infrastructural modernisation works, such as building renovations. This local budget is directivity given to local representatives as hospitals, outpatient clinics and surgeries. The budget is not allowed to be spent on treatment of patients. University hospitals budget can have two sources of income; first they are paid from the educational or scientific institution owning the hospital and second they have the opportunity to contract with the NHF (PPRI, 2007).

Table 5 shows the total amount of expenditure on health care in Poland in the years of 2007 and 2008. This number also includes expenditure of sectors of foreign countries (Central Statistical Office, 2010). Furthermore the shares between public and private expenditures are visualised, as well as the percentage of GDP for respectively entry for an easier comparison. Further expenditure numbers split upon providers are shown in Appendix A, table A1.

Table 5. Public and private health expenditure, 2007 and 2008 (Central Statistical Office, 2010).

Specification	2007		2008	
	[mln zl]	% GDP	[mln zl]	% GDP
Gross Domestic Product	**1 176 737**	**100.00**	**1 272 838**	**100.00**
Total expenditure	**75 609**	**6.43**	**89 270**	**7.01**
-Current	70 832	6.02	83 393	6.55
-Capital formation	4 777	0.41	5 877	0.46
Total public expenditure	**53 544**	**4.55**	**64 475**	**5.07**
-Total current public expenditure	49 960	4.25	60 170	4.73
- State budget	4 722	0.40	5 347	0.42
- Local government units	970	0.08	1 014	0.08
- Social security funds	44 268	3.76	53 809	4.23
-Capital formation	3 585	0.30	4 305	0.34
Total private expenditure	**22 027**	**1.87**	**24 733**	**1.94**
-Total current private expenditure	20 872	1.77	23 224	1.82
- Household OOP expenditure	18 337	1.56	20 025	1.57
- Other private expenditure	2 535	0.22	3 199	0.25
-Capital formation	1 155	0.10	1 509	0.12

Pharmacies are reimbursed by the NHF based on reimbursement report sent in to the regional NHF offices every two weeks by the pharmacies (PPRI, 2007). In table B1 in appendix B, the current expenditure on health care in 2008 is shown. The expenditure is divided between health care providers and financing agents. The Law on the Basic Benefit Package (BBP) regulates the Polish insurance-budgetary system on health care funding (Nowicki, 2010).

3.1.4.1. NHF Contracting Process

In order to be contracted by the NHF the service providers must fulfil the requirements stated in the law as well as further requirements decided by the NHF. The NHF health service contracts are made either through a competition process for public funds or through negotiations (Kuszewski and Gericke, 2005). Before the contracting process begins the NHF prepares both a National as well as a Voivodship Plan of Health Services Delivery. Comprehended in the Plan are health services in relation to the population in a specific area, in which the number of different services from previous years are considered. The NHF invites competitive tenders for the contracting process. The process is only open for providers who fulfil certain requirements specified in the ordinance of the Minister of Health in 1992. All patients have the free choice in which hospital in Poland they want to be treated. This makes it harder for the NHF to plan and interpret health services different areas (Kozek, 2006).

In the NHF catalogue of hospital services, every service corresponds to a code and therein a point value, corresponding to the hospital performance of a certain health service. Stated is also certain qualification such as the time frame in which the health service is performed or in which hospital referral level the service is to be carried out. Hospitals must also provide intensive care units or intensive medical care units. Further hospitals need to have a committees dealing with for example contagions prevention. Hospital standards regarding both medical equipment and medical procedures have to be met. The point value is determined on an annual basis. The NHF chooses the amount and scope of health services among the different tenders sent in by health care providers, based on the cheapest price offered by a health care institution fulfilling all predetermined conditions. Sometimes NHF invites to negotiations. This is done for example if a hospital acts as a monopolist in a given region, which forces NHF to contract with it (Kozek, 2006).

3.1.4.2. World Bank Partnership and EU Funds

The World Bank Country Partnership Strategy is an on-going project in Poland. It started in 2009 and is due to last until 2013 (Poland Country Partnership Strategy, 2009). Figure 6 visualise the current active loans in 2011 from the World Bank represented as original principal amount, disbursed amount, undisbursed amount and borrower's obligation. The borrower's obligation is the outstanding and overdue amount, which needs to be repaid (World Bank Finances, 2011).

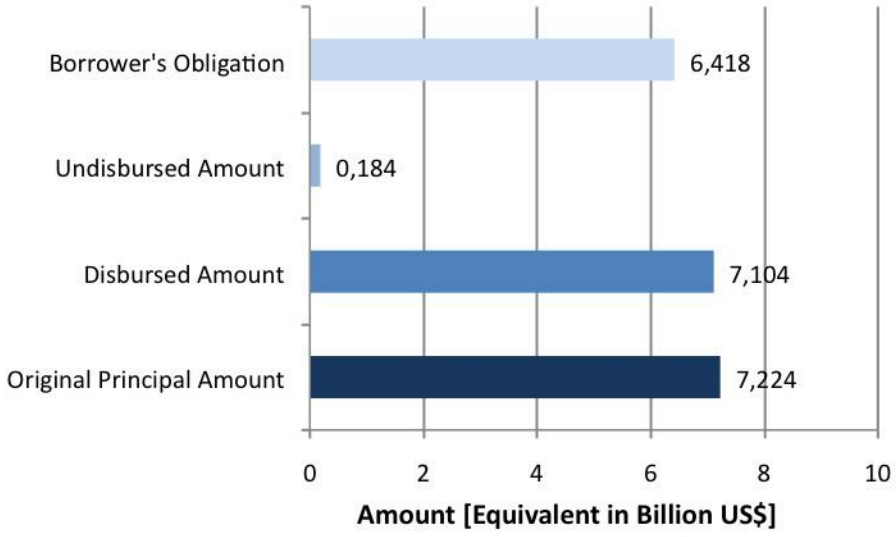

Figure 6. Summary of active World Bank loans (World Bank Finances, 2011).

Within the health care the partnership program aims to support health sector reforms in which higher resource allocation efficiency is wanted, as well as an improved health care service delivery. The efficiency agenda's main content is debt management, in which the government solution is to corporatize hospitals under commercial law and provider payment reform in which Diagnosis Related Groups (DRGs) in 2009 for all hospitals. The World Bank also plays a supportive role for Poland's main external partner; the EU and its institutions (Poland Country Partnership Strategy, 2009).

For the period 2007-2013 the EU granted 67 billion euro to Poland, intended to be focused on development of a knowledge economy and infrastructure (Poland Country Partnership Strategy, 2009). The grant amounted up to 19 percent of the EU's total Structural and Cohesion Funds over this period and was funded by three funds; European Regional Development Fund, European Social Fund and Cohesion Fund (OECD, Economic Surveys, 2010).

Further information regarding the grant distribution of the EU fund operational programs is shown in table 6. Poland contributed with 18.3 billion euro as a complement to the EU investments (Poland Country Partnership Strategy, 2009).

Table 6. EU funds by operational program 2007-2013 (Poland Country Partnership Strategy, 2009).

Operational Program	EU allocation [mln EUR]
16 Regional OP:s	16,556
OP Development of Eastern Poland	2,274
OP Infrastructure & Environment	27,914
OP Innovative Economy	8,255
OP Technical Assistance	517
OP Human Capital	9,707
Performance reserve	1,331
Convergence Objective	66,553
European Territorial Cooperation Objective	731
TOTAL	67,284

3.1.4.3. Hospital Payment Scheme

The major hospital payment system used in Poland is payment per case or DRG (OECD Health Working Papers, 2010). The main goal in which the DRG system was introduced in Poland was to improve the hospital resource allocation and to increase the transparency of hospital service provision (Geissler et al., 2011).

In 2008 the DRG system was first applied for inpatient health care in Poland. It adopted the British 3.5 version of DRG system (British Healthcare Resource Groups, HRGs) and has until now only done minor changes of it. The patient classification system is supposed to be updated every second year but it is rather irregularly made. The updates are always based on a year old data collection values (Geissler et al., 2011). NHF updates its DRG tariffs every year (Saltman et al., 2004).

The Polish DRGs are called Jednorodne Grupy Pacjentów (JPG) or translated to English, unified groups of patients. As the name indicates each of these grouping composes similar types of patients

according to characteristics such as diagnoses or procedures corresponding to the amount of resources a certain type of patient consumes. The number of JPG in 2011 amounted up to 518 groups (Geissler et al., 2011).

In order for both public and private hospitals to be contracted by NHF they need to use the classification system with JGPs. More than 60 percent of the hospital revenues are related to the DRG system. The Polish system uses the same DRG weights for the whole country and there are three different tariffs used in the price setting; emergencies, elective cases and day cases (Geissler et al., 2011). NHF reimburses each treatment according to different points allocated to them (Adamski and Wendykowska, 2010).

3.1.5. Health Care Institutions

The Law on Health Care Units defines the establishment and management of health care units. It is independent regarding to its organisation, personnel, asset and finances. Furthermore the Law established and managed to promote health and to perform health services to the population. A health care unit can for example be; a hospital, an outpatient department, an emergency ambulance, a dental clinic, chronic medical care home, nursing home or a rehabilitation facility (Kuszewski and Gericke, 2005).

