



“Italy and Sweden: a comparative analysis of financing and health services provision”

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Abstract

The present study focuses on the financing and provision of health services in Italy and in Sweden. The purpose is to compare Italian and Swedish health system with respect to these aspects. The intention is to provide new insights to how the financing and provision health care system in Italy and Sweden are organized and make a comparison analyzing different quantitative data. The study is organized in two part: one “*qualitative*”, based on literature review, and one “*statistical*” based on critical analysis of data. In the theoretical part the financing flow of Italian and Sweden public health care system, which incentives are awarded to providers and which health services are provided, are reviewed. The statistical part shows how many resources (human and technological) are involved in the delivery process. The main findings, discussed in the conclusion section, suggest the need to improve the fairness in the financial contribution for the Sweden and the need for Italy to undertake cost-control and rationalization measures. Further research and especially greater availability of data remains to be done in order to make more complete the comparison.

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1.Introduction:

1.1“ What is a health system

In today's complex world, it can be difficult to say exactly what a health system is, what it consists of, and where it begins and ends. A health system comprises all organizations, institutions and resources devoted to producing actions whose primary intent is to improve health. It includes the resources, actors and institutions related to the financing, regulation and provision of health actions. This primary intent criterion leads to a broad definition of the health system. Formal health services, including the professional delivery of personal medical attention, are clearly within these boundaries. So are actions by traditional healers, and all use of medication, whether prescribed by a provider or not. So is home care of the sick, which is how somewhere between 70% and 90% of all sickness is managed (Kleinman, 1978). Such traditional public health activities as *health promotion* and *disease prevention*, and other health-enhancing interventions that efforts to improve road and vehicle safety where the primary intent is to reduce road traffic accidents. Hence, the general education system is outside the “boundaries”, because the primary intent of education is not to improve health, but specifically health-related education is included (Murray et Frenk, 1999). Health systems have three fundamental objectives that should be routinely monitored by all countries and should form the main basis for assessing health system performance:

- *Improving the health of the population they serve*
- *Responding to people's expectations*
- *Providing financial protection against the costs of ill-health*

Better health (...” a state of physical and mental well-being necessary to live a meaningful, pleasant and productive life.”) is the “raison d’etre” of a health system, and unquestionably its primary or defining goal: if health systems did not contribute to improved health we would choose not to have them. This means making the health status of the entire population as good as possible over people's whole life cycle, taking account of both premature mortality and disability (Donabedian, 1972). Other systems in society may contribute greatly to the population's health, but not as their primary goal (e.g. the education system makes a large difference to health, but its defining goal is to educate).

The second intrinsic goal is to enhance the **responsiveness** of the health system to the legitimate expectations of the population. It is not a measure of how the system responds to health needs which shows up in health outcomes, but of how the system performs relative to non-health aspects, meeting or not meeting a population's expectations of how it should be treated by providers of prevention, care or non-personal services (world Health report, 2000). Responsiveness has two major components; the **first component** can be called “respect for human beings as persons”, and it captures aspects of the interaction of individuals with the health system that often have an important ethical dimension. It includes:

- *Respect for dignity*: Health systems might be able to achieve higher levels of health by incarcerating individuals with a communicable disease or sterilizing individuals with a genetic disorder, but this would be a violation of basic human rights (Pernick, 1997 and Leavitt, 1995). Respect for dignity also includes interactions with providers, such as courtesy and sensitivity to potentially embarrassing moments of clinical interrogation or physical exploration (World Medical association, 1981 & 1995 et Smith, 1981).

- *Respect for individual autonomy*. The individual should be able to act autonomously when making choices about his/her own health. Individuals, when competent, or their agents, should have the right to choose what interventions they do and do not receive (Brock, 1993 et Faden, Beauchamp, King, 1993).

- *Respect for confidentiality*. When interacting with the health system, individuals should have the right to preserve the confidentiality of their personal health information or determine who has access to one's personal health information (Rylance, 1999 et Beauchamp T, Childress J, 1989).

The **second component** can be called "client orientation", and it includes several dimensions of consumer satisfaction that are not a function of health improvement.

It includes:

- *Prompt attention to health needs*: immediate attention in emergencies, and reasonable waiting time for non-emergencies.

- *Basic amenities*: the basic amenities of health services, such as clean waiting rooms or adequate beds and food in hospitals, are aspects of care that are often highly valued by the population (Bernhart, 1999)

- *Access to social support networks for individuals receiving care*: an expectation of access to social support is not only an instrumental goal, because it may enhance health outcomes, but it is also an intrinsically valued attribute (Gilson, Alilio, Heggenhougen, 1994)

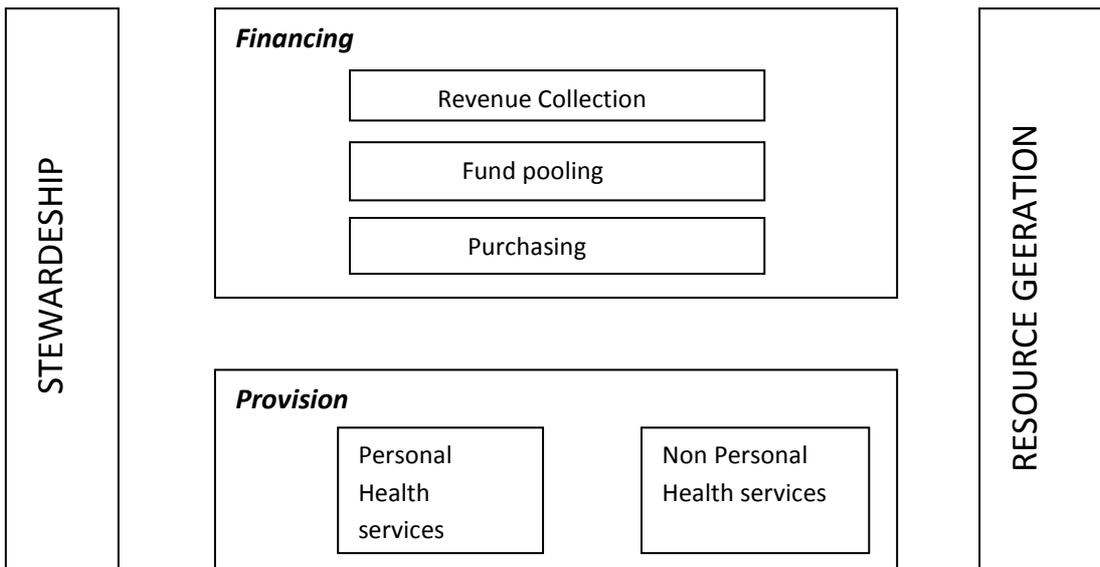
- *Choice of institution and individual providing care*: concerns choice of provider, or freedom to select which individual or organization delivers one's care

The third goal concerns **fairness in financial contribution**, and means that the risk each household faces, due to the costs of the health system, are distributed according to ability to pay rather than to the risk of illness. A health system in which individuals or household are sometimes forced into poverty through their purchase of needed care, or forced to do without it because of the cost, is unfair. This situation characterizes most poor countries in which at least part of the population is inadequately protected from financial risks (Fabricant, Kamara, Mills, 1999). Paying for health care can be unfair in two different ways. It can expose families to large *unexpected* expenses, that is, costs that could not be foreseen and have to be paid out of pocket at the moment of utilization of services rather than being covered by some kind of prepayment. Or it can impose *regressive* payments, in which those least able to contribute pay proportionately more than the better-off.

1.2 Functions of health system

As shown in Fig.1 below in every health system organization have to perform four basic functions: (Murray et Frenk, 1999) 1) financing; 2) provision; 3) stewardship and 4) resource generation.

Fig.1 Functions of Health system



Sources: WHO

Health system financing is the process by which revenues are collected from primary and secondary sources, accumulated in fund pools and allocated to provider activities. For the purposes of analysis, it is useful to divide health system financing into three sub-functions: revenue collection, fund pooling and purchasing.

- **Revenue collection:** refers to the mobilization of money from primary sources (households and firms) and secondary sources (governments and donor agencies). Funds can be mobilized through eight basic mechanisms: out-of-pocket payments, voluntary insurance rated by income, voluntary insurance rated by risk, compulsory insurance, general taxes, earmarked taxes, donations from nongovernmental organizations and transfers from donor agencies.
- **Fund pooling:** refers to the accumulation of revenues for the common advantage of participants. Indeed pooling means that financial resources in the pool are no longer tied to a particular contributor and contributors share financial risk
- **Purchasing:** is the process through which revenues that have been collected in fund pools are allocated to institutional or individual providers to deliver a set of interventions. Purchasing can range from simple budgeting exercises in highly integrated public systems, where the government

collects revenue through general taxation and allocates it to programmes and facilities for staff and other costs, to more complicated strategies where specified units of inputs, outputs or outcomes are purchased.

The second function concerns the **provision of health services** and refers to the combination of inputs into a production process that takes place in a particular organizational setting and that leads to the delivery of a series of interventions. In analyzing provision, it is useful to keep in mind the conventional distinction between personal and non-personal health services. The former refer to services that are consumed directly by an individual, whether they are preventive, diagnostic, therapeutic or rehabilitative, and whether they generate externalities or not. The latter refer to actions that are applied either to collectivities (e.g., mass health education) or to the non-human components of the environment (e.g. basic sanitation). Health system are not limited to institutions that finance or provide services, but include a diverse group of organizations that produce inputs to those services, particularly human resources, physical resources such as facilities and equipment, and knowledge. This function refers to **resource generation** and encompasses universities and other educational institutions research centres, and companies producing specific technologies such as pharmaceutical products, devices and equipment (Roemer, 1991). The fourth function is called **stewardship** because concerns the careful and responsible management of something entrusted to one's care (Meriam Webster's deluxe dictionary, 1998). People entrust their bodies and their money to the health system, which has a responsibility to protect the former and use the latter wisely and well. The government is called on the play the role of a steward, because it spends revenues that people are required to pay through taxes and social insurance, and because it makes many of the rules that are followed in private and voluntary transactions. It also own facilities on trust from the citizens. Private insurers and practitioners, however, perform this function in only a slightly restricted degree, and a part of the state's task as the overall steward or trustee of the system is to see to it that private organizations and actors also act carefully and responsibility. The concepts embraces more than just regulation, and when properly conducted has a pervasive influence on all the workings of the system.

1.3 Purpose and outline of the study

The purpose of my study is to compare Italian and Swedish health system with respect to financing and provision of services. The intention is to provide new insights to how the financing and provision health care system in Italy and Sweden are organized and make a comparison analyzing different quantitative data. This led me towards the development of following research questions, including:

- How health systems are financed?
- Which incentives are awarded to providers?
- Which resources (human and technological) and units are involved in the “delivery”?
- Which health services are provided?

The study is organized in two part: one “*qualitative*”, based on literature review, and one “*statistical*” based on analysis of data. The content of each chapters is briefly outlined below.

The background, in the **chapter 2**, is divided in two paragraphs; in the first one is brought up the key elements from prior literature that relates to this study. It means that were selected all the documents, magazines, articles, web sites that helped me in the process of conducting this thesis. In this chapter I present prior research conducted in this field in order to be used as a benchmark to the results and chosen methodology; in the second one is made a basic comparison between Italian and Sweden health system concerning how administrative structure is organized and what are the main leading principles that regulate health system; in this part is made also a first analysis about the data with respect to development of National Health system expenditures.

In the **chapter 3** I present and describe the method used to compare the financing and services provision in the different systems and the procedure of how the data are collected, processed and analyzed. Furthermore I present and explain the qualitative *criteria* that were applied to the results of my study. In the last part of this chapter I discussed the limitations about the collection of the data. In the **chapter 4** I present the results from data analysis and answer to the questions above. This section is the “heart” of my thesis and is divided into two major parts. First part is more qualitative and I compare the two different Italian and Swedish health systems with respect to financing and services provision. The second part is empirical because I interpret the results and the index that I have obtained by channelizing what is most relevant for the reader in order to assess if the system works fluently and efficiently. In the **chapter 5** I discuss the findings in connection to earlier literature made in the area and offer concluding remarks in the next chapter.

2. Background

2.1 Literature review

There are a number of studies aiming at analyzing the internal structure of health care systems. The study by **World Health Organization (WHO)** through an analytical description of both health systems, especially Swedish health system, allowed me to deepen and collect relevant information for my study. World health organization is the directing and coordinating authority on international health within the United Nations' system. WHO experts produce health guidelines and standards, and help countries to address public health issues. It ,also, supports and promotes health research. Through report conducted by WHO experts, governments can jointly tackle global health problems and improve people's well-being. My focus was especially on Swedish and Italian health system profile that provided a detailed description of both health care systems, of reforms and policy initiatives. As I explained above each profile is produced by country experts in collaboration with the Observatory's research directors and staff. Health system profiles seek to provide relevant information to support policy-makers and analysts in the development of health systems in Europe. They can be used:

- to learn in detail about different approaches to the organization, financing and delivery of health services and the role of the main actors in health systems
- to describe the institutional framework, the process, content and implementation of health care reform programs
to highlight challenges and areas that require more in-depth analysis
- to provide a tool for the dissemination of information on health systems and the exchange of experiences of reform strategies between policy-makers and analysts in different countries

The profiles are based on a template that, revised periodically, provides detailed guidelines and specific questions, definitions, and suggestions for data sources. Authors draw on multiple data sources for the compilation of Health systems profiles, ranging from national statistics, national and regional policy documents, and published literature. In addition the Observatory supplies quantitative data in the form of a set of standard comparative figures for each country, drawing on the European HFA database. The HFA database contains more than 600 indicators defined by the World Health Organization (WHO) Regional Office for Europe for the purpose of monitoring Health for All policies in Europe.

