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Challenges and efficiency solutions within the health insurance system in Romania

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CHAPTER I
BASICS OF THE HEALTH INSURANCE SYSTEM

Adequate health is necessary to develop human capital, its productivity, which ultimately leads to a nation's wellbeing, economic and social development (1). People in the labor force need to be healthy to be able to work, and children need to be healthy to be able to go to school and take part in age-specific activities. However, most developing nations still lag far behind what they could achieve in terms of the health of their populations. At the same time, poor health has another negative impact, it can lead to poverty if families incur too much expenditure on health care relative to their financial resources. A significant number of studies draw attention to the devastating impact that health expenditures have on family poverty (2-5). In this context, health insurance must allow equal and timely access to adequate health services.

The concept of health insurance

Health insurance can be defined as a tool for transferring the financial consequences of temporary or permanent changes in an individual's health, which may cause either health care costs or a negative impact on income due to reduced work capacity, or both (6). Of course, the range of possible changes in an individual's health status is extremely wide, and consequently the range ofpossible financial effects is equally wide, ranging from relatively small and routine (i.e. highly likely to occur) expenses to huge costs, such as those caused by the need for surgery.

Health insurance can also be defined as a contract between an insured and a third-party payer or a government program to reimburse the policyholder for all or part of the cost of necessary medical treatment or preventive care provided by health professionals (6).

The need for health insurance varies considerably between countries and is related to the amount of health care provided by the public sector. Public healthcare systems have developed over time according to local political, cultural and socio-economic conditions. Different countries therefore have different healthcare infrastructures.

The causal effect of general health conditions on economic performance is intensively debated in the literature. Arguably, health, as reflected by infant and adult mortality, affects economic performance through investment in human capital, physical capital accumulation, population growth, productivity growth and increased female labor force participation (7). The main challenge in identifying the total effect is the issue of reverse causality, as mortality is likely to be affected by economic development, for example, because developed countries can afford better health care.

A managed care organization (MCO) is responsible for the health of a group of enrollees and can be a health plan, a hospital, a physician group, or a health system. Unlike traditional fee-for-service plans, managed care is funded based on a method called capitated care, in which providers accept predetermined payments for providing health care services to enrollees over a period of time (usually one year). If the physician provides services that cost less than the capitation amount, there is a profit (which the physician keeps). If the services provided to subscribers cost more than the capitation amount, the physician loses money (7).

Managed care combines the provision of healthcare with the financing of the services provided. The intent was to replace conventional fee-for-service payment plans with quality care services that were more affordable for consumers and health care providers who agreed to certain restrictions, for example, patients would only receive care from providers who are members of a managed care organization (8).

Health insurance is a fundamental objective of the health system. Achieving high levels of health and equitable distribution of health care services is an important objective. Each country's health system must respect the individual (through confidentiality and autonomy) and meet the expectations of the population by directing patients to timely services and quality facilities.

Health is an interdependent part of economic activity. A decisive factor in health is the level of education of the population. The health system is defined as "all activities whose main purpose is to promote, restore or maintain health" (6). Health systems use most of the resources allocated to the health system as a whole. Each government is responsible for its own health system that it coordinates so that it can play an active role in it, while the risk of illness of each insured is different (6).

Health system - concept and typologies

Health systems comprise all organizations, institutions and resources that are dedicated to health actions. A health action is defined as any effort, both in terms of personal health care, public health care services and intersectoral initiatives, whose primary aim is to improve the health of the population.

The essential aim of the health care system is to ensure a high level of health and an objective distribution of health care services.

Health system is defined as: "all activities the principal aim of which is to promote, restore or maintain health" (According to World Health Organization report). Public health systems aim to guarantee the rights of people suffering from various diseases and their free access to health care. The World Health Organization (WHO) states that each government is responsible for its own health system and therefore has a key role to play in their development.Health systems have gone through generations of overlapping reforms over the last 100 years, including the establishment of national health systems, promoting primary health care (PHC) as the path to achieving health for all at universally affordable prices. One criticism of this path has been that very little importance has been given to people's demand for health care, and instead reforms have focused almost exclusively on people's perceived needs. This gave rise to health universalism - a form of public intervention based on governments trying to provide and fund everything for everyone. This philosophy dominated for about 20 years from the early 1970s and gave rise to the formation of well-defined health systems.

Since the beginning of the new millennium, there has been a gradual shift towards what the World Health Organization (WHO) calls the new universalism. This shift has been partly due to the profound political and economic changes of the last three decades, including the shift from centralized planning to a market-oriented economy, reduced state intervention, diminishing government controls, etc. In this context, WHO advocates the new universalism which recognizes the limits of government intervention but retains government responsibility for the governance, regulation and financing of health systems.

Health care systems differ in the way they are organized and financed, and if we look at Europe, we find several financing systems, such as the Bismarck health system, the Beveridge national health system, the Semashko centralized health insurance system and the private health insurance system.

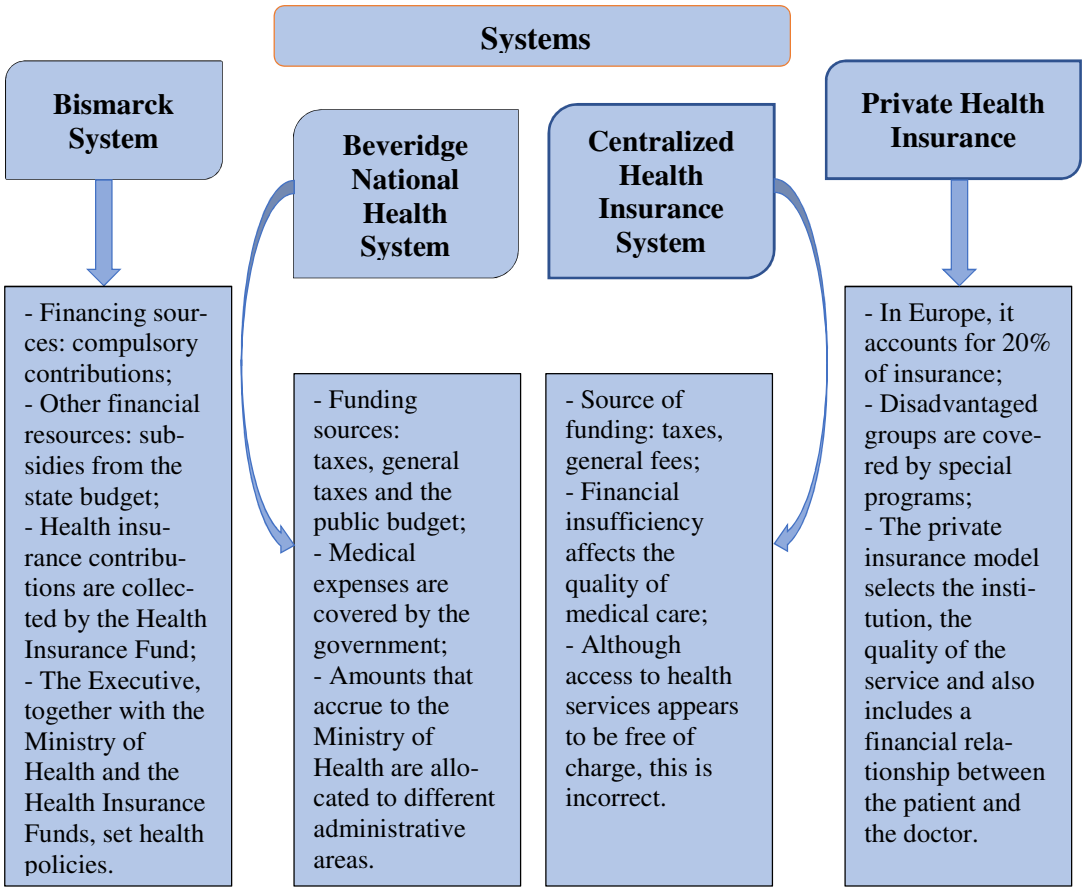


Figure 1. Global health systems (Source: by authors)

The Bismarck-type health care system has the following characteristics: each citizen is obliged to belong to a National Health Insurance House in order to be protected against the risks of illness, the insurance premium is compulsory and corresponds to the income of each citizen, and these health insurance houses closely link hospitals, clinics and family doctors, who are freely chosen, so that all patients can benefit from the necessary medical services. Features include:

- The health contribution is compulsory for both the employee and the insurer;
- Contributions are set by law and are equal as a percentage, but are reflected differently for individuals depending on their income;
- Contributions are collected by the health center;
- Service delivery is timely and efficient;
- Only insured persons benefit from health services and, by exception, disadvantaged persons.

The advantage of this health care system is its high medical performance and efficiency, but it also has a disadvantage: the model has the most concentrated and significant percentage of expenditure in Europe as a whole (9). Among the countries that have adopted this medical model are Germany, Belgium, Austria, France, Luxembourg, Sweden, Romania and the Netherlands (10).

The second medical system model globally is Beveridge, which first appeared in the United Kingdom in 1948. The countries that have adopted this system are: the United Kingdom, Spain, Portugal, Denmark, Greece, Italy, Norway, Ireland, Finland, Iceland, Norway. Under the Beveridge system, the main feature is the source of funding, which is made up of general taxes and duties paid by all citizens. It is very important to note that the whole system is entirely run and controlled by the state. In return, the state provides unrestricted and free access to public health services. Family doctors are assigned remunerations directly proportional to the number of patients on the lists in the clinics' databases, while specialist doctors who work only in state-owned hospitals and clinics are only salaried employees. As in the other cases, the Beveridge system also has a

predominantly positive impact, but also related disadvantages, the biggest problem being the long waiting time for a document from the family doctor, in case of the need for detailed investigations to be carried out by a specialist.

The Beveridge system has a high degree of efficiency of services available to citizens.

The third system is private health insurance, found predominantly in the United States of America, which is effectively based solely on the insurance premium, which is paid exclusively on the basis of the medical condition of each individual patient. This insurance is intended for people with adequate financial means. Private insurance premiums may be equal for all people or they may differ depending on the risk of illness of each insured (6).

Centralized Health Insurance System - Semashko type is found in countries with a centralized economic system in Central and Eastern Europe.
Its features are:

- Health services are wholly state-owned;
- The quality of care is affected by insufficient funding;

  Medical staff are state employees and receive a salary for the work they do.

Any health system strives to meet people's needs in terms of health and health service provision. Each country has established its own funding mechanism, so these systems rely on a mix of funding sources, but it is the state that controls most of these funding sources. The main objective of health systems is to distribute health care costs between those who are sick and those who are not sick, and health systems also aim to moderate costs according to the resources available to each country.

Health systems objectives

The objectives of a health system, according to the World Health Organization, are: to improve the health of the population, to meet the legitimate expectations of the population and to provide financial protection, which must be supported by solidarity. To achieve these objectives, health systems must constantly

adapt to changes in society. Failure to do so threatens the sustainability of European health systems.

Achieving the three objectives is influenced by changes in population structure. Europe's population is ageing. In the 21st century, the average life expectancy has exceeded 80 years, and developments in science and health care technology have brought with them improvements in quality of life, even for those who are older. However, an important aspect that cannot be ignored by any democratic society, is that prolonging life and maintaining good health costs money. On the other hand, the ethnic composition of Europe is changing, due to large-scale migration from other parts of the world.

Looking first at the first objective of improving the health of the population, one of the main reasons why the number of older people is increasing is the progress of modern medicine, which enables people to survive, often in good health, after the onset of previously fatal diseases. In many cases, modern treatments enable conditions to be treated permanently, allowing people to return to good health. An example is the treatment for acute appendicitis, a frequently fatal condition before modern anesthesia and aseptic surgery. In other cases, modern treatment is long-term and often lifelong, but patients' health remains stable. Hypertension is a prime example. For others, modern medicine keeps the disease under control, but patients will still be left with greater or lesser disabilities. An example might be chronic obstructive airways disease. And finally, for some patients, the onset of the disease will be the beginning of a decline until death. Examples include cancer or certain types of untreatable dementia. All these diseases become more common with age and, crucially, as people get older, they accumulate disorders. Thus multimorbidity is becoming increasingly common because of the accumulation of seven to eight conditions.

The situation is complicated because the incidence of these conditions is changing. Thus, rates of acute coronary syndrome have declined significantly in Europe in recent decades (11), due to a reduction in risk factors, both through lifestyle changes such as reduced smoking rates and early detection and treatment.

Smoking-related cancers are much less common (in men). Research in England has shown how dementia has declined significantly (12). An obvious example is HIV/AIDS, unknown until just over three decades ago. Antibiotic-resistant infections are another example of an emerging problem with major implications for the health system. In other cases, changing risk factors are causing new diseases, as in the case of increasing obesity, leading to increased risk of cancer, musculoskeletal disorders and cirrhosis. Other conditions may also arise from changes in population structure.

The health system must be able to respond to these pressures generated by the prevalence of diseases at different ages, the number of people in each age group and their collective exposure to risk factors over their lifetime. The complexity of this function relates to the fact that it drives constant change, change that is essential to advances in medicine, to enable people to live and remain in better health.

On the question of the future sustainability of health systems, the literature shows that this could be ensured by implementing those policies that will enhance the health of the population in the future. Therefore, health system reforms should not be seen in isolation, so-called "health in all policies", whereby multi-sectoral responses are developed in response to emerging health threats. This explains, for example, why the National Health Service in England, which is responsible for health care, has prioritized measures to reduce obesity levels, even though according to some positions, this is not the responsibility of the system. Laverty et al. (13) argues that it is difficult to trust governments, given their relative inability to encourage the implementation of a sustainable health system in the future and to adopt comprehensive anti-tobacco strategies, through various actions that have been successful in Australia: increasing taxes on cigarettes, bans on point-of-sale advertising or the presence of standardized packaging.

The nature of the demands on health systems is changing as new opportunities for interventions that keep people alive are emerging, whether we are referring to new, safer drugs, improved diagnostics or new minimally invasive surgeries or techniques. Child health provides a good example of this (14). Hospital

wards that only a few decades ago were full of children suffering from respiratory and gastrointestinal infections are now empty. Instead, pediatricians are caring for premature babies who, in the past, would not have had a chance of survival, for older children with complex physical and mental disorders who, in the past, would not have had a chance of survival either. Pediatric surgeons give children with developmental disorders, such as congenital heart disease, which once would have been fatal, a chance to survive and in many cases live a normal life.

In this context, at older ages, one of the biggest challenges is that of multimorbidity, requiring health professionals who can provide holistic care to patients with multiple chronic disorders, avoiding the administration of a high volume of medications and avoiding the need for them to spend their days traveling from specialist to specialist.

Since 2001, the Economic Policy Committee and the European Commission have started studies on ageing populations and in 2009, they considered different scenarios and projections for future health care expenditure at European level (15). The 2015 Ageing Report (16) updates the forecast of health care expenditure as follows: "balancing the health care needs of the European population with financial resources, as well as continued efforts to increase the efficiency and quality of health care provision, will continue to remain a priority in the political and economic reform of Member States". Thus, the pace of change in the health needs of the European population means that health systems need to anticipate both diseases, where possible, and plan for unforeseeable situations. In both cases, however, change will inevitably have implications for how services are delivered and often for the systems within which they are embedded, as where organizational structures or payment systems serve as a barrier to the multidisciplinary and multi-agency responses required by the ageing population.

The second objective of a health system is to meet the legitimate expectations of the population. They are constantly changing. For example, changing family structures and family work patterns create expectations of health services that are always available and accessible to all patients. However, they pose challenges for

those employed in healthcare, particularly where working hours are irregular and insurance does not match childcare, leading to the risk of discrimination, as in England. Changing ethnicity in the population structure brings with it a need for adequate services.

The third objective is financial protection. This objective refers to ensuring that no one faces financial hardship as a result of needing and using health services. Health systems provide good financial protection by keeping payments to a minimum, using a combination of strategies. Adequate and stable public funding for the health system plays a fundamental role in ensuring financial protection, but other policy options are important, in particular efforts to protect poorer people and people with different problems.

The World Health Report in 2000 identified the importance of an oversight and stewardship role, whereby governments would engage in forecasting and anticipating changing needs while preparing for possible uncertainties. An example would be the introduction of an organized screening program, which requires new payment systems and governance structures. In reality, in many countries, the governance function is undeveloped or fragmented. Moreover, given that organized health care is a form of resource redistribution, the main driver for major reform is often political reform.

Technological progress, new consumer expectations, an ageing population and the reluctance of governments to allocate an increasing proportion of the state budget to health care have all posed challenges to current health systems. Health sector reform is now underway in most developed countries. Insurers are an integral part of the prospects opened up by these reforms and already play a complementary role, which varies in importance in most developed countries.

A common goal of health care systems in developed countries is to optimize the health status of the individual in a fair, efficient and effective way that is acceptable to patients, providers and administrators. No generally valid solutions have been found to achieve this goal by reforming service delivery or securing financing for such services. Instead, it appears that optimization requires progressive

change at all levels of health systems. This evolutionary process, in turn, depends on systematic measurement of health system performance, coupled with evidence-based decision-making processes (17).

Over the last two decades, a number of frameworks have been developed with the aim of better understanding the health system and enabling us to assess its performance (18,19). Although most of these frameworks implicitly or explicitly include quality as a key health system goal, how do we define quality and how does it contribute to the overall health system goals? It depends on how one describes it. One particularly influential framework is the WHO framework on health systems strengthening. The framework conceptualizes the health care system in terms of components such as service delivery, health workers, information, health care products, financing, and leadership/governance. In addition, the framework defines quality and safety as intermediate objectives for health systems, alongside access and coverage. Achieving these intermediate objectives will ultimately contribute to the overall health system objectives of improved health, responsiveness, economic protection and increased efficiency.

Health services will always reflect not only evidence of best policy and practice, but also local and national contexts or circumstances, and the values or preferences of different communities and policies.

The complexity of health systems

Health systems are by their nature complex adaptable systems. This manifests itself in many ways that have implications for reforms. One set of implications is derived from complexity theory. Health systems are characterized by their dependence on certain factors, such as the institutional structures that are in place in a particular country and the limitation of certain options. Thus, it will be very difficult to implement a social insurance system based on a tripartite relationship between employers, labor representatives (trade unions) and governments. They are also characterized by non-linear relationships and feedback

loops, both positive and negative, whereby the implementation of one set of regulations or incentive package can have multiple unpredictable outcomes.

A second set of implications are derived from soft systems theory. Thus, each health system is itself a collection of subsystems, each subsystem interacting with the others and contributing to the functioning of the overall system. Examples of subsystems include financing and governance. In addition, the health system exists within a larger social system. The boundaries of these systems vary by country. Thus, in a given country, the boundaries of the health system may include elements of social care, medical education or research and development. These boundaries may change over time. For example, the UK Government is committed to protecting the National Health Service (NHS) budget in England, but has done so in part by redefining its boundaries, with activities such as public health and training of health professionals, where their budgets have been substantially reduced. Soft systems theory helps not only by making clear the boundaries of the health system in question, but also by constraining those who evaluate reforms to identify and explain key elements (20).

It is therefore necessary to determine which of the many possible transformations taking place within the health system are affected by these reforms. Thus, the reforms could change the method of fundraising, their redistribution or the provision of care, among many others. Also, those who distribute them need to identify the beneficiaries of the reforms, in other words, those who are directly affected by the proposed changes (patients), but also those who make these changes possible (the providers of certain services).

Several problems arise from the application of these theories. First, the complexity of health systems means that unpredictable consequences can follow reforms. Second, the failure to clearly identify the actors involved in any reform and the risks for clients or beneficiaries creates confusion among those involved. Third, reforms are more likely to succeed when they take into account the relevant values and the environment within which the system is embedded.

Financing models for developing health systems

The problem of health system financing is clearly at the root of the shortcomings in health systems. The lack of consistent and well-targeted funding for the main needs leads to the impossibility of providing quality services and to the degradation of the quality of life in that country.

Financing is "the ability of a country to mobilize funds, using different modes of financing, is closely related to its per capita income. This determines each household's ability to pay for health and hence the demand for these services." (21).

At the level of health systems, financing can be provided from the following sources:

1) financing from the state budget;
2) financing from social health insurance;
3) financing from private health insurance;
4) financing from direct payments;
5) community financing.

- ✓ **State budget financing**

With this financing, funds come from general taxes, health-specific taxes, import/export duties, taxes on economic agents, payroll taxes, donations and external loans. This mode of financing is not usually a stable source of health financing because health is not a priority area for some governments.

However, these collected funds do not present a sustainable source of health financing because some governments do not consider health as a priority area, which, together with the economic instability of countries in transition, may lead to a crisis of resources for the medical sector. Politics plays a decisive role in the allocation of funds to health, so some areas may be favored over others. For example, there are cases where money in the health sector is directed in a particular direction.

Whatever health system we are talking about, the state budget is one source of funding for that system, but if the state budget is the main source of funding for a system, then we are talking about a national health system. These national health

systems operate in countries such as the UK, Spain, Scandinavia, Australia, Ireland, Canada, Greece, New Zealand.

- ✓ **Health insurance financing**

The financing of the social health insurance system is realized through compulsory contributions from employees and employers. The government is responsible for securing the funds from the state budget, and it is also the responsibility of the government to manage the disadvantaged groups that are not included in social health insurance (21).

For middle- and high-income countries, health insurance is a way for them to cover, to a large extent, their health expenditure. These health insurances fall into two broad categories: social and private.

The financing of the social insurance system takes place through compulsory contributions in equal shares, both from employees, in the form of a percentage of their salary, and from employers. In some countries, the contribution is calculated as a percentage of the overall income of the persons concerned, for those working outside the formal sector. The government makes a financial contribution in the case of this social health insurance, it contributes funds from the state budget to finance certain objectives that are not covered by the insurance, such as the financing of health programs of national interest, certain medical contractions and rehabilitation, the provision of high-performance equipment and apparatus or other objectives. In addition to this financial contribution, the government is also responsible for those disadvantaged groups not covered by social health insurance.

- ✓ **Financing through direct payments**

It is achieved by:

- Full payment for services;
- Co-payment (a fixed amount per visit);
- Co-insurance (a certain percentage of the cost of the medical visit).

The emergence of these methods of payment has some positive effects; firstly, the reduction of unnecessary services, this has been achieved by empowering both doctors and patients, secondly, the increase in the quality of services and also the allocative efficiency. Despite all these positive aspects of direct payment insurance, there are also some difficulties, especially among the poor or elderly, who are forced to forgo certain health care services precisely because they cannot pay the cost.

- ✓ **Community funding**

This method generally applies to rural communities. It consists in paying the contribution in advance in order to obtain a medical service when needed.
Community funding is based on two principles: cooperation between community members and trust between community members (21).

There are a number of important differences in the way different countries design and structure their health financing systems. There may be differences in the regulation of financial access (e.g., there are or are not mandatory cross-subsidies for specific services), in the institutional framework (e.g., there is or is not competition), in the types of carriers (there are or are not commercial insurers), in the type of coverage (voluntary or mandatory), and in the set of entitlements granted (e.g., services, choice of providers, quality of care, and waiting time) (22).

Developing countries generally combine several schemes to finance health systems, so their financing systems are often fragmented. The government funds public health institutions to provide free or low-cost services to poor people. At the same time, a social health insurance system is set up to mobilize resources and pool risks. The government often subsidizes part of the social insurance funds, especially when a country aims to include the poor in social health insurance. In such mixed systems, the method of financial resource management significantly affects the scale and allocation of resources in the health sector and the efficiency of resource utilization (23).

In economically developed countries, the financing of the health care system has historically been inspired by three competing "models": the first, implemented by Bismarck in Germany, was based on professional enrollment through a compulsory system of contributions from employers and employees; more recently Beveridge, a public monopoly system in health care, providing universal social protection, was first introduced in the UK. The last form of organization is a mixed system, which prevails in the USA, where health insurance is not compulsory. Although this model is the only one that does not provide citizens with a right to health care, leaving 15% of the population without health care, it is widely exported, especially to emerging economies (24).

In many countries there are often concerns about the financial sustainability of health systems, expressed in terms of worries about the economic impact of rising total expenditure (economic sustainability) or concerns about the impact of rising public spending on health on the level of total public spending (fiscal sustainability or fiscal balance) (25). Given the projected impact of population ageing on disease incidence, there are many simplistic estimates of expenditure. The first relates to the fact that many are based on projections of the old-age dependency ratio, calculated on the basis of the population aged 65 and over. However, it ignores the fact that older people are in much better health these days than in the past, and many are still in paid and unpaid employment.

A greater difficulty for some health systems, especially those based largely on funded employment, is the decline of the traditional employment model, which requires increased contributions from various other forms of taxation. With respect to the way taxes are levied, income and capital gains are generally taxed progressively, while those related to consumption (such as value added tax) are regressive. When the population and its characteristics change, reforms of the health financing system may be necessary. Second, the impact of ageing on health expenditure is generally small compared to the impact of changes in the technology that the health system uses.

Barriers to access to adequate health services in developing countries

Health status differs significantly between developed and developing countries. The difference lies in the relationship between income level and health status. In developing countries, the main causes of poor health status are inadequate prevention and lack of reasonable access to basic health care, together with poor nutrition and dirty water, while health-related poverty results from lack of risk pooling and insurance (27). Underfunding of health care is to blame for both negative outcomes. In addition, many countries exacerbate these problems by inefficient use of available health care resources and risk pooling.

Most low- and middle-income nations face difficulties in financing healthcare. While nations state similar goals of providing their citizens with equal access to services, reasonable quality health care and preventing ill health, the reality is vastly different. These stated objectives are not backed by adequate public funds or a rational financing system. As a result, ill health, poverty and mortality are prevalent.

In addition to its ability to mobilize additional funds for health, social health insurance is also being promoted by several international bodies, including the World Bank and the World Health Organization, as a policy tool that could help facilitate or stimulate four desirable elements for the health sector, namely:

- When low-income nations do not have adequate tax revenues to finance health care of reasonable quality for everyone, social health insurance diverts public funds to subsidize insurance premiums for the poor, instead of financing and providing universal health care for all;
- Providing public resources so that they can be directed towards public health goods and services;
- shifting public subsidies from the supply side to the demand side to improve the efficiency and quality of health services; this separates the responsibilities of collecting and managing social insurance financing from the responsibilities of providing health care to patients, whereby services are contracted

from providers who are separate entities; providers are required to be accountable to patients for the quality of services;

- the use of non-governmental organizations to provide health services in order to improve access to health care for the insured.

Poor health is prevalent in many developing countries. The average infant mortality rate in many African countries still exceeds 100 per 1,000 live births, compared with 4 per 1,000 live births in developed economies. Asian nations usually fare better, but the results are still poor: China has an infant mortality rate of 30 per 1,000 live births, while the figure is 31 per 1,000 in Indonesia and 62 per 1,000 in India. Significant disparities can exist not just between countries, but even within countries. For example, the infant mortality rate is 6 per 1,000 live births in urban China, but is 56 per 1,000 live births in poor rural China (27).

What explains these poor outcomes in developing countries? In addition to underfunding of health, at least four other reasons have been identified in the literature (28), namely:

- Misdirected public resources tend to favor the rich.
- Many countries are not able to manage their public health services efficiently, in other words, they are not able to translate financial resources into efficient and quality health services.
- Public sector primary care services do not meet the demand of the rural population in terms of location and organization.
- Health risks are not adequately addressed, so people who are poor, low-income, elderly or in poor health are excluded from health insurance.

The budget crises facing ministries of health in less developed countries are such that little more can be done than to pay the salaries of medical staff. Moreover, these salaries are often inadequate. The subsequent shortage of medicines and other consumables has led to a gradual decline in the use of public health services by the population. Maintenance of health facilities is under threat. Health staff is mainly

concentrated in large urban areas, and many hospitals and health centers in rural areas operate without doctors or nurses.

One of the reasons for the slow progress in improving and expanding health services globally in general, and in developing countries in particular, is that policy makers and the general public have not fully understood importance of improving solutions for a more efficient health system (29).

One of the most serious barriers preventing the poor from accessing adequate health services is the heavy burden of paying for these services out of their own budget. The significant out-of-pocket costs that low-income people would have to incur relative to their disposable income make the vicious cycle of poverty and poor health status worse (2-5). Appropriate sizing of public spending on health has an important role to play in countering this. Both central and local governments are key organizations in this context. In particular, local government, which is in direct contact with people, has an important role to play in improving their health. Intergovernmental alignment of responsibility and fiscal authority will therefore have a critical impact on health outcomes. Providing health services to the excluded poor is an important challenge for public authorities (29).