In Poland health care facilities are divided into public (SPZOZ) and non-public (NZOZ) legal structures (Kozierkiewicz (2), 2009). What separates them is basically how they are legally established. The same requirements and terms of registration pertain for both public and non-public facilities. Any person or legal entity, which concludes commercial partnerships, is entitled to found a health care institution. Examples of founders of public legal structures are; a minister or a central body of the government administration, public medical institutions such as a medical university or other public institutions as a Voivodship or a territorial self-government. The basic type of health care organisation is an Independent Health Care Institution (HCI), which to a 90 percent extent is founded by territorial self-governments. It can also be founded by the state. The HCI is dependent on health insurance contributions and has a specific legal form of public ownership (Kuszewski and Gericke, 2005). The public SPZOZ are autonomous units with regard to their management. They are registered in the legal register with a similar legal status to companies or foundations. However an important difference to the companies and foundations is that the SPZOZ cannot go bankrupt, as the public authorities that hold the liability responsibility protect them. This mechanism has protected the health care facility since it was introduced in the 1990s. Today this is not sustainable for the state budget. In 2008 the state paid 1.5 billion Euros for hospital debts, which is a substantial part of the total health budget of around 14 billion Euros. In order to decrease the debts in the health care sector the government is trying to change and restructure the health care sector in which the legal structure is changed to non-public (Kozierkiewicz (2), 2009).

Non-public health care facilities have different founders such as; churches, religious organisations, trade unions, foundations, insurance companies, a professional local government body or association or an individual (Kuszewski and Gericke, 2005). Privatisation in which health care units are converted from public SPZOZ structures to non-public NZOZ structures does not limit the access to public services, since both the legal structures mainly operate on the same principle. Further the private

providers are fully integrated in the public health care system (Kozierkiewicz (2), 2009). The private hospitals are mainly build up from scratch, since the financial and organisational effort needed is so extensive. If taken over the best hospital type suited for privatisation would be the municipal county hospitals (Kozek, 2006).

The primary health care can both be public or private. Though they have to be contracted by the NHF in able for the patient to be reimbursed. Otherwise it has to be paid through OOP payments (Turowiec et al., 2010).

Health care units need to be registered in order to perform its services. The public health care registration can be performed either in the Register of the Ministry of Health or at the Voivodship offices in the different regions. Where the registration is made, depends on the health care unit founder. The Chamber of Medical Doctors, the Nurses' Chamber and the Laboratory Diagnosticians Chambers are responsible for private medical facilities registrations (Kozek, 2006).

3.1.6. Hospitals

Polish hospitals are classified according to three referral levels. The lowest level hospitals have four basic departments including internal medicine, surgery, obstetrics and gynaecology and paediatrics. They are generally founded by county self-governments. Voivodship specialised hospitals are second referral hospitals having additional to the basic departments also specialisations in for example cardiology, oncology or neurology. The third referral level hospitals provide highly specialised health care services and are mostly university or ministerial hospitals (Turowiec et al., 2010). The number of hospitals in the public sector is shown according to classification in table 7 below.

Table 7. Number of hospitals in each referral level (Baseline Country Survey on Medical Devices, 2010)

Health Care Facilities	Public Sector	Density per 100,000 Population
Regional Hospital	57	0.1497
Central Hospital (Provincial)	234	0.6146
General Hospital (District)	70	0.1839

The outpatient specialised health care and the inpatient specialist health care are differentiated from each other. For the most part the outpatient specialised health care is privately managed in medical practices (Turowiec et al., 2010).

In the NHF contracting process, mentioned above in the section 3.1.4.1. NHF Contracting Process, all public hospitals take part in the tendering for health care services. Public hospitals are not allowed to treat patients covered both by NHF and a private health insurance. This is done in order to prevent abuse or fraud in the public hospital system. Private hospitals on the other hand can choose if they want to contract with the NHF or not. If a private hospital decides to only treat private health insurance patients, they are not obliged to comply with the NHF contracting regulations (Kozek, 2006). The total number of hospitals over the years from 2005 until 2009 are shown in table 8. The distribution between public and private hospitals is also shown, as well as the number of general practices in the primary care. The number of for-profit privately owned hospitals has increased and on the contrary the public owned have decreased (table 8).

Table 8. Number of hospitals in Poland and their ownership management (OECD Stat Extracts, 2011)

Hospitals	2005	2006	2007	2008	2009
Hospitals, total	874	835	916	896	916
-Publicly owned hospitals	n/a	n/a	681	648	626
-For-profit privately owned hospitals	n/a	n/a	235	248	290
General hospitals, total	824	785	790	774	795

According to the shares of public versus non-public hospitals in 2009 as shown in table 8 the percentage part of private hospitals was 31.7 percent of the total amount of hospitals in Poland. Apart from starting a private hospital from scratch another possibility in which the privatisation can be performed is to create a NZOZ hospital from taking over a closing down SPZOZ facility. A limited liability company then establishes the NZOZ with the ownership belonging partially or fully to a local government. Both SPZOZ and NZOZ hospitals make contracts with the NHF. A law was formulated in 2008 by the government in order to change the status of all hospital from SPZOZ to NZOZ. However the law proposal was turned down. The government introduced financial encouragement to promote the hospital to make the legal change on a voluntary basis (Kozierkiewicz (2), 2009). Private hospitals are established by religious associations, legal entities such as companies, foundations and associations or by natural persons, in which mostly doctors. Furthermore they are mostly highly specialised and commonly they try to contract with the NHF (Kozek, 2006). Table 9 shows the amount of hospital beds in different health care facilities over the years from 2005 until 2009.

Table 9. Number of hospital beds (OECD Stat Extracts, 2011)

Hospital Beds	2005	2006	2007	2008	2009
Total Number of Beds	248 860	246 851	244 877	252 375	253 815
- Beds per 1000 Population	6.52	6.47	6.42	6.62	6.65
Acute Care Beds	178 945	177 441	175 956	168 179	167 347
Long-Term Care Beds	14 892	14 214	14 032	14 344	13 738
Other Hospital Beds	29 302	29 266	29 509	45 139	48 270
Beds in Publicly Owned Hospitals	n/a	n/a	196 269	200 607	195 946
Beds in For-Profit Hospitals	n/a	n/a	19 099	22 904	27 439

3.1.7. Ambulance Service

The main part of the ambulatory health care has been transformed to non-public NZOZ legal structures. Often companies owning the ambulance service operates in facilities rented from the local administrations, which were the prior owners of the ambulance services (Kozierkiewicz (2), 2009).

The emergency medical system operates since 2007 under the Act on State Medical Rescue Service from the 8th of September 2006 (Central Statistical Office, 2010). In table 10 the total number of emergency rescue teams and other teams as well as their distribution per function area are visualised. Further the number of emergency health care units in the area of hospital emergency and admission rooms are shown.

Table 10. Emergency health care units (Central Statistical Office, 2010).

Year	Ambulance emergency rescue teams and other teams							Hospital emergency wards	Admission rooms
	Total	Ambulance emergency rescue teams				Other teams			
		Specialist	Primary	Accident	Reanimation	General	Neonatology		
2008	1513	595	485	232	151	30	20	186	134
2009	1538	575	749	90	63	38	23	211	132

3.1.8. Medical Technology

The Ministry of Health partly funds medical equipment (Kuszewski and Gericke, 2005). Furhter the most of the regulatory functions regarding medical devices is managed by the Ministry of Health (PPRI, 2007). One of its related tasks includes the initiation process of new medical technologies into the BBP catalogue. The Ministry of Health then assigns the task to the President of the Polish Health Technology Assessment Agency to make corresponding recommendations. The technology is then evaluated and tested how it influences inter alia health improvement of the population, consequences of illness, clinical efficacy and safety and cost-effectiveness (Nowicki, 2010). Table 11 shows the total number of different medical technology devices in Poland over the years from 2005 until 2009.

Table 11. Total amount of medical technology instruments in Poland (OECD Stat Extracts, 2011).

Medical Technology	2005	2006	2007	2008	2009
Computed Tomography scanners	303	352	368	414	473
Magnetic Resonance Imaging units	77	74	103	112	141
Positron Emission Tomography scanners	n/a	n/a	n/a	19	16
Gamma cameras	87	99	98	108	114
Digital Subtraction Angiography units	n/a	n/a	n/a	246	292
Mammographs	607	583	630	512	544
Radiation therapy equipment	n/a	266	153	102	107
Lithotriptors	125	132	147	152	161

In table 12, selected medical devices in the public health care sector as well as in the private health care sector, when available, are visualised. These figures are based on the status of medical devices in 2010. As a comparison also the density of the total amount of the different instruments per 1,000,000 persons is shown.

Table 12. Medical technology instrument shares in public and private sector (Baseline Country Survey on Medical Devices, 2010).

Medical Devices	Public Sector	Private Sector	Density per 1,000,000 Population
Magnetic Resonance Imaging	125	n/A	3.2831
Computerized Tomography Scanner	405	n/A	10.6373
Positron Emission Tomography Scanner	9	4	0.3414
Nuclear Medicine	107	n/A	2.8103
Mammograph	529	n/A	64.1401
Linear Accelerator	99	n/A	2.6002
Telecobalt Unit (Cobalt-60)	5	n/A	0.1313

3.2. Estonia

In this subchapter the Estonian health care system is framed and described. The research questions are answered regarding the current health care status in Estonia, concerning the structure, decision makers and financing scheme. Further health care institutions are presented as well as the hospital structure, ambulance scheme and some important medical devices used in the country.

3.2.1. Estonia – Country Overview

This part gives a quick introduction to the country and aims to present important numbers and figures. Indicators about demographic, economical and political numbers are introduced. The economical indicates the economical progress.