In order to analyze data I focused on **Organization Co-operation and development (OECD) health data 2009** that offered me a comprehensive and detailed source of comparable statistics data on health and health system across 30 OECD member governments, including Canada, the United States, the European community, Australia and Japan. Although health system differ widely in their design, in the inputs they use and the outcomes that attain, policy makers in all OECD countries share the common overall goal of achieving high- performing health systems. These policy objectives include:

- Improving population health status and health outcomes of medical interventions
- Fostering adequate and equitable access to care
- Increasing health- system responsiveness
- Increasing the efficiency of health systems
- Ensuring sustainable costs and financing

Thus OECD health data can be an essential tool for health researchers and policy advisors in governments, the private sector and the academic community, to carry out comparative analyses and draw lessons from international comparisons of diverse health care systems. Covering the period 1960 to 2009, this interactive database can be used for comparative analyses on:

- Health status
- Risk factors to health (including smoking and obesity)
- Health care resources and utilization (including the supply and activities of doctors)
- Long-term care resources and utilization
- Health expenditure and its financing
- Social protection (including public health coverage and private health insurance)
- Pharmaceutical markets

The collection and analysis data allowed me to make a comparison based on quantitative indicators with respect to some aspects related to financing and provision

In the first part of introduction I analyzed the “**World Health report 2000- Health system performance**” and a study realized by Murray and Frenk (“**a framework for assessing the performance of Health systems**”). The first report examines and compares aspects of health systems around the world. It provides conceptual insights into the complex factors that explain how health systems perform, and offers practical advice on how to assess performance and achieve improvements with available resources. The main purpose of the report is to provide countries, donor agencies, international organizations and others with the information they need to help them make policy and funding decisions. The principal writers were Philip Musgrove, Andrew Creese, Alex Preker, Christian Baeza, Anders Anell and Thomson Prentice, with contributions from Andrew Cassels, Debra Lipson, Dyna Arhin Tenkorang and Mark Wheeler. Through the reading of this study I deepened the concept of health system and especially I answered to question as what makes for a good health system, what makes a health system fair, how do we know whether a health system is performing as well as it could, that are subject of public debate in most countries around the world. In effect before analyzing the difference between Italian and Swedish health systems with respect financing and provision, is necessary understand foremost how a health system should be defined in order to extend our field of concern beyond the provision of public and personal health services, and encompass other key areas of public policy that have an impact on people’s health. World Health report suggests that the boundaries of health systems should encompass all actions whose primary intent is to improve and promote citizen’s health. It is also important understand what are the goals of a health system. Clearly, their defining purpose is to improve and protect health, but they have other

intrinsic goals. These are concerned with fairness in the way people pay for health care, and with how systems respond to people's expectations with regard to how they are treated. Where health and responsiveness are concerned, achieving a high average level is not good enough: the goals of a health system must also include reducing inequalities, in ways that improve the situation of the worst-off. The attainment in relations to these goals provides the basis for measuring the performance of health system. The study by Murray and Frenk focuses on how to measure the health system performance with respect to goal attainment and to the resource available; if policy-makers are to act on measures of performance, they need a clear understanding of the key functions that health systems have to undertake. The study defines four key functions:

stewardship (a broader concept than regulation); financing (including revenue collection, fund pooling and purchasing); service provision (for personal and non-personal health services); and resource generation (including personnel, facilities and knowledge). By investigating these four functions and how they combine, it is possible not only to understand the proximate determinants of health system performance, but also to contemplate major policy challenges.

In the second part of introduction in order to make a "first" comparison between Italian and Swedish health system I analyzed a study conducted by Vittorio Maio, PharmD and Lamberto Manzoni ("**The Italian Health Care system: W.H.O ranking versus public perception**") that focuses on Italian Health care system trying to answer to question such What makes the Italian health care system so appealing? What important health outcomes has the Italian health system accomplished? And what perceptions and expectations does the Italian population have of its health system?. This study, by describing the socioeconomic and political issues of the country, focuses and illustrates the principles on which the Italian health system is grounded, examines its structure and organization, and defines achieved health care outcomes. For the achievement of my work purpose has been very important the analysis of the study conducted by Anders Anell – "**Swedish Health care under pressure**" about Swedish health care system. The study focuses on the structure of the Swedish health care system and is divided into three sections; In the first section, the present structure of the health-care system is described, together with a summary of recent changes in the organization and funding of services and the development of expenditures. The following two sections discuss changes in incentives at the macro- and micro-levels as well as issues related to access and outcomes from a population perspective. This section looks more closely at the flow of funds to local governments and health-care providers, and at the resulting incentives. In the first subsection, special emphasis is placed on budget allocation at the macro-level, and on the ambition to compensate local governments for differences in need and income. The second subsection discusses payment to health-care providers.

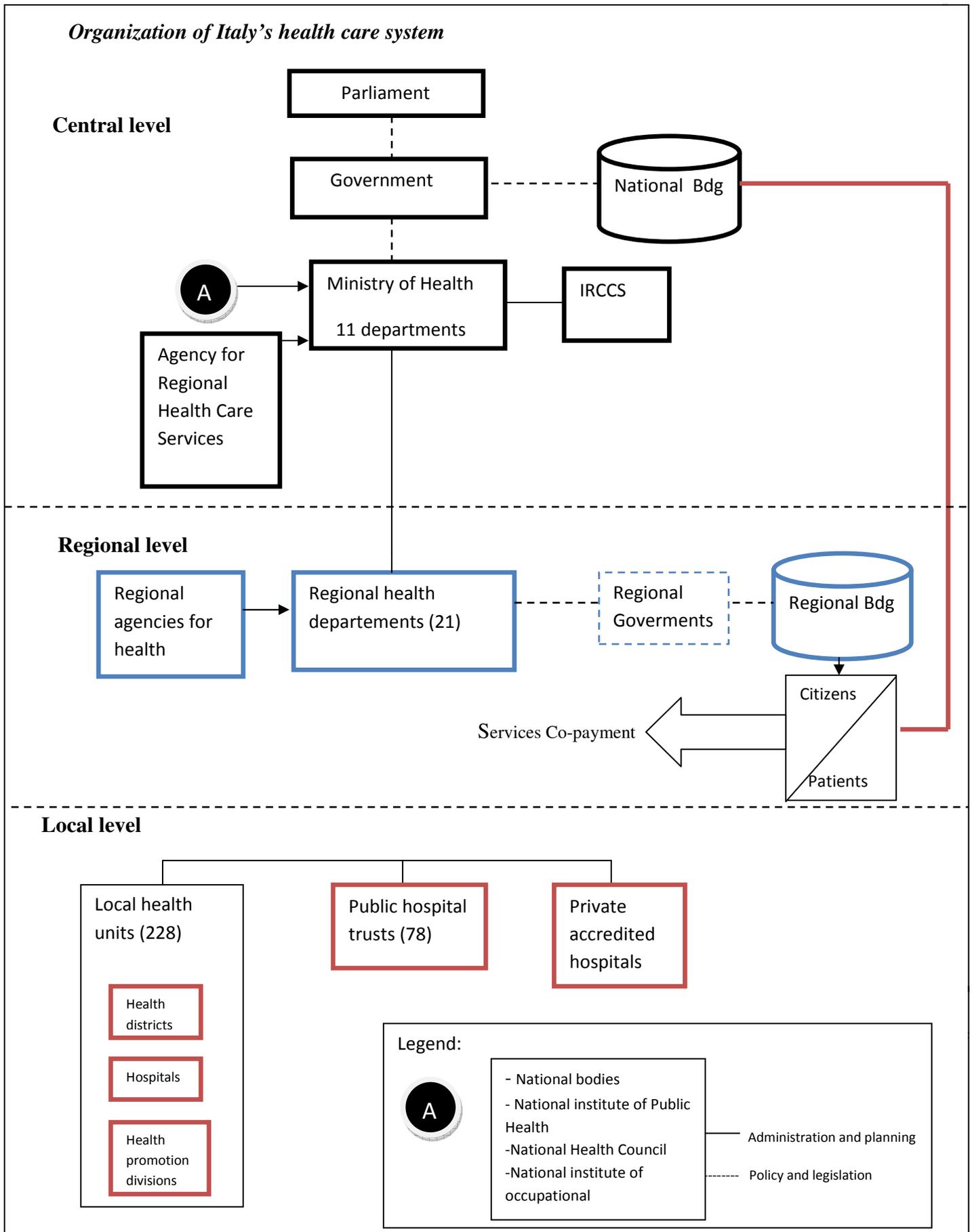
2.2 Italian and Swedish health care system: a “basic” comparison

Italy’s health care system is a regionally based national health service that provides universal coverage free for charge or at a minimal charge, and include general medical and pediatric services, essential drugs and those for chronic disease, treatments administered during hospitalization, rehabilitation and long-term post cure inpatient care, instrument and laboratory diagnostics, as well as other specialized services for early diagnosis and prevention. The system is organized at three levels: central, regional and local (fig.2). The **central level (Ministry of health)** is responsible for national health planning, including general aims and annual financial resources to be spent on health, and rules the commercialization of drugs and medical equipment in accordance with the European Union regulations (Fattore and Jommi, 1998). In addition it is also responsible for monitoring and taking measures to improve the health status of the population and assure a uniform level of services, care and assistance to the population (it sets the essential levels of health care - LEA, that must be guaranteed throughout the national territory). The Ministry of health also negotiates and monitors the labor contracts of medical and paramedical NHS personnel (Fattore, 1999)

The **regional governments**, through their 21 *departments of health*, are responsible for pursuing the leading national objectives posed by National Health Plan at the regional level. Regional health departments are required to guarantee the benefit package to be delivered to the population through a network of population-based health care organizations (local health units) and public and private accredited hospitals. They are responsible for legislative and administrative functions, for planning health care activities, for organizing supply in relation to population needs and for monitoring the quality, appropriateness and efficiency of the services provided. Regional activities must be covered by regional laws approved by Parliament, although these laws may vary from one region to another. The regions have also significant autonomy on the revenue side of the regional health budget, and are required to fund any deficit that might occur from their own resources, beginning with the 1992–1993 reforms (European Observatory on health care systems, 2001).

The **local health agencies (LHAs)** form the basic elements of the Italian National Health system. Each LHA is financed from its region under a global budget with a “weighted capitation system” (European Observatory on health care system, 2001). Based on criteria of efficiency and cost–quality, the LHAs might provide care either directly, through their own facilities (directly managed hospitals and territorial services), or by paying for the services delivered by providers accredited by the regions, such as independent public structures (hospital agencies and university-managed hospitals) and private structures (hospitals, nursing homes, and laboratories under contract to the NHS) (Mapelli, 1999). Patients can freely choose among the public or accredited private providers. The LHAs must ensure three levels of care planned by the central government and reported in the National Health Plan: *community health care at home and at work, district health care, and hospital care*. To provide these levels of care, each LHA has three main facilities: one department for preventive health care, one or more directly managed hospitals, and one or more districts. Through the districts, the LHAs provide primary care, ambulatory care, home care, occupational health services, health education, disease prevention, pharmacies, family planning, child health and information services (Ministero della sanita’, 1998).

Fig.2



The Italian National Health System follows a model similar to that developed by the British National Health Service (Beveridge Model) in that it provides universal health care coverage throughout the Italian State as a "single payer" financing from general revenues. However the Italian NHS is more *decentralized* because of a recent strong policy of devolution(L.3/2001) that have radically transformed the NHS giving the 20 regions political, administrative and financial responsibility regarding the provision and financing of health care. In particular Italian NHS should be organized according to the following principles (Ministero della sanità,1999):

- **Human dignity:** Every individual has to be treated with equal dignity and have equal rights regardless of personal characteristics and role in society.
- **Protection:** The individual health has to be protected with appropriate preventive measures and interventions.
- **Need:** Everyone has access to health care and available resources to meet the primary health care needs.
- **Solidarity:** Available resources have to be primarily allocated to support groups of people, individuals and certain diseases that are socially, clinically and epidemiologically important.
- **Effectiveness and appropriateness:** Resources must be addressed towards services whose effectiveness is grounded and individuals that might especially benefit from them. Priority should be given to interventions that offer greater efficacy in relation to costs.
- **Equity:** Any individual must have access to the health care system with no differentiation or discrimination among citizens and no barrier at the point of use

The Italian Health care system is considered among the most advanced in the world, with excellent results in terms of health care and well-being. How it explained above the health system provides universal coverage for the entire population, with services provided for free or at modest cost at the point of consumption with the best standards of medical assistance: Italian doctors are well trained and very passionate about their profession and their private hospitals are comparable with any country. The latest reforms, in fact, considered human resources as a strategic factor in enhancing health care quality and patient satisfaction. Training allows health professionals to improve their skills and develop a new professional culture; it is no longer seen as a preparatory activity to be undertaken solely before practice but involves participating in courses, meetings and seminars. The reforms that have occurred in Italy gave considerable attention also to the quality of health care especially on its three main components: *input* (quality of infrastructures and human resources), *process* (appropriateness and timeliness of interventions) and *outcome* (health status and patient satisfaction). In particular the National Health Plan for 1998-2000 established procedure for institutional "accreditation" of public and private providers, based on assessing the quality of their infrastructure and human resources and a national program on guidelines by assessing the effectiveness and appropriateness of health care interventions.

In the 21st century Italy will strive to offer quality health care services by seeking to control the high costs through a rationalization measures. However, because of its fundamental characteristics, the Italian health care system will certainly face other important challenges: to create and develop an efficient system capable of preserving the principles of egalitarianism and solidarity, and to find fair financial mechanisms that overcome regional discrepancies.