There are many important factors that cause the health financing system to malfunction in underdeveloped countries. The most serious problem is the lack of price lists for health services, which means that providers can, in practice, charge patients fees that far exceed the actual cost of the services provided. Therefore, the current social health insurance system needs to be reformed to address the emerging problems (29) .

Per capita spending on pharmaceuticals in low-income countries is much lower than in high-income countries. The necessary treatment therefore does not reach those who need it. Treatment coverage is still very low in most underdeveloped regions (29). Pharmaceutical prices affect the type, quantity and quality of pharmaceuticals that people can obtain. Various factors interact in the pharmaceutical market: pharmaceutical companies, price regulation and patents, for example. This complicated interplay fuels price debates.

The shortage of health workers is also a serious obstacle to the provision of adequate health services in developing countries. In recent times, the migration of health workers from underdeveloped to developed countries has increasingly become an international concern, as such migration has the potential to worsen the global health workforce situation and lead to a serious shortage of human resources for health in developing countries (30). We could say that migration is a consequence of factors coming from both the demand and supply side. The demand for health workers is increasing in developed countries where average life expectancy is high, while health workers in developing countries are moving to developed countries to seek better professional opportunities.

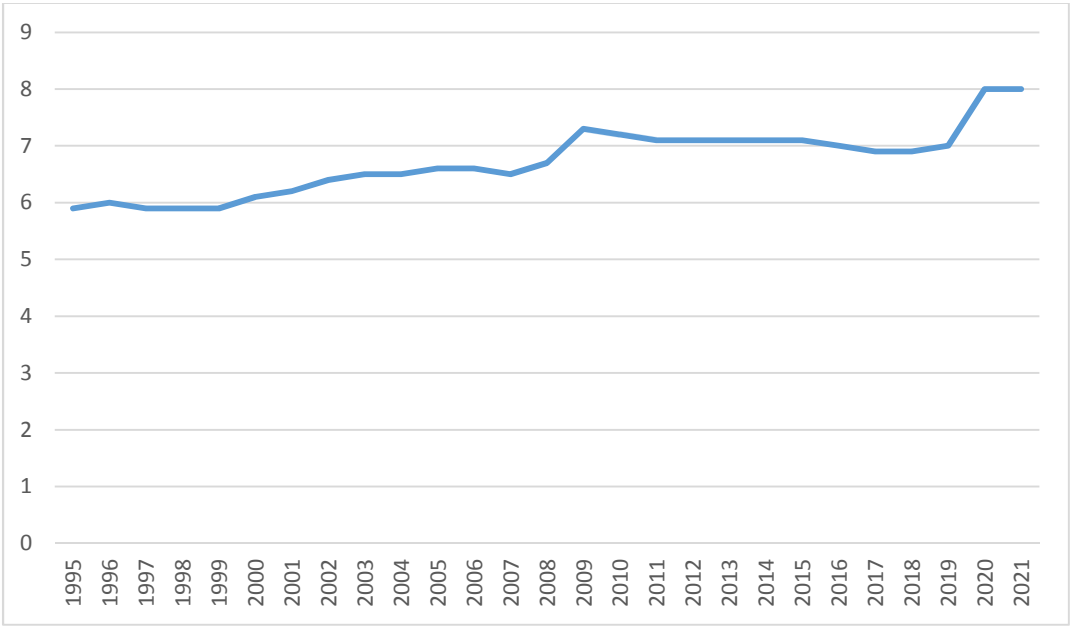
Trends in health systems management

Since the beginning of the 20th century, three processes towards universal health coverage can be distinguished. First, the share of the protected population has increased, reaching almost 100% in most European countries. Second, the benefit package has expanded and the quality of services has improved. Third, the direct contribution of patients (out-of-pocket payments) has decreased. Thus, in the 1960s, public health expenditure in European Union countries increased by 1.3 percentage points of GDP, and in the 1970s by a further 1.7 percentage points (31). These changes reflected a commitment to solidarity with the experience of the inter-war period, accompanied by a sense of optimism about the potential benefits of new medical breakthroughs.

At present, the approach to health is dominated by concerns about the sustainability of the 'welfare state' and the perceived need for 'fiscal consolidation' and expenditure control (32-35).

In the first part of the 1990s, there was again an increase in spending on public health, from 5.8% in 1990 to 6.8% in 1995. At this time, reforms in the European Union focused on micromanagement and efficiency (36, 37). However, at the same time, some countries have sought to improve access (reducing waiting

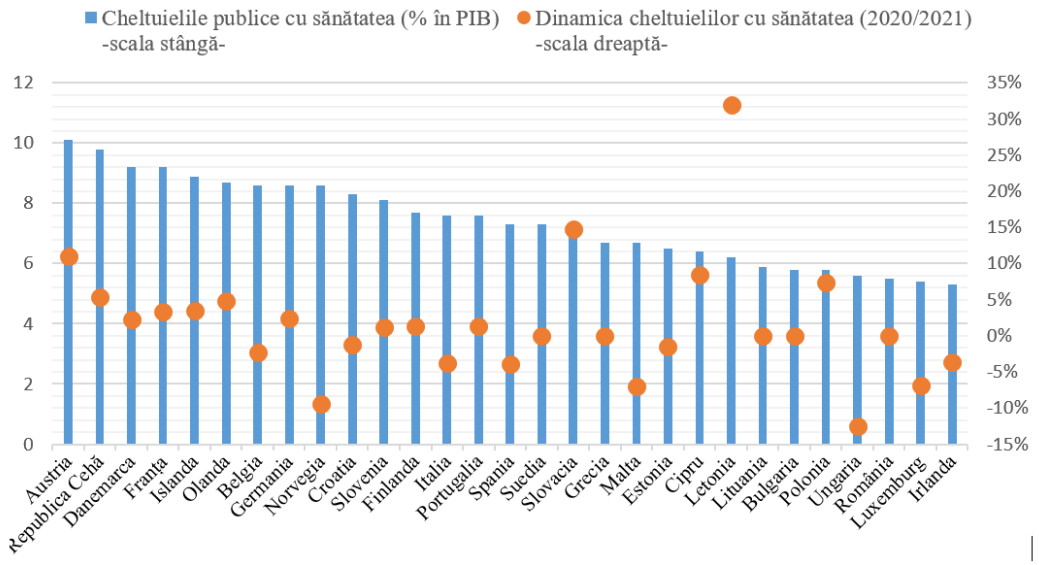
times) and modernizing infrastructure or attempting to introduce market mechanisms (contracting out, outsourcing, changing payment methods). Some of these measures have contributed to increased health spending. Countries that have relied more on regulation have sought to "open up" their systems to competition, while countries with less regulation have tried to limit some options for additional health financing. A European Union-wide analysis from 1995 to 2000, public health spending stabilized (averaging 6.6% of GDP at EU level). However, after 2000, demand for higher quality services, new technologies, and increased use of services by an ageing population, led to a rise in health spending again, reaching 7.3% of GDP in 2009.



Graph 1. Public spending on health (% of GDP) in the European Union (Source: compiled by authors, Eurostat data)

The financial crisis of 2007-2008, which severely affected European economies, triggered a new wave of health reforms. Since 2009, public spending on health in the EU has fallen from 7.3% of GDP to 7.1% in 2011 (31). The latest statistics indicate an increase in the level of public spending as a share of GDP, more precisely by 1.1% of the EU average, from 6.9% in 2017 to 8% in 2021. This increase can be considered necessary, especially in the context of the COVID-19 pandemic,

which will be installed at EU level in 2020. With regard to the level of public spending on health as a % of GDP in the EU Member States, we can see that in 2021 Romania will be at the bottom of the ranking (with 5.5% of GDP), the last two countries being Luxembourg and Ireland (with 5.4% and 5.3% of GDP respectively).



Graph 2. Percentage of GDP allocated to health spending in EU Member States (2021 and dynamic 2020/2021)

(Source: compiled by authors, Eurostat data)

There are substantial differences in the level of spending on health care, both in per capita terms and as a percentage of GDP, between Western European and CEE countries.Thus, countries such as Austria, Denmark, France and the Netherlands allocate more than 9% of GDP to health care, while countries such as Romania, Bulgaria, Lithuania, Poland and Hungary allocate less than 6% of GDP. In another order of ideas, we observe that in 2021, most countries (including Romania) have maintained a similar level of expenditure in GDP compared to 2020, except for countries such as Latvia (which recorded an increase of almost 32%), Slovakia (with an increase of 14.75%), Cyprus (with an increase of 8.47%), Poland (with an increase of 7.41%), but also countries such as Hungary and Norway which recorded negative corrections in the importance of public spending on health in GDP.

Moreno-Serra (38) studied the impact of different reforms on health spending. He differentiated between supply-side, demand-side and audience-oriented policies, reforms in public money management, coordination and financing, while investigating the impact of different approaches on cost reduction.

Other experts and institutions have looked at governance reforms (decentralization; payment/contracting/financing; subsystem integration; patient empowerment, etc). Some studies have focused on sectors that have gone through reforms (pharmaceuticals, hospitals, primary care, mental health, etc.).

In the 1990s, Saltman and Figueras (39) identified four themes of integration around which different reform processes can be analyzed: changing market roles and status in health care; decentralization to lower levels of the public or private sector; greater choice and empowerment for patients; and a changing role in the evolution of public health.

IMF analyzed health care reforms using a typology developed by Oxley and MacFarlane (40): macro-level controls (budget ceilings, price controls, etc.); micro-level reforms (coordination, contracting, etc.); and demand-side (cost) reforms.

In the context of the 2008-2009 economic crisis, the European Observatory on Health Systems and Policies analyzed health policy responses to austerity, presenting a framework for analyzing policies and their impact on health system performance (41). Thus, health policy typologies have been identified: policies designed to reduce the level of contributions to public, health care financing (health budget cuts; user fees, etc.); policies designed to affect the volume and quality of publicly funded health care (benefit package; legislation; public health measures; taxes on alcohol and cigarettes, etc.); policies designed to affect the costs of publicly funded health care (drug prices, improving rational use of medicines, wages, payment systems, restructuring of Ministries of Health, restructuring of the hospital sector, investment in primary health care, etc.). Some measures were considered more appropriate to promote health systems objectives, while others were seen as potential threats to these objectives.

Types of health system reform

A health reform is any change in any fiscal or structural policy that is intended to have a direct impact on the health system, in terms of financial resources, expenditure, demand or supply of health care and health outcomes. Reforms usually include a set of changes aimed at improving the existing situation. They may change structures, processes or both. As living organisms, health systems are constantly changing and can be considered to be undergoing constant reform. As an example, Van Ginneken (42) refers to health care reform in the Netherlands as 'perennial' reform.

In recent decades, reforms of health care systems have focused on: structures and programs whose primary focus is on disease prevention and treatment (usually within the program of ministries of health or health insurance institutions).

When we talk about health system reforms, there can be several types of processes observed: those based on levels, either partial or global reforms, or those over a certain duration, incremental or discrete (big-bang) reforms. Partial reforms (operational, evolutionary, incremental, day-to-day changes) try to change one aspect of the system. Comprehensive structural reforms attempt to shape the system. Partial reforms are implemented continuously in response to changing situations (demographics, economics, technology, epidemiology, public opinion, etc.). The sum of partial reforms across several significant elements of the system can lead to comprehensive system-wide reform. For example, when analyzing Italian health policy, Fanelli and Zangrandi (43) observed that, since its inception in 1978, the Italian National Health Service has been characterized by a series of reforms that have substantially altered its functionality.

Global reforms are often the result of major changes that have taken place in society (demographic, political, ideological, social, ideological, social, economic, technological and cultural changes, both individually and collectively). Countries vary greatly in the frequency with which comprehensive reforms are implemented within their health systems, and this reflects, to a considerable extent, the speed at

which the legislative process works. Thus, the UK and, until the introduction of voting based on proportional representation, New Zealand, have stood out internationally, undergoing systematic and repeated reform, whereas the US, with its separation of powers between the President and Congress and separation of the states from the federal government, with a rigid and detailed constitution backed by the Supreme Court, has found reform extremely difficult to implement.

But when is a package of changes a "reform"? Berman (44) argues that for reform to take place, the changes must be aimed at achieving a set of explicitly formulated and sustained policy objectives. Other authors argue that there must be structural and institutional changes (33,39).

Global reforms are complex processes that require:

a) an explicit wording to be published (a law, a decree, a government declaration, etc.);
b) a set of reform measures to be implemented;
c) changes in important reform-related structural dimensions (insurance, adequacy or level of spending; benefit packages, quality, health outcomes, equity in financing, efficiency, etc.);
d) institutional changes to be implemented.

Europe faces continuing challenges in terms of population health. The most significant health gap in Europe is the growing inequality in life expectancy and mortality between Eastern and Western European countries. This East-West gap widened further in the 1990s, mainly due to the sharp deterioration in health in most countries of the Commonwealth of Independent States (CIS) and some countries of Central and Eastern Europe (CEE). In 1993, life expectancy was 76.9 years in Western Europe, 70.4 years in CEE countries and 66.9 years in CIS countries.

Cardiovascular disease (CVD) continues to be the leading cause of death in Europe. They cause half of all deaths and one third of permanently disabling conditions and are responsible for a large share of care costs. CVD mortality is increasing in most CEE and CIS countries and is responsible for about half of the East-West gap. Cancer is the second leading cause of death in Europe, accounting

for 20% of all deaths. Many cancers are lifestyle-related and thus preventable to some extent. External causes, such as accidents, homicide and suicide, are the third biggest cause of death in Europe and are the second biggest contributor to the gap in life expectancy at birth between the eastern and western parts of the region. They mainly affect adults in their thirties and forties and thus have a disproportionate effect on families and industrial productivity. Although mortality from infectious diseases is less significant compared to that from non-communicable diseases, the emergence of new infectious diseases such as HIV infection and AIDS and the re-emergence of others such as tuberculosis, diphtheria and cholera is particularly notable.

The ageing of the European population is considered important and has a significant impact on the health needs of the population and on the patterns of disease that contribute to it. The proportion of the population aged 65 and over is increasing in all parts of Europe, with particularly large increases over the next few decades in southern and western Europe.

In the current context, these health system challenges have major implications for health sector reform. For example, recognizing that while health services are fundamentally concerned with improving health, they have only a relatively limited impact. Overall health status is predominantly determined by behavior and lifestyle, socioeconomic status and environmental factors. Recent studies show that a person's job and social position can help explain susceptibility to stress and disease.

Throughout the 20th century, European governments progressively adopted measures to ensure universal health coverage (defined as ensuring that all people can use good quality health services without financial hardship). This development was not spontaneous, but was the result of tensions and pressure from social movements demanding access to basic human rights (health, education, pensions, etc.).

Access to these entitlements required public funding, and for this to happen, the establishment of social contribution collection and the setting or raising of taxes on wealth and higher incomes were necessary conditions. It should be noted that, before the economic and financial crisis of 2007, there were significant differences

between EU countries in terms of universal health coverage. In spite of this recent setback, for the first time in human history, the right of all people to have access to the same level of publicly funded health services has been recognized, based on the principle of solidarity.

Financing based on allocations from the State or local budgets, however, does not always cover the financing needs of the health system, as it is highly dependent on the economic context on the one hand and on the size of the expenditure that should be covered on the other. Economic crises reduce the state's chances of being able to allocate sufficient resources to health. High levels of corruption have the same effect because they significantly reduce the level of effective collection of the taxes that underpin budget revenues. Reduced budget revenues lead to reductions in budget allocations, thus reducing the main source of funding for the public health system

This lack of funding leads to a situation where people would have to work and save for their medicines or treatments or buy private insurance. In case of a lack of financial resources, charities could take care of them in need.

However, there are strong arguments against this view:

- People don't choose to get sick. It is a risk that affects the whole population;
- People don't choose when to get sick;
- People don't choose what kind of illness they get;
- People don't choose how much to spend on health care each year, they decide how much to spend on everyday consumer goods. The cost of treatment is unpredictable, it depends on the illness, and some people will not be able to afford such costs.

In addition, those in need of care are often poor, reflecting the influence of the social determinants of illness, and even if they are not poor, when they become ill they may lose their ability to work and be paid (45,46).

It is for these reasons that European governments have repeatedly confirmed their commitment to universal health care, financed through solidarity mechanisms

such as progressive taxation. Thus, in the aftermath of World War II, the signatories to the Constitution of the World Health Organization proclaimed the right to health for all, recognizing it as "the highest attainable standard of health as a fundamental right of every human being".

In 1966, the Member States of the International Covenant on Economic, Social and Cultural Rights confirmed the right of everyone to the enjoyment of the highest attainable standard of physical and mental health. They declared that "health is a fundamental and indispensable human right. Every human being has the right to the enjoyment of the highest attainable standard of health in order to lead a life with dignity" (47). There are different aspects that contribute to the right to health (education, food, housing, drinking water, sanitation, working conditions, etc.). One of these conditions is access to health services: prevention, health promotion, treatment, care, palliative care, etc. Universal health care is a necessary means to promote the right to health.

Post-war health systems have worked well. They provided a broad package of benefits at a reasonable cost to society while contributing to social stability. Deaths from medically manageable conditions have fallen significantly.

A key issue for proponents of this approach is the level of taxation and the extent to which it is funded through taxation. Corporations must decide what proportion of income and wealth should be transferred from individuals and corporations to public institutions. They must also decide on the degree of progressivity (48). There are no rights without taxation. Oxfam (49) states that "fair tax regimes are essential for financing functioning and efficient states that enable governments to fulfill their obligations to ensure citizens' entitlements to essential services such as health care and education".

When looking at health system reforms, it is important to consider the fairness and efficiency of the tax system, as this is the foundation on which health services are built. The ratio of taxes and contributions to GDP and the prioritization of health spending are key political and moral decisions that affect the sustainability of health systems.

The reorganization process of the health system

Decentralization is a central aspect of health sector reform in many European countries. It is seen as an effective means of stimulating more efficient service delivery, ensuring a better allocation of resources according to need, involving the community in decision making and prioritization, and facilitating the reduction of inequalities within the health system. Decentralization is attractive because it is difficult for a central administration to be close enough to service users to provide appropriate and responsive responses to their expressed preferences. Across European countries, the same disadvantages of centralized systems can be observed in the existence of large, centralized and bureaucratic institutions characterized by: low efficiency, slow pace of change and innovation, and a lack of responsiveness to external changes affecting health and health care. Decentralized institutions have a number of advantages. They can be more flexible than centralized institutions and respond more quickly to changes, circumstances and needs. This flexibility allows them to be more effective than centralized institutions because local decision-makers are better able to identify problems and opportunities. Decentralized institutions can also be more innovative than centralized institutions in the types of solutions they adopt. They can generate higher morale, commitment and productivity in the work-place. Decentralized structures can also facilitate policy-making partnerships with citizens and local groups, increasing the democratic nature of local policy-making.

Successful decentralization, however, requires a specific social and cultural environment: sufficient local administrative and managerial capacity, ideological certainty in implementing tasks, and a willingness to accept multiple interpretations of a problem. Decentralization can also have negative effects, including fragmented services, weakening of central health departments, inequity, political manipulation to favour particular interests or stakeholders, and a weakening of the position of the status within the public sector. The experience of many countries in recent years demonstrates that there are certain areas where decision-making power should not be decentralized. Four such areas can be identified: the basic structure for health policies; strategic decisions on the development of health resources; regulation of

public safety; monitoring, evaluation and analysis of both the health status of the population and health care.

Privatization is the ultimate form of decentralization in that it directly replaces public decision-making authority with privately owned firms. The central benefits of privatization result from the introduction of market incentives for greater efficiency and higher quality in the management of health care institutions. In addition, governments facing financial difficulties can look to privatization as a way of attracting private capital into the health sector and thereby reducing the public funding gap.

But the disadvantages of privatization are considerable. Private management and invested capital require financial returns in line with other types of investments. Pressures to realize these returns can lead to the abandonment of the social character of health services and can intentionally discriminate against sick and other vulnerable groups in need of care.

Recent experiences with private competing insurers in the Czech Republic, Israel, the Russian Federation and, to a lesser extent, the Netherlands have confirmed US analysis showing that private insurers have major interests in adverse risk selection.

In our opinion, we believe that health sector reform offers a valuable opportunity to strengthen the public health infrastructure across all sectors of society, to prioritize national policies related not only to health care but also to influencing the determinants of health, to improve health promotion and intersectoral strategies, and to reorient the public health service to support health care services in the pursuit of improving the health of citizens.

As a consequence, we consider the following measures as part of the health system reforms to be timely:

1) Strengthen cooperation between tax and health policies and use a wide range of budget planning tools to support efficiency, transparency and accountability.
2) Establish information technologies and data management strategies to support monitoring, governance and strengthen the fight against corruption, fraud and abuse of public resources.

3) Evaluate ex-ante and ex-post reforms in a systematic and formalized evidence-based way and implement health system performance assessment.
4) Clearly defining the roles of public authorities for long-term care services, aiming at integrating health and social services through a legal framework and improving administrative efficiency.
5) Improve the adequacy and quality of human resources for health by tailoring planning to needs, adapting incentives, exploring the possibility of recruiting doctors from abroad and long-term planning.
6) Design pay and procurement mechanisms to promote efficiency and equity.
7) Moving health systems away from the traditional hospital-centered model by giving a stronger role to primary care and promoting coordination and integration of care.
8) Improve the sustainability of hospital care by improving financing, reducing operational costs and improving hospital performance and benchmarking.
9) Further explore mechanisms for cooperation between countries to address issues related to the availability and affordability of medicines in EU countries. This should include appropriate regulatory mechanisms at EU level and joint procurement arrangements;
10) Strengthening policies for health promotion and disease prevention: promoting risk factor campaigns, developing integrated multi-sectoral and multi-stakeholder multi-sectoral initiatives and aligning financial plans with policy timetables.
11) Increasing accessibility to good quality care by reducing waiting times and household financial burdens on health spending, including informal payments.
12) Provide appropriate levels of care to those in need by promoting and evaluating quality and effectiveness.
13) Promoting healthy ageing and preventing physical and mental deterioration of people with chronic conditions.

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CHAPTER II
HEALTH INSURANCE SYSTEM IN ROMANIA

Considerations on health policy, health care system and health insurance in Romania

✓ Health policy formulation and influencing factors

Health in its established medical understanding refers to vitality, the fulfillment of organic functions or, in a negative perspective, the absence of disease.

Bryant (1) defines a health policy as a subcomponent of public policy. In another simple definition, Porche (2) defines public health policies as those policies shaped by the legislature, the executive, or the judiciary that determine the course of actions that affect the health of the population. We should note that all three branches of government are responsible for the health of the population. If one accepts that health is a public good, then its qualities of non-excludability and non-rivalry should exist, along with the impossibility of providing health services through free market mechanisms. Regulators have a wide range of instruments that can substitute market mechanisms. These may include: bans, licensing, pricing, tariffs and quantity restrictions, product standards, technical production standards, performance standards, provision of information on subsidies, and allocation of ownership and liability (3).

Public healthcare is one of the major challenges for both individuals and governments in today's rapidly evolving healthcare industry. However spectacular medical progress may be, its benefits are not always harmonized with the real individual needs for a higher quality of life. In terms of quality of life, the health component includes not only a person's health, but also the level of access to health services and how these services can be utilized. It can also include health behaviors, attitudes and values (4).

Public health care is a social construct, according to Bhattacharya (5). A common definition of public health care does not yet exist. Seltzer (6) states that "the public health expert considers health from the perspective of the whole community, neighborhoods, cities and states. Public health addresses disease prevention and health promotion at the national and global levels". Other definitions are claimed to be positive because they consider health rather than disease and focus on public policy. Carter and Slack (7) assert that public health is the responsibility of the local state and national government to provide the necessary conditions for people to be healthy. The history of modern public health is full of major changes. The dramatic impact of widespread communicable diseases such as influenza or polio, the development of vaccines for certain diseases such as measles in children; the widespread use of antibiotics for various infections, the emergence of threats such as AIDS, have all made a significant contribution to the development of public policy (8). Holdinger and Schutchfield (9) believe, after the September 11, 2001 attacks on the World Trade Center and the Pentagon, that "the epidemic of the new century is terrorism and bioterrorism, and the answer is public health preparedness".

The new public health care includes health education, social marketing, biostatistical epidemiology, screening, diagnosis, immunization, participation in policy making, cross-sectoral collaboration, ecology and health economics. All of the above are in addition to or replace traditional disease approaches such as quarantine, isolation or health inspections (10).

A sensitive issue in public health is that of professional ethics. Hester (11) argues, in this regard, that public health is unique in that it is always responsible for shared rather than universal goals, which inevitably require the sacrifice of individual interests.

To achieve a comprehensive public health policy, we need to consider the needs and impact on all stakeholders. Therefore, most public policies can only be made through a series of decisions taken by different ministries or departments. It must also be taken into account that there are limits to policy making due to lack of resources or resistance from some stakeholders. Public policies are designed with

certain objectives in mind, Jenkins (12) states that public policies are decisions made by governments, decisions that set a precise goal and specify the means by which it can be achieved.

The distribution of actors involved in the policy-making process is diverse and includes not only decision-makers, but also decision-implementers, those who have a say in the content, execution or implementation policies. It encompasses, in other words, not only state entities (ministries, commissions, agencies, etc.), but also those of civil society such as trade unions, NGOs, advocacy groups and those representing other interests, directly or marginally involved in the public process (13).

The paper by Buse et al. (14) iterates the contextual factors influencing public health policy. The political system is mentioned as a relatively stable structural factor. In democratic countries, the political system generally supports the principles of social justice and recognizes them as facilitators of public welfare. Social justice, according to Powers and Faden (15), aims to improve human well-being and does so in particular by focusing on the needs of the disadvantaged. Along this line of thinking, improving the health of the population as an element of quality of life requires, among other things, reducing inequalities (4).

The European Union's policy to combat poverty and social exclusion was clearly discussed in the social agenda of the Lisbon Treaty, which introduced the concept of social inclusion. The plans to combat poverty, respectively that of social inclusion, elaborated at the Nice European Council meeting in 2000, reaffirmed this social aspect (16). The Romanian Social Assistance Law No 292/2011 defines social inclusion as a set of multidimensional measures and actions in a variety of areas (social protection, housing, education, health and communication) through which the state ensures that vulnerable people have access to some of their fundamental rights, including the right to health care.

- ✓ **Health care system in Romania**

National health systems are the result of complex social organizations that continuously develop and deliver health services, with different functions, interests and expectations. Decisions taken within health systems are under continuous pressure as their objectives need to be adjusted to cope with developments in the medical field such as the emergence of new types of medicines, the rising costs of medicines, and the general increase in the need for health care by society and beyond.

The current healthcare system in Romania operates on the basis of Law 95/2006, drafted and adopted by Parliament, which was subsequently amended in 2012. In addition, the primary healthcare law (Law No. 95/2006 on health reform) was amended in 2020 to provide the basis for the advancement and application of tele-medicine. The main challenges for the Romanian healthcare system are cost and quality issues. In terms of cost issues, they are related to insufficient funds and inefficiency in the way they are used. In addition, there are also problems related to informal payments, such as money that people give to doctors and nurses to get services faster - money that distorts equitable access to health services. The Ministry of Health is responsible for the overall governance of the social health insurance system, while the National Health Insurance House administers and regulates the health insurance system of the Single National Health Insurance Fund (FNUAS). The Ministry of Health is the main body responsible for healthcare in Romania. It is responsible both for the regulatory and policy framework and for the management of the health system in general. The National Health Insurance House (CNAS) administers and regulates the health care system. The activity of the National Health Insurance Fund requires the fulfillment of certain functions. These involve administering the funds collected and financing medical services needed by insured persons. The National Health Insurance House is a public, autonomous institution of national interest, with legal personality, whose main object of activity is to ensure the unitary and coordinated functioning of the Romanian social health insurance system.

CNAS operates on the basis of its own statutes and has the following obligations:

- Ensuring the logistics of the unitary and coordinated functioning of the social health insurance system;

- Monitor the collection and efficient use of the fund;

- Use appropriate means of communication to represent, inform and advocate the interests of the policyholders they represent;

- To meet the health service needs of individuals within the limits of funds available.