3.2.1.1. Demographic Indicators

The current inhabitant number has since the beginning of the 1990s decreased, mainly due to emigration particularly to Russia and due to a low birth rate (Habicht and Habicht, 2008). This is leading to an ageing population, which will in the long run influence the economical sustainability of the Estonian society (Estonica, 2011). Further the health care capital is affected since a smaller tax base becomes available which is the main source of health expenditure payment (Habicht, 2008). The Estonian labour force amounts to 686,800 people (The World Factbook, 2011). Further Estonian demographic numbers are shown in table 13.

Table 13. Selected demographic indicators (The World Factbook, 2011).

Demographic Indicators	
Inhabitants	1,280,000
Population Density	28.4/km^2
Age Groups 0-14 15-64 65+	 15.1 % 67.2 % 17.7 %
Birth-rate Death-rate Children Born/Woman	10.45 births/1,000 people 13.55 deaths/1,000 people 1.44 children
Life expectancy Female Male	73.33 years 78.97 years 68.02 years

3.2.1.2. Economic Indicators

Estonia has one of the higher per capita income levels compared to the countries in Central Europe (The World Factbook, 2011). It has a modern based economy with a free market, a financially secure and safe fiscal policy, a balanced budget and low public debts. The public finances are very strong. The United States based financial services company Standard & Poor's (S&P) upgraded Estonia to AA- (UniCredit, 2011). The unemployment rate has been reduced as shown in table 14.

Table 14. Economic indicators (UniCredit, 2011).

Year	Real GDP Growth Rate in %	GDP/Capita in EUR	Consumer Price Index (eop*)	Unemployment rate in %
2009	-13.9	10.343	4.9	13.8
2010	3.1	10.870	0.8	16.8
2011	6.9	12.193	2.1	11.6

*End of period.

Estonia has been a member of both the European Union (EU) and the North Atlantic Treaty Organisation (NATO) since 2004 (Estonian Ministry of Foreign Affairs, 2011). In December 2010 Estonia joined the Organisation for Economic Co-operation and Development (OECD) (The World Factbook, 2011) and in January 2011 it also joined the Eurozone (EHIF, Annual Report 2010). In 2008 the Estonian government spent 13.1 percent of its state budget on health care (figure 7).

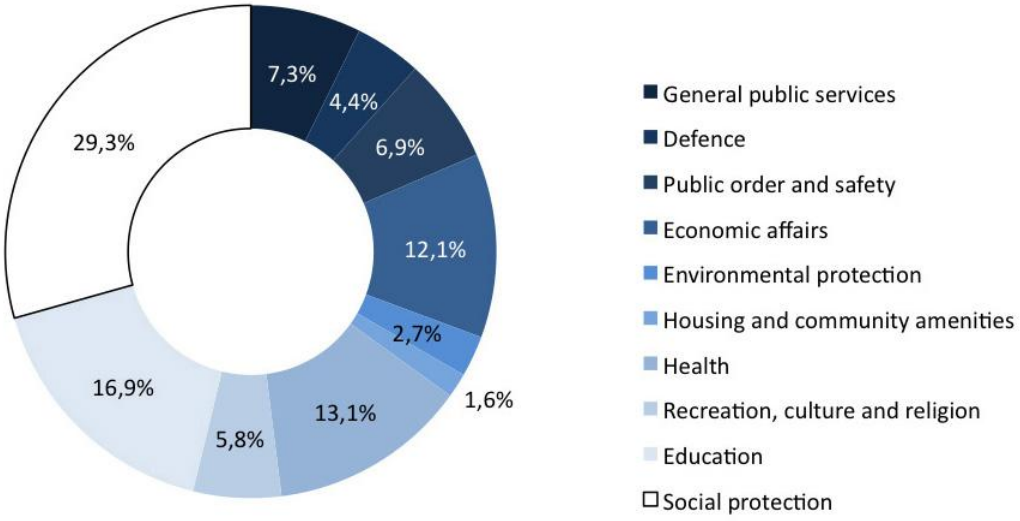

Figure 7. Government expenditures by function in 2008 (OECD Government at a Glance, 2011).

3.2.1.3. Political Indicators

Estonia is a parliamentary republic. The first political layer consists of one chamber with 101 members elected to four-year terms and the second political layer of 227 municipalities. The municipalities have budgetary autonomy and local tax-raising powers (Koppel et al. 2008). Estonia is divided into 15 counties, run by governors (Habicht and Habicht, 2008).

3.2.2. Structure and Organisation

In 1991 Estonia gained its independence from the Soviet Union. It then started to carry out major reforms of its health care system. A single payer of the health care system was established; the Estonian Health Insurance Fund (EHIF) (Habicht, 2008). The health care reforms aimed to achieve two key goals; to guarantee access to best possible medical care and to supply financial protection with mandatory health insurance and to restrain out-of-pocket payments (OOP payments) (Habicht and Habicht, 2008). Figure 8 shows the Estonian health care system structure and organisation.

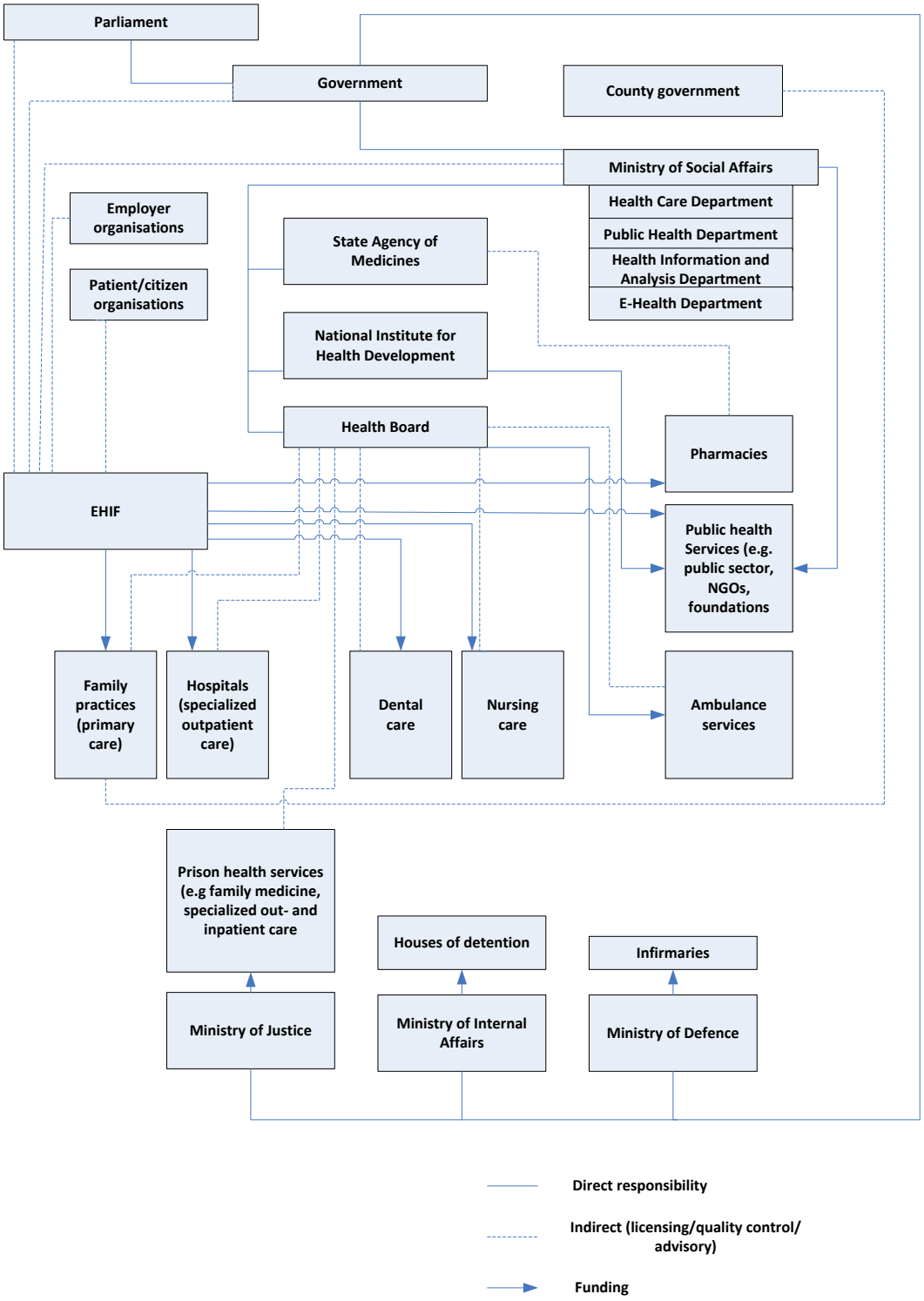

Figure 8. Structure and organisation of the Estonian health care system (Redrawn from Koppel et al., 2008).

The Parliament (Riigikogu) approves legislative acts as well as supervises the Government (Koppel et al., 2008). The Board organises the parliament work and consists of the president and two elected parliament members as vice-presidents. There are eleven standing committees of the Parliament. The Social Affairs Committee works with draft acts regarding social insurance, labour relations and health care (Riigikogu, 2011). The chairman of the Social Affairs Committee is also a member of the Supervisory Board of EHIF (Koppel et al., 2008).

The Government has the executive power according to the Constitution as well as to the laws in Estonia. It develops and implements state policies and within the health care the Government approves regulatory acts embodying public health issues as well as sets health care prices. The Government nominates members to the Supervisory Board of EHIF. The chef of the Government is the Prime Minister (Koppel et al., 2008).