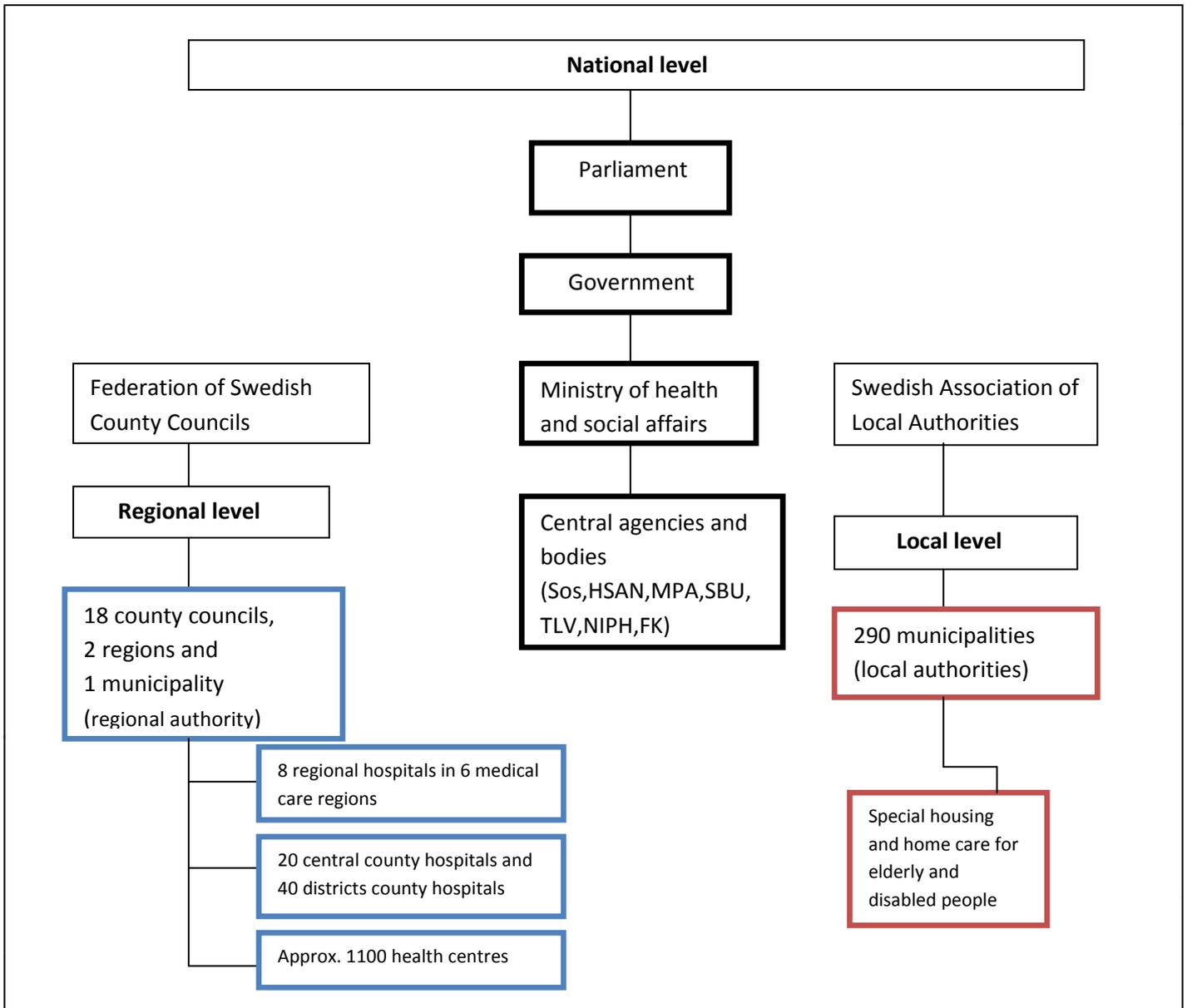
The Swedish health care system is a regionally based, publicly operated health service. It is organized into three levels (Fig.): the **national**, **regional** and **local** (Observatory, 2005)

The regional component, operating through the county councils, together with central government, forms the basis of the health care system. Overall responsibility for the health care sector rests, at the national level, with the Ministry of Health and Social Affairs. The principal responsibility of the *Ministry of Health and Social Affairs* is to ensure that the health care system runs efficiently; It prepares cabinet business and deals with policy matters and legislation in health care, social welfare services and health insurance and allocates financial assistance directed at very specific treatments, and acts as a supervisor of activities in the county councils. It collaborate with other central government bodies. The most important are the Medical Responsibility Board, the Medical Products Agency, the Swedish Council on Technology Assessment in Health Care, the Pharmaceutical Benefits Board and the National Institute of Public Health (Observatory, 2005)

The 21 *county councils* play a dominant role in Swedish healthcare. According to the Health Care Act of 1982, '*every county council shall offer good health and medical services to persons living within its boundaries*', and they shall promote the health of all residents (The Swedish Health care act, 1982). The county councils also regulate the payment of private health care providers (regulate the establishment of new private practices and the number of patients that private practitioners can visit during year).

At the *local level* there are 290 municipalities with their own areas of responsibility. The traditional organization of the municipalities involves a **municipal executive board** (leads and coordinates the entire municipality's business and acts as a supervisor for the committees), a **municipal council** (make decisions about taxes, goals and budgets for all community-run businesses, and about the organization and tasks of the committees) and several **local government committees**. The responsibilities of a municipality include issues relating to the immediate environment of the citizens, (schools, social welfare services, roads, water, sewerage, energy, etc). Besides providing financial assistance, social services in Sweden cover child care, school health services, environmental hygiene, and care of the elderly, the disabled and long-term psychiatric patients. Patients who have been fully medically treated and have been discharged from acute care or geriatric hospitals also fall within the remit of the municipalities. As it showed in the figure 3, the 290 municipalities offers benefits package to citizens through *public nursing home* and *home care* (Fig.3 below)

Fig.3 *Organization of Swedish's health care system*



Legend:

Sos	National Board of Health and welfare
HSAN	Medical Responsibility Board
MPA	Medical Products Agency
SBU	Swedish Council on Technology assessment in Health care
TLV	The Dental and Pharmaceutical Benefits Agency
NIPH	National Institute of Public Health
FK	Swedish social insurance agency

The Swedish health care system is primarily funded through taxation. Both county councils and municipalities have the right to levy proportional income taxes on their respective populations and these make up 70% of their revenues (Landstingsförbundet, 2004). Swedish health system is organized following three principles:

- “**Human dignity**” means that all human beings have an equal entitlement to dignity, and should have the same rights, regardless of their status in the community
- “**Need and Solidarity**” means that those in greatest need take precedence in medical care
- “**Cost-Effectiveness**” means that when a choice has to be made from different health care options, there should be a reasonable relationship between the costs and the effects (outcomes), measured in terms of improved health and improved quality of life

Despite several decades of important reforms, numerous challenges for the Swedish health care system remain. There is a need for integration between hospital care, primary care and institutional care, especially in the provision of services for the elderly, and for those with disabilities or mental illness; there is a need to strengthen primary care and home-based care and to find a way of tackling the shortage of skilled personnel in the municipal sector; as for many other countries the cost containment remains an important challenge; the difficulties in defining division of responsibility for health care provision between central government, county councils and municipalities need to be tackled. Effective interventions are needed for tackling increasing social inequality in health care in Sweden, especially with regard to dental services. At the opposite side we can argue the health status of the Swedish population is one of the best in the world. The main strengths of the Swedish system include the provision of health care services to everybody on the basis of need, democratic control and local accountability, control over total expenditures and an effective management of clinical activities.

In the table 1 below are summarized values of the expenditure and health status key indicators reported in Italy and Sweden. The Italian National Health system is the third largest health care system in the European Union, behind Germany and France with **total health expenditure** amounted to 8,7% of the Italian Gross Domestic Product (GDP) in 2007, with 76,5% of **public expenditure** and 23,5% of **private expenditure**; in 1960, health care expenditure was 82% public and 18% private. A such thick increase can be explained by citizens’ dissatisfaction due to non appropriateness of services offered by the public system and to the co-payments growth (Donatini A et al, 2001). Health expenditure as a proportion of GDP increased steadily until 1992: from 3.9% in 1960 to 6.6% in 1978, when the NHS was established, to 7,7% in 1990, peaking in 1992 (8,0%), declining to 7,3% in 1995, stabilizing at 7,8% from 1997 to 1999 and then increasing in the last years. Since 1992 various measures have been introduced to contain NHS expenditure. These can be classified in two broad groups: the first one concerns cost-containment measures aimed at increasing productivity, such as financial accountability at the regional level, spending ceilings on goods and services, measures to contain personnel expenditure, and closure of small hospitals; in the second group can be included the other measures aimed to contain the demand for health care by patients, such as co-pays on drugs and outpatient specialist care (Mapelli, 1995 et Abel-Smith B, Mossialos, 1994).

In 2007 **pharmaceutical expenditures** represented 19,3% of total health care costs. Although Italy has one of the lowest public shares of total health care expenditure among the EU countries, the volume of public health care expenditure remains an important issue for the government, both at the national and at the regional level, mainly because of the existence of a large public deficit. **The expenditure for each person** was 2686 \$ and, by comparing this data with the OECD average, it means health system spend less with respect to other 30 countries (OECD average was 2759 \$ in 2007). The two most widely measures to assess health care outcomes, life expectancy and infant mortality indicate that Italy has a very healthy population compared to the other OECD countries. **Life expectancy at birth** has increased over the last 20 years. In 1987 was 73,1 years for man and 79,6 for women, while in 2007 was 78,5 for man and 84,2 for women (OECD average was 75,7 for man and 81,4 for women). The **infant mortality** rate remains one of the highest in the EU, although it underwent the second largest decline during the 1990s and in 2007 it was 3,7 deaths each 1,000 live births (OECD Health data, 2009). With respect to OECD average it is important to note Italy has a high **percentage of elderly population** (19,3%; OECD average 17,3%). It means that being vulnerable groups, it will consume more resources for the system due to disease's treatment, more health care resources (technological and human), more length of stay, more occupancy rate hospital beds.

Data concerning health- care expenditures in Sweden are rather poor. Until 1999, the municipalities did not separate expenditures for health care to the elderly, and this has posed problems when comparing total health-care expenditures in Sweden with those of other OECD countries. **Total health care expenditures** as percentage of Gross Domestic Product (GDP) have been stable between 1993 and 1997, but between 1997 and 2003 total expenditures increased faster than GDP; during this period health care as proportion of GDP rose from 8,1 to 9,3 %. In the last three years (2004-2007) total expenditures on health fell from 9,4 to 9,1 % (see Table 1). The **public share of total health care expenditure** has continuously decreased during the past decades (in 1980 was 92,5 % GDP and in 2007 81,7%). This is mainly due to increasing cost-sharing, as health care with a high degree of patient co-payment (e.g. drugs, dental care) has increased, while health care with a low degree of patient co-payment (e.g. inpatient care) has decreased. The **pharmaceutical expenditure** amounted to 13,4% and it is very low with respect to OECD countries. In comparison with OECD- data for other EU countries health care expenditure is very high and in 2007 was almost 3323 \$ per capita (OECD average in 2007 was 2759 \$). Analyzing the health expenditure development it is important noting in the last ten years (Between 1997 and 2007) health care expenditure "per capita" is almost doubled (in 1997 was 1887 \$). As well as in Italy, also in Sweden we find a elderly high percentage (17,3%). **Life expectancy** in Sweden is among the highest of the Nordic countries: in 2007 it was 82,9 years for women and 78,7 years for men. During the past 30 years, the average life expectancy rose by 5.5 years, and Sweden currently has one of the world's oldest populations. **Infant mortality** decreased substantially during the same period, from 11 to 2,5 deaths per 1000 live births in 1970 and 2007, respectively. This decrease can be explained with the commitment, by the County councils, to give full immunization coverage to all the children; in 2007, 96% of them are covered by the vaccination against measles, 99% of them are covered by the vaccination against diphtheria, tetanus and pertussis and 57% against influenza (Oecd Health Data, 2009).

Table 1

Health expenditure and health status data, 2007

Indicators	Italy	Sweden	OECD average
Health Expenditure (%GDP)	8,7	9,1	9
Public Health expenditure (% total)	76,5	81,7	73
Private Health expenditure (% total)	23,5	18,3	27
Health expenditure " <i>per capita</i> " US \$ PPP (public + private in \$)	2686	3323	2759
% of population 65 years or older	19,3	17,3	14,7
Male life expectancy at birth(years)	78,5	78,7	75,7
Female life expectancy at birth(years)	84,2	82,9	81,4
Infant Mortality rate (per 1,000 live births)	3,7	2,5	5,6

Sources: OECD health Data, 2007. July 2007

3. Methodology

In my thesis the comparison between Italian and Swedish health care system with respect to financing and services provision is studied by using a framework deriving mainly from several literature sources. In other words my work is a “combination” of detailed context description and data analysis in order to ease the readers to focus on the most obvious differences. The method used to describe the framework was especially a “**reviewing of prior literature**” that allowed me to focus just on relevant documents that detailed these aspects. In other words exploring the existing literature allowed me to identify the following issues connected with the area of financing and service provision in Swedish health care system

- What is already known about this area?
- What research methods and research strategies have been employed in studying this area?
- Are there any unanswered research questions in this area?
- Which questions need to be deepened?