Both the Ministry of Health and the National Health Insurance House are represented at the local level, through the District Public Health Authorities (DSP) and the county health insurance funds. Romania's health system has undergone reforms, including a reduction in the number of state-funded hospitals and an increase in private investment in health services. The implementation of the health system reforms in Romania took place in a difficult environment characterized by limited financial and human resources. Between 1989 and 2001, the series of reforms included the inclusion of social health insurance as well as an expansion of the role of family doctors. A national health strategy for the period 2014-2020 was approved at the end of 2014. The strategy focused on the following areas: public health and health care (with emphasis on improving women's and children's health, reducing morbidity and mortality from non-communicable diseases and ensuring equitable access, especially for vulnerable groups, to quality and cost-effective health services), health research, health technologies and health infrastructure (at national, regional and local level). This strategy aimed to protect and improve the health of the population and support the modernization of health systems.

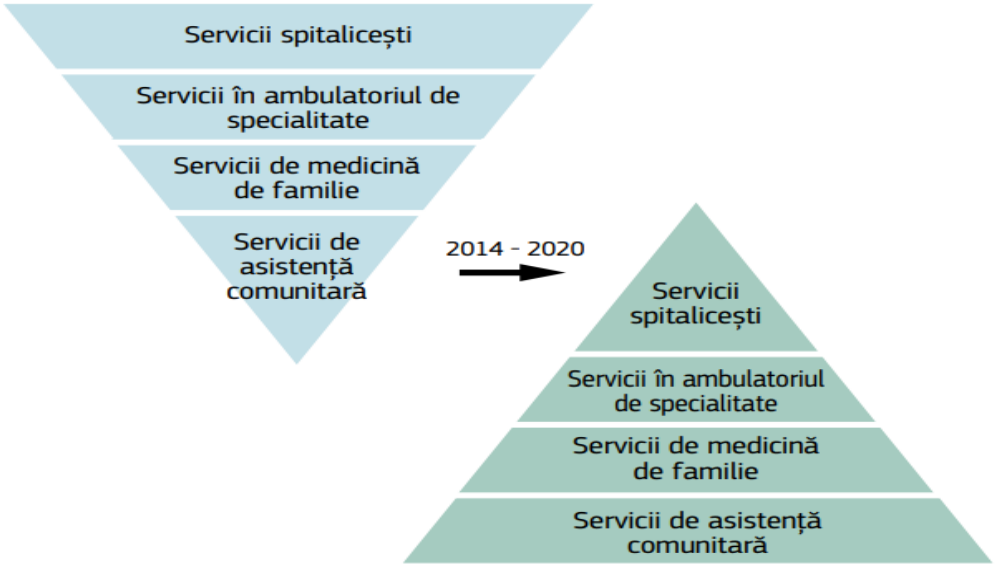

Figure 1. National Health Strategy 2014-2020

Source: Ministry of Health (2014)

Subsequently, the National Health Strategy 2023-2030 (NHS) was adopted, which represents the commitment of the Ministry of Health, as the central authority for the development and coordination of health policies at national level, to the citizens of Romania, with the aim of improving their healthy life expectancy and quality of life. The current National Health Strategy, "Together for Health", runs from 2022 to 2030, continues the objectives of the previous strategy and responds to the need for structural reforms in the health sector. The strategy also serves as a national strategic health policy framework, which will assess the fulfillment of the European Commission's health-friendly condition on the development of the Partnership Agreement and programs in Romania for the period 2021-2027, as well as the country recommendations issued by the European Commission on the health system.

The National Health Strategy 2023-2030 comprises three key strategic interventions aimed at protecting and promoting public health, providing high quality, safe and accessible health services and technologies and ensuring the efficiency and coherence of the entire health system.

The Romanian healthcare system saw a significant increase of 14.5% in the total number of facilities, with the private sector contributing more than 50% to this growth and the establishment of more than 18,000 new facilities, according to a study by the National Institute of Statistics, which showed that the private healthcare system expanded 60 times between 1997 and 2016 and now accounts for 75% of the total, with the number of doctors employed in the private sector rising to 25.98% in 2014. Despite the doubling of the number of private hospitals during the period under review, the total amount of private hospitals remained relatively small. They accounted for only 30% of the highest total in 2015, amid a shrinking number of public facilities. Private hospitals had the possibility to establish a relationship with the social health insurance system, either fully or partially, after obtaining all necessary authorizations. The vast majority of these facilities are currently financed by the Single National Social Insurance Fund (FUNASS). However, the Romanian health system requires an initiative to improve the quality of medical services in an effort to increase patient satisfaction and optimize the use of resources within the health system.

The Romanian healthcare system is predominantly financed by the public sector, accounting for 80.45% of its financial resources. These funds come from various sources, namely social health insurance, which contributes 65%, and the state and local authority budgets, which provide 15.45%. In addition, private sources such as private health insurance and out-of-pocket payments contribute 19.55% to the overall public budget. Expenditures allocated to hospital services showed a share of 54.7% in 2019, in contrast to 55.8% in 1999, showing a significant stagnation trend over 20 years, despite public proclamations and initiatives aimed at promoting primary care and outpatient services. Spending showing an increasing trend included spending on medical devices, as well as spending on medical consumables, dialysis costs and medical services received as part of EU spending. In the peak year 2016, the total magnitude of healthcare facilities purchased within the EU amounted to approximately €125 million. The above-mentioned amount represents the healthcare services imported to Romania from EU providers. In the 2008 - 2019 timeframe, the

absolute total amount disbursed by Romania for the provision of healthcare services procured within the framework of the European Union exceeded 650 million EUR, while more than 10,000 doctors emigrated from Romania in the mentioned period.

The main problem of the Romanian healthcare system is widely considered: corruption. An investigation has established that the main concern in the Romanian healthcare system is attributed to the perception of corruption, with the majority of respondents expressing their opposition to unregulated financial transactions. The overwhelming majority of survey participants express opposition to informal payments and believe that the implementation of co-payment will not inevitably lead to a reduction in corruption or informal payments in the health system, nor will it lead to an improvement in the quality of health services unless accompanied by measures directly targeting these services. In addition, patients expressed a general sense of dissatisfaction with the existing healthcare infrastructure and its practitioners. In addition, patients had a pessimistic outlook on the effectiveness of the healthcare system.

- ✓ **Reform and decentralization of the Romanian healthcare system**

The Romanian healthcare system has been undergoing reforms for almost 30 years, during which attempts have been made to find appropriate measures accepted by the social parties involved, which have produced significant changes in the system, as have been recorded in other countries in transition or developing countries undergoing this type of reform (17-22).

An important stage of the reform is decentralization, with changes in this regard starting in 2002 in an administrative decentralization of hospitals. In 2009, a continuation of the measure taken in 2002, namely the decentralization of hospitals along with all the components related to their structure and functioning, took place, and was completed in 2010, resulting in the transfer of authority of more than 300 hospital units from state to local authorities (Ministry of Health, 2010). Throughout the same year another decentralization measure was implemented, namely the

Emergency Ordinance for the rectification of Law No. 95/2006, where the government established the necessary approach for the decentralization of the Single National Health Insurance Fund. Thus, we identify four social parties involved in this decentralization and reform process, namely the state institutions responsible for the adoption of the legislative documents and the implementation of decentralization, the medical staff, the local administrations that took over the hospitals, and last but not least the beneficiaries of the health system.

The health care reforms that have taken place over the last decades in various European countries have aimed at the gradual withdrawal of the state from the direct service delivery mechanism and the implementation of new service delivery systems based on the commoditization of public services. These reforms have become a common reality in most European countries, but public perception of them is often negative. These reforms are of major importance not only for governments, but also for the populations of the countries where they take place.

A number of good practices proposed by the authors of the literature in terms of the reform process consist in improving accessibility to the supply of health services, achieving efficiency in the use of resources allocated to the system, improving the quality of health services, and sustainable development in the financial field. For these practices to be achieved, a number of conditions need to be in place, such as: institutional, political and economic stability, qualified and specialized human resources, institutional flexibility and an organizational culture amenable to change.

As far as Romania is concerned, we can see that it has not met the three conditions mentioned above. The last three decades have been marked by institutional and political instability. The rigid and bureaucratic organizational culture which characterizes all institutions in Romania, and which is not only found in the health sector, has also been a major obstacle to real reform. As far as human resources are concerned, they have not met the highest qualification criteria, and the lack of managerial ability needed to implement change has been felt. The human resource problems were also felt in the dissatisfaction of doctors with the technical

equipment and salaries, which was the main reason for the departure of as many doctors as possible from the system. Population growth has also declined over this period, with public opinion showing an increase in public dissatisfaction with the quality of health care in Romania.

Taking all these aspects into account, the pace of health reform in Romania has been slower than in other countries belonging to the former communist bloc, and its precarious state has been exacerbated by the economic crisis, the media and the opinions of representatives of the medical profession.

Social health insurance in Romania

Social health insurance in Romania can be seen as a whole as an insurance program through which Romanians can insure their health and at the same time finance their medical needs. Health insurance is an essential objective of a healthcare system.

Health insurance can also be defined as a contract between a person and a health insurer to cover medical expenses. The chosen health insurance company supports payments for part or even all of the medical care, depending on the type of insurance the person has chosen. Social health insurance is organized in a variety of recurrent ways, particularly in terms of the purchase and provision of services, as well as the nature of the services covered in benefit packages. How they are organized has a significant impact on the adequacy and quality of health care, on the availability of care and on access, volume and pattern of use, and ultimately on the overall cost of the social protection system.

Law no. 95/2006 on health care reform is the basic law on health care in Romania, which defines the role of social health insurance, private health insurance, hospital organization, community care, primary health care, pharmaceuticals, emergency services, public health and national health. The system is organized on two main levels: national or central.

Social health insurance in Romania can be seen as a whole as an insurance program through which Romanians can insure their health and, at the same time, finance their medical needs. Medical services are divided into two categories: those that are paid by the Health Insurance House and those that are not paid by the Health Insurance House. Medical services that are paid by the Health Insurance Fund:

- Emergency medical services other than those funded directly by the Ministry of Health;

- Medical services provided to the patient until the condition is diagnosed: anamnesis, clinical examination and paraclinical investigations;

- Medical and surgical treatment and certain rehabilitation procedures;

- Prescribing the treatment necessary for improvement or cure, including indications concerning living and working conditions, hygiene and nutrition.

Insured persons are entitled to medicines, with or without personal contribution, on prescription for medicines included in the list of medicines drawn up by the Ministry of Health and CNAS. Insured persons are entitled to certain home healthcare services, including palliative care at home, and are entitled to the medical transportation necessary to perform a medical service.

Services that are not paid from the fund are:

- Medical services in case of occupational diseases, accidents at work and sports accidents, medical care at the workplace, medical care for sportsmen and sportswomen;

- Certain high-performance medical services;

- Certain dental care services;

- Hotel services with a high degree of comfort;

- Aesthetic corrections performed on persons over the age of 18, except for breast reconstruction by endoprosthesis in the case of oncologic surgery;

- In vitro fertilization;

- Medical assistance on request;

- The cost of certain materials needed to correct vision and hearing;

- Personal contribution to the price of medicines, certain medical services and medical devices;

- Medical services requested by the insured person;

- Certain rehabilitation services and procedures;

- Family planning services provided by the family doctor in the hospital's family planning clinics.

The basis for calculating social health insurance consists of a series of taxable incomes, namely:

- income from wages and salaries and other income from self-employment;
- taxable income from agriculture and forestry;
- unemployment benefits;
- revenues from intellectual property rights.

AtEU level, an index is being calculated to measure the performance of a health system, the European Health Consumer Index, which covers five areas: access to services, outcomes provided by the system, patients' rights and information; access to pharmaceuticals, prevention, the types of services provided by the system to patients and access to them.

At national level, this index shows that, despite the financial contributions made by the European Union, the Romanian state has not reformed the health system. In Table 1 we present this index which covers the performance of the various health systems in the European Union, from the best performing system (the Netherlands) to the worst performing system (Romania), according to the total score obtained for this index. Data are for 2018, according to the latest report published in 2023 by the Euro Health Consumer Index.

Table 1. European Health Index (EHCI). EU benchmarking

Country	**Total score EHCI index**	**Access to services**	**Results system**	**Patients' rights and information**	**Patient access to pharmaceutical products**	**Prevention**	**Diversity and accessibility services**
Netherlands	883	175	256	125	89	113	125
Denmark	855	175	267	121	78	95	120
Belgium	849	213	244	104	72	101	115
Finland	839	150	278	113	78	101	120
Luxembourg	809	188	244	100	72	95	109
Sweden	800	113	267	117	78	101	125
Austria	799	175	244	108	78	89	104
France	796	188	233	104	83	83	104
Germany	785	163	244	104	89	101	83
Portugal	754	163	222	108	78	89	94
Czech Republic	731	175	211	108	61	71	104
Estonia	729	188	189	121	61	77	94
Slovakia	722	188	200	113	67	77	78
Spain	698	113	222	96	72	101	94
Italy	687	138	233	92	50	101	73
Slovenia	678	125	222	88	72	77	94
Ireland	669	75	244	83	83	89	94
Croatia	644	125	200	104	50	71	94
Cyprus	635	150	200	83	56	83	63
Malta	631	150	156	88	39	95	104
Lithuania	622	163	167	104	44	71	73
Greece	615	163	200	67	50	83	52
Latvia	605	138	178	100	44	77	68
Bulgaria	591	200	167	79	39	60	47
Poland	585	138	167	79	56	89	57
Hungary	565	113	156	79	44	95	78
Romania	549	175	133	96	39	54	52

Source: compiled by author, data provided by Euro Health Consumer Index (2023)

As can be seen from the table above (Table 1), Romania scored only 549 out of the total of 1000 points corresponding to the total score, placing it in last place in the ranking. In relation to Romania's situation, compared to the other European countries, Stanciu (23) stated: "*the results of the Romanian healthcare system are the worst among the 34 countries in the ranking, which should cause great concern in Brussels. The situation will not change until Romania does not create a decent salary system for doctors, but these salaries should not be earned only in private clinics or by taking bribes from patients*

- ✓ **Social health insurance beneficiaries in Romania**

The beneficiaries of social health insurance are all Romanian citizens who are domiciled in Romania, including people of other nationalities with the right to temporary or even permanent residence in Romania. There are several categories of persons who have the privilege to benefit free of charge from this social health insurance, such as:

- Minors under the age of 18, as well as pupils and high school graduates only until the beginning of the academic year, but not for more than three months, even apprentices or students whose age is in the range (18-26) who do not earn income from work;
- Co-insured persons, i.e. a spouse, spouse or parents who are dependants of an insured person;
- People who fought in the 1989 Revolution and, of course, their descendants who meet the legal requirements;
- Persons with a degree of disability who do not earn an income from work and who are protected under Law No. 448/2006 on the protection of the rights of persons with disabilities;
- People who are sick and who are included in health care programs, until they are cured, do not earn any income of any kind, including pension;

- Pregnant women and women earning less than the minimum wage are also eligible;
- People who are deprived of their liberty while serving a certain sentence;
- Persons receiving unemployment benefits or other social protection rights that are adjusted from the unemployment insurance budget as required by law;
- Pensioners, i.e. those who earn income from intellectual property rights;
- Persons on temporary incapacity leave;
- People who are detained or arrested, being held in detention or detention centers;
- People who are on a voluntary placement, on the basis of a voluntary contract;
- People who fall prey to human traffickers for up to one year;
- Persons belonging to religious cults recognized by the State Secretariat for Religious Cults;
- People up to the age of 26 from centers for abandoned children.

The right to be insured is demonstrated by the electronic card held by each insured person. All the necessary information is contained on the basis of that card, which covers, first of all, all personal data, then the payment of health insurance contributions, the medical diagnoses presented, as well as Rh and blood group. Citizens who benefit from social health insurance on the basis of the contract have a number of rights, but also a number of obligations.

The insured's rights consist of:

- The right to choose the health care provider, as well as the choice of the insurance company to which they wish to be insured;
- The insured person's right to be on the lists of a requested family doctor;
- The right to change the family doctor, but no earlier than 6 months after the insured person's registration with the family doctor;

- The right to full and non-discriminatory access to basic services;
- The right to reimbursement of all expenses incurred during hospitalization related to medication;
- The right to emergency and dental services;
- The right to certain physiotherapeutic and rehabilitation treatments;
- The right to receive healthcare at home;
- The right to guarantee confidentiality of data as well as treatment and diagnosis;
- The right to information about medical treatment;
- Entitlement to insurance benefits.

Entitlement to health insurance is lost if you lose your domicile or long-term residence in Romania, if you die or if the payment period has exceeded three months since the last contribution was paid.

The insured's obligations consist of:

- The insured person's obligation to register with a family doctor;
- The insured person's obligation to notify the insurer whenever his or her state of health changes;
- The obligation of the insured person to notify both the family doctor and the Social Insurance House of every change of personal data;
- The insured person's obligation to take seriously the explanations, guidance, advice and treatment given by the family doctor;
- The insured's obligation to comply with all the terms imposed by the framework contract;
- The insured person's obligation to provide proof of insurance to healthcare providers.

- ✓ **Financing public social health insurance in Romania**

When it comes to resource consumption, health systems have seen a steady increase in resource consumption over the last 30 years, mainly due to an ageing population, the emergence of more advanced technologies than those used today, the increase in the number of health care beneficiaries and more.The components of the health systems financing process are:

- The parties between whom the funds are transferred, including the government, beneficiaries, health insurance funds and others.
- Payment mechanism, the most effective being payment by service, per capita and salary.

Within the health care system, it is of particular importance which entities provide the financing resources, how they are collected and, last but not least, which entities collect them.

Funds come mainly from the public (individuals or companies), and collection mechanisms include taxes, social security contributions, private insurance premiums, public savings, direct payment by patients ("self-financing"), donations, loans and grants.

Collecting agents can be public or private, and taxes can be direct taxes (paid separately by households and companies) or indirect (transaction) taxes. Taxes are collected by the government, while compulsory insurance premiums are collected by independent or semi-independent agents. Health insurance contributions are paid jointly by employers and employees, and their level usually depends on income.

Financial sustainability can be improved by taking one of the following measures: limiting access to health services, lowering the quality of these services or increasing the share of private financing. But none of these measures is in line with what citizens want.

From a social protection perspective, the best way of financial support is to increase the efficiency of the health care system, which refers to allocating sufficient resources to prevent excessive consumption of health care services, thereby reducing costs and maintaining the same level of quality and quantity.

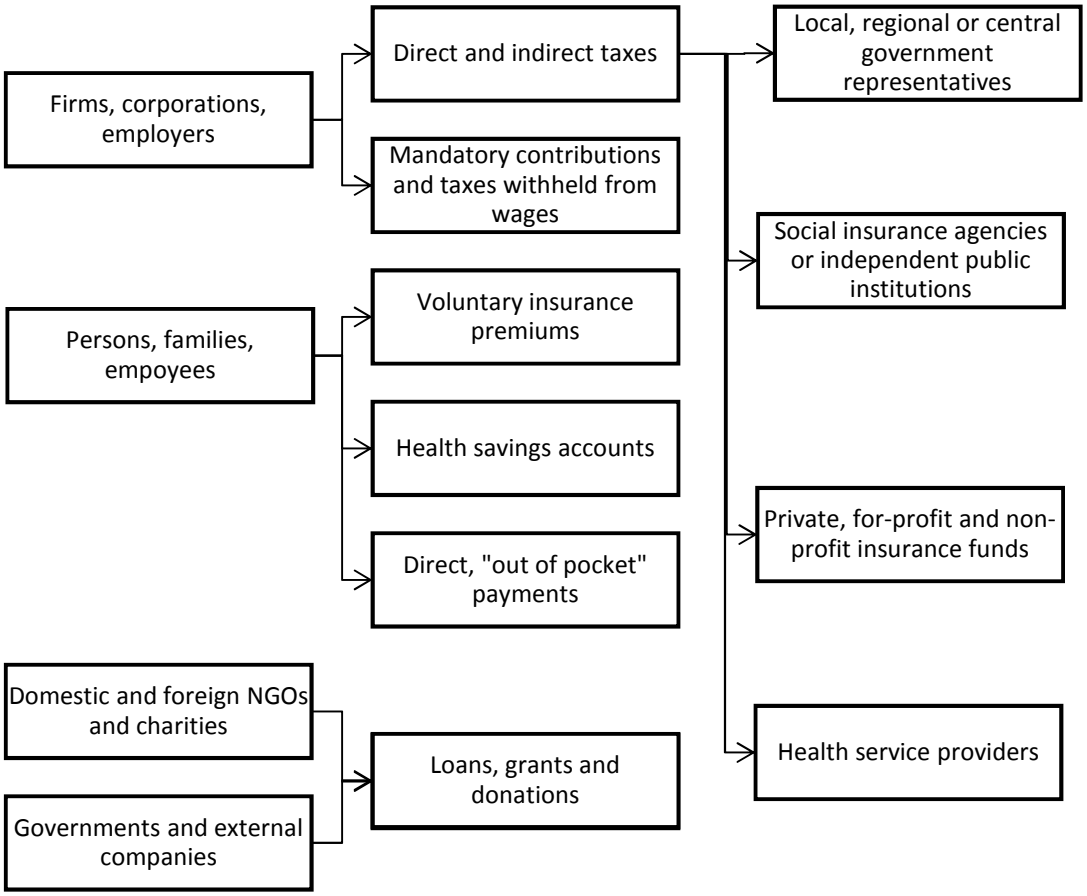

Figure 2. Financing sources, mechanisms and collection agents.

Source: processing after Mosialos et al. (24)

Social health insurance in Romania is financed from public revenues, such as the budget of the Single National Fund for Social Health Insurance, to which are added sums from the state budget, the state social insurance budget, as well as the Romanian citizens' own revenues. The state budget is understood as a source of financing for all health care systems, but it is also assumed that there are certain limits to this budget, given the insufficiency of funds and political influences on the share of the total budget allocated to health care.

Health financing policy directly affects financial protection. Financial protection is achieved when out-of-pocket payments for obtaining health services do not expose people to financial hardship and do not threaten their standard of living.

Out-of-pocket payments for health care can lead to high household expenditures which in turn can lead to higher levels of poverty. These out-of-pocket payments are defined as direct payments made by individuals to health care providers at the point of service utilization. There are several other methods of financing these insurances, such as a pooled collection of the amount.

Most health sector reform measures attempt to address health financing issues such as mobilization of funds, financial risk-sharing, allocation and utilization of services, and provider payment incentives.

In the European Union, as mentioned above, three models of functioning and organization of the public health system have been distinguished, such as the Bismarck model, the Beveridge model and the Semashko model. Initially, Romania adopted the Semashko model. At the end of 1989 and during the period that followed, this model underwent several adjustments. The reasons why it did not work for Romania were the sub-optimal use of funding and the extremely low amount of funding. As a result of these problems, Romanian authorities decided to adopt a different model, the Bismarck model, adopted in 1997 by Law 145/1997.

There are several institutions that are essential for the Romanian public health system, such as:

- National Health Insurance House (CNAS);
- Ministry of Health;
- The chain of public services which consists of hospitals, polyclinics, pharmacies, dispensaries, laboratories;
- College of Physicians.

In Romania, the institutions that run and control the health system are facing various problems related to:

- the efficiency of fundraising for essential healthcare services;

- the constitution and adoption of health policies according to the social situation of the population;

- adequate supply of health services within the state;

- target funds appropriately by program and efficiency criteria.

Among the measures to support and ensure the sustainability of the system, we mention the diversity of health services, encouraging competition for better functioning and collaboration; contracting as many health service providers as possible; the existence of more high-performance equipment, even offering attractive salaries to hospital staff, etc.

The beginning of the health care reform involved a recentralization of health care services as well as the system of financing health care services. Therefore, in July 1997, Law No. 145 on social health insurance was enacted, and this law followed the Bismarck-type insurance model, which Romania later approached, with compulsory health insurance, a system based on the principle of solidarity and operating within a decentralized system.

This model adopted by the Romanian state implies:

- ✓ Financial resources are provided by compulsory contributions paid by employees and employers;
- ✓ resources from state, local or national budget subsidies;
- ✓ insurance funds which are managed and administered at national level by the social directorates.

The Bismarck model has a number of advantages and disadvantages, as shown in the following table.

Table 2. Advantages and disadvantages of the Bismarck model

ADVANTAGES	DISADVANTAGES
1. Stable, personalized, personalized transferred funds.	1. High administrative costs.
2. Visible cash flows on component elements of the system.	2. Health services are for: - insured persons; - disadvantaged groups.
3. Deliver services efficiently and timely.	3. Controlling health care costs with difficult exception.
4. Health programs in line with health policies.	
5. The House has functional independence from the executive.	
6. Combine "good risks" with "bad risks".	
7. Allocate health services according to need.	
8. Eliminate tests.	
9. Supports policyholders' rights.	

Source: Bârbilă and Sinițchi (25)

Law No. 145/1997 has played a quite significant role in changing the Romanian health system, changing it into a social health insurance system.In 2002, Law No. 145/1997 was repealed by Government Emergency Ordinance (GEO) No. 150/2002 on the organization and functioning of the social health insurance system. This emergency ordinance did not make its power felt in the organization and functioning of the system, but took up some recommendations of the World Bank, resulting from the analysis of the Romanian health system, consisting in principle in correcting the abusive decentralization of the territorial health insurance funds. Emergency Ordinance No. 150/2002 was repealed in 2006 by Title VIII of Law No. 95 on health reform, which regulates the proper organization and functioning of the health system.

The major role in the healthcare system in our country falls to the state. Regardless of the type of system followed, the volume of funding from the Romanian State is a more than important factor in ensuring quality health care. The volume of funding allocated depends on the budget allocation policy adopted and the volume of budget revenue. Budgetary revenues depend on the level of taxation set by the Tax Code and laws specific to various fields, as well as on the ability of state bodies to collect these taxes. While a number of steps have been taken in recent decades to establish an adequate level of taxation, the problem of tax collection has remained for the time being in a deficit area, with the debts owed to the State by participants in Romania's economic life often not being recovered.

The financing of the public health system in Romania is paramount to the health system's ability to maintain and improve human prosperity. Without essential funds, medicines or human resources would be unavailable, prevention or health promotion would be impossible. However, financing is not a simple operation.

Health system financing is envisioned as a system function that aims to accumulate, allocate and mobilize resources to meet the health needs of mankind, whether individual or collective, in the health system. The purpose of this financing is determined by making financing and health care providers available to ensure that all people have access to effective public health and personal health care.

Primary care units and outpatient clinics are financed by drawing up a framework contract with local health insurance funds. The reimbursement of expenses is based on the framework contract, in accordance with the legislative provisions.

The health care system is a large consumer of resources, with central spending on health care increasing over time, in particular for the ageing population (which accounts for a growing share of the total population), for the purchase of effective medicines that are regularly being discovered and technologies that are constantly being developed, and not least for the total number of people who benefit from health care.

There is, however, a social equity issue with regard to the contributions that taxpayers pay for health. Taxpayers pay the same rate of social health contribution, regardless of their financial level. Too high a financial burden means that some individuals do not seek medical services for prophylaxis or general care, but only when they are ill.

The Romanian state has also applied other variants of financing the health system, such as in 2010, when the state introduced a tax on tobacco consumption, but also on the turnover of pharmaceutical companies.

The health insurance system is based on the principle of social solidarity, according to which everyone pays, but only those in need consume. Contributions are not risk-related but rather income-related, usually expressed as a percentage of gross income or salary.

The health insurance system also made co-payment possible in April 2013. This co-payment involved an amount of between 5 and 10 lei, paid by patients only on discharge from hospital. The amount was set by each hospital. September 1, 2015 was the date on which the National Health Insurance House decided that medical services in the public health care system should be recognized and justified by a card. This health card was distributed to every insured person who reached the age of 18. When purchasing medicines or having medical interventions, this health card can lead to a certain percentage reduction of the total amount of the necessary medicines or interventions.

The sources of health system financing are:

- funding from the state budget;
- public and private insurance funding;
- funding through direct payments as well as Community funding;
- grant funding.

This mix of financing sources ensures the functioning of the Romanian healthcare system. Taxes are considered as a main source of financing for the health system, with social health insurance in second position. State levies on tobacco and alcohol to supplement the health budget can have negative consequences for the black market of these products.

None of these financing options is perfect. There are, however, certain criteria underpinning the best possible decision on how to finance the system. These could be equity, efficiency, sustainability, quality of services provided. Unfortunately, most of the time, especially in the case of developing countries, it is impossible to meet them simultaneously.

The number of CASS taxpayers is significantly lower than those who are insured through the health system (including pensioners, children and young people in education, disabled people and those on social assistance).