One of the Parliament's twelve Ministries, the Ministry of Social Affairs, deals with health care, social services and employment. In appendix B, figure B1, its structure is visualised. The health care part is divided into five departments; the Health Care Department, the Medicine Department, the Public Health Department, the Health Information and Analysis Department and the E-Health Department (Ministry of Social Affairs, 2011). The health tasks of the Ministry of Social Affairs involve the preparation of health care legislation, supervision of health-related law enforcement, development and preparation of legislation on standards within the health care, public health programme development and controlling, planning and funding for uninsured persons' health services (Koppel et al. 2008). The respectively main functions of the different departments are to be read in the appendix B, table B1.

The health division within the Ministry of Social Affairs coordinates the work of its three subordinated health agencies; the State Agency of Medicine (SAM), the National Institute for Health Development (NIHD) and the Health Board (HB).

Registration, quality control and trade of pharmaceuticals are tasks of the SAM. Another task of SAM is the authorisation and supervision of medical technology. The NIHD responsibilities comprise applied research and analysis in public health, environmental health and communicable diseases and to realise national public health programmes as well as health monitoring and reporting. The third agency HB, licenses health care providers and registers health personnel, verifies health care quality and provision control, organises and funds ambulance service, creates and implements occupational health development plans as well as educates health personnel (Koppel et al., 2008).

EHIF, founded in 2001, is a single payer on the market who organises the mandatory social health insurance in Estonia. It is an independent public entity that owns its assets, which can be used according to the context in the Estonian Health Insurance Fund Act established by the Parliament and the statues of EHIF (Jesse, 2008). In this act the objective, functions and the basis for the working organisation process of EHIF is stated (EHIF Annual Report, 2010). As shown in figure 1, EHIF does funding for primary care, specialised care, dental care, nursing care, pharmacies and public health services. Its main tasks are pooling of funds, to contract with health care providers, to pay for the

insured health care services and for other insurance benefits such as pharmaceutical financing, temporary sick leave and maternity benefits (Habicht, 2008).

The cover includes cost of health services, the curing and prevention of illnesses, to finance medical products and technical aids and to provide different types of benefits as for example temporal incapacity to work. The social health insurance is a compulsory contribution paid by salaried workers and self-employed persons (EHIF, 2011), aimed to provide health insurance benefits to all insured people and a sustainable health insurance system (EHIF Annual Report, 2010). According to the law, all employers have to pay 33 percent of social tax for their workers, out of which 13 percent goes to the financing of health insurance (EHIF, 2011) and the remaining 20 percent cover for pension contributions (Habicht and Habicht, 2008).

The EHIF covers over 95 percent of the Estonian population (Van Ginneken and Habicht, 2010). The Estonian health insurance system is based on solidarity. About 49 percent of the insured population are non-contributing individuals (figure 9) consisting of children, students, disability pensioners and citizens over 65 years old, who are subsidised by the active workforce. The state contributes to around four percent of the covered citizens, including individuals on parental leave, registered unemployed and caregivers of disabled people. To this group of non contributing people, persons covered by voluntary agreements also belong (Habicht and Habicht, 2008).

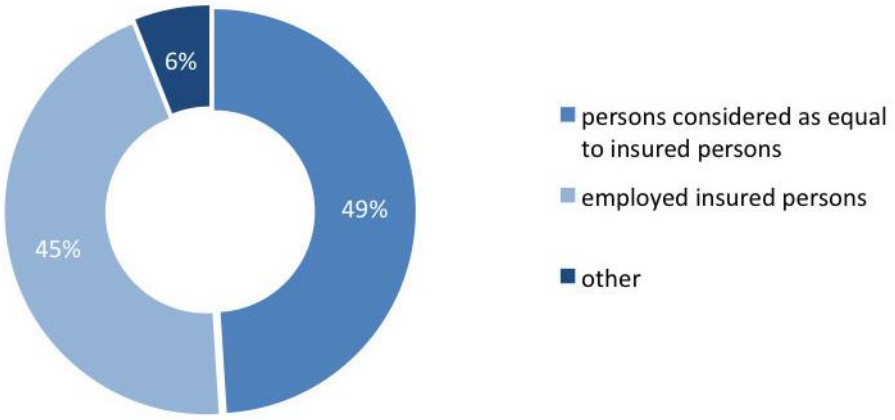

Figure 9. Share of insured persons by the EHIF (EHIF Annual Report, 2010).

Persons not eligible to the health insurance are mainly working age people, unemployed in the formal labour market and not legitimated to register as unemployed or disabled. They have the opportunity to join the EHIF in which they pay 13 percent of the previous year's national average salary (Habicht and Habicht, 2008). The private health insurance consists primarily out of medical travel insurance (Koppel et al. 2008).

The supreme body governing EHIF is the Supervisory Board. It is made up of 15 members, whereas five members represent the employer organisations, five represents the beneficiaries and the last five act upon from the state. Three of the state representatives are predetermined to be the minister of social affairs, who also is the Chairman of the Supervisory Board (EHIF Annual Report, 2010), the minister of finance and the chair of the parliamentary committee of social affairs. The remaining two, the fourth is a member of the parliament and the fifth is a nominated official of the Ministry of Social

Affairs named by the government. The members from the citizen's and employer's organisation are named by the Government (Habicht, 2008).

If any damage caused to the EHIF or by violations of Parliamentary acts and EHIF statutes, the Supervisory Board is held legally responsible. Its main function is to oversee the Management Board, which is the body who manage and oversees the EHIF operations, in which it prepares development plans and the budget of the Health Insurance Fund as well as prepares materials and draft decisions for the Supervisory Board. The Management Board chairman is denominated by the minister of social affairs. The Management Board consists of three to seven members (EHIF, 2011). EHIF consists of four regional departments; Harju, Ida-Viru, Pärnu and Tartu, as well as twelve central departments. The EHIF structure is shown in appendix B, figure B2.

The central departments within the Ministry of Social Affairs plan and control the EHIF finance and are additionally supervising the regional departments. These four departments' tasks are regional population needs assessment, claims processing, contracting providers in its respective areas and the operation of the county client services offices (CSO:s) (Koppel et al. 2008). The counties have a limited organising and supervising role of the primary health care (Jesse, 2008). Apart from the Ministry of Social Affairs, the Ministry of Finance, the Ministry of Justice and the Ministry of Internal Affairs also play a role in the health care in which their respectively responsibilities concern health finance managing, providing and financing of outpatient and inpatient health care for prisoners and health check-ups for in detention houses (Koppel et al., 2008).

3.2.3. Decision Making Bodies

Estonia has a rather well developed governance system. The World Bank placed Estonia among the top 20 percent out of 212 countries in its Worldwide Governance Indicators (Jesse, 2008). The decision making parties influences the decisions made by the Estonian health financing system shown in table 15. The government has the overall governance power out of the decision making parties. The second main policy making body and regulator is the Ministry of Social Affairs and its main agency in this area is the Health Board.

Table 15. Decision maker's influence on health financing decisions (Habicht, 2008).

Decision-Making	Appointment of Supervisory Board	Appointment of Management Board	Financing	Services	Prices	Payment Methods	Contracting	Reserves	Fund Manage-ment
President	-	-	-	-	-	-	-	-	-
Parliament	-	-	++	+	+	+	-	+	-
Government	++	+	+	++	++	++	+	++	-
Ministry of Social Affairs	+	+	+	++	++	++	+	+	-
Ministry of Finance	-	-	++	-	-	-	-	+	-
Supervisory Board	-	++	+	++	++	++	+	+	+
Management Board	-	+	-	+	+	+	++	+	++
Providers	-	-	-	+	+	+	++	-	-

++: Strong influence; +: moderate influence; -: no influence.

The Supervisory Board has the strongest influence on the Management Board of the decision-makers. Private industry and the citizens practice their strongest influence through their membership in the Supervisory Board (Jesse, 2008). These ten members are named by the Government (Habicht, 2008). In appendix B, table B2 the main powers and decision makers in the Estonian health system are further described (Ministry of Social Affairs, 2008).

In participatory processes of working groups led by the Ministry of Social Affairs involving representatives of relevant organisations, most health care policy and legislations drafts are developed. When submitted all of these drafts are published on the Ministry of Social Affairs and on the Parliament home page (Jesse, 2008).

3.2.4. Financing

The Estonian health care system is funded by both public and private sources. The public sources constitutes of the mandatory health insurance as well as funding from the state and municipalities. The private sources are OOP payments, voluntary health insurance and some other expenditure. An overview of the financial flows in the Estonian health care system is visualised in the figure 10.