To make more clear the comparison, how I explained above, especially with respect to health service provision, the content analysis (where is explained how care services are provided to meet the health-related needs of the population and which resources are involved in the delivery process is integrated with collect, structured observation and analysis data. It is important to clarify that are not taken in consideration all data, but those actually relevant to make clear the comparison. This data concern the number of practicing physicians and of nursing, dentistry and midwifery personnel involved in the “delivery process”, hospital and acute care beds (to indicate the availability of inpatient services) and also resource technological involved (to assess the care intensity provided to restore health’s patient) as well as magnetic resonance imaging units and Computed Tomography Scanners, in other words all data that allowed me to understand the appropriateness degree of the health system to meet the population’s expectations.

In data processing I adopted a rational and critical approach; i took in consideration three qualitative criteria; the first one refers to the **credibility** of data interpretation; this criterion allowed me to ensure a high level of congruence between concepts and observation; with the second one I tried to elaborate them in order to can be generalized and applied across different settings(**transferability**); the final one refers to the ability to convince the readers that the data are plausible and the importance of them in the process conducting of my thesis (**confirmability**).

Limitations:

- In table 2 was considered the year 2001 because it was the first year of implementation of fiscal federalism. It was interesting to evaluate the main *public* regional financing sources and total amount of these in order to compare with the *public* sources of total county councils revenue (tab.4)
- In the tables 3 and 5 was analyzed out-of – pocket payments trend in the last six years for Italian and Swedish health system with respect to public and private (OOP payments+ private health insurance) expenditure. Was taken in consideration the period from 2002 to 2007 because it is a good benchmark for the study for both the systems
- In the tables 7 and 9, about hospital structures in Italy and Sweden, has been take in consideration the years 2004 for the **inability to finding latest data for Sweden**. Data as well as number of public inpatient care, number of public inpatient care per 1000 inhabitants or private accredited beds per 1000 inhabitants were not available for Sweden, as well as in 18 of 30 OECD countries.
- In the tables 8 and 10 was examined the organization of both health systems with respect to human and technological units involved in the “delivery process”. The period taken in consideration was the years 2006 for the great variability of health systems in the use of resources. Data related to number of CT scanner and Magnetic Resonance Imaging units in Sweden are from 1999 (latest year for which data has been reported).

4. Results:

How financial resources are collected from citizens

Italy

The Italian NHS is funded mainly by general tax revenue (European observatory, 2001). The recent fiscal reform (D.lgs 56/2000) has introduced important changes with respect to Italian health system financing by transfer power to the regions in managing financial resources, so that health care funding has become a regional responsibility (Taroni, 2000). It means the National Health Fund, which had been the main sources of financing since the NHS was established (D.lgs 833/1978), was abolished in 2001. From 2001, Italian National Health System is financed by this kind of regional taxes (see also fig.4 below)

- **A piggy- back regional tax (IRPEF)**. Personal Income Tax rates range from 23% to 43% (from 01/01/2007). In addition, it is also allowed for each region to modify the total regional IRPEF rate from 0,9% to 1,4% depending on the level of income and region of residence (Taroni, 2000)
- **A set amount of the petrol excise tax per litre** (€0,13); regions have also the right to increase the petrol excise by up to €0.026 per litre
- **Regional share on the value added of companies (corporations, partnership and self-employer workers) and on the salaries paid to public-sector employees (IRAP-** imposta regionale attivita' produttive). The companies' value added is taxed at 4,25% but the taxes on public sector salaries is 9,6% on the first 20.660 € and 3,8% on the following 56.820 €. Starting 2001 the regions have the power to raise the rate by up to 1 percentage point

Because of extreme differences in fiscal autonomy that exist among 21 regions, in addition, a fixed proportion (25,7%) of the indirect value-added taxes (**VAT**) is used to build a "National Solidarity Fund", which is primarily intended to redistributed funds to the regions that are unable to raise sufficient resources (European observatory, 2001). This tax compensates almost 94% of the funds abolished (tabl.2)

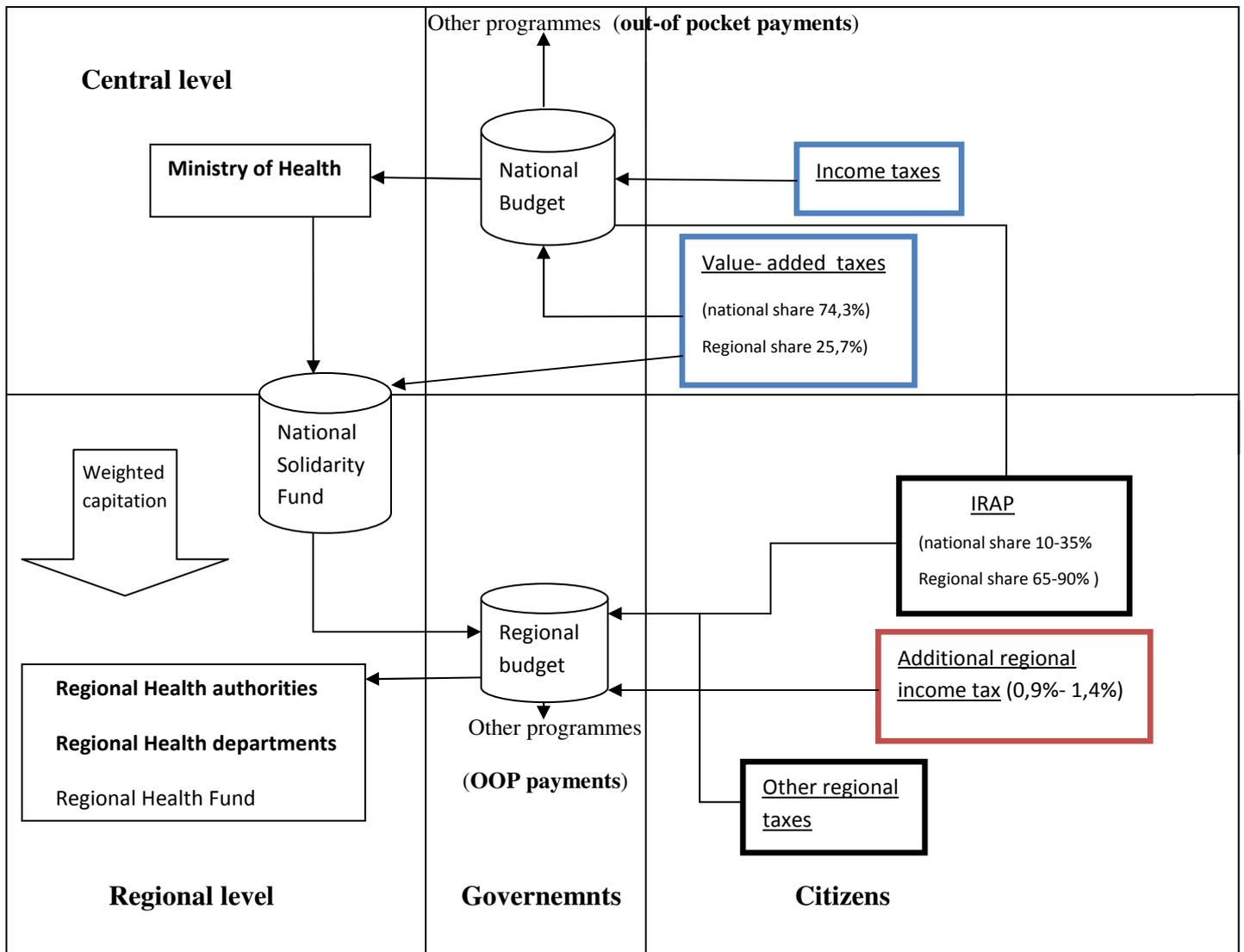
Tab.2 - Regional Sources of **public** health care financing: 2001

Sources of financing	MLD LIRE	%
<i>Regional revenue from petrol excise tax</i>	156	0,3
<i>Regional revenue from additional IRPEF</i>	3.373	6
<i>Revenue from VAT</i>	53.127	93,7
<i>Total Regions revenues</i>	56.656	100,0

Source: N. Dirindin

The mechanism that allocates funds to the regions has changed several times to more homogeneously distribute resources and decentralize budget responsibilities among regions. In 2001, the first years of operation of the National Solidarity Fund, regions received a VAT quota based on *historical spending* to keep the regional financial situation unchanged. Since 2001 the distribution of funds to the regions is based on a "*per capita allocation*" (*weighted capitation*), which takes into account the regional population age distribution, mortality rates and indicators of consumption of health care services. Redistribution is not left to the initiative of regional governments: in fact, as the state collects VAT revenue, all transfers are from the central government to the regions, representing the national sum per person needed to cover the essential health care levels guaranteed by the Italian NHS. (Ministero della Sanita', 1998). Fig. 4 shows the new flows of financing of the NHS from 2001 onwards, after the National Health Fund is abolished and the changes mentioned above are implemented.

Fig.4 Financing flow in Italian Healthcare system



Source: Observatory, 2001

On the **private health care** complementary sources of financing concern *out-of-pocket payments* and *voluntary health insurance*. Italy has two main **out-of-pocket payments**; the first one is demand side-cost sharing: a co-payment (ticket) for diagnostic procedures, pharmaceuticals and specialist visits. The second one is direct payment by users (user charges) for the purchase of private health care services and over-the-counter drugs (Mapelli, 1999). Analyzing OECD health data, can be estimated that, in 2007, out-of-pocket payments represented 20,2% of total health care expenditure and, in the same year, each household used to pay 542 \$ for the private health care. In the last six years (from 2002 to 2007) data show the share of out-of-pocket payments decreased by 2,2 % (it fell from 22,4 to 20,2 with respect to total health expenditure) and out-of-pocket payments per capita increased by 44 \$ at purchasing power parity (see tab.3 Below) (OECD health data, 2009)

Tab.3 – out-of-pocket payments trend in the last six years with respect to public and private expenditure

Health expenditure	2002	2003	2004	2005	2006	2007
Public expenditure % total exp	74,5	74,5	76	76,2	76,8	76,5
Private expenditure% total exp	25,5	25,5	24	23,8	23,2	23,5
OOP payments % total exp.	22,4	22,4	21,2	20,5	19,9	20,2
Public expend. per capita \$ PPP	1656	1692	1822	1933	2054	2056
OOP payments per capita \$ PPP	498	508	508	519	533	542

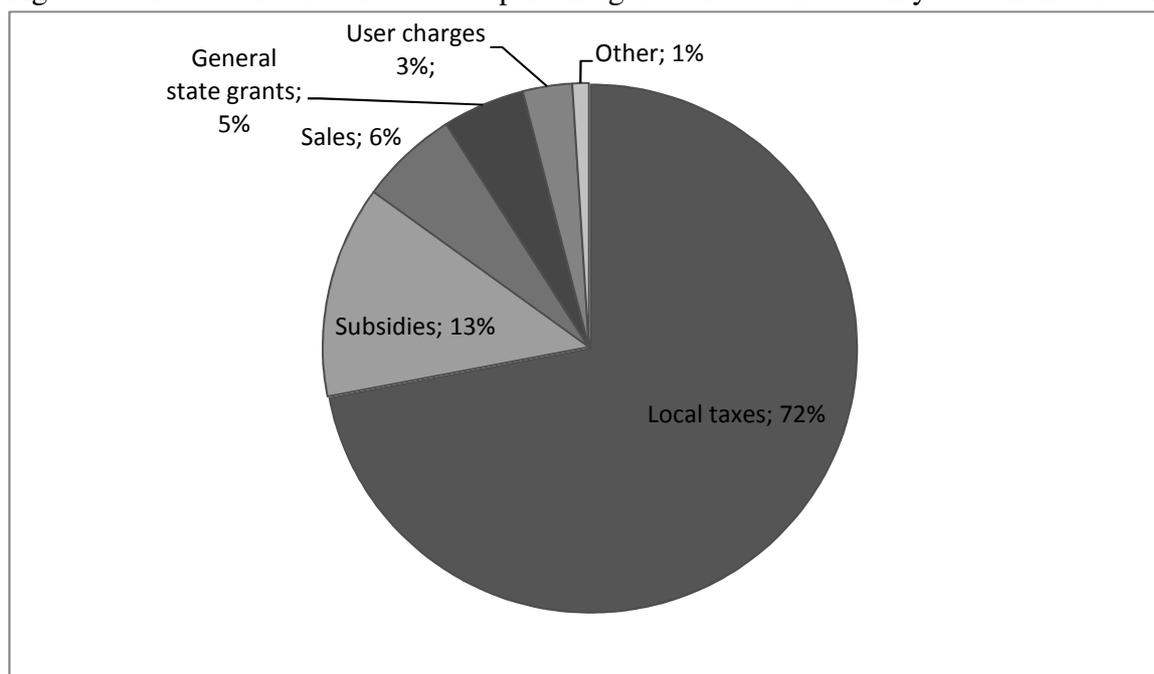
Source: OECD health Data, 2007. July 2007

There are two types of demand for **private health insurance**: *corporate*, where companies cover their employees and sometimes also their families; *non-corporate* with individuals buying insurance for themselves or for their families (voluntary health insurance). How it showed in the tab.3 in 2007 private expenditure represented 23,5% of total health care expenditure in Italy and out-of- pocket payments represented 20,2% of the latter. It means the remaining 3,3% came from premiums paid to private health insurance funds (OECD health data, 2009).