Romania does not have a specific strategy to solve the problems of the health care system, but some reforms are assumed, including the inclusion of new co-payment mechanisms, in order not to affect groups of people who are not in a favorable situation. One could also consider the fairly agile development of private insurance of service providers or the possibility of changing the way hospitals are organized from public government institutions to semi-independent institutions, with the aim of increasing competition between health care providers.

An optimization of the functioning of the current health care system is necessary, as well as an increase in funding so that the state can provide patients with basic medical services. However, falling fertility and birth rates, the still relatively high infant mortality rate and outward migration are just some of the issues affecting the financing of the public healthcare system in Romania.

Worldwide, health services are of great importance for the health of the population, but they are experienced differently by patients, depending on the different quality levels, which depend on the infrastructure and performance of the equipment offered to patients, the elimination of discriminatory forms of access to health services for patients, and the bureaucratic process patients, providers and the hospital setting as a whole have to go through. The objective of the public health care system is to provide health care through various techniques and methods aimed at improving the general health of the population.

In our opinion, Romania's healthcare system faces significant challenges, but it also shows potential for improvement. While the system provides universal health care coverage and has made progress in reducing infant mortality rates and improving immunization rates, it faces problems such as inadequate infrastructure, regional disparities, lack of health professionals and limited financing. Addressing these challenges requires a comprehensive approach that focuses on increasing investment in healthcare, improving access to healthcare in rural areas, improving recruitment and retention of healthcare workers, and implementing effective healthcare policies.

By prioritizing these areas, Romania can work together to build a more robust and equitable health system that ensures quality healthcare for all its citizens.

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CHAPTER III

ROMANIAN HEALTH INSURANCE SYSTEM IN THE EUROPEAN CONTEXT

Analysis of the health system and main health system indicators in Romania compared to other developed countries

In this chapter we propose to conduct a case study that aims to analyze and compare the health care systems in a sample of European Union member countries (including Romania) with the UK health care system. Throughout the study we will use the term the "United Kingdom" to refer to the UK. As EU Member States, we have proposed the following countries for analysis: Finland, Germany, Greece, Romania and Spain.

Table 1. States analyzed by area, population and GDP/capita

Country	***Surface (km^2)***	***Population (million inhabitants) (2022)***	***GDP per inhabitant ($, current prices) (2022)***
UK	242.900	66,65	48.910$
Finland	338.424	5,56	54.510$
Germany	357.114	83,79	52.820$
Greece	131.990	10,57	23.170$
Romania	238.391	19,05	18.410$
Spain	505.992	47,61	33.090$

Source: compiled by author based on data from Statista, Eurostat and IMF

Table 2. Other selection criteria - economic development of the countries considered in the analysis

Ranking of countries by gross national income (1)	
Germany, Great Britain, Spain, Finland, Greece, Romania	High-income countries
Ranking of countries by level of economic development (2)	
G20 developed G20	Germany, Finland, UK
Developed countries	Greece, Spain
Emerging and middle-income countries	Romania

Source: author's processing

We can refer to the countries under consideration by considering several criteria: *population size, surface area, gross domestic product per capita (GDP/capita), and the classification of countries in terms of economic development* (Table 1 and 2).

The countries analyzed in this study form a diverse group in terms of the organization of the health system and health care. Table 3 presents the principles and structure of the health systems in the selected countries and gives an overview of what is meant by the principles of functioning, organization and financing of their health systems. It can be seen that these organizational features may affect the extent of access to health care available to the population, especially for groups at risk of social exclusion (3).

Table 3. Principles and structure of health systems in selected countries

	UK	***Finland***	***Germany***	***Greece***	***Romania***	***Spain***
Level of	National delegated responsibility and administration in Scotland, Ireland and Wales	Services provided by local authorities	Federal system, insurance through sickness funds	Decentralized into regional health units	Decentralized, regulated by national insurance funds	Decentralized into autonomous communities

	UK	*Finland*	*Germany*	*Greece*	*Romania*	*Spain*
Sources of	Funded by general taxes and charges	Funded by general taxes and charges	Statutory health insurance, Social insurance	Mix between taxes and compulsory insurance premiums paid	Statutory social health insurance, general taxes, direct payments	Funded by general taxes and charges
Private health	Voluntary, covering 12.5% of the population	Voluntary, covering 11% of the population	It mainly covers the self-employed, civilians, servants and high-income employees.	Voluntary, covering 8% of the population	There are voluntary private insurances directly linked to private clinics and hospitals offering more comprehensive services	Voluntary, covering 10% of the population
Cost	Prescriptions, dental care, Children and elderly exempt from fees	Prescription drugs, dental and hospital care. Maximum limits apply.	Prescription , dental care, child exemption.	Prescribing medicines	Prescription of medicines, referral note, tests based on funds	Prescription drugs; Retired and low-income people exempt
Providing services	Separate buyers from providers, GPs, specialty services	Health centers provide primary health care in cooperation with municipal health centers. Public: hospitals with external specialists, Private: provides specialized care.	Contracted sickness funds from private doctors and hospitals, associations	Private centers, public hospitals, specialist care and equipped hospitals	Independent family doctors, outpatient/inpatient services mainly in public hospitals	Public health centers, outpatient services, inpatient hospitalization / especially in public hospitals
Pay in the public	Capitație	Remuneration in the form of a salary	Service charge with capitation elements	Answer unavailable	Mix of capitation (70%) and consultation fees (30%)	Wages and capital

Source: author's processing based on data from HealthQUEST Reports and National Reports on Strategies for Social Protection and Social Inclusion (4)

All of the countries mentioned above have decentralized health systems, with different levels of management by local authorities.

In terms of funding sources, the coverage system is divided into two main models. In Finland, Spain and the United Kingdom the main health system is financed by general taxes and levies. Private health insurance in these countries is also considerable and has a coverage of around 10%-12% of the population. On the other hand, coverage in countries such as Germany and Romania is based on the social health insurance system. Greece has a mixed system combining national health services with compulsory social insurance. Out-of-pocket sources through direct payments are another source of financing for Greece and Romania. Cost-sharing/distribution and co-payments exist in all these countries: they generally relate to prescription drugs, dental care and people who are exempt from payments. Most countries have implemented co-payment exemptions, which provide some level of protection. It applies to vulnerable groups, but especially to children.

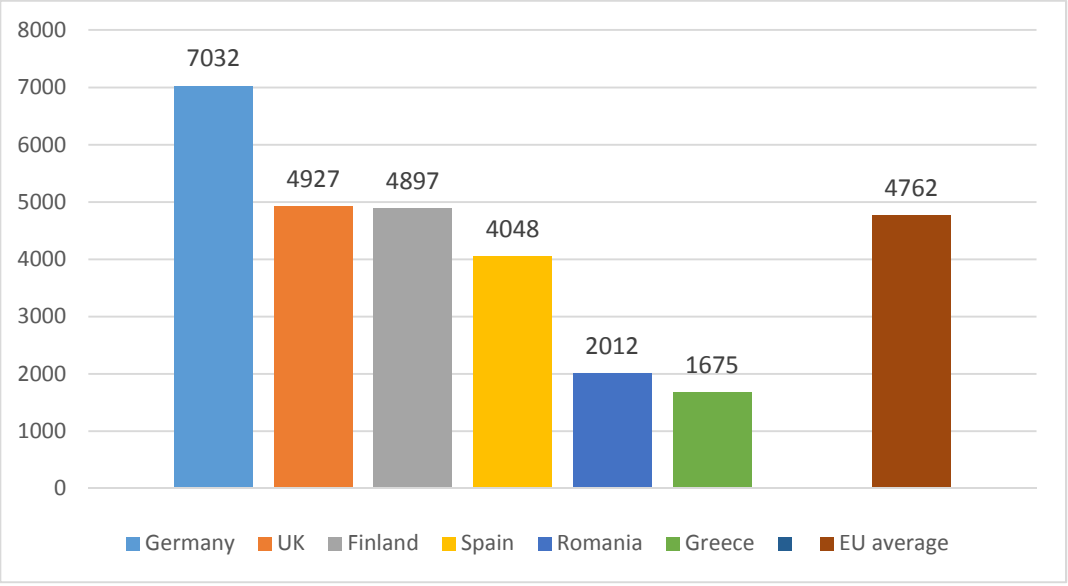
There are also several other groups at risk of social exclusion, but which benefit from extended protection. In many countries, groups such as pensioners, people on low or almost no income, and those suffering from chronic diseases are exempted and considered exceptions from cost sharing. There are also differences in the organization of services, but a common pattern is that health centres provide primary care from general practitioners. In most cases, GPs, family doctors are remunerated on a capitated basis, in the form of a fixed fee per patient served. However, when capitation is used as a form of remuneration, it means that there is a mixed system of charging in place and that charges are made for consultations.

- ✓ **Current health expenditure per capita**

Health expenditure measures the final consumption of health goods and services. It includes both public and private spending on health goods and services, disease prevention programs, public health and administration per capita. The financial resources that a country allocates to health and care (for individuals or for

the population as a whole) and the way they fluctuate over time are the result of a wide range of social, economic, and social factors, as well as the result of continuous financing and the existence of a well-structured way of organizing a country's health system (5). These amounts reflect investments in what inpatient beds in clinics and hospitals mean, it means that investments have been made in specialist and general practitioners as well as in nurses (thus in specialized medical and healthcare personnel).

Recurrent health expenditure per capita refers to those expenditures on health goods and services per capita per year. The reference year used in the following graph is 2020 (the *latest available reference year with statistical data reported by all sample countries in the World Bank database*), and the values are expressed in US dollars at purchasing power parity.



Graph 1. Current health expenditure per capita in 2020 ($, PPC)

Source: Author based on data from WorldBank Indicators (6)

Germany tops the league table, spending the equivalent of $7032 on medical goods and services in 2020, followed by the UK which spent the equivalent of $4927. Finland is third in the chart, spending the equivalent of $4897, followed by Spain,

Romania and Greece. Current health expenditure in Romania per capita amounted to $2012, less than a third of the level in Germany and less than half the level in the European Union on average per capita (Graph 1).

- ✓ **Health expenditure as % of GDP**

Health expenditure in relation to GDP - shows how much a country spends on health care in relation to all other services and goods in the economy and how it fluctuates over time, depending not only on the level of health expenditure but also on the size of the economy as a whole.

Of the countries analyzed, three countries had health expenditure higher than the EU average (Germany, the United Kingdom and Spain) and two countries had a level of expenditure close to the average (Finland and Greece). Romania has the lowest health expenditure as a % of GDP (6.27%), which is also due to the fact that it is a developing country (Table 4):

Table 4. Health expenditure as % of GDP in 2020

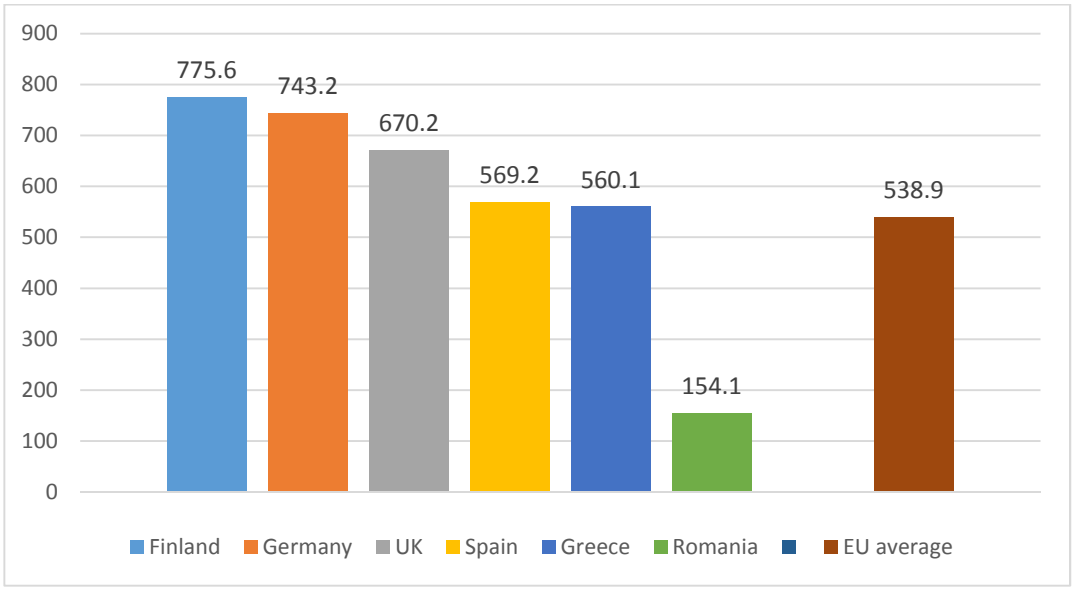
Country	% of GDP allocated to health spending
Germany	12,82%
United Kingdom	11,97%
Spain	10,71%
Finland	9,61%
Greece	9,51%
Romania	**6,27%**
EU average	10,91%

Source: Author based on data from WorldBank Indicators (6)

- ✓ **Private health expenditure per capita**

It is a core indicator of health systems financing. The indicator shows how much was spent per capita on medical goods and services provided by private health care institutions (hospitals, clinics and private health care centers).

From the next graph (Graph 2), it can be seen that there is significant private health expenditure, but much less than public expenditure. Finland is the country with the highest private health expenditure per capita ($775.6). Germany is the country that also had significant private expenditure per capita, equivalent to $743.2 per capita in 2020, which is only 11% of total current health expenditure per capita.



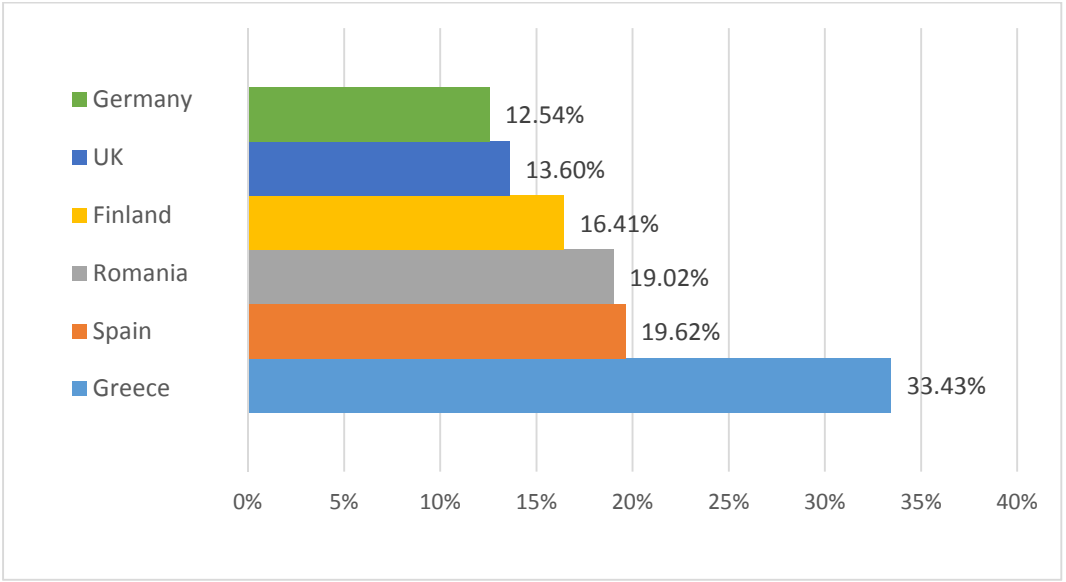
Graph 2. Private health expenditure per capita in 2020 (current, $)

Source: Author based on data from World Bank Indicators (6)

In the UK, about 13.6% of current health expenditure is covered by private health expenditure, equivalent to 670$per capita. Spain spends the equivalent of $569.2 per resident on private health care. Private health care expenditure in Greece accounts for about 33.43% of total current expenditure, equivalent to $560.1 on private health care. Romania ranks at the bottom of the six countries, with private spending on health totaling only 154.1$per capita, 3.5 times less than the EU average (Chart 2 and Chart 3).

✓ **Share of private health expenditure in current health expenditure**

Private health (out-of-pocket) expenditure refers to costs that individuals pay out of their own financial resources. Out-of-pocket expenditures are incurred directly by users of health goods and services, even if they are to be reimbursed.



Graph 3. Private (out-of-pocket) expenditure as % of current health expenditure (2020)

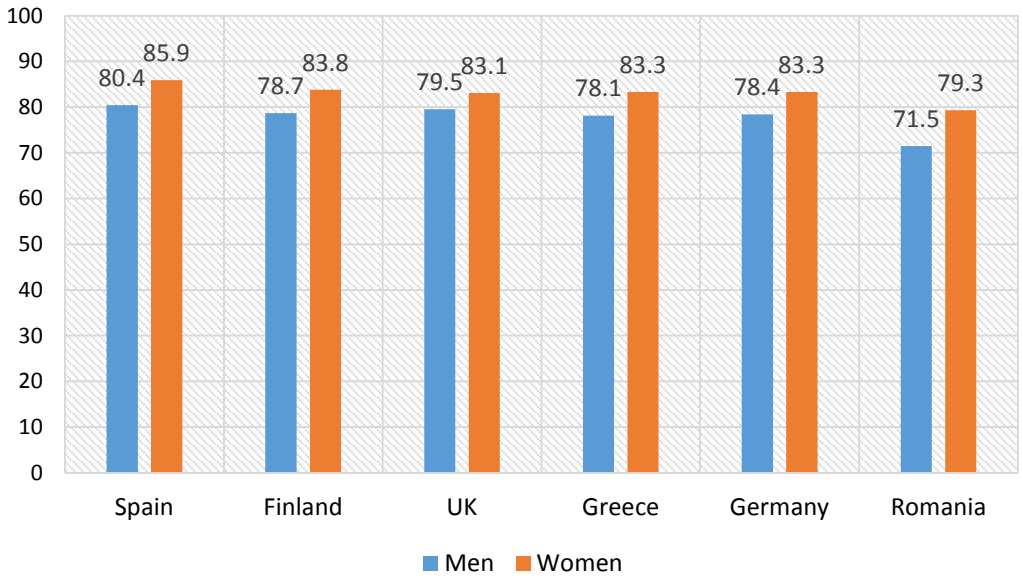
Source: Author based on data from World Bank Indicators(6)

According to the statistics presented in Chart 5, the analysis and processing of the statistical data shows that Greece had the highest share of out-of-pocket expenditure on health out of current expenditure on health, i.e. 33.43%. This reflects that the population obtained quality and immediate medical services, without waiting too long before being able to access the list of appointments through the Insurance Houses. High shares were also recorded in Spain (19.62%), Romania (19.02)%. Finland came next with 16.41%, followed by the United Kingdom with 13.6%. Although Germany is an economically developed country, which means that the population has high incomes, out-of-pocket spending was the lowest at 12.54% compared to the other countries in the analysis. It should be noted that although

Romania does not have a very well-developed economy, and the GDP per capita and per capita expenditure are the lowest compared to the other countries analyzed, Romania ranks third in terms of the share of private expenditure in total current expenditure on health in 2020 *(7).*

- ✓ **Life expectancy**

The life expectancy indicator, according to the World Health Organization, shows the average number of years a newborn is expected to live if he or she were to go through life exposed to the sex- and age-specific death rates prevailing at the time of his or her birth for a specific year, country, region or geographical area.



Graph 4. Life expectancy for women and men (8)

Source: compiled by the author based on data taken from the Eurostat database

The analysis was made with reference to the values of the indicator in the year 2020. The most recent data shown for all countries included in the study were available and visible for the year 2020 in the Eurostat database. The highest indicator

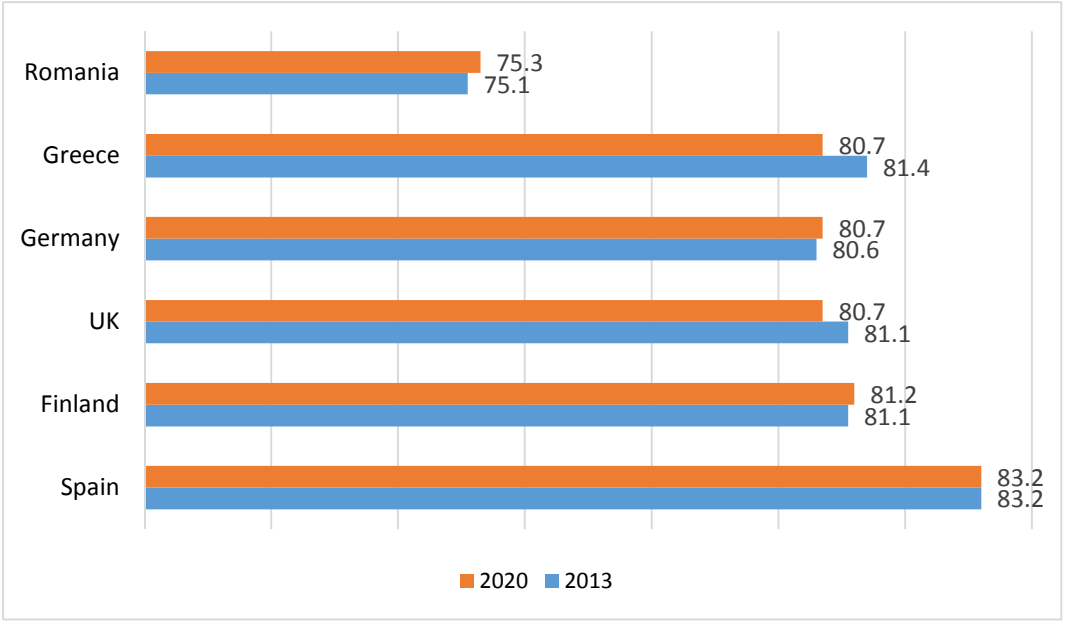
value of 85.9 for women was recorded for Spain. For men, the highest value of 80.4 was also recorded for Spain.

In general, life expectancy for women tends to be higher than for men.

If we calculate the average life expectancy for all men in these countries for the year 2020, and the average life expectancy for all women in these countries in the year 2020, we would have an average for men of 78.15 years and an average for women of 83.46 years. This implies that on average, relative to all the inhabitants of the 6 countries (women and men), women can expect to live about 5 years longer than men.

- ✓ **Life expectancy indicator dynamics 2013-2020**

As a definition, the life expectancy indicator shows the average age at which a newborn could be expected to live, if exposed to various factors during its lifetime that could affect it.



Graph 5. Life expectancy indicator 2013/2020

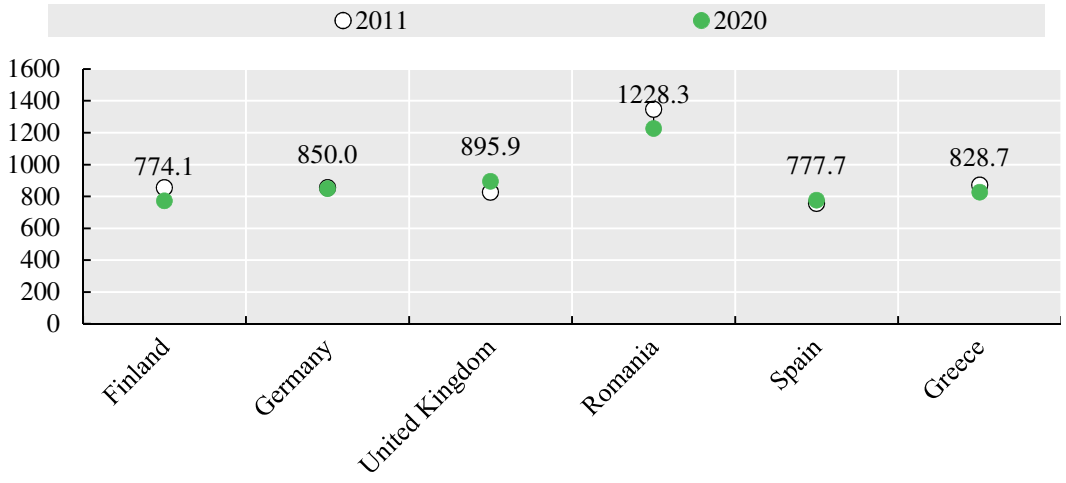
Source: compiled by the author based on Eurostat data (8)

Figure 7 shows how the indicator has developed from 2013 to 2020, taking into account the total population at birth. It can be seen that in Germany, the indicator showed a modest increase from 80.6 years in 2013 to 80.7 years in 2020, which means that life expectancy increased in 10 years by only 1.2 months. For Greece, the indicator decreased from 81.4 years in 2013 to 80.7 years in 2020, meaning that the population is expected to live 8.4 months less. For Spain, the indicator remained constant at 83.2 years. Finland showed little growth in the indicator, with life expectancy increasing by just 1.2 months over the period. In Romania, life expectancy recorded the highest increase among the countries surveyed, thus life expectancy increased from 2013 to 2020 by 2.4 months. In the United Kingdom, life expectancy was 3 months higher in 2018 compared to 2015.

Factors that can affect the gap in life expectancy can be: socio-economic, medical, environmental and pollution factors, lack of better living and a more balanced lifestyle, lack of sport.

- ✓ **Number of registered deaths per 100,000 persons (standardized rates), all causes**

The graph below (Figure 8) shows the number of deaths in Germany, Finland, Romania, Greece, Spain, Greece, Romania, Spain and the UK per 100,000 people from all causes.



Graph 6. Number of deaths per 100.000 persons (2020, compared to 2011)
Source: compiled by author based on data from OECD.Stat and Eurostat (8)

The causes of death determining the number of deaths in the above graph can be correlated with Table 7 (to be presented below), but include infectious and parasitic diseases, neoplasms, diseases during pregnancy or childbirth, etc. The number of these deaths is relatively similar between countries, except for Romania (which had the highest number of deaths among the countries analyzed, 1228.3 deaths in 2020, the last reference year). However, there has been a decrease in this number over the period analyzed, which is encouraging. There are also countries that show a negative trend in this indicator over the period (such as Spain, where the number of deaths increased from 758 in 2011 to 777.7 in 2020). Finland has the lowest number of deaths per 100,000 inhabitants in 2020.

- ✓ **Main causes of death according to the International Statistical Classification of Diseases and Related Health Problems**

The International Statistical Classification of Diseases and Related Health Problems (ICD-11) standard was adopted at the 72nd World Health Assembly in May 2019 and effective January 1, 2022. The first edition of the international classification, referred to as the "International List of Causes of Death", was adopted by the International Statistical Institute in 1893. The ICD has undergone several revisions since then, precisely to keep up with advances in medical and health sciences over time. The ICD is the foundation for identifying global health trends and statistics, and is the international standard for reporting diseases and health conditions. ICD-11 is the classification standard for all clinical and research scores. This standard defines the totality of diseases, disorders, injuries, causes of death and other related health conditions and lists them, in a comprehensive and hierarchical manner, which allows:

- Easily store, retrieve and analyze health information for evidence-based decision-making;
- Share and compare health information between different hospitals, regions or countries;

- Compare data for the same location but over different time periods.

Based on clinical information, based on research and epidemiology, the ICD standard has become a suitable tool for different health uses/purposes such as:

- Monitoring the incidence and prevalence of different diseases;
- Causes of death and external causes of illness;
- Antimicrobial resistance codes;
- Primary care and family medicine concepts are incorporated in ICD-11;
- Codes for comprehensive patient safety documentation;
- Double-coding for traditional medicine diagnoses, etc.

The following table (Table 5) lists the causes of death according to ICD found as common in the six countries analyzed.

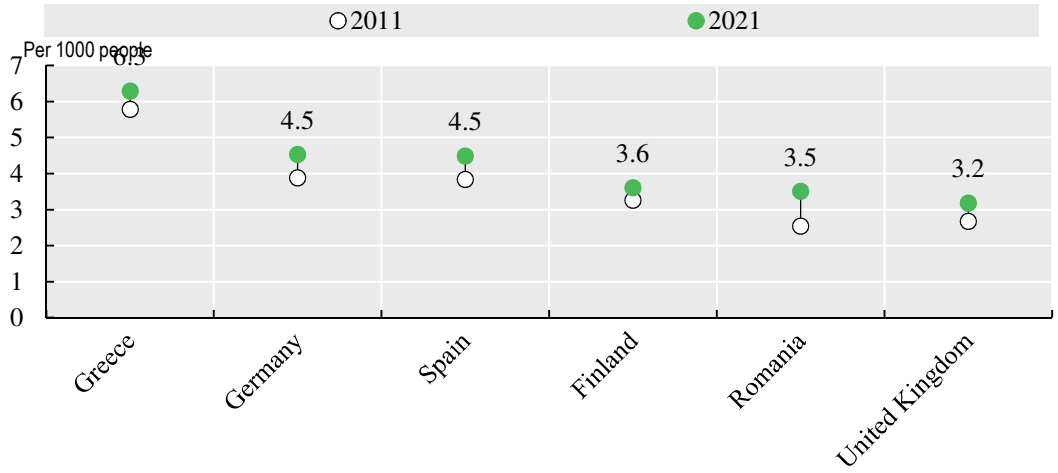
Table 5. Main causes of death

Causes of death classified by DCI
a) Infectious and parasitic diseases; b) Neoplasms; c) Immune diseases, caused by various diseases in the blood or organs; d) Endocrine, metabolic and nutritional diseases; e) Behavioral and mental disorders; f) Diseases of the nervous system; g) Diseases of the eyes, ears; h) Diseases of the circulatory system; i) Diseases of the digestive system; j) Diseases of the respiratory system; k) Skin and subcutaneous tissue diseases; l) Locomotor and connective tissue diseases; m) Diseases of the genitourinary system; n) Illness during pregnancy or childbirth; o) Congenital malformations, deformities and chromosomal abnormalities; p) Abnormal clinical and laboratory findings and symptoms not elsewhere classified; q) Consequences of other extreme causes: injury, poisoning, etc.