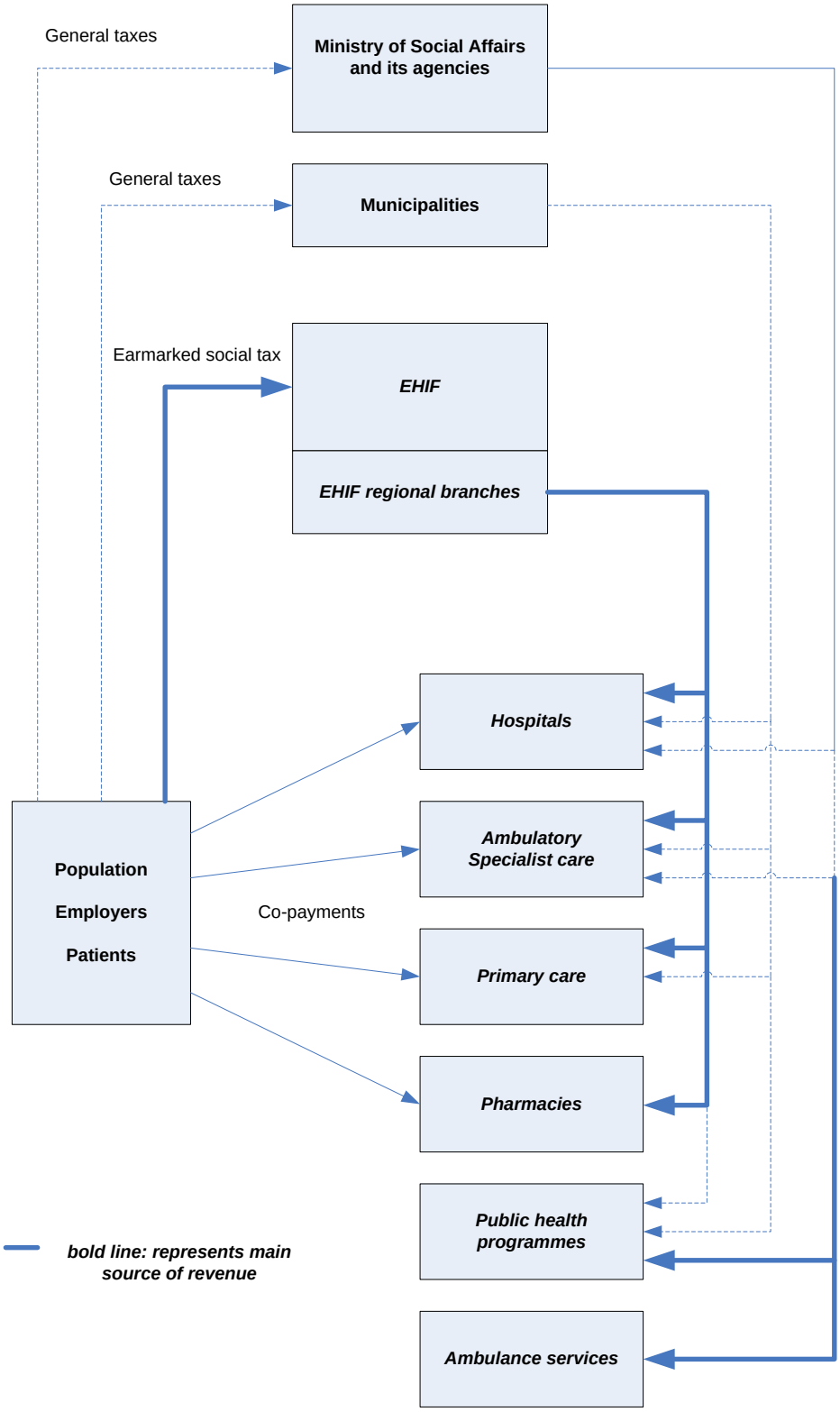

Figure 10. Financial flows in the Estonian health care system (Redrawn from Koppel et al. 2008).

The main contribution to the Estonian health care system is the mandatory health insurance, which is levied as an earmarked social tax of 13 percent on the payroll. The health insurance part amounts to around two-thirds of the total health expenditure (Van Ginneken and Habicht, 2010). The EHIF pools this health care tax as a single purchaser. The Ministry of Social Affairs and the municipalities also pays for health care through the funding by general tax revenues (Koppel et al., 2008). They make up for approximately a tenth from the central government budget. The private sources constitutes for just under a quarter (OECD, 2011). The latest available data over the funding distribution is shown below in table 16.

Table 16. Shares of health care financing in percent (OECD, 2011)

Source of Financing	2006	2007	2008	2009
Public	73.2	76.0	78.4	78.2
-Taxes (state and municipal)	10.5	10.9	10.8	10.4
-Social Health Insurance (SHI)	62.7	65.1	67.6	67.8
Private	26.3	23.6	21.5	21.6
-OOP payments	25.3	22.2	20.5	21.1
-Private Health Insurance	0.3	0.3	0.3	0.2
-Other	0.7	1.1	0.7	0.3
External sources	0.4	0.3	0.1	0.1

EHIF is the major purchaser of all health care services, except from ambulance service and public health programmes, which are mainly funded by the Ministry of Social Affairs, as shown in the financial flow chart, figure 10 (Koppel et al., 2008). The EHIF ensures unbiased funding decisions, in which it separates the health care providers and the funding of the insurances (EHIF Annual Report, 2010). The EHIF funds are centrally allocated and pooled and are then to 98 percent allocated to the regional offices according to the number of insured persons in each region in Estonia. The EHIF Management Board approves these regional budgets.

The EHIF has an autonomous status in which the Supervisory Board approves its budget. It is fully liable for its obligations unless either the health insurance tax revenues are lower than budgeted or if the Government or the Ministry of Social Affairs sets unreasonable high prices that obstructs EHIF to meet its tasks. Every financial year the EHIF budget must balance. To guarantee solvency, EHIF has three reserves; the cash reserve, the legal reserve and the risk reserve (Koppel et al. 2008). EHIF has low administrative expenses reaching below two percent of the total spending in Estonia as well as a very good transparency as in showing all the important numbers and figures in its annual report (Habicht, 2008).

In figure 11, the EHIF contracting process is shown. This procedure is carried out for all types of care; primary care, specialist outpatient and inpatient care as well as for the rest of EHIF beneficiary services (Couffinhal and Habicht, 2005). The process begins every year with EHIF negotiations with hospitals regarding cost and volume contracts. These must contain service quality and access agreements and a detailed cost- and volume-based financial part. A need assessment plan is made as well as a selection of partner providers, who must be licensed by the Health Board.

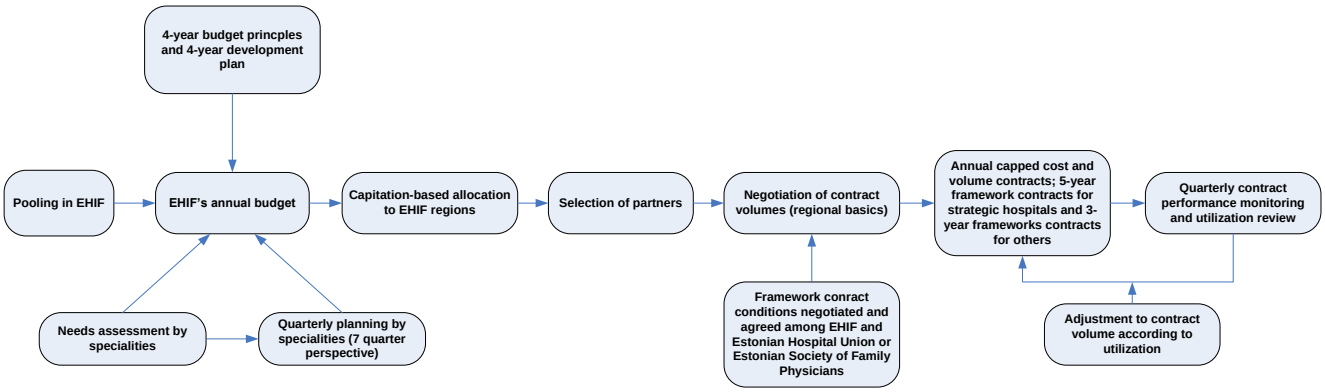

Figure 11. EHIF contracting process (Redrawn from Koppel et al., 2008)

19 predetermined acute care hospitals stated in the Hospital Master Plan all have a guaranteed number of contracts (Koppel et al., 2008). Except from these the contracts are obtained through selective contracting, which leads to a furthering of the quality and efficiency of the hospitals (Couffinhal and Habicht, 2005) as well as encouraging of hospital service delivery in less attractive areas for the providers. Five-year contracts are made with the hospitals stated in the Hospital Master Plan and three-year contracts with the other hospitals (Koppel et al., 2008). The Health Insurance Act contains the contracting rules and is formally supported by the Supervisory Board (Thomson et al., 2010).

The state or government financed health care services are obtainable not only to the insured persons, but to the entire population (Thomson et al., 2010). The Ministry of Social Affairs reimburses for ambulance service, emergency care treatment for uninsured people, medical devices and some medicines such as HIV medicines and health promotion and disease prevention through public health programmes (Koppel et al., 2008). The ambulance care administration is made by the Health Board. The state budget share for health care is prepared by the Ministry of Social Affairs and set by the Ministry of Finance. The number of nurses and doctors in each ambulance team make up the base for the financing of the ambulance service, which is decided in the state budget negotiations.

Municipalities cover for extra health costs moreover the emergency care for uninsured people and gives money to people who can not pay for their necessary health care services (Koppel et al. 2008). Pharmaceuticals (53%) and dental care (23%) makes up most of the OOP payments and examples of other private expenditure are employer-paid health care travel insurance and employer-paid health check-ups (Habicht and Habicht, 2008). External funding is used to invest in human resources as well as in technology. Two important external funders are the EU (structural fund) and the European Economic Area (EEA).

3.2.4.1. World Bank Partnership

The World Bank projects in Estonia are completed (World Bank, 2011). In table 12, a summary of the Estonian current loan status is shown. The active loans in 2011 from the World Bank are represented as four bars; original principal amount, disbursed amount, undisbursed amount and borrower's

obligation. The disbursed amount is the used money from the original principal amount. Since the project is completed the undispersed amount is set to zero (World Bank Finances, 2011). The partnership program between the World Bank and Estonia resulted in the health sector into a pre-clinical teaching and research facility for the Tartu University Medical School as well as a strengthened health sector planning management and a stronger institutional and regulatory framework (World Bank, 2011).