Sweden

As in Italy, also Swedish Health care financing system is primarily through **local taxes revenues**. In Sweden the financing of health care services is decentralized to the local level, in fact, both the county councils and municipalities have the right to levy proportional income taxes on their respective population. The county councils and the municipalities also generate income by the **national government payments** (through subsidies and general state grants) and by **user charges** (out-of pocket payments) (see Fig.6). As it showed in Fig.5, in 2003, 72.2% of the county council revenues originated from taxes (Federation of Swedish County Councils 2004b); the remainder consisted of: state grants 18% (subsidies and general state grants), user charges, 3% and other sources 7% (Federation of Swedish County Councils 2004a). State grants are partly based on a formula that reallocates resources across local governments with the purpose to give every county council and municipality the possibility to provide services of similar standards in their respective geographical area, irrespective of differences in average income and/or need. One part of the new formula gives compensation based on differences in income across local governments. Another part gives a similar compensation based on a combination of *demographic* (age and average life expectancy) and *socioeconomic* (number of single households) factors to adjust for differences in need , and on *geographical* factors (special compensation for small county councils and county councils in sparsely populated northern Sweden) to adjust for differences in expected cost of services. For municipalities compensation is based on *demographic* (age and sex) and *socioeconomic* (professional background of retired people and number of single households) factors. (Diderichsen et al. 1997)

Fig.5 sources of revenue as percentages of total county council revenue,2003



The main source of finance has been quite stable over time. Taxes, as a proportion of County council revenue increased from 62,3% in 1980 to 72,2% in 2003, whereas from 1998 to 2003 increased by 3,7% (from 68,5 to 72,2 as a percentage of total county council revenue). During this period (from 1998 to 2003), user fees as a proportion of total revenues decreased by 0,6% as are state grants (subsidies decreased by 0,2% and general state grants by 1,4%)(Federation of Swedish County Councils 2004b)

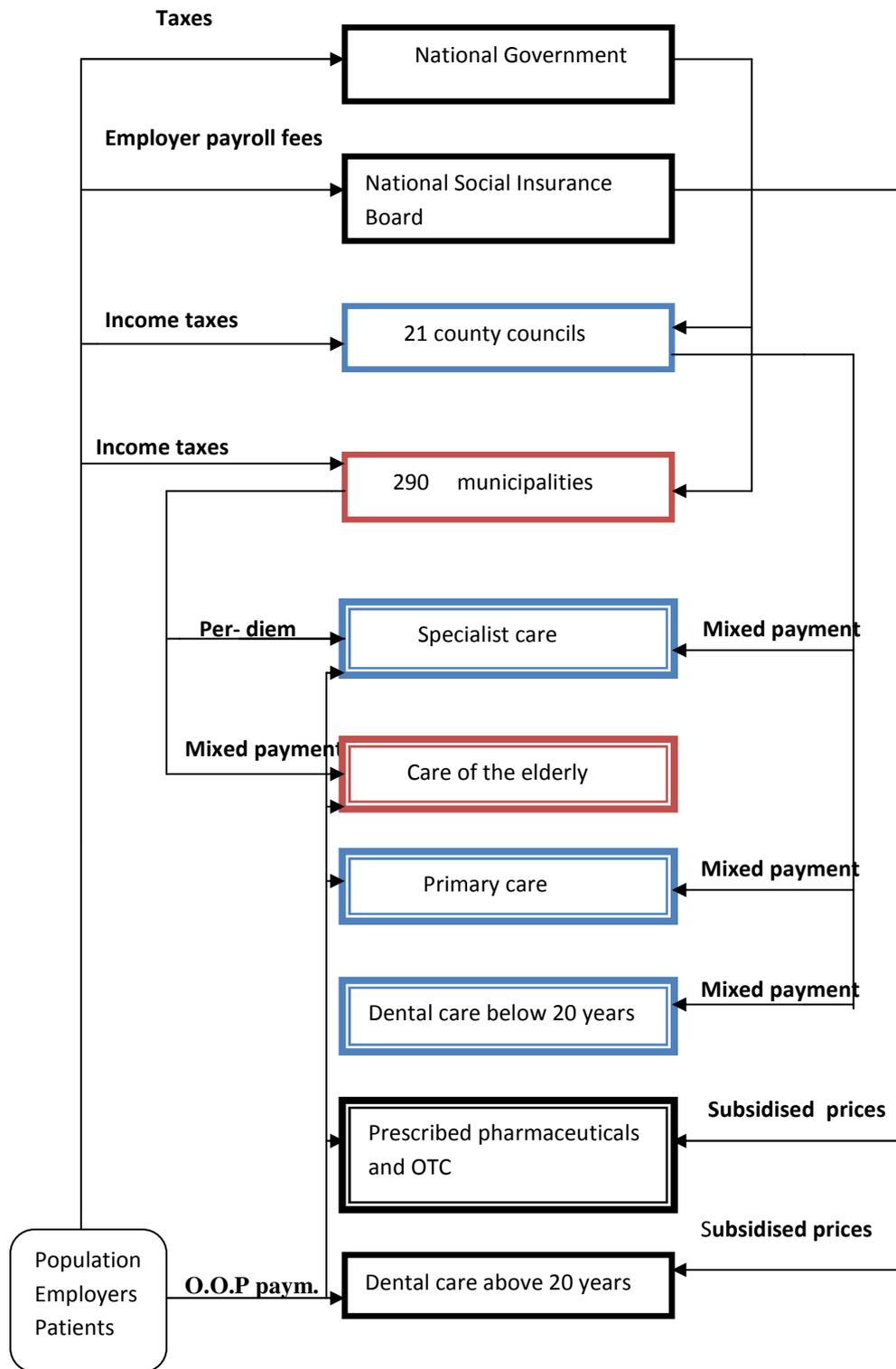
Tab.4 – sources of revenues as percentage of total county councils revenue, 1998-2003

Source of revenue	1998	1999	2000	2001	2002	2003
Taxes	68,5	68,3	69	70,4	70,8	72,2
Subsidies	13,0	13,6	14,0	13,5	13,5	12,8
Sales and other revenues	5,7	4,5	5,0	6,4	6,6	5,9
General state grants	6,8	7,6	7,0	6,3	6,0	5,4
User charges	3,4	3,4	3,0	2,8	2,7	2,8
Other	2,6	2,6	2,0	0,7	0,6	0,9

Source: Federation of Swedish County Councils (2004b)

It is the local authorities that decide the levels of the local taxes. The average county tax rate was 10,76% in 2004 and the average municipal tax rate was 20,79% in the same year (Federation of Swedish County Council (2004a). In 2002 approximately 82% of the health care services (excluding dental care) and 65% of the dental care services were financed through taxes (Federation of Swedish County Councils 2004a).

Fig.6- Financing flow in Swedish health care



On the **private health care** complementary sources of financing concern *out-of-pocket payments* (charge users) and *voluntary health insurance*. Analyzing OECD health data (see tab.5), can be estimated that, in 2007, out-of-pocket payments represented 15,9% of total health care expenditure and, in the same year, each household paid 528 \$ for the private health care. In the last six years (from 2002 by 2007) data show the percentage of out-of-pocket payments increased by 0,4 % (it increased from 15,5 to 15,9 with respect to total health expenditure) and out-of-pocket payments per capita increased by 109 \$ at purchasing power parity (see tab.5 below) (OECD health data, 2009)

Tab.5 – out-of-pocket payments trend in the last six years with respect to public and private expenditure

Health expenditure	2002	2003	2004	2005	2006	2007
Public expenditure % total exp	82,1	82,5	81,8	81,6	81,6	81,7
Private expenditure% total exp	17,9	17,5	18,2	18,4	18,4	18,3
OOP payments % total exp.	15,5	15,4	15,9	16,3	16,2	15,9
Public expend. per capita \$ PPP	2213	2334	2413	2415	2548	2716
OOP payments per capita \$ PPP	419	435	470	482	507	528

Source: OECD health Data, 2007. July 2007

In 2003 the County Councils received SKr 5130 million in patients' fees and other fees (including those for dental care), which accounted for 2.8% of the county councils' total revenues (Federation of Swedish County Councils 2004b) (see Tab.4). In 2004 the fee for consulting a *physician* in primary health care varied from SKr 100 to SKr 150 (approximately €11–17) among the county councils. In the same year, the fee for consulting a *specialist* at a hospital varied between SKr 200 and SKr 300. For *inpatient care*, normally a fee of SKr 80 per day is charged, but reductions are possible for pensioners and those in low-income groups (Federation of Swedish County Councils 2004a). The ceiling for individual co-payments for *prescribed drugs* is separated from the other health care services and is administered by the National Corporation of Swedish Pharmacies. Co-payments for prescribed drugs are uniform throughout the country and are fully determined by the Government. The patient has to pay the full cost for prescribed drugs, up to SKr 900 (100 €) , after which level the subsidy gradually increases up to a 100% subsidy (above SKr 4300 - 478 €) Within a 12-month period, the maximum co-payment is SKr 1800 (€200) for prescribed drugs. *Dental care* is provided free of charge to all children and adolescents (up to the age of 20 years). Adults receive a financial subsidy, from the national dental insurance system for basic dental care which is paid directly to the provider, and pay the difference between the subsidy and the actual price of services. For certain more expensive dental procedures, there is a special high cost protection system ,for patients above 64 years, whereby a patient pays a maximum of SKr 7700 (€ 850) for a 12- month period of treatment.

For the elderly and handicapped a total maximum of 100 euro (900 SEK) applies for all health-care and dental services during a 12-month period and the patient's out-of pocket payments depend on the level of service and care together with the number of hours of assistance accorded per month(Anell,2004).

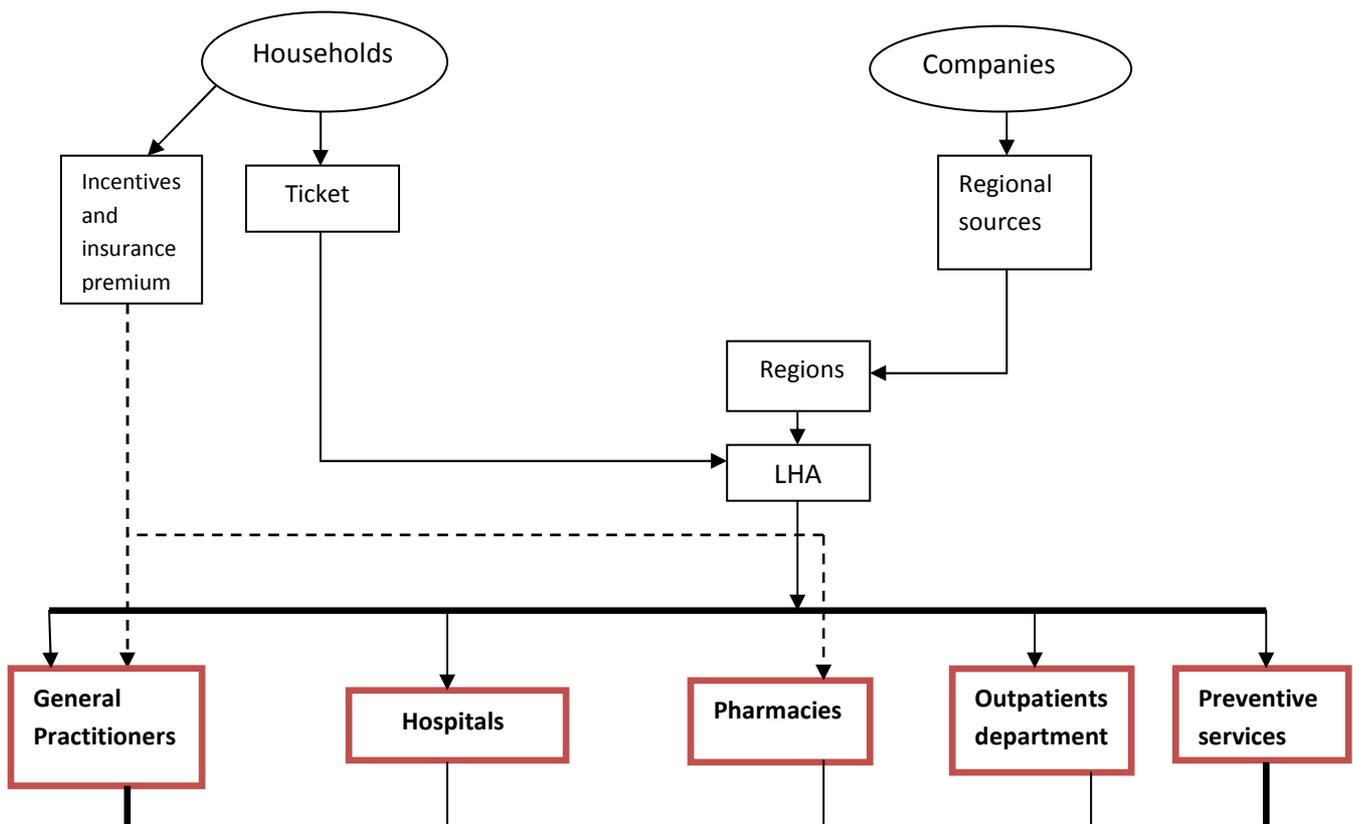
The market for **voluntary health insurance** is small in comparison with other EU countries, but its importance is growing (in 2007 was 2,4 of private expenditure). In 2003 about 200.000 inhabitants (2,3% of the population) had supplementary insurance; the main benefit being the possibility to jump waiting- list for elective treatment and also quick access to a specialist in ambulatory care when necessary.