Source: author's processing based on data provided by destatis.de.

✓ **Total number of practicing doctors**

Practicing physicians provide services directly to patients. They include: *persons who have completed a university degree in medicine* (status supported by a graduation diploma) and are licensed to practice medicine, *interns and residents* (who have an appropriate diploma and provide services under the supervision of other physicians during their postgraduate training or residency in a facility responsible for health care), *salaried and independent physicians* providing individual services, *foreign physicians authorized to* practice in the country. It is thus estimated by the number of registered doctors.



Graph 7. Number of practicing doctors per country in 2021, compared to 2011

Source: Author, OECD data (9)

Graph 7 shows the situation and the number of practicing physicians by country in 2021 compared to 2011, i.e. those doctors active in the field of medicine. In order to be able to make a comparative analysis, we relate the number of practicing physicians per thousand inhabitants. Thus, it can be seen that all the countries analyzed have seen an increase in the number of practicing doctors per thousand inhabitants over the period analyzed (2011-2021). Greece has the highest number of practicing doctors per 1000 inhabitants (6.3 doctors per thousand inhabitants), followed by Germany and Spain (with a value of 4.5), Finland and Romania, while the United Kingdom has the lowest number of practicing doctors per thousand inhabitants (3.2).

✓ **Total number of practice nurses**

Nurse practitioners provide direct health care services to patients and include: nurse practitioners, associate nurse practitioners, foreign nurses licensed to practice in the country.

Professional nurses have the responsibility to manage the care of patients, to supervise and supervise including other health care workers, to work autonomously or in teams with other doctors or nurses in the practical application of preventive and curative measures. Included in this category are: clinical nurses, anesthetic nurses, general and public health or specialists.

Graph 8. Number of practice assistants in 20 21, compared to

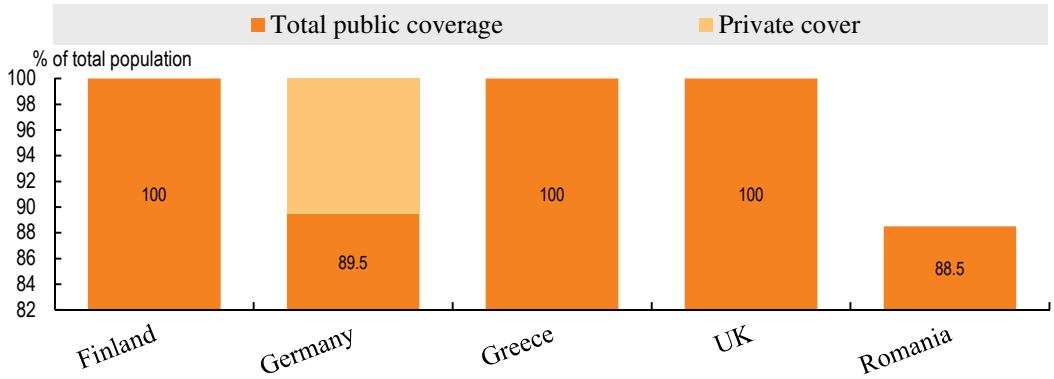
Source: Author, OECD data (9)

Associate Nurse Practitioners generally work under the supervision of and in support of the implementation of care plans, recommendations and treatments predetermined by general practitioners, specialized medical professionals and other health professionals. This category includes: nurses, registered nurses and nurses in practice. As Graph 8 shows, Finland has the highest number of practicing nurses, 18.9 per thousand inhabitants. It is followed by Germany (12), the United Kingdom (8.7) and then Romania (with 8 practising nurses per thousand inhabitants). Among the countries analyzed, Greece has the lowest number of nurse practitioners (3.8

nurse practitioners per thousand inhabitants). In all the countries analyzed, the number of nurse practitioners increased over the period analyzed (2011-2021), but the highest increase is in Romania, where, at the 2021 level, there was a number of approximately 2 nurse practitioners per one practicing physician.

✓ **Population coverage by public and private health insurance**

Graph 9 shows to what extent and in what percentage the population of Finland, Germany, Greece, Greece, Spain, Romania, Spain and the United Kingdom is covered by some type of public (social) health or private health insurance.



Graph 9. Population coverage with public/private health insurance

Source: Author based on data from OECD.Stat (9)

It would be preferable that in all six countries the percentage should be 100%, but we note that in some countries people have opted for other forms of insurance or even non-insurance. Thus, it can be seen that in Greece, Finland, Spain and the United Kingdom 100% of the population is covered by social or private health insurance, which is much higher than expected compared to other countries. In Germany only 89.5% of the population is covered by public insurance, the remaining 10.5% by private insurance.

Romania has the lowest percentage of population coverage by public/private insurance, at 88.5%. In other words, out of 19.5 million inhabitants, only 17.26

million are covered by health insurance, and the remaining 2.24 million are uninsured or have opted for other forms of social protection.

- ✓ **Analysis of health expenditure in the EU Member States**

This analysis presents key statistics on health expenditure and financing aspects of health care in the European Union (EU). In all EU Member States, the health system is organized and financed in different ways, but universal access to high-quality and affordable care for individuals and society is seen as a basic need; moreover, it is the common value of the EU health system and one of its principles.

Statistics on how each country spends on health can be used to understand how the health system responds to universal access to quality health care by measuring the financial resources in the health care sector and the allocation of these resources between health care activities (such as preventive and curative care) or between health care providers (e.g. hospitals and outpatient centers). In the table below (Table 8), the importance that each EU country attaches to health can be seen by analyzing health expenditure/capita, its importance as a share of GDP, and the growth rate of health expenditure over the 2013-2020 period and also over the 2019-2020 period to capture the impact of the coronavirus pandemic on the growth of health expenditure.

Thus, when we look at health expenditure per capita, we see that it ranges from a low of 1428 Euro (PPP) in Romania a high of 4831 Euro (PPP) in Germany in 2020. Indeed, we could say that the new EU Member States (those that joined the European Union since 2004) allocate a much lower level of per capita expenditure, with an average of 1895 Euro/capita, while the older EU Member States have an average per capita health expenditure of 3492 Euro, almost double the average per capita level. There are of course exceptions, among the new Member States, Slovenia, Malta and the Czech Republic have the highest per capita health expenditure, while among the old Member States, Greece, Portugal or Italy have the lowest per capita expenditure

In relation to population size, health expenditure was highest among the old EU Member States, after Germany, in the Netherlands (4302 EUR per capita) and Austria (4095 EUR per capita). Interestingly, Luxembourg has the lowest ratio of health care expenditure to GDP, but ranks high in terms of health care expenditure per capita (3918 EUR per capita), reflecting Luxembourg's high level of GDP. A large proportion of Luxembourg's workers are cross-border workers and live abroad; note that, as non-residents, their healthcare costs are not included in the statistics, but their economic activities contribute to Luxembourg's GDP (Table 6).

Table 6. Health expenditure (EU level) (10)

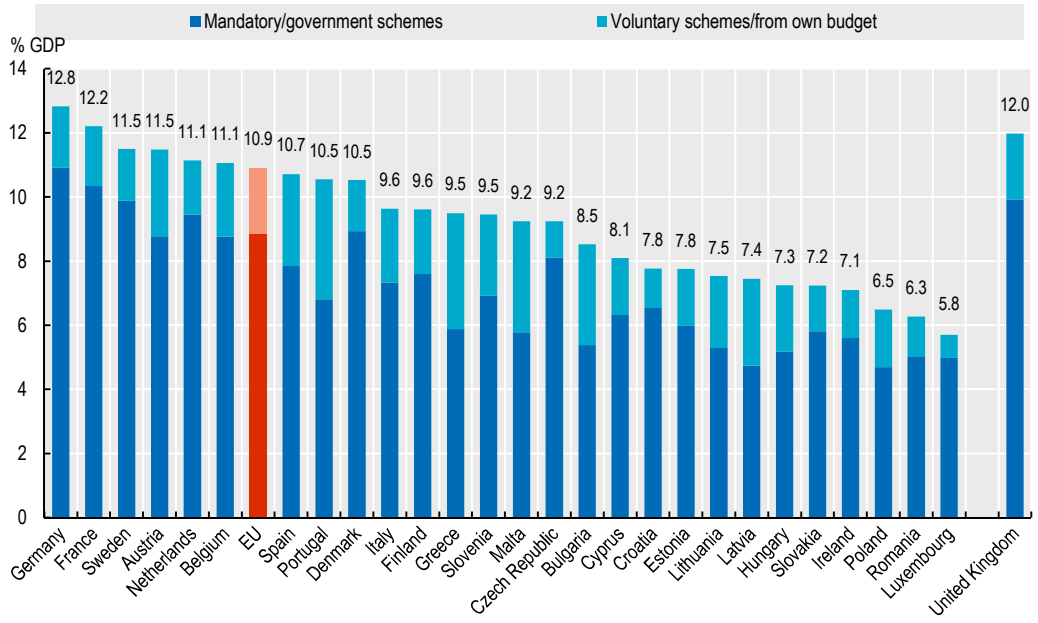
Country	Health expenditure per capita (Euro, PPC)	Health expenditure (% of GDP)	Per capita health expenditure growth rate (2013-2020)	Per capita health expenditure growth rate (2019-2020)
Austria	4095	11.5	1.1	1.7
Belgium	3764	11.1	1.6	-2.6
Bulgaria	1478	8.5	4.4	19.9
Cyprus	2065	8.1	4.1	8.9
Croatia	1448	7.8	4.8	4.4
Denmark	3964	10.5	1.6	2.3
Estonia	1900	7.8	5.9	9.9
Finland	3205	9.6	0.6	2.3
France	3807	12.2	0.9	1.0
Germany	4831	12.8	2.8	4.7
Greece	1731	9.5	0.8	5.8
Ireland	3740	7.1	2.1	9.2
Italy	2609	9.6	1.2	2.8
Latvia	1551	7.4	7.5	8.1
Lithuania	2006	7.5	6.9	6.2
Luxembourg	3918	5.8	1.0	5.9
Malta	2942	9.2	5.6	-
Netherlands	4302	11.1	0.9	5.3
Poland	1591	6.5	4.9	-0.7
Portugal	2331	10.5	3.2	2.5
Czech Republic	2649	9.2	2.5	15.2
Romania	1428	6.3	7.8	7.0
Slovakia	1480	7.2	1.4	-0.4
Slovenia	2418	9.5	3.8	6.3
Spain	2588	10.7	2.5	4.9
Sweden	4008	11.5	1.4	1.6
Hungary	1672	7.3	2.5	11.4
United Kingdom	3494	12.0	2.0	9.1

Source: Author, OECD data (11)

It can be noted that in all Member States, health expenditure per capita has increased over the period under review (2013-2020). Romania, although having a low level of health expenditure per capita, i.e. low in terms of its importance in GDP, compared to the other Member States, has experienced the highest increase in health expenditure over the period under review (7.8%). On the other hand, among the countries that experienced a significant increase in the level of realized health expenditure in the period 2019-2020 were Bulgaria (19.9%) and the Czech Republic (15.2%). There were, however, also countries that experienced negative, but nevertheless small, corrections in this period, such as Belgium or Poland (Table 8).

In terms of the importance of health expenditure in relation to GDP, we can see that once again, the old EU Member States allocate more to health in relation to their GDP. Thus, the best performing countries in this respect are Germany (12.8% of GDP), France (12.2% of GDP) and Sweden (12% of GDP), while at the other end of the scale are the new EU Member States, such as Romania (6.3% of GDP), Poland (6.5% of GDP) and Slovakia (7.2% of GDP) (*Graph 9*).

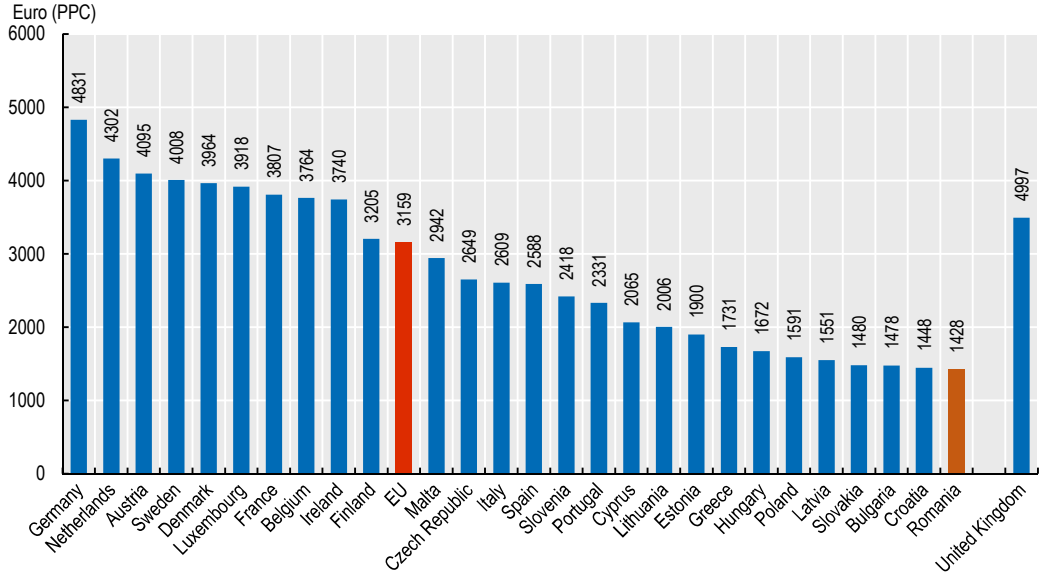
Obviously, the level of GDP is also an element to be taken into account as it has a major impact on the actual financing of the health system. Even if the percentage of GDP allocated to health spending increases, a drastic fall in GDP will (at least partially) cancel out the beneficial effect of the increased percentage allocation.



Graph 9. Health expenditure as a share of GDP (% of GDP, 2020)

Source: Author based on OECD data (11)

The average health expenditure per capita of all EU Member States averaged 3159 Euro. Germany, the Netherlands, Austria and Sweden topped the rankings with the highest health expenditure per capita, exceeding 4000 Euro, while health expenditure per capita below 2000 Euro was recorded in 9 Member States, mostly new EU Member States. The lowest health expenditure per capita is found in Croatia (1448 Euro) and Romania (1428 Euro). The ratio between the highest level of health expenditure per capita (Germany) and the lowest level of expenditure (Romania) is therefore about 3.38 (Graph 10).



Graph 10. Health spending per capita (12)

Source: Author based on data

Health expenditure can be analyzed from **three perspectives**: (i) the sources of financing, (ii) the functions that the health system performs, and (iii) the providers of health care (Table 9).

The government system provided about 34% of total healthcare expenditure in the EU in 2020, while mandatory health insurance plans and individual medical savings schemes accounted for 42.5% on average. These two sources therefore accounted for 76.5% of total funding. We note that there are countries where the importance of government funding is very high (Denmark, Sweden, Ireland), while in others (Slovakia, Luxembourg) it is extremely low. Compulsory health insurance plans and individual health savings accounts are predominant in France, Germany, Luxembourg (Table 7).

Table 7. Health expenditure analysis by financing, functions and providers (2020, %)

	Finanțare			Funcții			Furnizori			
	Sisteme guvernamentale	Scheme obligatorii și conturi de economisire	Altele	Îngrijiri curative și de reabilitare	Bunuri medicale	Altele	Spitale	Clinici private	Comercianți și furnizori de bunuri medicale	Alții
UE	:	:	:	53.1	18.2	28.7	37.4	24.8	16.7	21.1
Belgia	24.5	54.7	20.8	55.9	13.1	31.0	41.8	29.1	10.9	18.2
Bulgaria	17.5	45.6	36.9	53.6	34.1	12.4	39.8	13.7	33.6	12.8
Republica Cehă	17.5	70.2	12.3	57.4	17.3	25.3	45.5	20.7	13.6	20.3
Danemarca	84.9	0.0	15.1	60.6	10.5	28.9	46.3	24.7	10.5	18.4
Germania	9.0	76.1	14.9	49.6	18.2	32.2	28.8	31.4	18.1	21.7
Estonia	9.1	68.1	22.8	53.1	19.8	27.0	44.2	22.8	17.6	15.3
Irlanda	78.3	0.5	21.2	56.1	12.6	31.3	37.3	20.0	12.3	30.3
Grecia	28.2	33.7	38.2	59.0	32.5	8.5	43.8	16.0	32.5	7.7
Spania	69.5	3.7	26.7	58.6	21.1	20.3	46.4	19.9	21.1	12.7
Franța	6.2	78.5	15.3	51.6	19.4	29.1	38.9	22.2	15.9	22.9
Croația	8.7	75.5	15.8	56.3	23.2	20.6	46.8	19.0	22.7	11.5
Italia	75.9	0.2	23.9	53.5	20.8	25.8	44.8	23.0	15.7	16.5
Cipru	34.9	43.2	21.9	66.7	14.2	19.1	45.6	27.1	13.0	14.4
Letonia	63.6	0.0	36.4	51.5	26.2	22.3	34.6	25.0	25.2	15.2
Lituania	10.4	59.7	29.9	53.3	26.9	19.8	33.8	25.1	26.6	14.6
Luxemburg	7.1	79.3	13.6	54.4	12.8	32.8	33.1	28.9	11.1	26.9
Ungaria	11.8	59.6	28.6	54.3	28.1	17.6	40.3	19.7	28.1	11.9
Malta	62.5	0.0	37.5	48.4	24.0	27.7	40.0	21.1	14.8	24.2
Olanda	10.5	74.4	15.1	49.0	10.6	40.4	33.3	16.7	10.2	39.8
Austria	33.4	43.1	23.6	58.4	16.2	25.3	38.7	22.3	15.0	24.0
Polonia	9.8	62.4	27.7	62.3	21.7	16.0	40.4	25.8	21.3	12.5
Portugalia	62.1	2.4	35.5	64.1	19.8	16.2	43.2	23.5	19.0	14.4
România	17.5	62.7	19.7	57.0	25.9	17.1	48.0	13.6	25.2	13.2
Slovenia	9.1	64.1	26.8	57.4	21.1	21.5	39.1	23.6	20.8	16.5
Slovacia	4.5	75.7	19.7	53.9	31.8	14.3	34.7	18.8	31.8	14.7
Finlanda	65.5	13.6	20.9	59.0	14.2	26.8	37.7	30.1	14.6	17.6
Suedia	85.9	0.0	14.1	51.1	12.2	36.8	39.7	23.8	10.8	25.8

Source: author's processing based on Eurostat data *(13)*

More than half (53.1%) of EU spending on health care in 2020 was used for treatment and rehabilitative care, while about 18.2% of spending was used for medical products. In terms of expenditure, hospitals are the largest providers of health care, accounting for more than a third (37.4%) of total EU expenditure. Romania, Croatia and Spain are the countries where hospitals have the highest share as health care providers relative to expenditure (48%, 46.8% and 46.4% respectively).

Outpatient health providers (medical clinics) (24.8%) and traders and suppliers of medical goods (16.7%) ranked second and third respectively in terms of health expenditure.

The following table (Table 10) shows how health spending has changed by financing source, function and provider between 2012 and 2020. Between 2012 and 2020, the largest increase in health spending from government sources was in three EU Member States (Croatia, Romania and Slovenia) while in three others (Cyprus, Ireland and Estonia) it was from compulsory health insurance schemes and individual health savings accounts. There were also countries where other types of providers experienced significant increases (Estonia or Romania).

Table 8. Analysis of health expenditure dynamics 2012-2020 (%)

	Finanțare			Funcții			Furnizori			
	Sisteme guvernamentale	Scheme obligatorii și conturi de economisire	Altele	Îngrijiri curative și de reabilitare	Bunuri medicale	Altele	Spitale	Clinici private	Comercianți și furnizori de bunuri medicale	Alții
UE	:	:	:	23.0	16.8	31.5	26.6	22.7	15.1	29.5
Belgia	183.7	3.7	11.3	28.2	10.3	26.0	42.2	17.4	3.2	18.8
Bulgaria	161.3	86.9	23.5	74.0	39.0	117.6	86.6	38.8	38.5	135.0
Republica Cehă	120.3	60.2	21.4	70.7	33.0	65.7	81.9	58.8	22.0	58.7
Danemarca	23.5	–	19.0	21.7	17.7	27.4	25.1	16.1	17.7	30.3
Germania	90.3	44.9	26.9	38.9	36.1	61.7	43.1	45.3	36.4	55.0
Estonia	67.0	105.8	94.8	87.2	70.8	164.0	86.1	108.4	51.5	293.8
Irlanda	55.4	213.5	6.4	49.2	14.7	43.1	51.6	43.2	15.6	43.1
Grecia	-12.9	-12.3	5.3	-10.4	-2.4	8.7	-9.6	-14.0	-2.4	17.4
Spania	30.4	12.5	22.1	29.0	20.3	30.4	39.7	10.1	20.3	29.7
Franța	46.0	31.6	-23.8	16.5	19.0	24.2	22.2	22.3	1.8	25.4
Croația	337.8	25.4	42.6	44.1	14.9	46.4	48.1	32.6	13.8	55.3
Italia	12.3	-23.6	11.0	7.1	19.6	16.7	8.4	19.9	3.6	20.4
Cipru	5.0	8 323.2	-44.0	42.1	7.9	50.1	38.4	49.0	22.2	29.4
Letonia	88.6	–	61.9	84.9	56.3	92.6	71.0	130.7	53.2	75.1
Lituania	101.8	82.8	62.7	81.1	50.6	122.8	69.6	122.8	47.8	107.4
Luxemburg	180.4	50.9	18.9	48.0	28.0	66.1	61.6	48.8	17.1	57.3
Ungaria	83.2	40.6	11.1	43.2	6.3	72.6	59.8	25.4	6.3	65.3
Malta	66.4	–	58.2	66.7	65.9	55.5	53.0	73.0	54.1	80.8
Olanda	169.7	25.0	9.2	31.9	6.0	34.3	35.7	22.2	7.8	34.7
Austria	43.7	32.4	24.5	31.6	29.2	43.0	32.2	34.5	30.3	38.7
Polonia	34.0	39.7	28.4	41.5	23.2	33.6	55.6	35.9	21.6	12.2
Portugalia	36.3	46.7	19.2	31.4	21.3	35.5	39.1	18.4	16.4	46.7
România	284.2	104.8	86.8	159.9	51.2	155.4	178.2	108.3	50.2	154.0
Slovenia	239.2	31.8	28.8	41.0	29.2	42.4	33.4	47.1	30.3	52.4
Slovacia	-19.9	39.0	-14.9	34.9	7.0	4.5	57.7	9.6	7.0	1.6
Finlanda	22.4	9.8	13.9	24.8	17.6	7.7	31.9	13.8	17.4	5.1
Suedia	20.8	–	5.8	16.3	11.8	24.1	22.7	19.3	11.4	14.7

Source: author's processing based on Eurostat data (8)

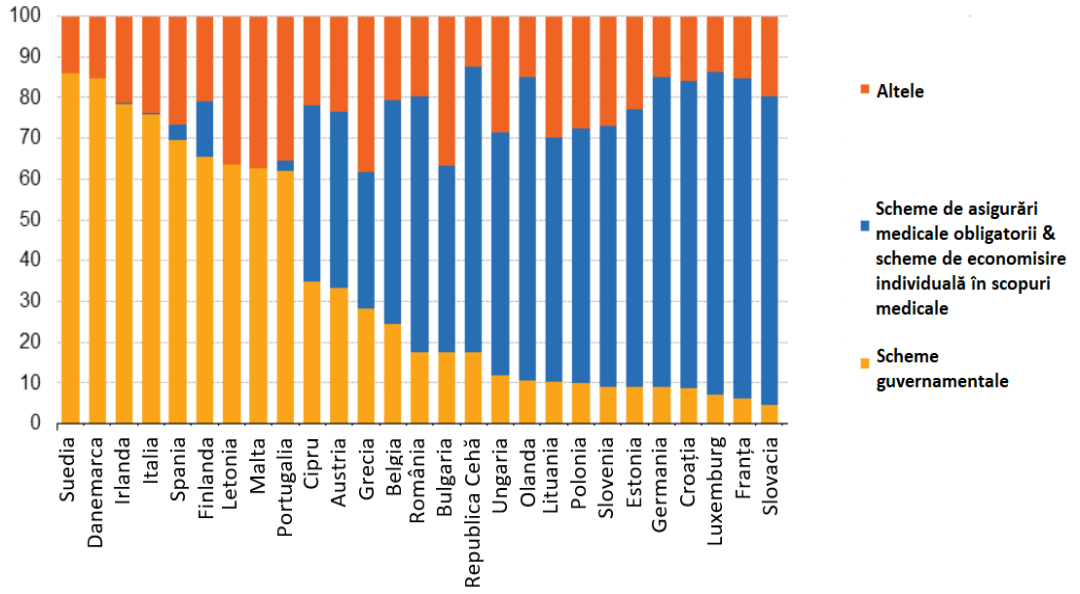
In terms of the functions performed by health expenditure, in seven EU Member States (Belgium, Czech Republic, Ireland, Malta, Poland, Romania, Slovakia, Czech Republic, Ireland, Malta, Poland, Romania), the largest increase was for curative and rehabilitative care, while in three other countries (Estonia, Malta and Romania), expenditure also increased quite strongly for medical goods. As a result, in more than half of the Member States, the increase in health spending on other functions was higher than the increase in spending on curative and rehabilitative care or medical goods.

For healthcare providers, the largest increase in spending between 2012 and 2020 was for hospitals in 13 EU Member States, which will lead us to model the efficiency of a hospital unit in the next chapter.

Romania was the country where health spending increased the most during the period under review (108.3%), but nevertheless, the way hospitals in our country are performing does not justify all the money invested. In six other countries, health spending growth was highest for ambulatory care providers (e.g. Estonia, Lithuania, Latvia),

Graph 11 provides a simplified analysis of health care expenditure by financing scheme, distinguishing: government schemes, contributory compulsory health care insurance schemes and compulsory health savings accounts (which are generally part of the social security system and are hereafter referred to as compulsory schemes/accounts), as well as all other financing agents. The share of government schemes and mandatory schemes/accounts in total current health care expenditure was the highest in Romania compared to the other factors of analysis, indicating that most of the financing sources come from contributions paid by employees.

The Czech Republic is the country with the highest combined rate of health expenditure from government schemes, i.e. compulsory health insurance schemes and individual medical savings schemes (over 87%). High rates were also recorded in Luxembourg, Sweden and Germany. Rates above 75% were also recorded in 13 other EU countries, with the lowest combined rate in Greece (61.8%).



Graph 11. Main sources of financing current health expenditure

Source: author's processing based on Eurostat data (8)

Combined spending from government schemes and mandatory schemes/accounts in 2020 exceeded spending from all other sources for each of the EU Member States.

In most EU Member States, either government schemes or mandatory schemes/accounts dominated: in nine Member States, government schemes accounted for more than half of total expenditure, and in 17 Member States mandatory schemes/accounts accounted for more than half of total expenditure.

Table 9 provides a similar analysis of health care expenditure within the scheme, but with more detail on other funding schemes. Health insurance schemes/mandatory health savings accounts accounted for three-quarters or more of total current health expenditure in 2020 in Luxembourg (79.3%), France (78.5%), Slovakia (75.7%), Germany (76.1%) and Croatia (75.5%), but less than 5.0% in Spain (3.7%), Portugal (2.4%), Ireland (0.5%), Italy (0.2%).