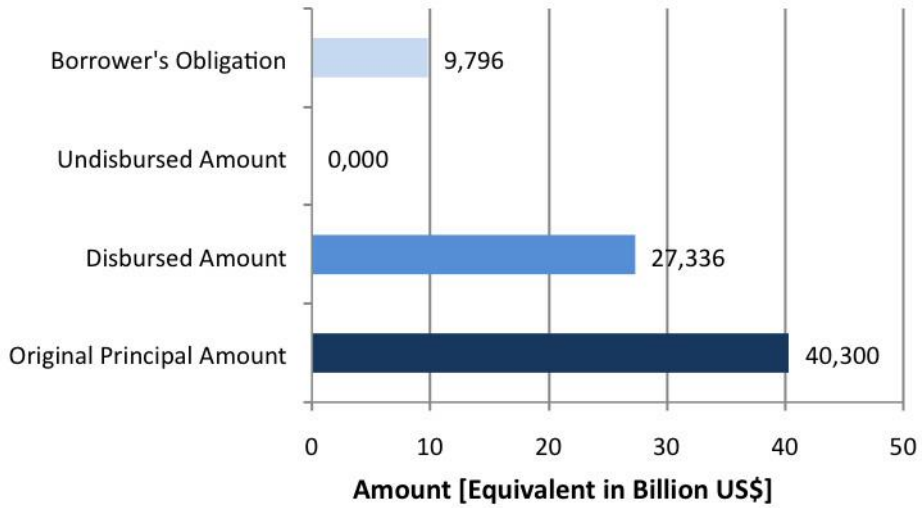

Figure 12. Summary of Estonian World Bank loan (World Bank Finances, 2011)

3.2.4.2. Hospital Payment Scheme

The hospital payment scheme in Estonia composes three different payment methods. The largest revenue share consists of DRG payment in which 39 percent of all hospitals are reimbursed. The other parts makes up of 33 percent FFS and 28 percent per diem (Geissler et al., 2011).

Estonia uses DRG as a hospital payment method since it was implemented in 2004. It was first introduced as a mean of controlling the increasing hospital costs. Estonia adapted the DRG system of the Nordic countries; the NordDRG. After being analysed it contained many advantages and suited Estonia very well compared to other DRG systems. It consists of about 500 different DRGs. Further it makes it possible for EHIF to more easily compare the performance of Estonian hospitals with the Nordic countries hospitals. Also buying the system was not very costly. Though Estonia has to pay contributions yearly for the further development of the NordDRG system (Overview of Estonian experiences with DRG system, 2009).

The DRG reimbursement prices in Estonia are equal for all hospitals regardless of their referral levels. At the start of use, these values were calculated as average costs according to EHIFs price information regarding inpatient care and surgical outpatient care. In 2006 the development process in order to base the DRG cost weights on Estonia's own values started by EHIF. The reinforced system has now been in practice since 2008. It reflects the actual values better and is also being used as an analysing tool (Overview of Estonian experiences with DRG system, 2009). Estonia has done further major developments of the NordDRG to better fit the country and is now a certified NordDRG group of 2011; NordDRG Est (Nordic Casemix Centre, 2011).

The patient classification system was first updated after seven years in use. Estonia does not have a system for when it should be updated. The payment rate is updated annualy according to data collected one or two years in advance (Geissler et al., 2011).

3.2.5. Health Care Institutions

Different health care institutions within the EHIF cover involves family practices, specialised medical care, dental care, ambulance care and funded pharmacies.

The primary care in Estonia is organised around family practices on the county level. This is the first health care instance. All insured persons in Estonia have a family physician. The family physician tasks include diagnosis, laboratory tests, treatment, writing referrals to medical specialists, giving advices in the preclusion of diseases, and issues prescriptions and different certificates, both health certificates as well as certificates of incapacity for work (EHIF, 2011). In 2010, there were 803 practice lists of family physicians in Estonia (EHIF Annual Report, 2010). Family physicians can act privately as sole proprietors or as companies. Though most of them have contracts with EHIF. In each practice they work together with a nurse and their list of registered patients contain between 1200 and 2000 patients. The family medicine system has good access wherein the patients are able to see their family physician on the same day for acute problems and within three days for chronic problems (Habicht and Habicht, 2008).

In order to visit a medical specialist, in most cases a referral from the family practitioner in the primary care is needed. Children and youth under 19 years are entitled to free dental care at dentists with contract with the Estonian Health Insurance Fund (EHIF, 2011). In Estonia the ambulance care service put weight on the onsite diagnosis and treatment, which is possible since the ambulance teams are led either by a doctor or a specialised nurse. The ambulance service is being financed by the state and is managed by the Ministry of Social Affairs (Habicht and Habicht, 2008). Pharmaceuticals are reimbursed by the Ministry of Social Affairs. Pharmaceuticals prescribed from doctors are either 90 percent or fully reimbursed for drugs against more serious diseases. Drugs used for inpatients in hospitals that are covered by the EHIF are free of charge (Habicht and Habicht, 2008).

3.2.6. Hospitals

According to legislation, considering the size and services provided, Estonia has seven types of hospitals; regional hospital, central hospital, general hospital, local hospital, specialised hospital, rehabilitation care hospital and nursing care hospital (Jesse, 2008). The first four types of hospitals are active treatment hospitals. A hierarchy of the hospitals exists, wherein the regional hospitals are at the top with the most varied and specific service provided. Care hospitals are at the lowest level. The local and general hospitals treating common conditions, situated close to where people live. Overall the location of an active treatment care hospital should not be further away than 70km distance or an hour of driving. They all cover a certain area (Association of Russian Medical Tourism, 2010).

In 2009 there were 59 hospitals in Estonia (OECD Stat Extracts, 2011) also shown in table 17. Since 2001 all hospitals in Estonia act as foundations or joint stock companies under private law according

to the Health Care Services Organisation Act. This gave them full managerial rights over assets and access to the financial market (Aaviksoo, 2006). Most of them are public hospitals, owned or founded by state, local governments or public legal bodies. A hospital can also have multiple owners consisting of several municipality owners or the state together with the municipalities owns one hospital. 19 active care hospitals out of 59 hospitals have long-term contracts with the EHIF according to the Hospital Network Development Plan in 2003 (Jesse, 2008). Furthermore the hospitals need to be licensed by the Health Board (Habicht and Habicht, 2008). In 2009 Estonia spent 7.0 percent of the Estonian gross domestic product, GDP, on health care (OECD Health Data 2011).

Table 17. Number of hospitals in Estonia and their ownership management (OECD Stat Extracts, 2011).

Hospitals	**2005**	**2006**	**2007**	**2008**	**2009**
Hospitals, total	54	55	57	60	59
Publicly owned hospitals	36	36	38	38	38
Not-for-profit privately owned hospitals	8	8	9	10	10
For-profit privately owned hospitals	10	11	10	12	11
General hospitals, total	34	35	36	37	36

The total amount of hospitals in table 5 refers to both public and private hospitals. The military hospitals are not included in this number. The hospitals are all licensed establishments providing inpatient services. As a secondary activity they may also provide outpatient service but is not a necessity for this statistics. The hospitals are mainly engaged in providing medical, diagnostic and treatment services (OECD Stat Extracts, 2011).

Publicly owned hospitals are foundations defined as publicly owned when the capital share of the state and local government (or shared ownership between the two of them) is 50 percent or higher. Further the not-for-profit privately owned hospitals the capital share lies within a private body and account for more than 50 percent. According to definition for-profit privately owned hospitals are public limited companies with a 50 percent or more share within a private body having a legal form foundation. The general hospitals are mainly operating in the area of diagnostics and medical treatment to inpatients, comprising general acute care hospitals, community, county, and regional hospitals, private non-profit-organisations, teaching hospitals, army, police hospitals as well as prison hospitals (OECD Stat Extracts, 2011).

All hospitals, both the joint stock companies and the foundations, have supervisory boards governing and overseeing the hospital activities. The supervisory board members are chosen by the hospital owner (Habicht and Habicht, 2008). A management board is responsible for operating the hospital (Jesse, 2008). In this way the state and local government owners, through their representatives in the supervisory boards, can ensure that public interests are met and operating goals are set in order to fulfil public interests (EHIF, 2011). Further the 19 acute care hospitals listed in the National Hospital Development Plan are also required to present a functional development plan to the Ministry of Social Affairs. The Health Board is responsible for assuring compliance with health care standards and EHIF perform external supervision during its hospital contracting process. This governance system in the health sector conduces to guarantee hospital sustainability (Jesse, 2008). Table 18 shows the distribution of health care facilities on different types of hospitals in Estonia.

Table 18. Number of hospitals in each referral level (Baseline Country Survey on Medical Devices, 2010)

Health Care Facility	Public Sector	Density per 100,000 Population
Regional Hospital	3	0.2238
Central Hospital (Provincial)	4	0.2984
General Hospital (District)	18	1.343

All health care personnel are required to register with the Health Board in order to practice their profession in Estonia. In table 17 the number of licensed health care professionals of 2010 is shown. Out of the 5633 doctors registered, 997 are licensed as general medical practitioners or family doctors (Health Board, 2011).

Table 19. Registered health care professionals (Health Board, 2011).

Registered Health Professionals	Licensed to practice	Practising Professionals
Doctors	5633	4476
- Family Doctors	997	910
Dentists	1493	1235
Nurses	11153	8283
Midwives	639	465
Total Health Personnel	18918	14459
Pharmacists	1147	N/A
Assistant Pharmacists	751	N/A

The reason for the requirement of health care professionals registering by the Health Board is to ensure that all health personnel fulfil the activity demand of their respectively profession. Furthermore it gives available data to assist the health care sector management and organisation tasks stated in the laws and other legislative acts to Ministries, EHIF and county governments.

Table 20. Number of hospital beds (OECD Stat Extracts, 2011).