How financial resources are allocated to providers

Italy

Hospital care in Italy has always represented the largest share of health care expenditure and his reimbursement mechanisms have been altered in attempts to curb the expenditure. Especially the 1992 reform envisaged widespread changes in financing of hospital care as well as the switch from cost-reimbursement mechanism (or global budget, based on historical expenditure, where even if the planned expenditure are exceeded, overall health interventions declared are financed with an uncontrolled health spending growing) to prospective payment system (classified by international system DRGs) for both inpatient and outpatient procedures. In figure 7 it showed *the funds allocation process* by the region to each Local Health Authorities; it is established on the basis of the number of residents, the frequency of health consumption per age, and sex, mortality rates, and different epidemiological local indicators (Roversi Monaco F, 2000). In turn, each LHA finances its own directly managed hospitals and facilities, “hospital trusts” and private accredited facilities in its territory.

Fig.7 Funds allocation process in Italy



The introduction of a hospital care financing system, where hospitals are remunerated on the basis of health services provided according to pre-determinate and all-inclusive fees (see below) for each hospitalization, aimed to stimulate hospitals to reduce their production costs and to achieve a reviewing process to ensure appropriateness in the resource's provision and use

Diagnosis-related groups (DRGs) refer a system for classifying patient care by relating common characteristics such as diagnosis, treatment and age. For each DRG, a lot of resources are absorbed in the hospitals that vary for the time (length of stay), for the care's intensity and for procedures' complexity used in the health care. Usually the way to calculate tariffs associated to each hospitalization's category concerns overall resources absorbed in the care process taking in consideration **direct cost** related to delivery process (health personnel costs, equipments, facilities) and **general costs** related to input involved. (Damiani et Ricciardi, 2005). In the table 6 it showed the classification of hospitalization's tariffs from 1998 in Italy

Tab.6- **the classification of hospitalization's tariffs from 1998 in Italy**

Hospitalization	Kind of hospitalization	Fees
Day hospital	<i>daily hospitalizations</i>	Drg "per day"
Hospital for acute	<ul style="list-style-type: none"> - <i>Hospitalizations 0-1 days</i> - <i>Hospitalizations 0-1 days of patients died or shifting</i> - <i>standard hospitalizations</i> - <i>Anomalous hospitalizations (days beyond threshold)</i> 	<ul style="list-style-type: none"> <i>Drg "per day"</i> <i>Drg "per day"(plus)</i> <i>Drg "per case"treated</i> <i>Drg "per case" (plus</i> <i>Drg for days beyond threshold</i>
Ward long-term care	<i>Hospitalization</i>	Day hospital stay undifferentiated
Ward or hospital's rehabilitation	<i>Hospitalization</i>	Day hospital stay differentiated per Mdc

Source: Brenna, 2003

The hospitalization's categories are classified according to 498 Drg and aggregate in 25 Mdc (Major diagnostic categories) and differentiated in: 1) Ordinary hospitalizations for acute; 2) hospitalization in day hospital; 3) hospitalizations in ward long-term care and 4) hospitalizations in wards or rehabilitation's hospitals. Ordinary hospitalizations and in day hospital fees are based on Drg, whereas for the long-term care a undifferentiated fee is fixed (for each day in hospital) and for the rehabilitation the fee is differentiated for Mdc. Finally in the ordinary hospitalization for acute there are several fees for each Drg, according to: 1) hospitalizations 0-1 days ; 2) hospitalizations 0-1 days with died or moved patient (usually this kind of hospitalizations have a double rate with respect to hospitalizations without died or shifting); 3) standard hospitalizations; 4) anomalous hospitalizations with days in hospital beyond average (in this case to the standard fee for the hospitalization there are also a daily fee to remunerate the marginal cost of days exceeding the standard length (Brenna, 2003)

DRG-associated tariffs are established at a regional level, although the Ministry of Health sets the ceiling for the regional tariffs (Taroni F, 1996). After the introduction of the DRG-based hospital financing system, Italy saw a decrease in the mean length of stay and in the number of hospital admissions.

The 1992 and 1999 reforms have completely redefined the payment system connected with **general practitioner activities**; as an incentive towards containing costs and reducing referrals to hospital for specific specialist treatments, the payment system has been split into three parts: **fixed, variable and additional parts**. The **fixed part** is determined on a capitation basis. The payment system is therefore determined by multiplying the per capita payment by the number of patients enrolled on the physician list. The latest collective agreement (CCNL sanita', biennio 2006-2007) has fixed the per capita payment between €15.50 and €21.20 according to the number of years since the general practitioner received a degree. In addition, physicians who set up a joint medical practice (medical association or partnership aiming to provide continuous care for ordinary activities) get a 6% increase, with additional payments for protecting physicians against risks and for physicians working exclusively within the NHS. For example, the fixed compensation for a physician who received a degree 10 years previously working full time for the NHS and with 1500 patients can reach €42 400. The agreement also has fixed the maximum number of patients each physician can have on his or her list. Full-time general practitioners and pediatricians can have up to 1500 and 800 patients, respectively, and the limits for part-time physicians are 500 and 400. When a general practitioner or pediatrician devotes more than 5 hours per week to private practice, the maximum number of patients is reduced proportionately by 37.5 patients for each additional hour in private practice above the 5 hours per week. Physicians who have higher limits (1800 for general practitioners and 1000 for pediatricians) as a result of previous laws and agreements can keep them. The **variable part** comprises fees from users for specific treatments, including minor surgery, preventive activities, therapies and post-surgery follow up. The fixed and variable parts are common to all general practitioners and are established nationally, but each region decides whether to apply expenditure budgets and estimates the budget itself. The **additional part** is a reward for effective cost containment: a proportion of the positive difference between expected and actual expenditure, including the cost of pharmaceuticals, laboratory tests and therapeutic treatments prescribed by the general practitioner. The same payment structure applies to pediatricians, but per capita payments are

higher than those for general practitioners because they have fewer patients. Payments vary between €35.10 and €49.10 depending on experience. Hence, the fixed compensation for a pediatrician working full time for the NHS and with 800 patients who received a degree 10 years previously is about €37 200. (Observatory,2001). Unlike general practitioners, hospital physicians are paid a salary by a hospital. The 1992 reform drastically changed the organization of hospital physicians by replacing several professional categories with first-level and second-level physicians. **Physicians at first level** have support and cooperation duties as defined by the medical officer in charge of the hospital unit. **Second-level physicians** (*dirigente medico di secondo livello*) usually have duties connected with organizing and managing the hospital unit. Further, they help in choosing the most appropriate therapeutic, diagnostic and preventive treatments for patients. The payment structure follows the hierarchical structure based on two levels; the first-level physicians earn about €41 300 per year, and second-level physicians receive about €62 000, including nights and weekends on call for both types (Observatory, 2001). Unlike physicians, **nurses** in Italy do not constitute a separate professional category but occupy the higher level of a wider hierarchical structure of nonmedical NHS employees that includes technicians, clerks, caretakers and administrative staff. Similar to other public workers, their payment structure is therefore defined by a national collective agreement (CCNL) negotiated every 33 years by representatives of the trade unions and of the government. The 1998 agreement simplified the structure by reducing the number of levels to four, each characterized by different requirements in terms of skills, duties and training. First-level employees (group A) have simple duties and generally include auxiliary workers and caretakers (15-17000€ to year). Group B includes more skilled workers, such as assistant technicians and administrative staff with little responsibility (17000-20000 €). The highest levels, groups C (19000-23000 €) and D (21000-28000 €), comprise mainly nurses together with midwives, dietitians and technicians working in such areas as radiology, orthopedics and ophthalmology, as well as higher-level administrative staff. Aside from specific professional duties, group D workers (such as ward sisters) also have decision making responsibility and play a significant role in organizing the delivery of health care (CCNL sanita' relativo al biennio 2006-2007). Aside from restructuring the professional hierarchy, the reform has also reassessed the payment scheme to stimulate professional motivation by acknowledging and remunerating individual employees' skills. Hence, each non-medical employee in the NHS (including nurses) receives a **basic wage** and **productivity rewards**. The basic wage is determined by the level in the hierarchical structure, taking into account duties, responsibilities and training profile. Productivity rewards are part of the more general incentive scheme that ties a portion of the wage to the results achieved by the employee. In particular, results are measured both at the individual level and in health care centres (by the medical director and the nurses' officier), with rewards going to the employees who successfully improve the quality of their performance and contribute to increasing the overall productivity and performance of the health care unit (Observatory, 2001)

Sweden

In Sweden usually there are two or more districts within every county council, each with responsibility for hospital services and primary care over a geographic area. Most county councils have decentralized a great deal of the financial responsibility to health care districts, through global budgets. Activities such as psychiatry, geriatrics and emergency services are normally financed on the historical expenditure system (**cost-reimbursement mechanism**). Resource-allocation principles vary among the county councils. It means that in about half of the county councils payments to both hospitals and primary care centres are based on global budgets and among the others a smaller group of about five county councils (Bohus, Dalarna, Stockholm, Sörmland and Skåne) continued to develop per-case payments (**Diagnosis-related-groups**) with aiming to solve Swedish health care major problems as well as the long waiting-lists and a lack of incentives for providers to increase health care output owing to fixed budget (Anell,2004). In another group of a similar size, payment for primary care is moving in the direction of capitation, whereas global budgets are used for all other services. Capitation model include a negotiation between the purchasing organization and hospital health care provide and the establishment of financial and activity contracts. These contracts are often based on a fixed prospective per-case payments (based on diagnosis-related groups) and complemented with price (determined by historical costs and negotiations between purchaser and provider) or volume ceilings and quality components. For example in 1993 cost control measures for Bohus, Stockholm, Skåne and Sörmland concerned payments reduced if actual volumes exceed budgeted target and for Dalarna cost control measures were oriented to cost ceilings and volume discounts (Anell A, Svarvar P, 1994).

As most providers in Swedish healthcare are publicly owned physicians, dentists, pharmacists and other professional groups are mainly salaried employees. Exceptions to this rule can be found among private health- care providers and dental clinics, which use a mixture of salaries, capitation and fee-for-service payments to professional staff (Anell, 2004). In 2003, **physicians** employed by the county councils earned SKr 48 100 (€5300) per month on average. This includes compensation for work done and for being on call during non-regular working hours. The corresponding salaries for **nurses** were SKr 23 000 (€2600) in the same period. **Dentists** made, on average, SKr 35 300 (€3900) per month. As a comparison, the average monthly salary in 2003 for all employees in the county council sector was SKr 24 100 (€2700) (Statistics Sweden 2004e).

How providers deliver health care services to citizens

Italy

The Italian NHS is a huge organization with almost 650.000 employees, over 1.000 hospitals and 16.000 ambulatory facilities. It also relies on private accredited health structures and different types of health professionals under contract with the NHS (Mapelli,1999)

Universal coverage entitles all citizens, regardless of their social status, to equal access to essential health care services, services that are necessary and appropriate to promoting, maintaining, and restoring health in the population. Essential health services are provided free of charge, or at a minimal charge, and include general medical and pediatric services; essential drugs and those for chronic diseases; treatments administered during hospitalization; rehabilitation and long-term post acute inpatient care; instrument and laboratory diagnostics, as well as other specialized services for early diagnosis and prevention.

NHS with own facilities engages to provide those services that can be divided in three categories:

1) Primary care; 2) Secondary care; 3) Tertiary care

Primary care is provided mainly by general practitioners and pediatricians and on-call physicians and concern the promotion, prevention and protection patient's health status, counseling, health education, diagnosis and treatment of low complexity acute and chronic illness (low specialized knowledge concentration and technology intensity) taking the patient's burden and continuity of health care. The secondary care concern specialized complex care (acute patient, diagnostic and therapeutic deepening). The tertiary care concern specialized care ultra-complex with high degree of technological engagement and ultra-specialized knowledge (Damiani et Ricciardi, 2005)

Regions provide these services to citizens through a network of public and private health care structures and providers that can be divided into four different categories: 1) **local health units** 2) **public hospital trusts** 3) **National Institutes for Scientific Research** 4) **private accredited providers** (Observatory, 2001)

Local health units are responsible for delivering the benefit package (primary care) by directly providing services through own facilities or through by funding hospital trusts and private accredited providers (acute and long-term hospital, diagnostic laboratories, nursing homes, outpatient specialities and general practitioners). In accordance to 1999 reform (Article 3, Legislative Decree 229/1999), local health units have to guarantee equal access to services for all citizens, the efficacy of preventive, curative and rehabilitation interventions and efficiency in the production and distribution of services (Damiani et Ricciardi,2005).

Local health units are organized in three macro-levels (see pag.13 fig. 2): 1) **health district** 2) **directly managed acute care and rehabilitation hospitals** 3) **health promotion division.**

Health district are geographical unit responsible for ensuring the accessibility, continuity and timeliness of primary care, non- hospital- based specialist medicine and residential and semi-residential care to their assigned populations. The number of districts in each local health unit depends on its size and on other geographical and demographical characteristics

Health districts also have the role of encouraging an inter- sectoral approach to health promotion and ensuring integration between different levels of care and between health services and social services. The health district, therefore, represents both an operational structure for providing services and a vehicle for promoting health projects that integrate various operational structures, in accordance with the strategic plans of the region and the local health unit. The general manager

of the health district has to be supported by a coordinating office to achieve these objectives. This office includes general practitioners (primary care physicians), pediatricians and specialists to promote the integration of health care and social services, which is also accomplished by developing and disseminating general organizational guidelines. (Observatory, 2001).