It should be noted that mandatory schemes/accounts do not exist in Denmark, Latvia, Malta and Sweden and are therefore reported as 0. In contrast, Sweden and

Denmark reported that government schemes covered more than four-fifths of their health expenditure, while shares between 65.0% and 75.0% were reported in Italy, Ireland and Spain.

Table 9. Current health expenditure, analyzed in more detail by financing source

	Scheme guvernamentale	Scheme de asigurare medicală obligatorii & scheme de economisire individuală în scopuri medicale	Scheme facultative de asigurare medicală	Scheme de finanțare non-profit care deservesc gospodăriile	Finanțare din partea companiilor	Finanțare proprie (din buzunar)	Restul lumii (non-rezidenți)
	:	:	:	:	:	14.4	:
Belgia	24.5	54.7	4.8	0.0	:	16.0	0.0
Bulgaria	17.5	45.6	0.6	0.5	0.3	35.5	0.0
Republica Cehă	17.5	70.2	0.1	0.4	0.3	11.5	:
Danemarca	84.9	0.0	2.2	0.1	:	12.8	0.0
Germania	9.0	76.1	1.3	0.8	0.4	12.4	0.0
Estonia	9.1	68.1	0.2	0.2	1.1	21.4	0.0
Irlanda	78.3	0.5	9.0	:	1.7	10.5	:
Grecia	28.2	33.7	4.3	0.1	0.1	33.4	0.2
Spania	69.5	3.7	6.7	0.4	:	19.6	:
Franța	6.2	78.5	5.8	0.0	0.6	8.9	:
Croația	8.7	75.5	5.3	0.0	0.0	10.5	0.0
Italia	75.9	0.2	2.0	0.2	0.4	21.3	:
Cipru	34.9	43.2	6.3	1.6	0.0	14.0	:
Letonia	63.6	:	4.3	0.2	0.0	31.9	:
Lituania	10.4	59.7	1.1	0.0	0.1	28.7	0.0
Luxemburg	7.1	79.3	2.9	1.0	0.0	8.4	1.2
Ungaria	11.8	59.6	1.6	1.1	0.4	25.5	0.0
Malta	62.5	0.0	3.4	:	:	34.1	0.0
Olanda	10.5	74.4	4.3	0.0	1.5	9.3	0.0
Austria	33.4	43.1	4.9	1.6	0.2	16.8	0.0
Polonia	9.8	62.4	5.9	1.5	0.8	19.5	0.0
Portugalia	62.1	2.4	6.8	0.1	0.8	27.8	:
România	17.5	62.7	0.5	0.2	0.1	19.0	:
Slovenia	9.1	64.1	13.4	0.1	0.9	12.5	:
Slovacia	4.5	75.7	:	0.8	0.2	18.8	:
Finlanda	65.5	13.6	1.9	0.4	2.2	16.4	:
Suedia	85.9	0.0	0.6	0.1	0.4	13.0	:

Source: author's processing based on Eurostat data (7)

The third largest source of funding for health expenditure was payments from households' own budget, which averaged 14.4% in the EU in 2020. This practice is unfortunately very common in Romania, and the percentage is also considerable (19%). People who need immediate attention from health professionals often cannot get it without taking a "penny out of pocket". The share of out-of-pocket payments peaked at 35.5% in Bulgaria, 34.1% in Malta, 33.4% in Greece, while out-of-pocket payments also exceeded 25% in countries such as Lithuania, Hungary or Portugal.

France, along with Luxembourg and the Netherlands, are the only EU Member States where out-of-pocket payments accounted for less than 10% of health spending. These differences can be explained by public policies, by the existence of a stable and efficient health system that people trust, but also by the level of education. Therefore, because if we want the share of this practice to decrease in our country too, a change has to be made on both sides, on the part of the state and on the part of the population.

Voluntary health insurance schemes generally accounted for a small share of healthcare financing in the EU in 2020, on average 3.7%.

Their relative share is at most 13.4% in Slovenia, while Ireland has more than 9%. The share in these two Member States is significantly higher than in other regions, followed by 6.8% (Portugal). There are five EU Member States in which voluntary health insurance schemes provided less than 1.0% of health care expenditure financing in 2018, with the lowest share in the Czech Republic (0.1%) but also in Estonia (0.2%). In Romania they do not occupy a significant place either, which is also explained by the lack of financial literacy. This type of voluntary health insurance is not adequately disseminated to the population or, if the necessary information does reach them, most of them do not understand its purpose and prefer to limit themselves to the basic package of medical services offered to them.

In our opinion, the Romanian healthcare system has real governance problems:

- *there is no systematic performance evaluation and transparency is generally lacking. There have been frequent changes in leadership, with the number of health ministers in the last decade being unique in Europe, and frequent changes in the leadership of the National Health Insurance Fund. This affects the stability, coordination and progress of initiated and unfinished reforms.*
- *Romania lacks a policy of efficient management and allocation of resources for the health system and beyond, which is reflected in the lower positions it occupies in European statistics on health spending*

In conclusion*, public policies similar to those practiced in developed countries need to be adopted in order to be in a better position compared to the other EU countries and to better manage resources*. We also believe that more attention should be paid to private clinics, because they meet all the conditions, both hygienic and ethical, which public hospitals lack, even though most of the money goes to them.

Making an analogy, the Romanian health system is like a balloon full of water, which over time, through all the reforms applied to it, started to form small cracks, and the government, instead of "replacing it with another balloon", has constantly chosen to glue these cracks, only postponing the problem for a certain period of time, not solving it. Also because of this, people's distrust in the Romanian national health system is being fueled.

The solution to this situation requires a longer period of time, through a total replacement of the decision-making structure, as well as better communication with the public, so that, little by little, the public can regain confidence in the soundness of the decisions to be taken in this system. However, given the high level of bureaucracy in Romania and the qualifications of the people employed in strategic management positions, this change is not easy to achieve. Until then, the entire healthcare system, as well as the resources which are allocated and managed within it, will suffer, with Romania continuing to occupy last place in the European rankings.

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CHAPTER IV

CHALLENGES FACING HEALTH SYSTEMS IN THE EUROPEAN UNION THROUGH THE LENS OF RELEVANT INDICATORS

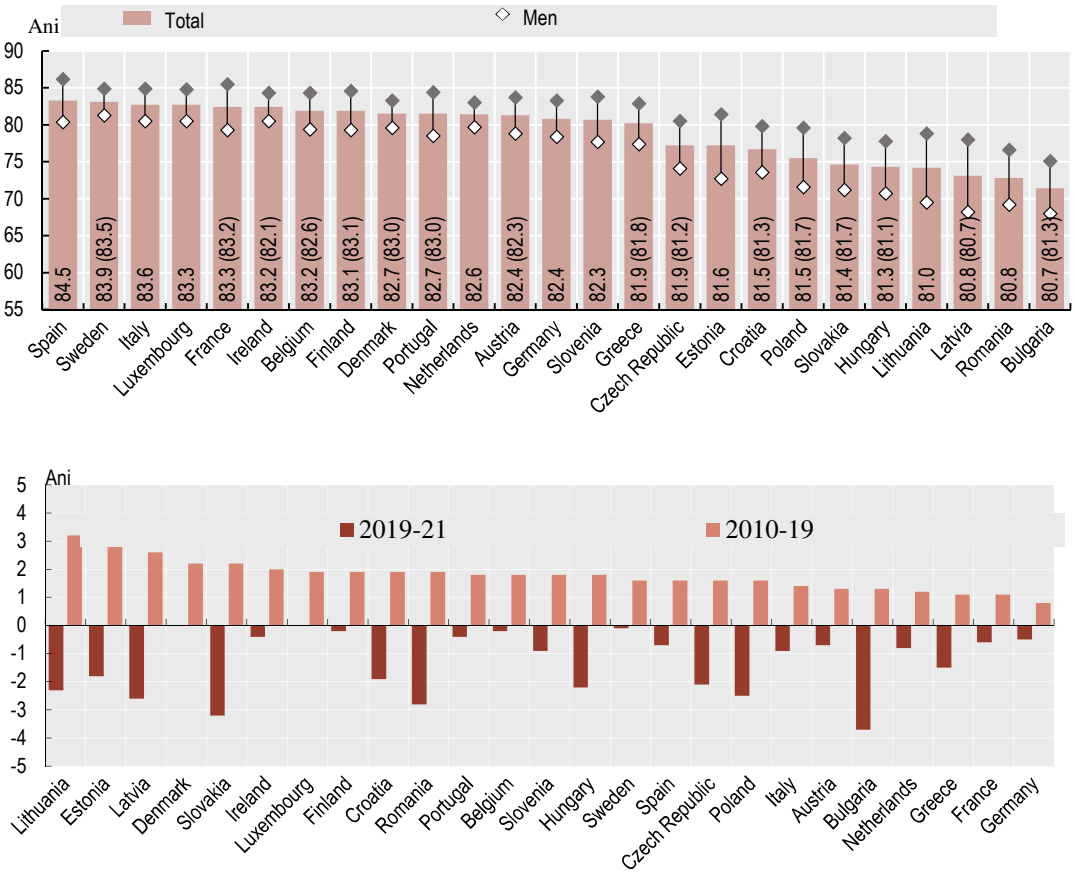
The health systems of the Member States of the European Union (EU) are an important part of Europe's social protection and social cohesion systems. EU health systems are diverse and reflect different public or social policy choices. Despite organizational and financial differences, they are based on common values: universality, access to good quality care, equity and solidarity.

Over the past decade, European health systems have increasingly faced *similar challenges*:

- Europe's population is ageing and more prone to multiple chronic diseases; this is leading to increased demand for healthcare and increased fiscal pressure due to an ageing population;
- The increasing level of health care costs, given the rising cost of innovative technology, the rising cost of medicines, the rising cost of health care professionals' salaries; this is a challenge for both public finances and health care beneficiaries;
- Health professionals are unevenly distributed, with shortages in some areas of care, despite increasing employability in the health sector;
- Access to healthcare is not equally distributed and leads to unbalanced health outcomes across society; patient satisfaction is often inadequate.

Analysis of demographic trends affecting the sustainability of the health system

Demographic trends show an increase in life expectancy for both women and men in the EU Member States. However, there are some countries where total life expectancy is above 80 years (Spain - 83.3; Sweden - 83.1; Italy - 82.7), while in others total life expectancy is much lower (Romania - 72.8 or Bulgaria - 71.4) (Graph 1).



Graph 1. Life expectancy for women and men (2021) and its dynamics (2010-2019) and 2019-2021), respectively, in the EU Member States

Note: estimated data for 2022 in brackets

Source: Author, OECD data (1)

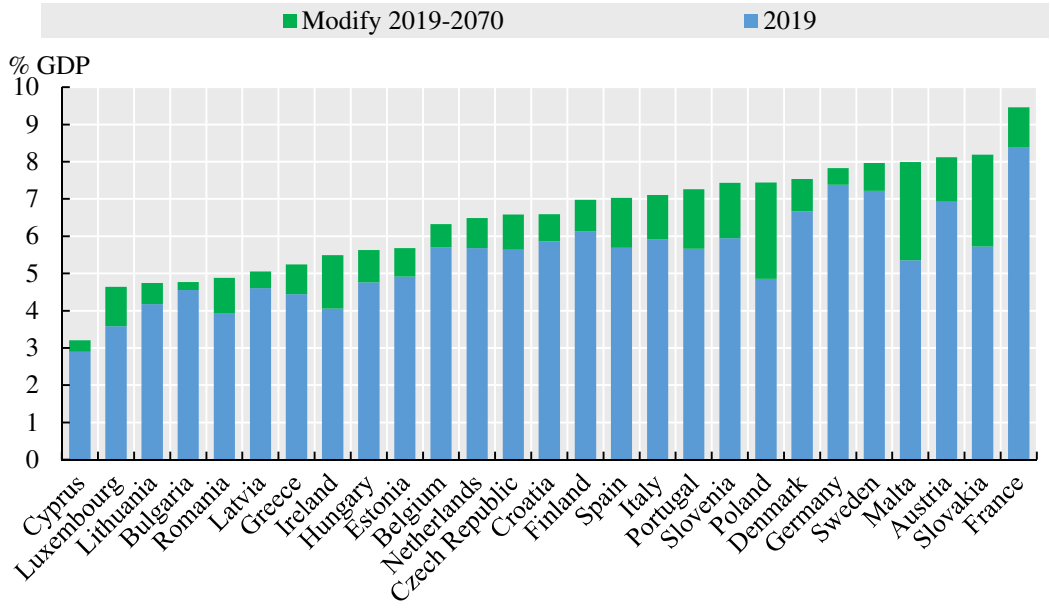
Women continue to live longer than men, which is usually caused by men's unhealthy activities: smoking, alcohol and less healthy diets. Increased life

expectancy puts additional pressure on the health care system to provide health care for a larger group of older people. However, we find countries that have experienced a significant increase in total life expectancy between 2010-2019, which may put additional pressure on the health system. Thus, for example, we find countries such as Lithuania (with a 3.2-year increase in life expectancy), Estonia (with a 3-year increase in life expectancy), Latvia (with a 2.6-year increase in life expectancy), Romania (with a 1.9-year increase in life expectancy). We also note that the period 2019-2021 implied a negative correction in life expectancy in all EU countries except Denmark and Luxembourg (but mainly in Bulgaria, Slovakia and Romania).

But the pressure for higher health spending remains. In the period ahead, the share of public spending on health in GDP is projected to increase further until 2070. The main drivers of this increase are:

- rising incomes and rising expectations for high-quality health services;
- ageing population;
- new health technologies.

The OECD's Aging Working Group of the Economic Policy Committee (Aging Working Group -AWG) has made an estimate of the growth of public spending as % of GDP over the period 2019-2070 in response to the ageing of the population and the shrinking segment of the working-age population, which finances the public health care system through contributions, and is concerned about the sustainability of the health care system under these conditions. Thus, an estimated increase in public spending on health of about 0.9% can be observed at the level of the EU Member States (EU-27), ranging from a minimum increase of 0.2% in GDP in Bulgaria to more than 2% in the Czech Republic, Poland or Malta. For Romania, the estimated growth rate is 0.9% (Graph 2).



Graph 2. Estimated increase in public spending on health (% of GDP) in response to ageing populations

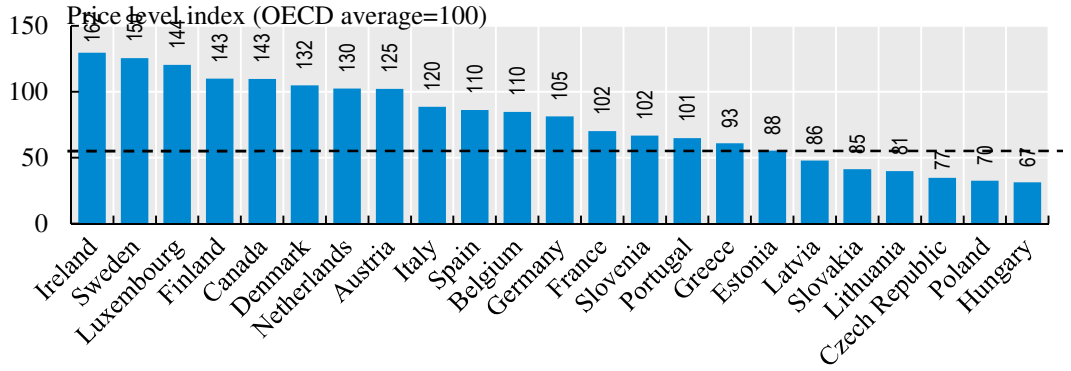
Source: Author, OECD data (2023)

A key objective of the EU is to ensure the sustainability of public finances, including in a medium and long-term perspective. For many EU countries, sustainability risks to public finances are influenced by the projected impact of age-related public spending on health care and long-term care.

✓ **Rising prices for health services**

The public health care system is affected by changes in the inflation rate, the level of salaries of health professionals, the cost of medicines, the cost of the technology used, etc., which put additional pressure on its sustainability. Since the goods and services provided by the health system are largely financed by governments, we cannot speak of prices per se (goods and services are not tradable), but of prices calculated by the OECD (1) according to a basket of similar health goods and services offered in different countries, in order to be able to make a comparative analysis. Thus, we can observe this price level in 2021 for the EU

countries for which we had available data, compared to the OECD average. The highest healthcare prices are in Ireland, Sweden and Luxembourg, while prices lower than the OECD average are generally found in the new EU Member States, with the Czech Republic, Poland and Hungary at the bottom of the ranking (Graph 3).



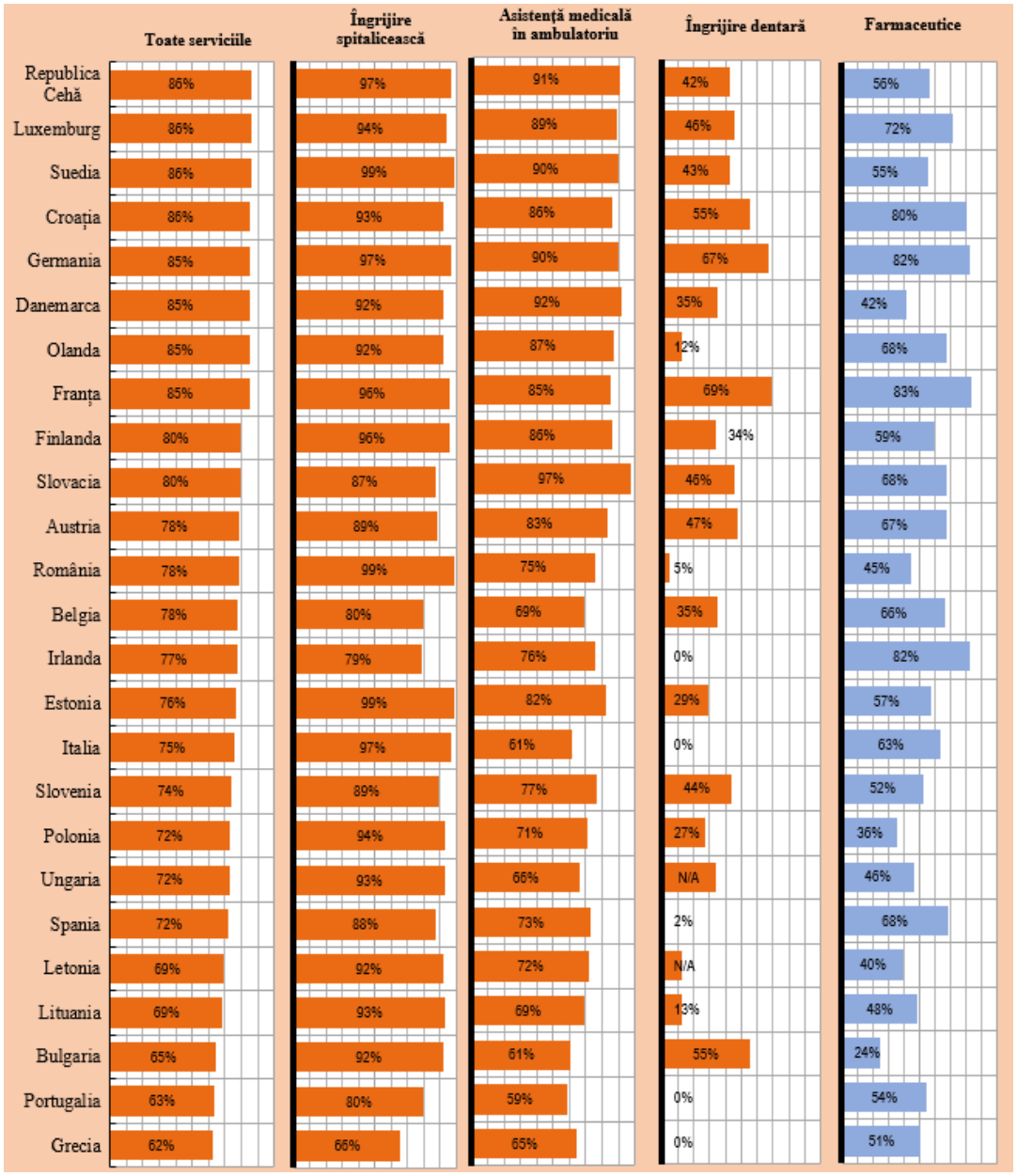
Graph 3. Health sector price level compared to OECD average (2021)

Source: Author, OECD data (1)

Many EU Member States see improving access to medicines as a challenge. In fact, a large number of new medicines will be launched in the coming years, creating a greater need for funding compared to the last decade. The nature of new medicines is gradually changing: innovations are based on complex and costly biopharmaceuticals and target smaller population groups.

However, according to the OECD, there is over-spending in health systems that would account for a significant share of total expenditure in health systems. The performance of health systems would not be affected as a result of reducing this spending. Instead, their mobility and sustainability would increase, the OECD report says.

An important component of overspending in the health system is the cost of medicines. They currently account for 59% of total health costs in the EU, with specificity for each country. In Bulgaria, for example, the percentage is around 24%, while in Romania it reaches over 45%, much higher than in some countries such as: Latvia, Poland, Bulgaria, as can be seen in Graph 4.



Graph 4. Public spending on pharmaceuticals in total health expenditure (2021)

Source: Author, OECD data (1)

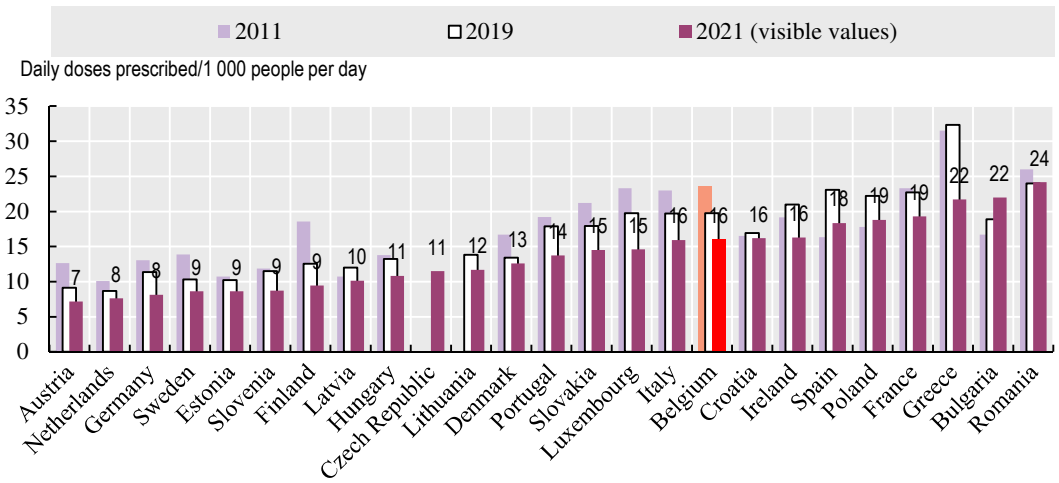
For the sustainability of health services, it is necessary to optimize expenditure deriving from drug costs. There are different strategies that include purchasing quality pharmaceuticals but at a lower price by accessing generics or biosimilars, as well as therapeutic procedures with an impact on rational use of medicines.

According to statistics in 2019, globally, the number of days of drug treatment administered by patients was approximately 1.8 trillion days; thus, each patient took medication approximately 234 days/year (2). Even though studies are conducted in different parts of the world, they all conclude that there is an increased incidence of medication use. In the US, 68% of adults take at least one medication (3). The costs of these medications amount to more than 400 billion dollars, and estimates for the future predict an increase in these costs. Nace et al. (4) showed that approximately 80% of patients who present to their GP receive a prescription following their consultation. No one is disputing the benefits of medicines, it is just that, one should, always, manage their administration with caution. Thus, it has been shown that Medicare beneficiaries with severe chronic conditions in the United States receive an average of 50 prescriptions annually from 13 physicians of different specialties, are responsible for 76% of hospitalizations, and are 100 times more likely to suffer a preventable hospitalization than a patient without chronic conditions (5).

Another factor that could lower the cost of medicines that the patient pays is the dissemination of information programs to raise awareness of prevention: it is easier to prevent than to treat. Forerunners of such a decision are countries like: the Netherlands, Belgium and Luxembourg which have already initiated a concern for information, price flexibility, and the emergence of reimbursement decisions, especially with regard to the class of certain drugs they have prioritized. Similar actions have been taken by countries such as: France (6), Germany, the United Kingdom, etc. (7,8).

All health authorities in European countries are trying to implement measures, including control measures, in order to be able to influence the supply generated by drug manufacturers, but also the need for medicines supported by distributors, pharmacists, doctors and not least patients. Some countries emphasize influencing supply through an increased focus on influencing demand. It is widely accepted that in the context of resource efficiency for health it is imperative to control demand, as it is more difficult to influence demand than supply, with a focus on price and/or price-volume agreements.

A body of evidence supports that over-prescribing and inappropriate use of medicines are irrational expenditures in health systems. Over-prescribing consumes resources and also increases the risk of therapeutic failure due to the adverse effects that over-prescribing can have, including the development of microbial resistance. The most commonly prescribed drugs in the hospital system are antibiotics and anxiolytics. According to studies, inappropriate use of antibiotics in the EU is responsible for approximately 33 thousand deaths per year, which in turn increases the cost of hospitalization. Thus, in 2021, in the EU, the average daily consumption of antibiotics was 14 defined daily doses per 1,000 people, a decrease from 17 daily doses in 2019 and 18 daily doses in 2011, which shows, that on average antibiotics were prescribed more slowly on average, in order not to increase antimicrobial resistance. Among the countries analyzed, the case of Romania stands out by far, where the prescribed daily dose is much higher than the EU average, being 24 in 2021, down however from the level recorded in 2011, when there were 26 daily doses. At the other extreme, Austria is the country with the lowest number of prescribed daily doses (7) (Graph 5).



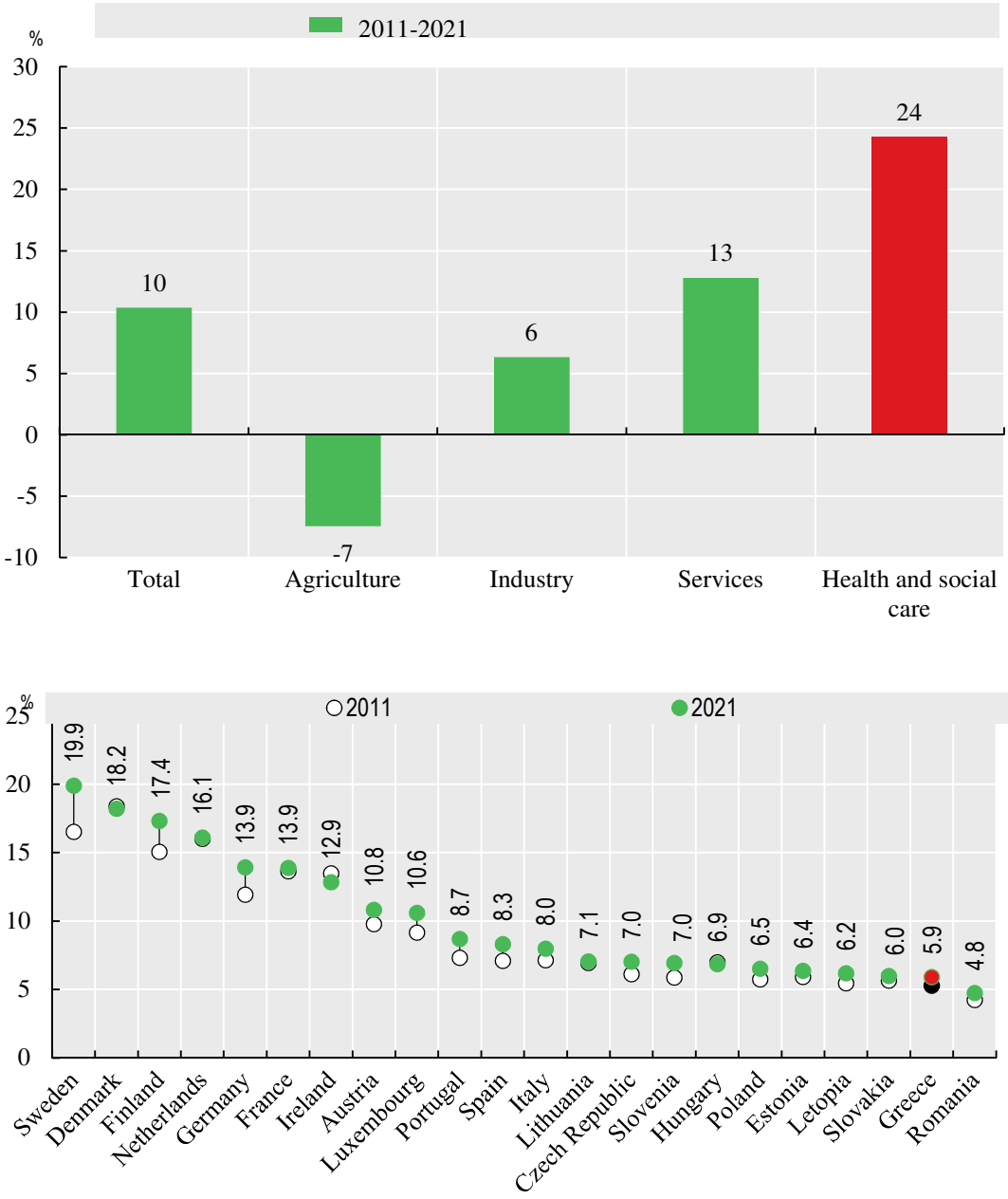
Graph 5. Average daily consumption of antibiotics in EU countries (2011/2019/2021)

Source: Author, OECD data (1)

Among the measures recommended by the EMCDDA is raising awareness of the adverse effects of overused antibiotics, which every EU member country has in its Rational Antibiotic Prescribing Guidelines, first published in 2017 and updated year by year.