Hospital Beds	2005	2006	2007	2008	2009
Total Number of Beds	7374	7588	7473	7660	7289
-Beds per 1000 Population	5.48	5.64	5.57	5.71	5.44
Acute Care Beds	5140	5287	5101	5163	4844
Long-Term Care Beds	1238	1288	1348	1488	1470
Other Hospital Beds	273	270	270	247	236
Beds in Publicly Owned Hospitals	6637	6839	6896	6924	6583
Beds in Not-For-Profit Hospitals	299	299	334	374	371
Beds in For-Profit Hospitals	438	450	243	362	335

The total amount of hospital beds is those ones who are regularly maintained, staffed and instantly available for admitted patients (table 18). These include all hospital beds, general hospital beds, mental health and substance abuse hospital beds as well as specialty hospital beds. Beds in nursing and other care hospital beds are excluded.

3.2.7. Ambulance Service

In Estonia in 2010 there were 90 ambulance crews, each comprising of three members, who usually consists of both one doctor and one nurse (1/3 of all crews) or two nurses, together with an ambulance technician. As mentioned earlier the state finances the ambulance service and entitles all population in Estonia. Further the state budget amounts up to around 27 million EUR every year. There is one dispatch centre organised via four regional offices (Health Board, 2011).

3.2.8. Medical Technology

The medical technology data in table 21 are collected by the National Institute for Health Development and put together by OECD in the OECD Stat Extracts. 90 percent of the Computed Tomography Scanners are to be found in hospitals and the remaining 20 percent in the ambulatory sector. Out of the Magnetic Resonance Imaging units 30 percent belong to the hospitals and 70 percent to the ambulatory sector.

Table 21. Total amount of medical technology instruments in Estonia (OECD Stat Extracts, 2011).

Medical Technology	2005	2006	2007	2008	2009
Computed Tomography scanners	10	10	15	20	20
Magnetic Resonance Imaging units	3	5	7	11	10
Positron Emission Tomography scanners	0	1	1	1	1
Gamma cameras	2	3	3	3	3
Digital Subtraction Angiography units	5	5	6	9	9
Radiation therapy equipment	2	2	4	3	3
Lithotriptors	..	2	1	2	2

In 2010 there were three linear accelerators in the public sector of the health care system in Estonia. Three hospitals were able to perform nuclear medicine treatment. In 2010 the number of Magnetic Resonance Imaging units had increased with one additional unit (Baseline country survey on medical devices, 2010). Further numbers in the public versus the private sector is shown in table 22.

Table 22. Medical technology instrument shares in public and private sector (Baseline Country Survey on Medical Devices, 2010).

Medical Devices	Public Sector	Private Sector	Total	Density per 1,000,000 Population
Magnetic Resonance Imaging	11	0	11	8.2073
Computerized Tomography Scanner	20	0	20	14.9224
Positron Emission Tomography Scanner	1	0	1	0.7461
Nuclear Medicine	3	0	3	2.2384
Linear Accelerator	3	0	3	2.2384

The Medical Device Act states the requirements a medical device has to meet in order to be put on the market in Estonia. Additionally the medical device has to pass a clinical trial, a conformity evaluation as well as to provide information as manufacturer, safe and usage purpose of the product. The market for medical equipment and supplies was in 2010 estimated at 109 million US Dollars (82 US$/capita). The Estonian medical device market consists to 85 percent of imports, mainly from western suppliers. The domestic production sector is rather small exporting the bigger part to the former Soviet countries but also a part to Western Europe (Epsicom, 2011).

4. Analysis and Future Aspects

The health system as described earlier in the report is a complex structure with many parties involved. There are both national and international leaders and deciding organisations influencing the path, in which the system is taking and what health policies are decided upon. Furthermore the different health care institutions influence the system. Important is to try to unite all health parties with policies leading to improvement of the system in total and not only for respectively own profit. Both Estonia and Poland are working to promote universal coverage of health services.

Economical factors play one of the most important roles for the capital a country disposes. There are overall factors such as the overall economical status of the country, where national and individual income matter. The share of employment affects the amount of money that can be collected through taxes and health insurance. This makes up the country's revenue basis for the next year's health expenses including inter alia the contracting of hospitals in which their respective compensation is determined, health promotion programs etcetera. The more people who are actively contributing to the health system scheme, the less people are in need to be subsided for, in the work of achieving universal coverage. If a country is doing well or is on the advancement path, the more international companies would be willing to invest and venture in a specific market segment of a country, which will give more worksites.

A further important factor influencing the health care is demographic factors of a country, where both its structure and size is accounted for. The conditions are improving for people, leading to people being able to live longer. But the people don't just want to live longer, they also want to have healthy lives with quality. At the same time the population is ageing in Europe there is often a trend in which fewer children are born. This is leading to a process in which the revenue base from the group of working people is declining and the group of old people needed to be subsided for in the health system is increasing. This will create an unbalance between revenue base and increasing health care expenses leading to for example people having to wait long in order to get treatment and might also decrease the hospital treatment performance as a consequence to lack of increasing liquid resources. Another consequence to this could be an increasing treatment indifference cleft between the rich and the poor in whom the rich people have the opportunity to buy their way in getting faster or better quality treatment than the poorer people. The number of people underwriting private insurances would further increase.

In response to these difficulties the health care system is facing there is a need for decision makers to perform further extensive health care reforms in order to improve the efficiency and effectiveness in which more health care services are achieved in relation to how many resources are consumed. There is an increasing need to reduce the common state deficits and debts in public budgets. Preventative health care performances as well as health promotions are also very important to keep the population healthy while ageing to keep the costs down. We are living in a world where big progresses are made in all research fields. Technical developments such as new innovative health care devices and solutions are making the health care perform better. The resource input such as contributions from the public and private health financing and insurance schemes has to be weighted to the improved hospital treatment performance. For example the sooner a medical condition is

detected with diagnostic procedures the better the chance for a quick patient recovery leading to lower hospital costs.

These changes in economic, demographic and technological conditions affect as described various factors in the health care system such as the funding, provision, contractual arrangements and decision-making procedures. Due to these ever changing conditions it is important to continuously adjust the settings of the health care system structure and funding through policy regulations made by decision makers.

Poland is trying to cope with its current hospitals debts in which the hospitals are privatised. This process will improve the quality of health services as well as influence them to work more effectively. When operating as a private hospital they are not longer protected by the state from bankruptcy and are therefor to a higher extent forced to promote profitability. Its own responsibility is enhanced and there is a new market environment in which the hospitals to a higher degree compete with each other to attract patients. This will lead to an overall improved health care service with better access and quality treatment.

In table 8 the Polish hospital privatisation trend is visualised in which the publicly owned hospitals decreased in number from 681 in 2007 to 626 in 2009 according to OECD data in 2011. The opposite trend is seen by the private owned for-profit hospitals with 235 hospitals in 2007 and 290 in 2009. These both trends can be explained as described under 3.1.5. Health Care Institutions in which the privatisation process often occur when for-profit hospitals buys a closing down public facility. This trend cannot be seen in Estonia where according to table 17 both the number of publicly owned hospitals as well as the number of for-profit privately owned hospitals have been stable in the timeframe between 2005 until 2009.

The Estonian health insurance system works well with its single payer system, in which the revenues is centrally collected and pooled as well as the health prices are centrally set. This contributes to resource efficiency. The Ministry of Health is working towards creating universal coverage and currently 95 percent of the population is covered. The public spending in Estonia is relative low compared to the EU average and will not be enough in a longer perspective. To tackle this problem in Estonia, the public revenue base need to be further expanded, in which also non-employed people would be able to contribute through taxes on capital and consumption. This would contribute to a fairer split of the costs of health care services. Furthermore Estonia has put a lot of effort in reforming its health care system and getting rid of its excess hospital capacity. Estonia should follow the guidelines in the Hospital Master Plan and further work towards making the system even more effective. The process in which resources are allocated could also improve. The levels on both public and private health spending has according to table 16, been relative stable over the years from 2006 to 2009. Though to meet the rising demand of public health care services, the private sector has grown to meet this demand on a better access to the health care services. To promote health would also be an important step in increasing the life expectancy, which for Estonian men is as low as 68 years. The same number for Poland is a little better with 72 years.

The Estonian health care sector venture in medical technology devices. Both the number of computed tomography scanners and magnetic resonance imaging units has increased substantially. From 2005 the computed tomography scanners doubled from 10 units to 20 units in 2009. Estonia had in 2005 only 3 units of magnetic resonance imaging devices. This number increased to being 10 units in 2009. The same trend in an increase of new medical technology instruments can also be seen in Poland where the CT scanners, MRI units and gamma cameras have increased substantially from 2005 until 2009.

Both Poland and Estonia are performing reforms and large changes in the entire health care system. Now is probably a good time to try to establish as in the case of Estonia and further build up the Polish health service market for Vamed. In this process I believe this report could be helpful in learning how the health care system works and collaborate.

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Appendix

The following section represents tables and figures providing a deeper knowledge in this area and they are for practical reasons put in the appendix. Appendix A corresponds to section 3.1. Poland and Appendix B corresponds to section 3.2. Estonia.

Appendix A

Table A1. Current expenditure on health care in 2008 by providers and financing agents in mln zloty (Central Statistical Office, 2010).