Directly managed acute care and rehabilitation hospitals (*presidi ospedalieri*) provide hospital-based acute inpatient, outpatient and rehabilitation care. These hospitals usually provide only secondary care

Health promotion division is responsible for: 1) hygiene and public health, including infectious and parasitic disease prophylaxis, health promotion and education and preventing environmental hazards; this activity area is primarily concerned with promoting appropriate lifestyles 2) food control (production, processing, preservation, commerce and transport), preventing food-related disease and nutritional surveillance (preventing obesity and malnutrition, etc.); 3) preventing occupational diseases and accidents by promoting safe behavior and 4) veterinary medicine (surveillance of animal stock health, hygiene of food production and animal food safety and control)

Public hospital trusts provide highly specialized tertiary hospital care (inpatient and outpatient). Starting in 1992 (D.lgs 421/92), the conditions for obtaining trust status are a divisional organizational structure, the existence of at least three clinical units considered by the law as “highly specialized”, a complete accident and emergency department with an intensive care unit and a particularly complex case mix (Damiani and Ricciard,2005).

National Institutes for Scientific Research (IRCCS) are research-oriented hospitals operating at the local level. In addition to research funding, the Institutes receive a global budget that covers inpatient and outpatient care and specific health care services, such as intensive care and transplants (Observatory, 2001)

Private accredited providers provide ambulatory, hospital treatment and/or diagnosis services financed by the NHS. The regional health departments regulate this participation through the authorization and accreditation system. It means that authorized organizations can receive public funding after having been accredited by the departments of health. Accreditation is conditional on several structural, organizational and technological prerequisites defined at the regional level. Other additional conditions set by regional health departments include a formal acceptance of the financing scheme, formal acceptance of the external system for auditing the quality of care, legitimacy and correctness of annual reimbursement claims, availability of quality peer-review programs, participation by users in systematically reviewing the quality of the services provided, adoption of health service charts and acceptance of control based on clinical results. Specialized ambulatory services, including visits and diagnostic and curative activities are provided either by local health units or by accredited public and private facilities with which local health units have agreements and contracts. People are allowed to access specialist care only after approval by their general practitioner, who is responsible for the referral. Once the general practitioner has authorized the visit or the procedure, people are free to choose their provider among those accredited by the NHS. A 100% co-payment with a maximum of €52 is required as an additional source of financing and in an attempt to moderate the use of specialist ambulatory. Tests for monitoring chronic conditions and treatment requested by people with low income are provided

free of charge. Hospital care is delivered mainly by public structures (672 in 2004, corresponding to 51, 85% of the total) which provide both outpatient and inpatient services. Nevertheless, local health units also contract out services to 624 private hospitals (48,18% in 2004), especially not-for-profit institutions (Ministry of Health, 2008). Hospital services are free or at nominal charges at the point of use and, four basic services- general medicine, surgery, pediatrics and gynecology- are available in most general hospitals. The hospital beds in health facilities are not evenly distributed among Italian regions. In 2004, in fact, Italy had 4 hospital beds per 1000 inhabitants but southern regions had fewer than 3,6 beds per 1000 inhabitants, whereas the northern regions had more than 4,1. In 2004 the average length of stay was 7,7 days (Ministry of Health, 2008), continuing the downward trend of recent years. It measures the duration of a single episode of hospitalization and it is calculated by subtracting day of admission from day of discharge. In the table 7 below it is summarized the hospital structures in Italy for the period 2004. It is important also note the overuse of nurse assistant per occupied bed. The data, in fact, show twenty units more of staff with respect to hospital beds; it could be generate the risk of inefficiency and waste of financial resources. Also the average inpatient care length of stay is not evenly distributed among Italian regions; in 2004 data show that in the southern regions average length of stay correspond to 6, 5 days and in the northern regions 8,3 days (Ministry of health, 2008).

Table 7 Hospital Structures in Italy in 2004	
Total inpatient care beds	232.160
Total inpatient care beds per 1000 inhab.	4
Public inpatient care beds	178.596
Public inpatient care beds per 1000 inhab.	3,1
Total acute care beds per 1000 inhab.	3,4
Private accredited beds per 1000 inhab.	0,9
Inpatient care occupancy rate (%)	77,2%
Average inpatient care length of stay(days)	7,7
Physician per 100 beds hospital	52,4
Nurse assistant per 100 beds hospital	122,4

Source: Adapted from the following databases: 1) OECD Health data,2009 2) Ministry of health of Italy

Pharmacies have the monopoly of drugs sales, but are subject to numerous clauses (Ministry of health, 1999). There are almost 16,000 pharmacies distributed across the country. In general pharmacies are privately owned by pharmacists, who act as independent contractors under the NHS. There are only 1,129 public pharmacies, owned mainly by municipalities and managed by pharmacists employed by municipalities and paid by salary (Ministry of health, 1999). By law both private and public pharmacies are licensed to sell commercial products and, on behalf of the NHS, pharmaceuticals, which include medication drugs and dietary goods (Observatory, 2001). Consumers can only purchase pharmaceuticals if they have prescriptions from their general practitioners. By 1994, in order to control pharmaceutical spending, regulatory power was concentrated on a national technical body, the *Committee for Drugs*, which is made up of 14 clinicians and pharmacologists nominated by the regions and the Ministry of Health. This Committee radically redefined the positive list (national therapeutic formulary), regrouping drugs into four co-pay classes (A, B, C and H). **Class A** includes drug for essential and chronic diseases that are covered by the NHS except for a minimal flat contribution by the patient (ticket). **Class B** consists of other drugs satisfying primary therapeutic requirement whose cost is shared at 50% by the consumer. **Class C** includes all other drugs that have no clinical documentation supporting their efficacy, are more costly than Class A drugs, are used to treat minor or inexpensive illness and do not require a prescription. Consumers are responsible for the total cost of class C drugs. In the **Class H** are classified drugs provided by hospitals. (Garattini S, 1995)

In the table 8 it is, also, summarized the organization of the Italian Health System with respect to human and technological units are involved in the delivery process. The number of health care professional increased in Italy during the last years; the total number of NHS employees increased by 642.000 (Mapelli, 1999) in 1999 to 652.587(Ministry of Health, 2008) in 2006. There are 3.019 Guardia Medica (On-call Physicians) stations employing 13304 doctors in Italy (Ministry of Health, 2008).They are available during holidays, nights and weekends, providing after- hours medical care and services when GPs and pediatricians are not available. The number of General Practitioners (GPs) and pediatricians was 46.678 and 7526 respectively. From the 1999 to 2006 data show the pediatricians number increased by 1839 units and GPs number decreased by 7832 (OECD health data, 2009). In the last years also the number of health care technological resources increased (OECD health data, 2009). In fact, how is summarized in the table below, in 2006 the number of magnetic resonances (MRI) and computed tomography scanners (CT scanners) per 1 milion of population was respectively 16,9 (0,5 per 1000 inhabitants) and 29,1 (0,6 per 1000 inhabitants) (OECD health data, 2009). In the same year the total number of ultrasonographics was 2323, 3,9 per 1000 inhabitants (Ministry of Health, 2008).

Table 8 Organization of Italian Health System in 2006	
Number of GPs	46.678
Number of Nurses and midwives	403.000
Pediatricians	7.526
Dentistry	37.000
On-call Physicians	13.304
Physicians working in hospitals(public and private)	121.558
Practicing physicians per 1000 inhab.	3,69
Practicing nurses per 1000 inhab.	7,07
GPs per 10.000 inhab	7,9
Health personnel per 1.000 inhab.	11,07
number of magnetic resonances per 1 milion	16,9
number of CT scanners per 1 milion	29,1
Total number of ultrasonographics	2323

Source: Adapted from the following databases: 1) OECD Health data,2009 2) Ministry of health of Italy

Sweden

The aim of national public health efforts is to improve public health and reduce differences in health between different population groups and geographic regions. People should have the same opportunities to enjoy good health, irrespective of gender, class, ethnic background or disability. This is reflected in the national public health objective adopted by the central government, which is “*to improve public health for the groups in society that are the most disadvantaged from a health perspective*”. In April 2003, the Government adopted a Bill entitled “Public Health Objectives” with the purpose to improve public health and reduce differences in health between various population groups. New public policies efforts in Swedish focus on health promotion compared to the former. The advantage of concentrating on health promotion is that public health work will become more effective when focused on factors that determine health instead of the diseases themselves. Initiatives aimed at creating good conditions for healthy lifestyles across the population are included in the policies for public health. These initiatives include programmes targeted at preventing the harmful effects of alcohol, drug and tobacco abuse and gambling addiction, and at promoting physical activity, healthy diet habits and sexual and reproductive health. Furthermore, communicable disease control, such as the prevention of HIV/AIDS, is part of this policy area.

The aim of the primary care sector is to improve the general health of the population and to treat diseases and injuries that do not require hospitalization. The **primary care services** include both basic curative care and preventive services delivered through the *local primary health care centres (Districts)*. According to the Health and Medical Services Act, primary health care in Sweden shall “without limitations regarding diseases, age or patient-group seek to fulfill the population’s need for basic medical treatment, care, preventive services and rehabilitation which do not require the hospitals’ medical and technical resources or other special competence”(Observatory, 2005). Primary health care is responsible for guiding the patient to the right level within the health system and include vaccination programmes for children pregnancy checkups, health examinations and consultations, as well as certain types of treatment.

According to a government decision in 1995, all physicians in primary care must be specialists in general practice and provide treatment, advice and prevention (district medical officers); others directly employed at this level are nurses, midwives, physiotherapists and gynaecologists, who also constitute part of the health-centre staff. The general practitioner usually provides the first health service contact for adults or elderly people who have mainly physical health problems or minor mental health problems (people with more serious mental health problem usually go directly to psychiatric services). In many cases, the general practitioner also provides the first health-service contact for children, although this function is shared with paediatricians and district nurses. Specifically female health problems are mostly covered by obstetricians, gynaecologists, district nurses or midwives. District nurses play a special role because often they make a first assessment of patients and, if necessary, direct them to the health centre’s general practitioners or refer them to the hospital. They are also involved in home care, and regularly make home visits, especially to the elderly. However, they do not have sole medical responsibility, but act, instead, under the supervision of physicians. Even if primary care is mainly publicly provided, there are also private providers at this level. Most private providers have contracts with a county council and are reimbursed with public funds for seeing patients.

Very few private physicians receive direct remuneration from their patients for consultation and treatment. Every physician who intends to offer private health care must report this to the National Board of Health and Welfare (Observatory, 2005)

For conditions requiring **secondary health care**, medical services are provided at county and regional hospitals. The hospitals for acute care in Sweden are divided into *district county hospitals*, *central county hospitals* and *regional hospitals* (see also fig.3), depending on their size and degree of specialization. In the approximately 40 district county hospitals, there are at least four specialties: internal medicine, surgery, radiology, and anaesthesiology. The medical competence and equipment available at the central county hospitals enables the treatment of almost all types of disease, including psychiatric problems. They have resources for both emergencies and specialized medical treatment and offers a broad range of specialties, available via departments. Currently, there are approximately 20 central county hospitals in Sweden, i.e. one hospital for each county council area. Regional hospitals provide an extensive range of medical specialties, and have a broader spectrum of specialists and subspecialist fields than county hospitals. According to legislation, regional care encompasses those few patients who present especially difficult problems; this demands cooperation among a number of highly trained specialists, as well as specialist equipment that is costly and difficult to use. Regional care also encompasses diseases that occur so rarely that physicians at county level lack experience as to their treatment (Ministry of Health and Social Affairs 2004). There are eight regional hospitals in Sweden, of which seven are affiliated with a medical school and also function as research and teaching hospitals. For highly specialized care (**tertiary care**), Sweden is divided into six large medical care regions, within which the county councils cooperate to provide the population tertiary healthcare services. This is coordinated by National Specialized Medical Care within the National Board of Health and Welfare.

Between 1993 and 2004, the total number of hospital beds was reduced by more than 40%. In 1993, the total number of beds per 1000 people was 5.5; however, in 2004, the number of beds had decreased to 2,9 beds per 1000 people (Federation of Swedish County Councils 2004b). The reduction in the number of beds in Sweden has resulted in a reduction in the average length of stay. In 1993, the average length of stay was 7.9 days and in 2004, it had dropped to 6.10 days (National Board of Health and Welfare, 2004). The decreasing number of beds together with the reduction in the average length of stay have led to an increase in the hospitalization rate and the rate of patient turnover (Observatory, 2005). The number of acute hospital beds per 1000 inhabitants in Sweden is low compared with other countries in western Europe (OECD countries average was 3,9 per capita). The number of such beds has dropped from 4.1 to 2.2 per 1000 inhabitants during the same period in Sweden (see table 9). It means that in the absolute values there are approximately 238 inpatient care hospital beds each 100.000 inhabitants (Swedish Association of Local Authorities and Regions- SALAR)

Table 9 Hospital Structures in Sweden in 2004	
Total inpatient care beds	27088
Total inpatient care beds per 1000 inhab.	2,9
Public inpatient care beds	Data not available
Public inpatient care beds per 1000 inhab.	Data not available
Total acute care beds per 1000 inhab.	2,2
Private accredited beds per 1000 inhab.	Data not available
Inpatient care occupancy rate (%)	60%
Average inpatient care length of stay(days)	6,10

Source: Adapted from the following databases: 1) OECD Health data,2009 2) National Board of health and welfare

All pharmaceuticals in Sweden are distributed and sold to the general public by the state-owned National Corporation of Swedish Pharmacies. It operates hospital pharmacies under one-year contracts with the county councils, as well as community pharmacies. There are 900 pharmacies nationwide and another 1000 accredited agents – mainly grocery stores in rural areas. Before a new drug or medical product can be sold, it must be approved and registered by Medical Products Agency (MPA), a national authority responsible for regulation and surveillance of the development, manufacture and sale of drugs and other medicinal products. From 2008, a state expert agency (Dental and Pharmaceutical Benefits Agency – TLV), deals to evaluate and decide which medicines and dental care procedures are to be reimbursed by the society and makes its decisions primarily based on the cost-effectiveness (i.e. whether or not the cost of the treatment is reasonable in relation to the good it does). It has also the responsibility for monitoring profitability on the pharmacy market with the objective to increase the services availability without corresponding rising costs for patients and county councils. In order to base the decisions on the best available evidence and material TLV collaborate with other agencies that are the Social Insurance Agency (FK), Medical Products Agency, Swedish Council on Technology assessment in Health care (SBU), and the Board of Health and Welfare (SoS). (<http://www.tlv.se>)

In the table 10 below it is, finally, summarized the organization of the Swedish Health System with respect to human and technological units involved in the delivery process in 2006.