- ✓ **Analysis of health systems in terms of the employability of the health workforce**

The health sector is the sector with the highest employment growth in recent years. Over the period 2011-2021, the health and social care sector grew by around 24%, which is stronger than in industry and even stronger than in services (Graph 6). However, not all countries have shown the same positive dynamics in terms of employability, which has led to some weaknesses in their health systems in terms of uneven and insufficient distribution of professionals. Thus, countries such as Sweden, Portugal, Slovenia, Spain, Germany, Luxembourg, Finland, the Czech Republic, Germany, Luxembourg and Finland have seen an increase in employability over the period analyzed of 15% or more. Likewise, Denmark, Hungary or Ireland recorded negative employability corrections over the period. Romania recorded a 12% increase in employability between 2011-2021.



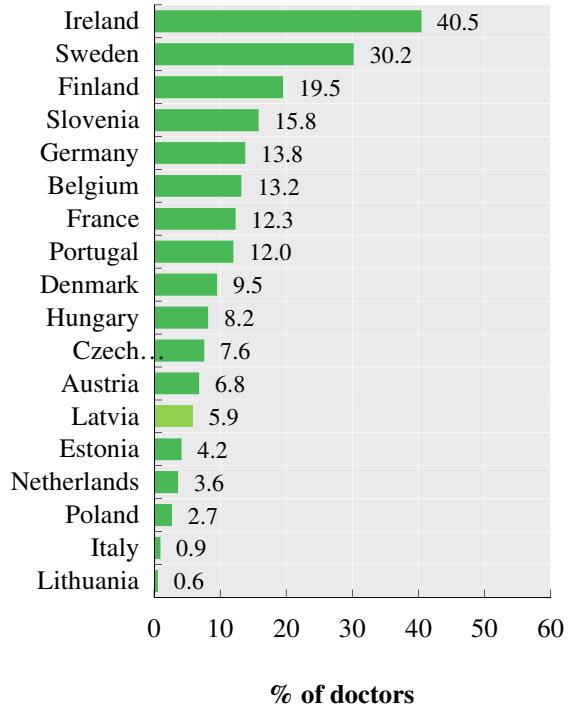
Graph 6. Trends in employability in the health and social care sector at EU Member State level (2011-2021)

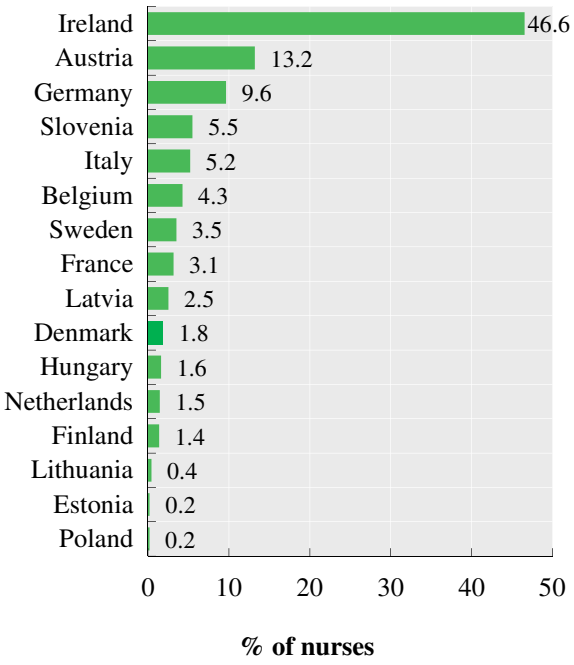
Source: Author, OECD data (1)

However, not all new jobs match the new demand for care: Europe's ageing population requires different skill sets and different ways of working across sectors

and disciplines to provide effective care. Employees in the health sector have a level of education well above the average for all sectors of the economy (doctors have a tertiary education, and nurses have a post-secondary education and increasingly a degree from a university or other higher education institution). In 2016, according to Eurostat, 33.9% of people in the EU workforce had a tertiary degree; in the health sector this figure was 43.4%. The percentage of employees with ter tertiary or post-secondary education was 48% for the economy as a whole and 45% in the health sector. Health remains a sector heavily influenced by the female workforce: 4 out of 5 employees in this sector are women, and the percentage has remained substantially unchanged over the period. As it therefore takes a long time to train new doctors and nurses, recruiting them from outside to counter existing shortages seems a quicker solution to the demographic changes affecting most EU countries.

Developed countries in the European Union rely on international recruitment of healthcare employees (doctors and nurses), and this has been increasing recently. Graph 7shows the share of foreign-trained doctors and nurses in the total number of health professionals in the EU Member States. We note that the top ranking in terms of doctors attracted with foreign training is to be found in countries such as Ireland (where more than 40% of the existing medical professionals trained abroad), Sweden (with almost one third of the medical professionals trained abroad) and Finland (19.5% of the medical professionals trained abroad). In the case of nurses, Ireland is again at the top (with around 50% of nurses trained abroad), together with Austria and Germany (with 13.2% and 9.6% of nurses trained abroad respectively).





Graph 7. Share of doctors and nurses trained in another country % (2021)

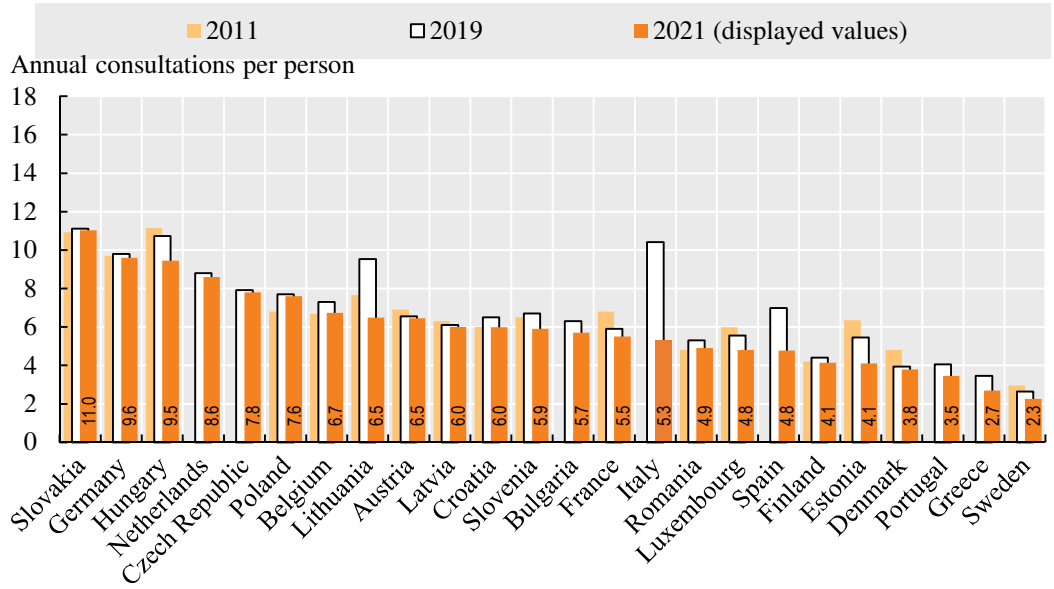
Source: Author, OECD data (1)

There are also skill mismatches both in nature and in the distribution of skills between health professions. New forms of care delivery imply a shift in tasks (e.g. from doctors to nurses) and better integration of tasks. It is believed that only through collaboration and better organization of tasks can safer and more efficient care be provided at lower costs.

- ✓ **Access to the health care system, public satisfaction with the quality of health services and premature mortality**

In addition to the above challenges, health care and long-term care systems often face common structural challenges that relate to inefficient distribution and utilization of resources in functional areas of spending. The OECD estimates that one-fifth of health spending contributes little or nothing to improving people's health. In some cases, health outcomes are even worse. Countries could spend significantly less on health care without worsening system performance or health.

An indicator of accessibility to health services is considered as the annual number of health consultations. According to statistics provided by the OECD (1), in the EU, the average number of consultations per person has remained relatively constant at 6 consultations/year/person. Countries with the highest number of annual consultations/person in 2021 include Slovakia, Germany, Hungary and the Netherlands, while the lowest number of annual consultations/person are in Portugal, Greece and Sweden (Graph 8).



Graph 8. Number of annual medical consultations in the European Union (2011/2019/2021)

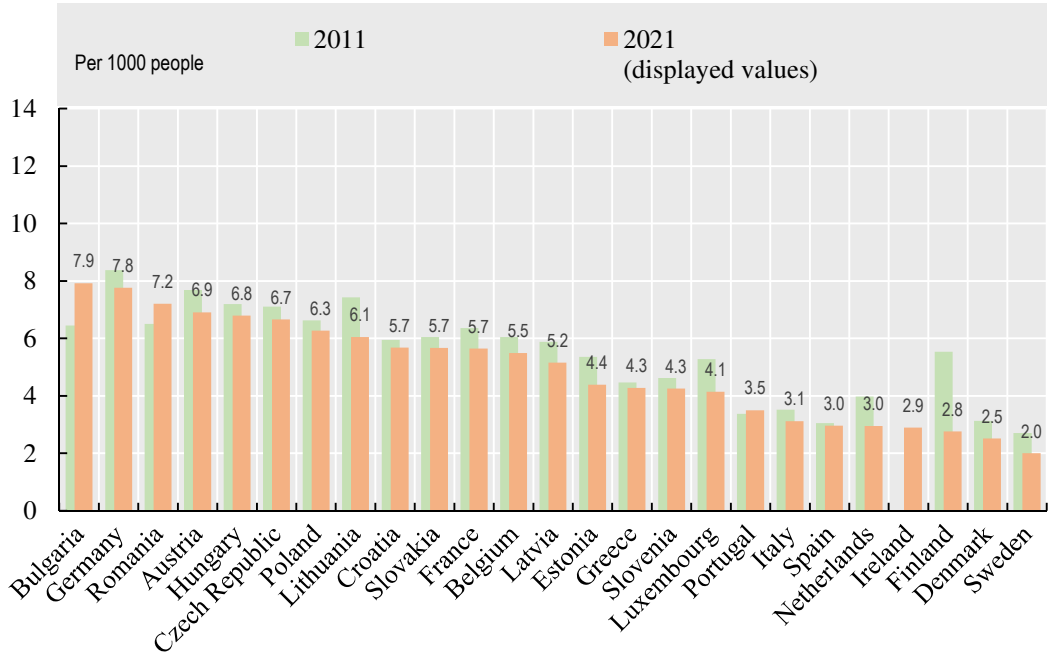
Source: Author, OECD data (1)

In Romania, the number of annual medical consultations/person has remained relatively constant, cumulating around 5 consultations per year, both in 2011 and 2021. The way in which doctors' payment is legislated also has an impact on the number of consultations, if we talk about countries where doctors' remuneration depends on the number of consultations, it tends to be higher.

Another important indicator for assessing the accessibility of health services is the number of available beds. This is an indicator of the resources available to provide health care services to patients. Its influence on the number of hospital admissions has been attested: a higher number of available beds leads to more hospital admissions.

At European Union level, we observe that the highest number of hospital beds per thousand persons is provided in Bulgaria, Germany and Romania. At the other extreme, Finland, Denmark and Sweden have the fewest hospital beds available (Graph 9). The pandemic crisis has highlighted the need for sufficient capacity and

flexibility in its use to cope with unexpected demand for intensive care. However, too many beds may mean unjustified costs, as a significant number of patients may be treated on the same day without hospitalization or with outpatient resolution of the medical problem.



Graph 9. Number of available hospital beds in the European Union per thousand persons (2011/2021)

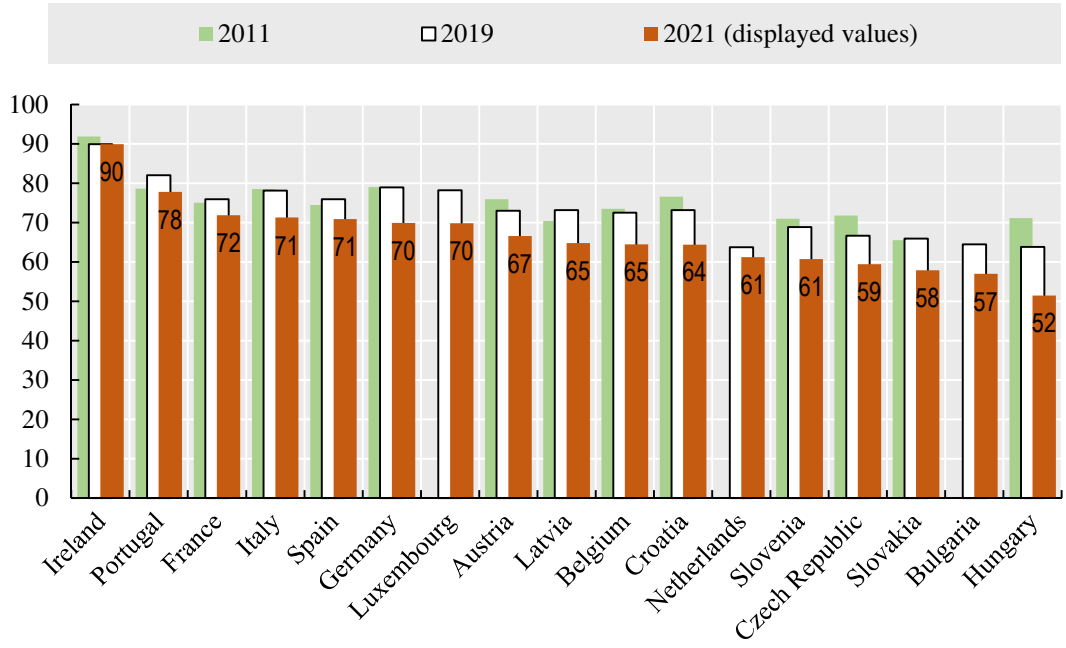
Source: Author, OECD data (1)

If we look at the dynamics of the number of hospital beds over the period 2011-2021, we will notice that the number of beds per capita has decreased from around 6 beds on average in the European Union to 5 beds.

In countries with the most available beds, hospital admissions and discharges are at their highest levels. In some European countries, hospitalization rates vary at least twice as much from one region to another, not only because of the difference in the number of available beds, but also because of the difference in the availability and quality of medical care. Occupancy has also increased in countries with few

available beds, a situation also found in Ireland, where occupancy was almost 100% in 2021 (90%).

What matters, however, in assessing a hospital's capacity is its occupancy rate. Thus, a hospital with an extremely high level of occupancy may indicate certain pressures and vulnerabilities in the event of exceptional situations, which imply the existence of vacant beds. Although there is no consensus on an optimal occupancy level, an occupancy level of 85% is considered to be the maximum acceptable level to cope with unexpected admission requests (9). The highest level of bed occupancy in 2021 is in Ireland (90%) and the lowest in Hungary (52%). In terms of the dynamics of occupancy rates over the period under analysis, a decrease in occupancy can be observed (from around 75% in 2011 to 66% in 2021) (Graph 10).

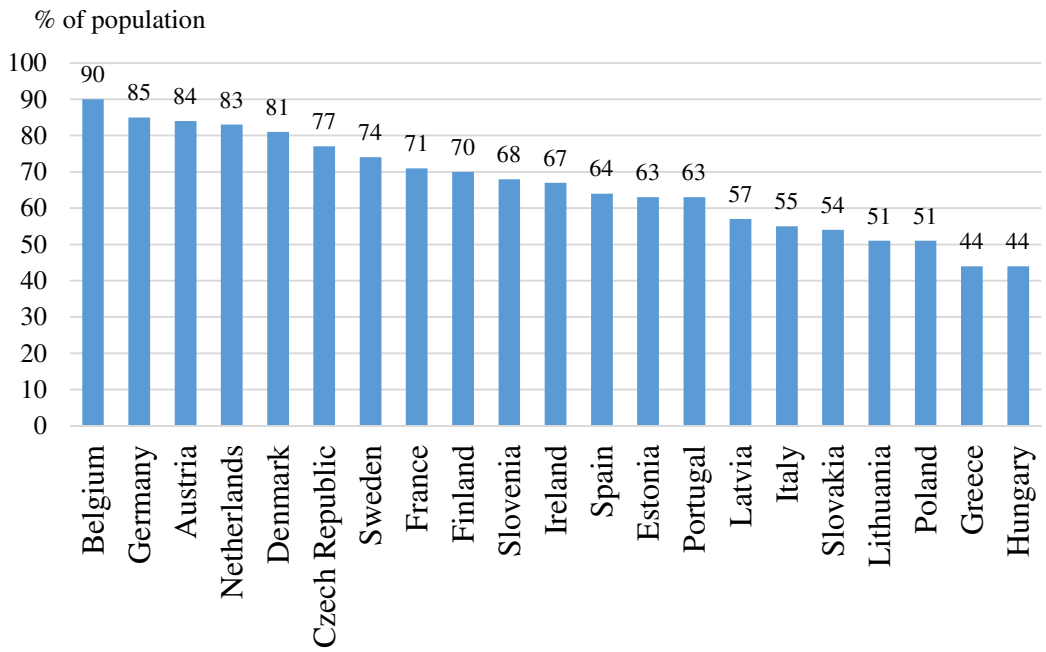


Graph 10. Hospital bed occupancy in the European Union

Source: Author, OECD data (1)

The most common barriers to access to healthcare have resulted from inability and/or lack of payment by patients for medical goods and services. Access to healthcare could also be hindered by insufficient availability of medical

infrastructure and health workforce. Thus, we can observe that the majority of the population (more than 80%) is satisfied with the access and quality of health services in countries such as Belgium, Germany, Austria, the Netherlands, Denmark, Austria. In contrast, more than half of the population is dissatisfied with the access and quality of health services in Greece or Hungary for example (Graph 11).



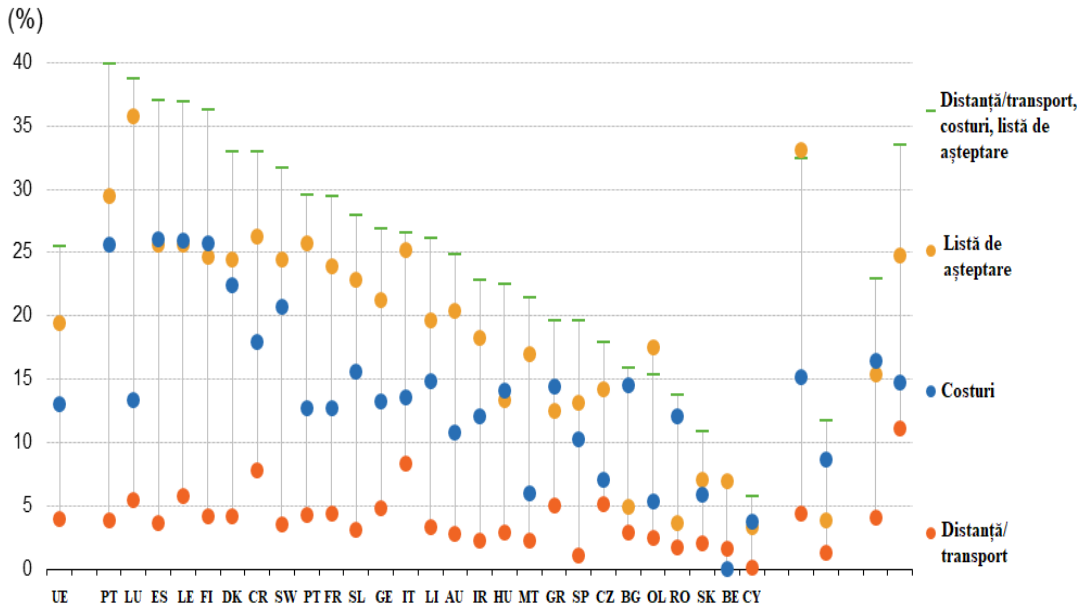
Graph 11. Percentage of population satisfied with access to and quality of health services (% of total population)

Source: by author, data provided by OECD (1)

Differences in self-reported access to good quality health care can be found in all EU Member States, despite the fact that the common principle of equity of health systems prevails in each of them. Barriers to equity of access to healthcare can be multiple and include financial, administrative, geographic, legal, cultural and organizational factors.

One indicator that is commonly used to show barriers in accessing healthcare is unmet patient need. In some countries, waiting time or distance to a health facility is a real problem. According to the following graph, waiting time (waiting list) is

cited by the majority of respondents (persons aged 15+ in the European Union), together with the costs of health care services, as a reason for dissatisfaction, whereas distance/transport is less perceived as a reason for dissatisfaction (Graph 12). Healthcare costs are cited as the most important reason for dissatisfaction with healthcare services in Romania, Estonia, Latvia, Hungary, Greece, Latvia, Greece, Bulgaria and Cyprus. In this sense, we could say that the level of public, private and out-of-pocket spending on health care also provides information about the population's dissatisfaction with social protection against health risks as well as the actual use of health services.



Graph 12. Unmet need for medical examination due to cost, waiting time and travel distance (% of population aged 15+, reporting) (2019)
Source: compiled by the author, based on Eurostat data (10)

Unmet health needs must also be taken into account in public policy measures and the dimensioning of health care expenditure. Providing universal, sustainable access to high-quality health care requires increased efficiency in health spending amid growing demand and financial resources. The challenge is to find cost-effective

ways of financing, organizing and delivering care to achieve better health outcomes using available resources more rationally.

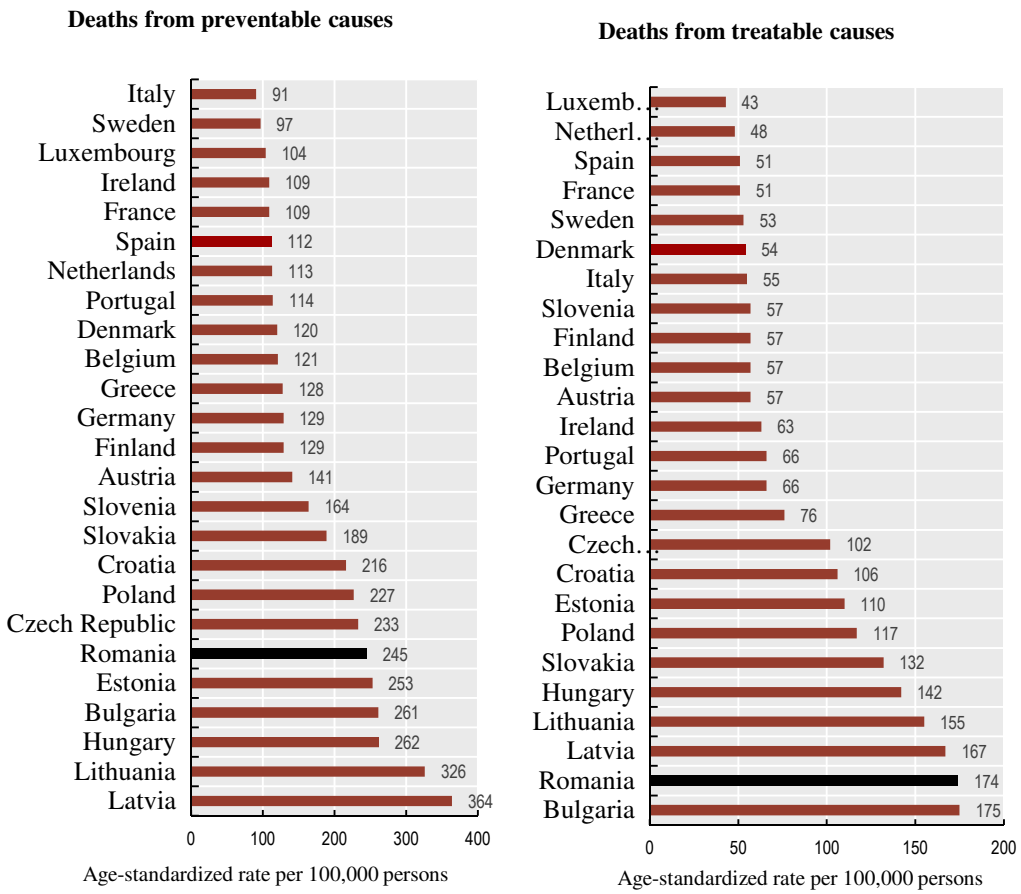
In relation to access to quality and timely health care, there is a performance indicator that can be analyzed at EU level, namely premature mortality. The concept of premature mortality is based on the idea that certain deaths, for certain age groups and for certain diseases, could be prevented or treated.

A still significant proportion of deaths in EU Member States occur because of poor, inequitable or even total lack of access to effective public health interventions and primary prevention. In other words, some deaths would not have occurred if timely and effective healthcare had been available.Those deaths could have been avoided in the light of current medical knowledge and technology. Heart attacks and strokes combined account for almost half of these premature, avoidable deaths.

The graph below (Graph 13) shows statistics on the number of deaths caused by gaps in or inaccessibility of healthcare in EU Member States.

This indicator is used in an overall context of health system performance assessment to provide some assessment of the quality and performance of public health policies. The share of deaths that can be ensured by optimal health care among all deaths of people under 75 years of age varies considerably between EU Member States.

Romania, along with Bulgaria, Latvia and Lithuania, has one of the highest rates of premature (preventable or treatable) mortality among EU Member States (Graph 13).



Graph 13. Premature mortality (preventable or treatable) in the European Union (2021)

Source: compiled by the author, based on Eurostat data

In addition to the challenges outlined above in relation to health systems at European level, there are also a number of additional challenges related to the functioning of health systems that need to be considered:

- frequent budget overruns;
- changing public policy priorities;
- fraud or corruption;
- lack of information on the value of investments in health and long-term care systems.

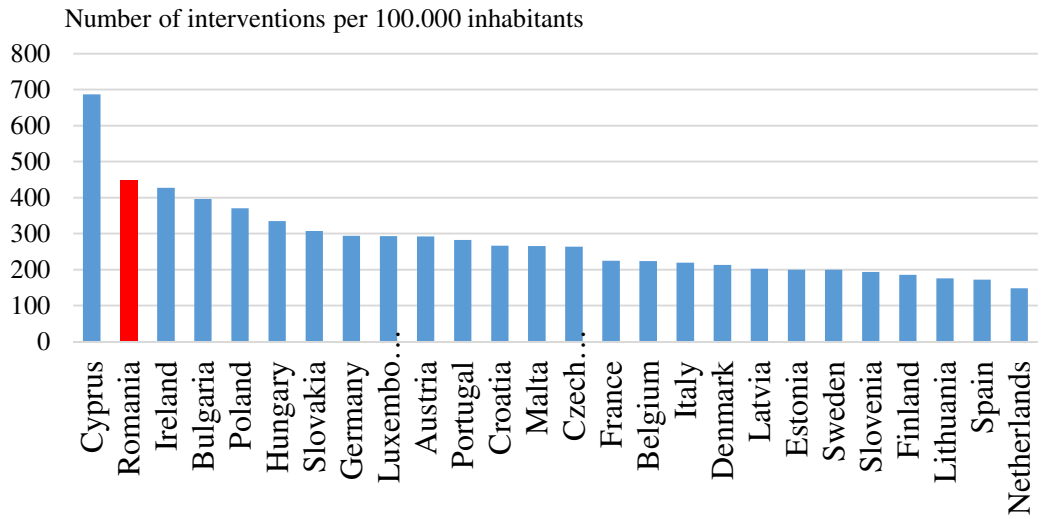
Most resources within health systems are represented by hospitals, resources that are sometimes not allocated efficiently. If we look at chronic diseases, a good part of the money spent on hospitalizations could be reallocated if there were an improvement in the care of these patients. Limiting paraclinical investigations to cases where they are strictly necessary would not compromise the quality of health care, while the use of outpatient minor surgery in more cases and shortening the length of hospitalization of patients without suffering the medical act would lead to important savings in health care systems across the EU.