Providers	**Total**	**Financing agents**							
		Government	General government excl. social security	Social security funds	**Private sector**	Private insurance	Private household OOP:s	Non-profit institutions serving households	Corporations
	[mln zl]								
Hospitals	**28 757**	**27 841**	848	26 993	**917**	228	439	119	130
Nursing and residential care facilities	**1 105**	**996**	18	978	**109**		23	86	
Providers of ambulatory health care	**24 650**	**16 965**	1 655	15 310	**7 685**	49	6 097	366	1 174
Offices of physicians	**1 284**	**1 245**	27	1 218	**39**			39	
Offices of dentists	**3 983**	**649**	2	647	**3 335**		3 330	5	
Offices of other health practitioners	**666**	**347**		347	**318**		265	53	
Outpatient care centres	**13 989**	**10 707**	26	10 680	**3 283**	49	2 191		1 043
Medical and diagnostic laboratories	**869**	**559**		559	**310**		297	12	
Providers of home health care services	**77**	**72**	72		**5**			5	

Appendix B

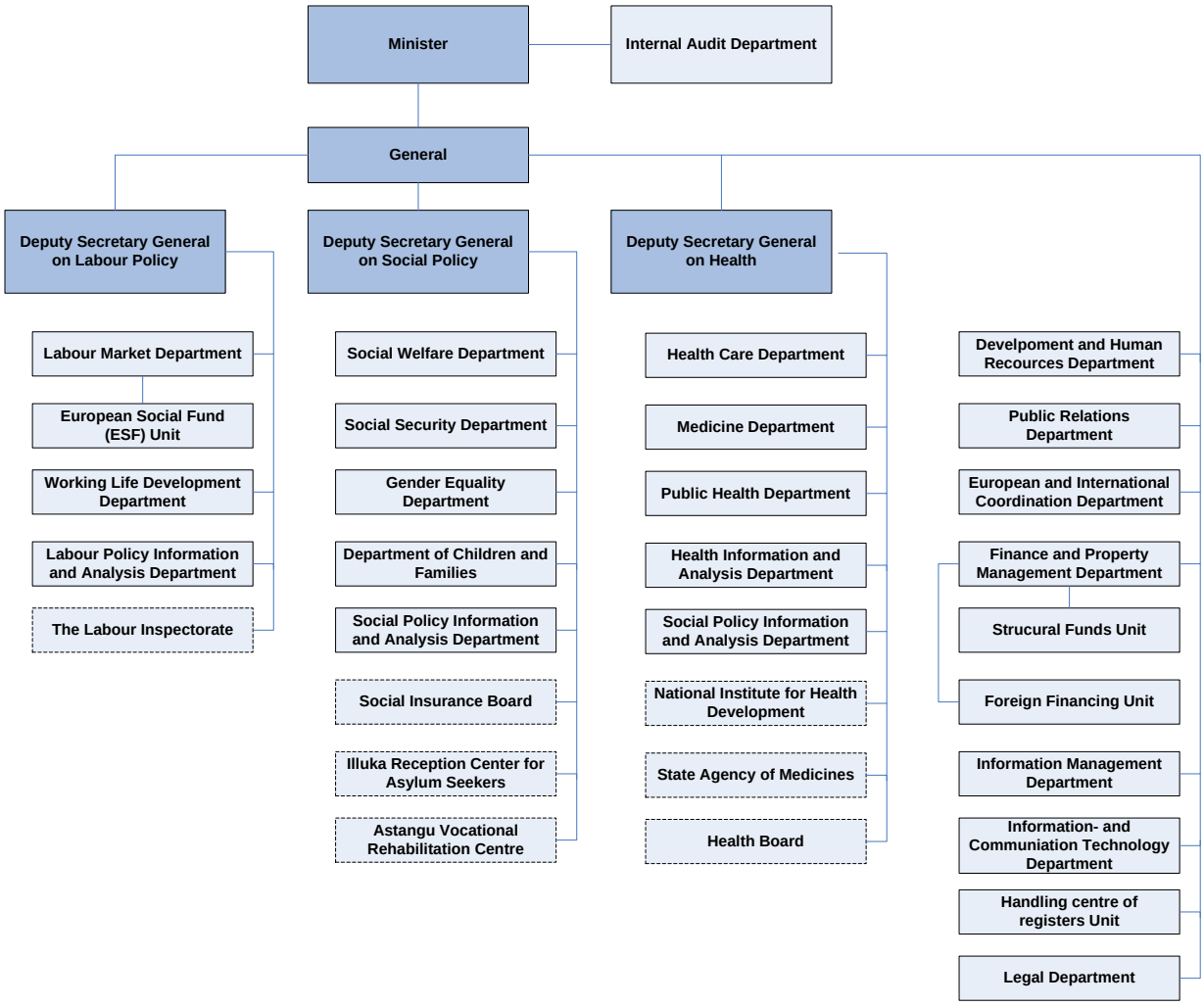

Figure B1. Structure of the Ministry of Social Affairs (Redrawn from Ministry of Social Affairs, 2011).

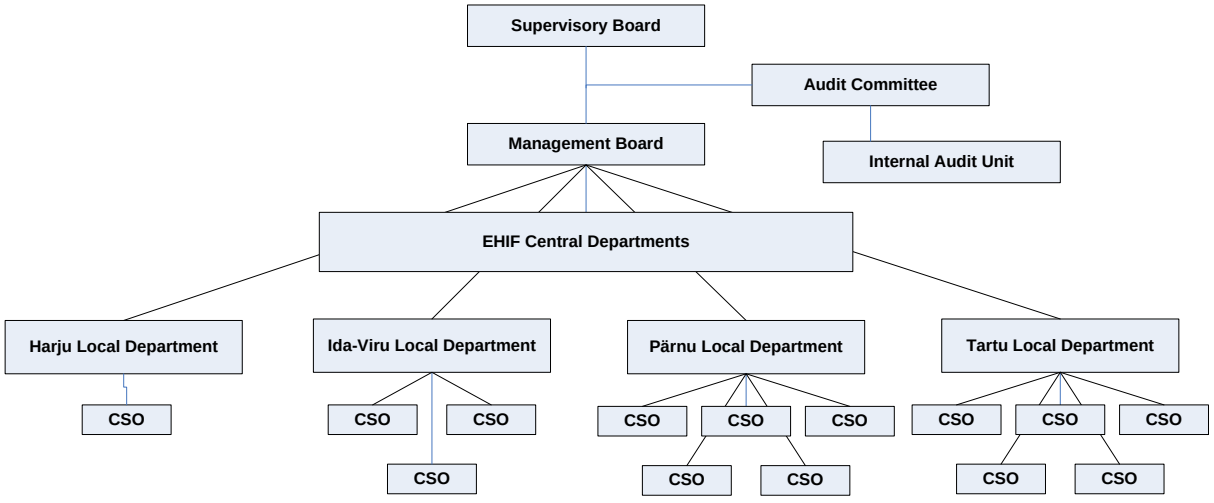

Figure B2. EHIF Organisational Structure (Redrawn from Habicht, 2008).

Table B1. The main functions of health departments (Ministry of Social Affairs, 2008).

Department	**Functions**
Health Care Department	-Health care policy formulation, organise health care implementation with the objective of access, quality and safety -Ensure population awareness and satisfaction with health care services -Policy development -Procurement and delivery of pharmaceuticals for national health programmes
Public Health Department	-Health care policy formulation, organise health care implementation with the objective of health promotion and prevention -Health policy developments in areas of environmental related health risks, control of infectious diseases
E-Health Department	-Management and coordination of the planning and implementation of e-health projects - Administration and development of health information systems, standardisations and implementation of data sets nomenclature and classification of medical documents.
Health Information and Analysis Department	- Create the conditions for knowledge based policy making in the Ministry, objective assessment of health systems development and impact of implemented or planned policies - Coordinate the collection of health statistics

Table B2. Main powers and decision makers in Estonia's health system (Jesse, 2008)

Health system constituent	Role and responsibilities	Powers and authority	To whom it is accountable	Official and the consequences for non-performance
Government, including the Minister of Social Affairs	Policy-maker and regulator	- Legislative initiatives to the Riigikogu - Adoption of decrees - Adoption of national programmes	Ministers to the Riigikogu	Mostly loss of the post and loss of seats in the Riigikogu in the next elections, If criminal activity is suspected, court action is taken
Ministry of Social Affairs	Main policy-maker and regulator in health sector	- Legislative initiatives to Government and the Riigikogu, - Adoption of ministerial decrees	Civil servants accountable to the general secretary of the Ministry	- Loss of job - If criminal activity is suspected, court action is taken
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 the Minister of Social Affairs	- Loss of job - If criminal activity is suspected, court action is taken
County doctors	Planning of primary care network and selection of primary care provider in case of vacancy	Announcement of the vacancy and selection of the provider	To country governors	For the Management Board and employees, loss of performance-related pay and loss of job, In case negligent non-performance ends in a financial loss for the EHIF, financial liability to Supervisory Board and Management Board members

EHIF	Administration of the health insurance system	- Adoption of contracting principles - Selection and contracting of providers - Paying providers - Paying pharmaceutical benefits to pharmacies and service users - Paying sickness benefits to insured people	Representatives of the Supervisory Board accountable to nominating agencies - Management Board accountable to the Supervisory Board	
Professional Associations	Professional development assessment of professional competence	Advisory role for public-sector institutions	To members	Low representation or interests and low status compared with other specialists
Estonian Family Doctors Association	Professional development as well as representation of interests in developing reimbursement, contracting policy and legislative process	Advisory	To members	Change of management
Hospitals	Financially sustainable provision of high-quality health services		To founding organisations (local governments, Ministry of Social Affairs and universities)	For Management Board - loss of job - In some cases loss of performance-related pay

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
Consumers	Representation of consumer interests	Advisory	To members of the respective organisations	Withdrawal of representatives from working groups etc.