Table 10 Organization of Swedish health system in 2006	
Number of GPs	5.326
Number of Nurses and midwives	97.005
Dentistry	7.270
Practicing physicians per 1000 inhab.	3,58
Practicing nurses per 1000 inhab.	10,83
GPs per 10.000 inhab	6,43
Physicians working in hospitals(public and private)	29.190
Health personnel per 1000 inhab	3,2
number of magnetic resonances per 1 million	7,9
number of CT scanners per 1 million	14,2

Source: OECD Health data,2009

In 2006, 29.190 registered physicians and 91. 000 registered nurses were employed in the county council sector in Sweden (Health data, 2009); Sweden employ more resources in the health sector than most other OECD countries; in 2006 in fact Sweden had 3.58 physicians per 1000 inhabitants compared with an average of 2.9 in OECD countries and 10,83 practicing nurses per capita, compared to an OECD average of 9. During the past decade there has been rapid growth in the availability of diagnostic technologies such as computed tomography (CT) scanners and magnetic resonance imaging (MRI) units in most OECD countries. In Sweden, the number of MRIs increased over time from about 1 per million population in 1989 to 7.9 in 1999 (latest year for which data has been reported). The number of CT scanners as well rapidly expanded over time, up to 14.2 CT scanners per million population in 1999 (latest year for which data has been reported-OECD health data, 2009)

Discussion

The purpose of this study has been to make a comparison between Italian and Sweden health system with respect to financing and health services provision. This has been achieved by examining how financial resources are collected from citizens (how occurs the distribution mechanism of payments from citizens to regional level), how financial resources are allocated to providers and how providers deliver health care services to citizens. Analyzing the prior literature and collecting data I believe there are a lot of differences between this two health systems even though logic underlying these two systems could seem the same.

The consequences due to distribution of payments from citizens to regional level is different. As it showed in the **figure 4** the public financing flow in Italian Health care is funded mainly by **income taxes** levied from central government; the remaining revenues come from Regions through *indirect taxes* as **Value-added taxes**, whose share for national budget is 74,3% and share for National Solidarity Fund figure out 25,7%, and *direct taxes* as well as **IRAP**, whose share for National Budget figure out 10-35% and share for Regional Budget is 65-90%, and **Additional regional income tax** (IRPEF) that finance entirely the Regional Budget. The financing flow in Sweden Health care (**Fig.6**) is different because it appears to be major decentralized to local level, County councils and municipalities have the right to levy proportional income taxes on their respective population. Sweden financing system is primarily founded on local taxes revenues. County councils finance public Health system, also, through direct **transfer from Central State** (subsidies and state grants) and **sales**. As it showed in **Fig.5**, in 2003, 72.2% of the county council revenues originated from local taxes; the remainder consisted of: state grants 18% (subsidies and general state grants), and other sources 7%. It means that Swedish Health system is founded on a *regressive payment system* because local taxes are collected at increasingly lower rates as income level increases. However, the financing in Italian Health system is founded mainly on *progressive and proportional payment system*. In fact IRPEF (income tax rate) is a progressive tax, because his share range from 23% (for income between 0 and EUR 15000) to 43% (for income exceeding EUR 75000). In addition a regional city tax may range from 0.9% to 1.4%, depending on the region in which the individual lives; IRAP is a proportional tax because under IRAP self employed individuals are subject to a tax rate of 4.25% applied to productive activity exercised, even if this may be increased by up to 1% by individual regions. Finally Value-added taxes is a proportional tax and, as it explained in the section related to financing, a fixed proportion of this tax (25,7%) is used to build the National Solidarity Fund in order to compensate the differences in fiscal autonomy among 21 regions (see "How financial resources are collected from citizens" section)

The mechanism by which financial resources are allocated to providers is different. In Italy the 1992 reform (D.lgs 502/1992) envisaged widespread changes in financing of hospitals as well as the switch from cost-reimbursement mechanism (or global budget, where even if planned expenditure are exceeded, overall health interventions declared are still financed) to prospective payment system (where hospitals are remunerated on the basis of health services provided according to pre-determinate fees for each hospitalization, (see **tab.6**). It means, how it showed in the Fig.7, each regions receives financial resources from citizens (households through income taxes and companies through other regional taxes) and allocates this funds to each LHA (local health unit) on the basis of the number of residents, the frequency of health consumption per age, per sex, mortality rates and different epidemiological local indicators. In turn each LHA finances its own directly managed hospitals and facilities, “hospital trusts” and private accredited facilities in its territory through prospective payment system, classified by international system DRGs for both inpatient and outpatient procedures. In Sweden prior literature shows resource- allocation principles vary among the county councils. It means that in 2004 about half of the county councils payments to primary care centres are based on global budgets (cost-reimbursement mechanism) and among others a smaller group of about five county councils (Bohus, Dalarna, Stockholm, Sörmland and Skåne) continued to develop prospective payment system (Drg) with aiming to solve Swedish health care major problems as well as the long waiting-lists and a lack of incentives for providers to increase health care output owing to fixed budget. Local governments (County councils and Municipalities) receive funds from Central Government and from citizens, taking into account demographic (age and average life), socioeconomic (number of single households) and geographical (special compensation for small county councils) indicators, and allocate financial resources to their facilities (8 regional hospitals, 20 county hospitals, 40 districts county hospitals, 1100 health centres and special housings and home care for elderly and disabled people.(see “how financial resources are allocated to providers” section)

In Italy the payment structure for physicians follow the hierarchical structure based on two levels; the **first level physicians** that have support and cooperation duties as defined by the medical officer in charge of the hospital unit, earn about €41 300 per year, and **second-level physicians**, that have duties connected with organizing and managing the hospital unit receive about €62 000 (€5100 per month), including nights and weekends on call for both types. Usually a **Swedish physician**, employed by the county councils, earns SKr 48 100 (€5300) per month on average and includes compensation for work done and for being on call during non-regular working hours. In Italy unlike physicians, **nurses** do not constitute a separate professional category but occupy the higher level of a wider hierarchical structure of nonmedical NHS employee including technicians, clerks, caretakers and administrative staff; their payment structure is defined by a *National Collective Agreement* and divided in four levels: first-level employees (group A) have simple duties and generally include auxiliary workers and caretakers (15-17000€ to year); second level (Group B) includes more skilled workers, such as assistant technicians and administrative staff with little responsibility (17000-20000 €). The highest levels, groups C (19000-23000 €) and D (21000-28000 €), comprise mainly nurses together with midwives, dietitians and technicians working in such areas as radiology, orthopedics and ophthalmology, as well as higher-level

administrative staff. In Sweden nurses constitute a separate professional category and use to earn SKr 23 000 (€2600) per month.

The units and the human and technological resources involved in the delivery process of health care services are different. In Italy Regions provide primary, secondary and tertiary care through **local health units**, divided in health districts, directly managed acute care and rehabilitation hospitals and health promotion division, **public hospital trusts**, **National Institutes for Scientific Research** and **private accredited providers** (Fig.2). Swedish Health system provide the same benefit package through **local primary health care centres**, for basic curative care and preventive services (primary care), **district county hospitals**, **regional hospitals** that provide an extensive range of medical specialties and **central county hospital** that have resources for both emergencies and specialized medical treatment offering to patients a broad range of specialties. This facilities are directly owned and managed by County Councils; for elderly care and for disabled people the 290 municipalities manage directly **special housing and home care**(see fig.3).

In 2004 data showed **total inpatient care beds** in Italian hospital structure is much greater than Sweden (232.160 and 27088 respectively) and it is coherent with the County Council policy (between 1993 and 2003) to reduce the number of hospital beds by more than 40%. Each 1000 inhabitants may benefit about 4 **inpatient care beds** in Italian facilities and 2,9 beds in Sweden. **Total acute care beds** each 1000 inhabitants is major in Italy (3,4) than Sweden (2,2) but both have a low value if compared with other countries (average= 4,1 each 1000 inhabitants). In the same year the average length of stay that measure the duration of a single episode of hospitalization was major in Italy than Sweden, 7,7 days and 6,10 respectively (**Tab. 7 and 9**). In the Tables 8 and 10 are instead summarized data that refer to different organization of health systems in 2006. Health data show a limited use of health personnel in Sweden hospital with respect to Italian hospital. For example the **number of GPs** was 46.678 (7,9 each 10.000 inhabitants) in Italy and 5.326 (6,43 each 10.000 inhabitants) in Sweden; the **number of dentists** employed in NHS was 37.000 in Italy and 7270 in Sweden; the number of **nurses and midwives** was 403.000 in Italy and 97.005 in Sweden. In the latter two cases data showed that though there are more dentists, nurses and midwives in Italy with respect to Sweden, the percentage of health staff each 10.000 inhabitants is major in Sweden. In fact in 2006 there was 8 dentists in Sweden each 10.000 inhabitants (in Italy 6) and the number of nursing and midwifery, for the same range of population, was 109 in Sweden and 72 in Italy. The **number of physician** working in the public and private hospitals is major in Italy(121.558 units) than in Sweden(29.190 units), and each 1000 inhabitants may benefit of about 3,69 physicians in Italy and 3,58 in Sweden. Data showed, in the same period, the number of technological units involved in the delivery process is major in Italy than in Sweden; for example the number of **Magnetic Resonance Unit** was 16,9 units in Italian hospitals and almost half in Swedish hospitals (7,9 units) each 1 million of inhabitants as well as the total number of CT scanners that was 29,1 units and 14,2 each 1 million of inhabitants respectively. (see “How providers deliver health care services to citizens”)

Conclusions

In conclusion from my research work emerge some interesting aspects that should be clear:

- The analysis of the different **financing** flow of public health care shows a different distribution of payment. Particularly it should be clear that the payment collecting system that finance Swedish public healthcare is unfair because citizens with high income levels use to pay less with respect to citizens with low income. It means that the **principle of fairness in financial contribution** (third goal that each health system should achieve- see introduction page 5) is violated because those least able to contribute pay proportionately more than the better-off. However in Italy the distribution of payments that occur within public health system is certainly more fair because rich people use to pay more than poor people. It means the poor households don't pay an excessive share of their income in obtaining needed health care and rich households pay according to their ability to generate income.
- The analysis of different shares of **total health spending** shows in 2007, Sweden invested more on health care system (9,1% GDP) with respect to Italy (8,7%) and to other OECD countries (9% GDP); the share of **public health expenditure** is major in Sweden than Italy (81,7 and 76,5 respectively), while percentage of **private health expenditure** is growing in Italy and it is major than Sweden(23,5% and 18,3% respectively), even if both are below OECD countries average (27%) (**Tabl.1**). More precisely data shows the percentage of **out-of-pocket payments** on total expenditure was 20,2% in Italy (**Tab.3**) and 15,9% in Sweden (**Tab.5**) and the use of **voluntary private health insurance** is major in Italy (3,3% of total private expenditure) than Sweden (2,4%)
- The analysis of **health care resources involved in the delivery process** in 2004 shows the number of resources involved by responding to citizens' needs is significantly higher in Italy than Sweden. **Total inpatient care beds** in Italian hospital structure is much greater than Sweden (232.160 and 27088 respectively); **total acute care beds** each 1000 inhabitants is major in Italy (3,4) than in Sweden(2,2); in 2006 the **number of GPs** was 46.678 in Italy and 5.326 in Sweden; the **number of dentists** employed in NHS was 37.000 in Italy and 7270 in Sweden; the number of **nurses and midwives** was 403.000 in Italy and 97.005 in Sweden. The **number of physician** working in the public and private hospitals is major in Italy (121.558 units) than in Sweden (29.190 units). Italy has a greater supply of advanced technological equipment than Sweden because the number of **Magnetic Resonance Unit** was 16,9 units in Italian hospitals and almost half in Swedish hospitals (7,9 units) each 1 million of inhabitants as well as the total number of CT scanners that was 29,1 units and 14,2 each 1 million of inhabitants respectively. Taking in consideration not the absolute value but the number of health care resources each 10.000 inhabitants emerge some interesting considerations concerned that the share of health staff, involved in the delivery process, each 10.000 inhabitants is major in Sweden than in Italy. It means that for example in 2006 the **number of dentists** in Sweden was 8 each 10.000

inhabitants while in Italy was 6 and the **number of nursing and midwifery** employed in NHS, for the same range of population, was 109 in Sweden and 72 in Italy. It means in Italy there are too many “providers”, which tend to increase the health expenditure, but poorly allocated on national territory, while in Sweden the providers allocation is done in a more rational and efficient way, offering a high quality of health care services and taking into account, at the same time, cost-control and rationalization measures (between 1993 and 2003 the number of hospital beds was reduced by more than 40%).

I hope with this work I gave new insights about this two health systems in order to encourage the reader to reflect about what should be done to improve the functioning of both. I hope, also, that in future data, that are unavailable now, can be found easily; further research and more empirical testing remains to be done in order to make more complete the comparison.

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