At the same time, reducing wastage and optimizing spending on medicines or the full range of pharmacological products is necessary to maintain the sustainability of health systems. The OECD proposes its own policies for the procurement and pricing of medicines, as well as the use of generics and biosimilars and the encouragement of rational prescribing of medicines, particularly antibiotics. All of these measures are proposed by the OECD, both in terms of limiting investigations and limiting unnecessary spending in hospitals. Overall, therefore, all these measures could lead to an improvement in the quality of healthcare itself in the vast majority of public health systems in the European Union.

A report by Health at a Glance (1) states that more than a quarter of surgeries are not justified. Other economic studies show that one-fifth of all spending in health systems is unnecessary. In France, it has been reported that almost 28% of surgeries were not fully justified. In the Netherlands, some statistics suggest that about 20% of expenditure could be saved in acute diseases by cutting unnecessary expenditure. Similar data are found in a similar study in Italy.

During hospitalization, unnecessary expenses can affect patients in various ways. First, in some cases patients are subjected to aggressive, unnecessary but costly investigations that do not change their prognosis. The costs of these investigations could be put to better use by being allocated to hospital care. Generic drugs could be used more widely and many cases treated in hospitals could be redirected to specialized outpatient treatment dedicated to each specialty. It is known that there is fraud and corruption in the public health systems in relation to some unnecessary expenditure, leading, overall, to significant financial losses.

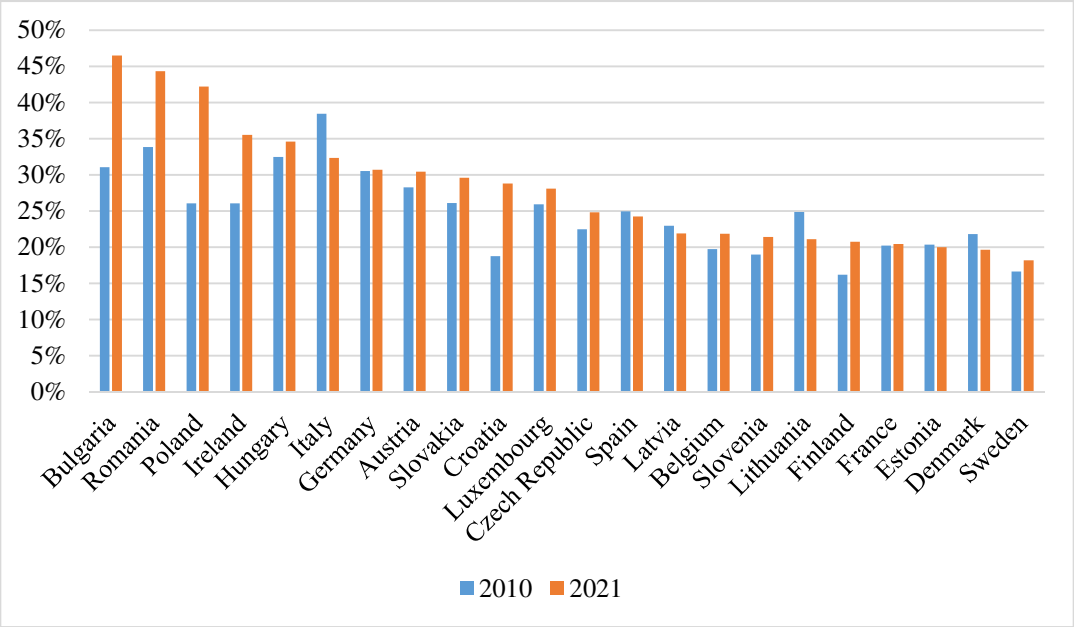
A relevant example is caesarean section. Caesarean section is an emergency surgery, performed when natural childbirth involves a major risk for either the mother or the fetus. Unfortunately, Romania is considered, after Cyprus, as the country in the European Union with the highest number of caesarean sections performed in 2021, according to Eurostat (Graph 14).



Graph 14. Number of caesarean sections in hospitals in EU Member States (2021)
Source: compiled by author, Eurostat data (10)

In Romania, in 2010 the rate of caesarean section interventions per thousand live births was 33.82%, and according to the latest estimates (10), it has increased by more than 10% by 2021, reaching 44.32% (the highest rate in the EU per thousand live births, after Bulgaria, which has a rate of 46.47% in 2021) (Graph 15). The ease of the operation and the sometimes false security have led to its abuse. While medical factors should naturally be at the bottom of the decision-making pyramid in the choice of Caesarean section, with social factors only at the top, in Romania we are witnessing an inversion of the pyramid. Compared with other countries, we can conclude that these interventions can sometimes be misused in Romania, with the benefits being hotly disputed in the medical world. The measures adopted to reduce unnecessary operations are mainly aimed at elective caesarean sections in many European countries

It can also be seen that caesarean sections are performed in high proportions per thousand live births in Romania, Bulgaria and Poland, while in the Nordic countries they are performed less frequently (Graph 15).



Graph 15. Rate of caesarean section operations per thousand live births in the EU (2010/2021)

Source: by author, data provided by OECD (1)

At the European level, there is an attempt to implement policies that would result in decreasing the rate of caesarean section by: spreading information about the overuse of cesarean section that does not bring any benefit in elective cases, by providing methodological advice to units that aim to decrease the number of caesarean sections performed and limiting the funds allocated to this intervention.

In Romania, with the emergence of the private sector, a number of changes have been made in the surgical procedure, without, however, a clear legal basis. The increase in the number of caesarean operations is also due to factors which are not related to medical causes, but to patients' perceptions of the quality and results of the medical procedure, which they consider to be clearly superior in the case of caesarean births. These fears include the fear of pain or the perception that caesarean

section would have little negative impact on the newborn, in close correlation with the current national obstetrics and gynaecology guidelines - which also stipulate the situation of caesarean section on request: ”Elective caesarean section is the procedure performed on the basis of obstetric and/or medical indications or at the request of the parturient before the onset of labour. In contrast, C-section performed during labor, out of necessity, is referred to as <<emergency C-section>>” (11).

The resolution of births by surgical intervention is intertwined with the history of obstetrics. Caesarean section was introduced as a failure of natural childbirth, dictated by particular obstetric conditions: central placenta praevia, maternal-pelvic disproportion, transverse presentation, fetal distress and in the last decade for scarred uteruses and pelvic presentation with appreciated bulky fetus. The period of pregnancy is a special one and it is only natural that there should be concern about the route of delivery and the maternity chosen for it.

At all national and international obstetric conferences around the world, this procedure is being discussed due to the increase in the number of caesarean births, and the WHO is sounding the alarm about caesarean sections performed without a clear medical indication. Statistics show that the percentage of caesarean births is rising (12). There are situations where caesarean section is not medically justified, especially in situations where natural childbirth is possible. All forums state the need for strategies and public policies to support natural childbirth.

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CHAPTER V

DEVELOPING A MODEL FOR THE EFFICIENCY OF A HEALTH UNIT IN THE ROMANIAN HEALTH INSURANCE SYSTEM

In this chapter we aim to present a model that is intended to be a contribution to the development of a new legislative project that will allow for the streamlining of health facilities by identifying alternatives for increasing financial resources within the state systems in the health sector.

Taking into account the fact that in Romania, state hospitals are still the basic unit of the medical system and are the ones that most often ensure the population's access to specialized medical care, we consider that making the medical act more efficient at the hospital level is an absolutely mandatory step. For this reason, the proposed model is based on a detailed analysis of what happens in an obstetrics-gynecology hospital.

The proposed model was tested by using certain statistical data from the obstetrics-gynecology wards of the County Emergency Clinical Hospital "Pius Brînzeu" Timisoara (SCJUPBT), performing a detailed analysis of obstetric cases, mainly the act of childbirth being finalized either by natural birth or by cesarean section. There is also a request for these medical procedures on demand in the private system, as there is a private clinic in Timisoara that provides these types of services at certain rates.

Statistical data on the economic indicators of the obstetrics-gynecology wards of the "Pius Brinzeu" County Emergency Clinical Hospital Timisoara

Statistical data reveal that maternal mortality has decreased considerably in recent years for all causes of death, but in 2020 maternal deaths and mortality increased to 32 cases (17.9 per 100000 live births) compared to 20 cases (9.8 per 100000 live births) in 2019, as deaths caused by COVID 19 were not quantified (1).

CNAS negotiates an annual service contract with each hospital. This contract stipulates the number of patients for which the hospital can be paid in terms of the relative value of each patient. The latter is calculated on the basis of:

a) *The estimated number of patients the hospital will discharge*. Such an estimate is established by negotiation between CNAS and hospitals. It is based on factors such as: a bed occupancy rate of 70% for surgical cases and the actual number of non-surgical admissions in the previous year, less the number of admissions that were unnecessary.

b) *Hospital Case Complexity Index*. This is an index of the severity of cases handled by the hospital compared to the severity of cases for the country as a whole. An index greater than 1.00 indicates that the average patient is more expensive than the national average.

c) *An itemized per-patient tariff based on the diagnostic diagnosis group (DRG) into which each patient is assigned.* DRGs are an internationally recognized system that groups patients according to their clinical condition and the cost of treating them.

There are also some rigid rules on how the budget can be applied. For example, the number of employees allowed for each hospital is directly proportional to the number of beds in that hospital's structure, and not to the medical activities that are carried out in that hospital. Personnel costs (salaries) are set by law and account for over 70% of total costs in most hospitals. This prevents hospital managements from being able to allocate money from their total budget according to the actual needs of the hospital.

In this context, there is a great need to introduce a performance element for all sectors of the health system. A good example is the countries where a tariff system has been introduced for efficiency and also a system that reflects the complexity of medical cases and where there is a history of payments to family doctors based on the performance criterion.

Indicators for achieving specific quality improvements are still being developed in Romania. Quality is difficult to define and difficult to measure. However, there are some recognized indicators and some proxy indicators that have been developed and used to encourage and strengthen quality in other health systems. Many countries have introduced "hospitals pay for performance" schemes, and these have been described in the literature. These systems increase or reduce payments to hospitals based on their performance as reflected in a set of predefined and measurable indicators.

A) Indicators characterizing the financing of health sector activity

Health sector activity can be assessed quantitatively by analyzing the financing of health services:

$$g_{CS} = \frac{CS}{PIB} x\ 100 \quad (1)$$

where:

g_{cs}= share of health expenditure

CS = health expenditure

GDP = Gross Domestic Product

This indicator reflects the financing possibilities of a country's health services, i.e. the impact of decision-makers in ensuring adequate health status of the population. This indicator is used in the comparative analysis of health systems in different countries in terms of financing possibilities and the importance given to health.

The structure of funding sources, i.e. the share of different funding sources in total funding (Y_{cs}):

$$\boldsymbol{Ycs} = \frac{\boldsymbol{cs_i}}{\sum \boldsymbol{cs_i}} \qquad (2)$$

where CSi = health expenditure financed from source ,,i'.

The sources of health financing according to the legal provisions in force are:

- Social Health Insurance Fund;
- State budget;
- Local budgets;
- Special Health Fund;
- External funding;
- Other sources of funding;
- Household expenditure on health (co-payment).

B) Indicators characterizing health expenditure

Health expenditure structure:

$$\boldsymbol{Y_{CS}} = \frac{\boldsymbol{cs_j}}{\sum \boldsymbol{cs_j}} (3)$$

where "j" is the category of expenditure.

According to the Health Insurance Fund budget, health care expenditure can be divided into two broad categories:

a) *Expenditure on medical services* includes medical supplies and services of a medical nature:

- primary healthcare;
- outpatient specialist care (excluding paraclinical care);
- paraclinical medical services;
- outpatient dental care;
- hospital medical services;

- specific drugs and materials used in hospitals for some chronic diseases and specialties on a program basis (inpatient or outpatient);

- out-patient drug assistance (drugs with personal contribution or drugs without personal contribution);

- medical devices;

- pre-hospital emergency medical services;

- medical rehabilitation services

- health rehabilitation;

- home care services.

b) Expenditure on investments in the health system aims to finance investments from the national insurance fund for investments in health infrastructure.

Looking at the main categories of expenditure, the structure of health expenditure includes:

- Expenditure on human resources (remuneration of medical and auxiliary staff);
- Expenditure on health care benefits;
- Maintenance costs for medical equipment;
- Investment expenditure (medical equipment);
- Other expenses.

This structuring of expenditure expresses the use of resources, but it is difficult to apply the method in certain sectors of the health system (e.g. family medicine).

C) Indicators characterizing the effectiveness of health insurance

The average expenditure per patient is a relevant indicator for analysis, as patients are the ones who actually benefit from health care services, and access to health care services is cost-generating.

Health expenditure per patient (CS/patient):

$$\boldsymbol{CS/pacient} = \frac{\boldsymbol{Totalcheltuieli}}{\boldsymbol{Totalpacienti}} \quad (4)$$

Cost of one day of hospitalization (CS / day):

$$\boldsymbol{CS/zi} = \frac{\boldsymbol{Totalcheltuieli}}{\boldsymbol{Totalzilespitalizare}} \quad (5)$$

The cost of a day of hospitalization is an indicator that gives a picture of the expenses incurred with a patient, i.e. a separation of categories of expenses such as:

- Hotel expenses;
- Medical investigations;
- Drug expenses.

Cost of a hospital bed (CS/bed):

$$\boldsymbol{CS/pat} = \frac{\boldsymbol{Cheltuieli}}{\boldsymbol{Numarpaturide\ spital}} \quad (6)$$

This indicator provides useful information only when comparing health facilities, as costs differ by type of illness, number of days of hospitalization or consumption of drugs, and are particular, depending on the disease, surgery or treatment. Under these circumstances it is useful to determine the per-bed expenditure for hospitalization and diagnosis in order to carry out a proper analysis.

✓ Relevance of the proposed study

The objective of the study is to develop a model of efficiency within the Romanian health insurance system, demonstrable in this paper on the Obstetrics-Gynecology Departments of the County Emergency Hospital "Pius Brînzeu" Timisoara (SCJUPBT).

It is known that in recent years, the number of referrals to private clinics, especially in the obstetric field, has increased considerably compared to 10 years ago. This is not at all encouraging for the management of obstetric wards, given that any complication, whether in the mother or in the premature fetus, is also dealt with by the state hospital. We mention a few other important aspects:

- A lot of progress has been made with regard to the hotel regime for wards in state hospitals;

- High-performance equipment is purchased in OG1 and OG2 sections and in the framework of cross-border projects, POIM, POCU, National Programs, etc.;
- Accreditations and national recognition of the County Emergency Hospital. "Pius Brînzeu" County Clinical Emergency Hospital "Pius Brînzeu" in Timișoara provides excellent medical services to the population of the western region of Romania;
- In 2020 SCJUPBT was declared "Hospital of the Year" in Romania. The prize was awarded by an international jury, composed of specialists from 12 countries, within the "Romanian Healthcare Awards";
- Medical performance is recognized nationally and internationally. The achievements of the medical staff serving these wards are recognized at various specialized congresses and conferences.

The Maternity Unit (Obstetrics-Gynecology ward 1 and Obstetrics-Gynecology ward 2) is classified as a tertiary unit, with the necessary equipment for the care of mothers and newborns with extreme prematurity, and ensures the management of all cases referred by the first and second level units in the West Region (Timis, Arad, Caras Severin, Hunedoara counties).

The birth of a child is considered one of the most important events in every couple's life - medically it can take place either by natural childbirth or by surgery - caesarean section, which takes place following a certain protocol. A caesarean section is the surgical intervention which consists in removing the fetus and its appendages from the uterine cavity by cutting through the abdominal and uterine wall.

The operation has been mentioned in history since ancient times, in both Western and Eastern literature. Introduced as an obstetric procedure in the 17th century, Caesarean section was described as far back as antiquity, when it was applied to dying or deceased women in an attempt to save the fetus. With few exceptions, this was the aim until the 19th century, when the era of anaesthesia began.

The first writing on caesarean section appears in 508 BC in a Sicilian work by Gorgias, a famous orator of the time. It was commonly practiced in India and Egypt. In 600 BC, one of the first kings of Rome, Numa Pompilius, enacted the Lex Regia, which explicitly required the removal of the child from the womb of a deceased woman before the mother's burial. This law was still in force in Caesar's time and was called Lex Caesarea. The name 'caesarean section' (2) probably dates back to this period. Although the procedure is ancient, surgeons at the time did not dare to perform caesarean section to save the lives of the mother and the fetus. Up until the last century, the success rate of the procedure was rather skeptical. Around 1350, the first mention in a medical treatise that the procedure was necessary after the death of the mother appeared.

With the name of Ambroise Paré, who lived between 1510 and 1590, the midwifery reform begins. The breech version of midwifery (in English, the procedure of delivering a baby with pelvic presentation) had been forgotten over the ages, although it had been practiced since Hindu times, but was rediscovered in Paré's time. This renewed interest in the procedure was a great step forward for obstetrics, and the practice of Caesarean section on living women was encouraged.

In Germany in 1610, the first caesarean section was performed by the surgeon Jeremias Trautmann. Although the patient died on the 25th postoperative day, it was discovered that the uterus had completely recovered after the operation. In the years that followed, caesarean section was mentioned quite often in the literature. Interestingly, the operation was already being performed when normal birth could not be achieved and the incision in the uterus was left open; it was thought that uterine relaxation and contractions prevented the use of sutures. As a result, maternal post-natal mortality was very high, as women died of hemorrhage and infection. Doctors relied on uterine contractions to control hemorrhage due to incision and did not dare to close the uterine incision because at that time sutures had to be removed and in these cases, once the abdominal wall was closed, it was impossible to remove them from the area of the uterus where the incision had been made (3).

In the 16th-17th centuries, specialized writings are described about successful and life-sustaining Caesarean sections for both mother and fetus. However, the death rate was very high, a rate that persisted into the 19th century - 50-85%. The cause of death was associated with septicemia and the inability to use sutures at the incision site in the uterus. In 1769, Lebas was the first to use sutures to close the incision. However, this did not improve the quality of the operation. Patients still died of bleeding and infection. In 1882, Sanger introduced an effective suture, while improving the operating technique - the midline incision with isolated sutures, and adding treatment to prevent sepsis. Caesarean section thus became a safer procedure.

To correct these technical errors, in 1907, Frank of Bonn introduced a procedure in which a "pocket" was created that could exclude the peritoneal cavity from the area of the operation. The abdomen was thus closed without any repercussions on the viscero-parietal peritoneum. In 1908, Hugo Selheim demonstrated the advantage of extracting the fetus through the dilated area over the contractile portion of the uterus. He perfected the surgery of the lower uterine segment at the time, procedures that were subsequently improved (4).

Cesarean birth is an important benchmark for access to vital, life-saving obstetric care. A caesarean section can reliably prevent maternal and perinatal mortality and morbidity where medically justified.

Caesarean section has also become a significant indicator of progress in emergency obstetric care and a means of avoiding complications during natural childbirth and labor. Very low caesarean section rates (less than 15%) are associated with poorer outcomes for both mother and baby.

Moreover, even though caesarean section can be a life-saving operation for an at-risk fetus, paradoxically, countries with higher caesarean section rates have consistently higher rates of neonatal morbidity and mortality. In addition, the risks of hemorrhage, sepsis, venous thromboembolism and amniotic fluid embolism are about five times higher for a caesarean section compared with a natural birth. It has also been reported that patients who underwent caesarean operations had a 9% lower

subsequent pregnancy rate and an 11% lower birth rate compared with patients who gave birth naturally.

In our opinion, it is fair to say that, although caesarean section is nowadays an easy operation to perform and no longer carries the risk of complications such as sepsis, things have not always been this way. But advances in anaesthesia, asepsis and antisepsis, antibiotic therapy, improved operating techniques, fetal monitoring, reduced maternal and perinatal mortality, have opened a new era for caesarean section, and today it is an operation with minimal risk to mother and fetus.

✓ Analysis of the current situation in Obstetrics-Gynecology wards

The Bega Clinic of Obstetrics-Gynecology was established in 1974 with the inauguration of the County Emergency Hospital in Timisoara, functioning from the beginning as a clinical undergraduate and postgraduate teaching center, as well as a county and intercounty methodological center. The clinic was set up in the building of the "Bega" Hospital, and is now part of the structure of the County Emergency Hospital. The establishment of this clinic was a response to the need for an educational and health care center next to the old Obstetrics and Gynecology Clinic in Timişoara.

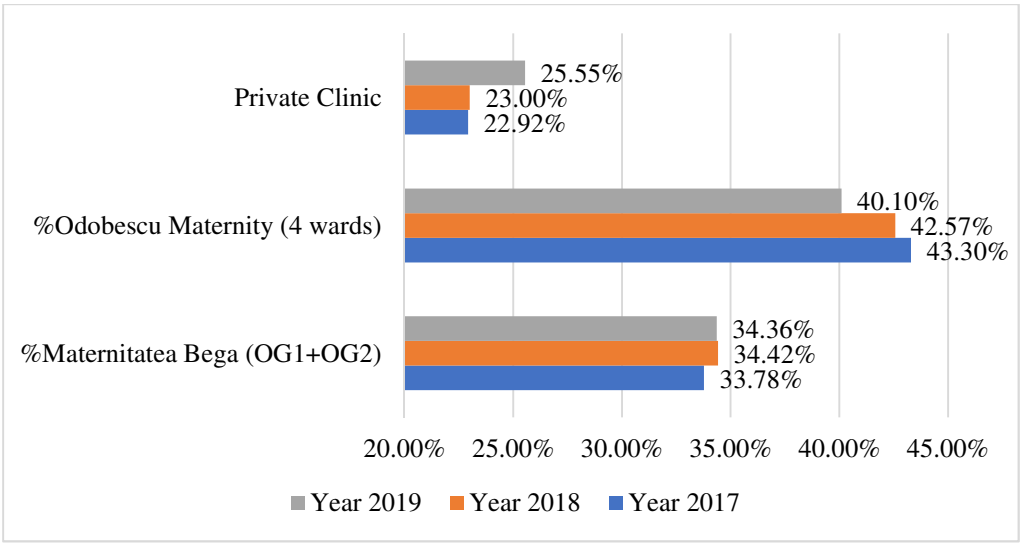
In 2009, in Timisoara, the first private maternity hospital in the western part of the country was established. *In the context of the pandemic, Bega Maternity Hospital was designated as COVID Hospital / COVID Support since March 2020, which is why the number of births has decreased significantly, and only suspected or positive patients can be admitted, according to the COVID infection surveillance methodology.*

In recent years, with the exception of the year the pandemic started (2020), there has been an increase in the number of births taking place in Timisoara clinics. The evolution is shown in Table 1 and Graph 1.

Table 1. Distribution of the number of births in Timisoara municipality

Year	Total number of births in Timișoara municipality	Bega Maternity (OG1+OG2)	% Bega Maternity (OG1+OG2)	Odobescu Maternity (4 wards)	% Odobescu Maternity (4 wards)	Private Clinic	% Private Clinic
Year 2017	7721	2608	33,78%	3343	43,30%	1770	22,92%
Year 2018	7716	2656	34,42%	3285	42,57%	1775	23,00%
Year 2019	7731	2656	34,36%	3100	40,10%	1975	25,55%
Year 2020	6938	1529	22,04%	3693	53,22%	1716	24,74

Source: by author



Graph 1. Distribution of births in maternity hospitals in Timisoara

Source: by authors

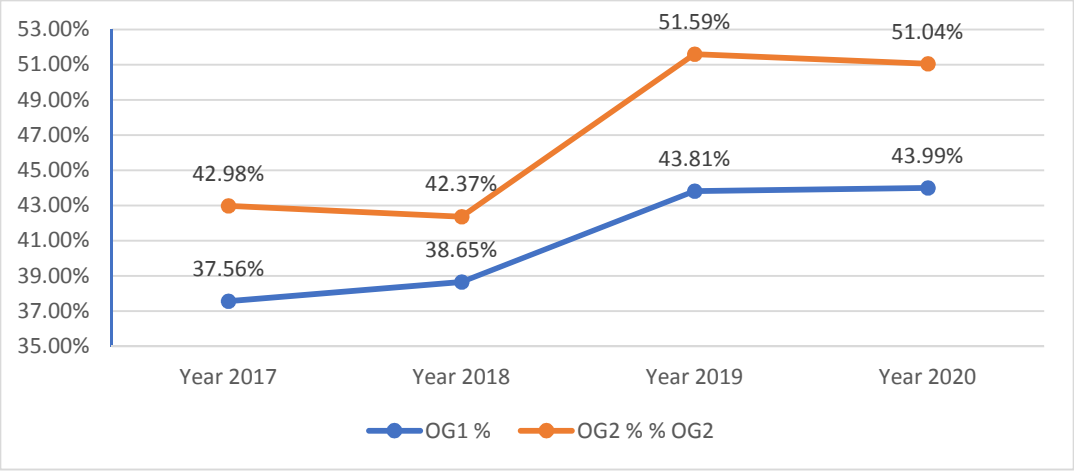
Retrospectively, excluding the year 2020 (the year the pandemic will start), the following tables and graphs show the evolution of cases in the two wards of the County Emergency Hospital, Timisoara.

Between 2017 and 2019, 7920 births took place in the maternity ward, the lowest in 2017 (2608 births). In the OGI ward between 2017 and 2020, the maximum occupancy rate was 76.4% (2017), while in the OGII ward, the maximum occupancy rate was 47.9% (2019).

Table 2. Distribution of births in wards OG1 and OG2

Year	Cesarean Birth natural		Cesarean Birth natural		Total births
	OGI	OGII	OGI	OGII	
2017	672	352	1117	467	2608
2018	700	358	1111	487	2656
2019	778	454	998	426	2656
2020	439	271	559	260	1529

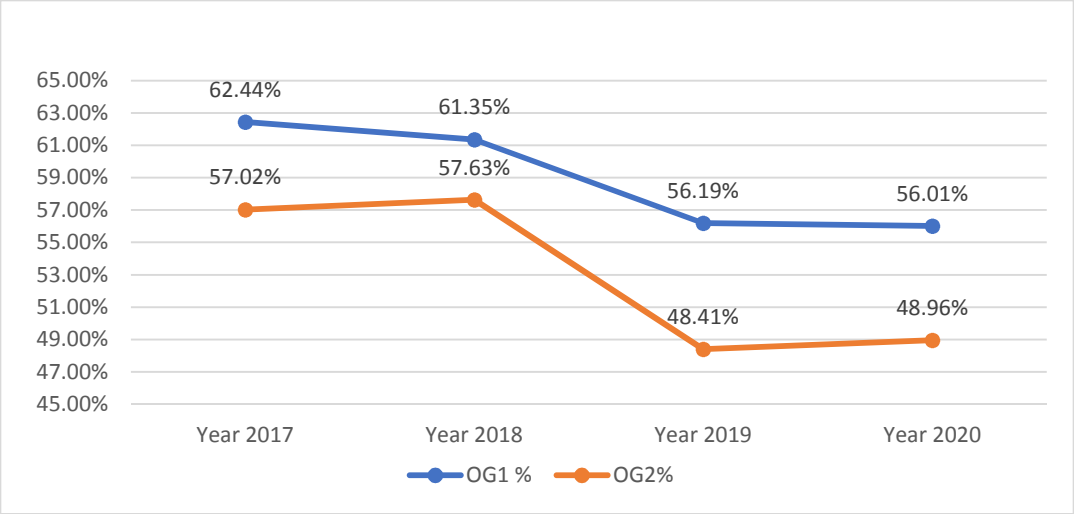
Note: OGI = Obstetrics-Gynecology Ward 1; OGII = Obstetrics-Gynecology Ward 2.



Graph 2. Distribution of natural births in the two wards

Source: by authors

If we analyze the distribution of natural childbirths at the level of the health unit, an upward trend can be observed during the period of analysis (2017-2020), with OG2 ward registering a higher percentage of cases than OG1 ward.



Graph 3. Distribution of cesarean deliveries in the two wards
Source: by authors

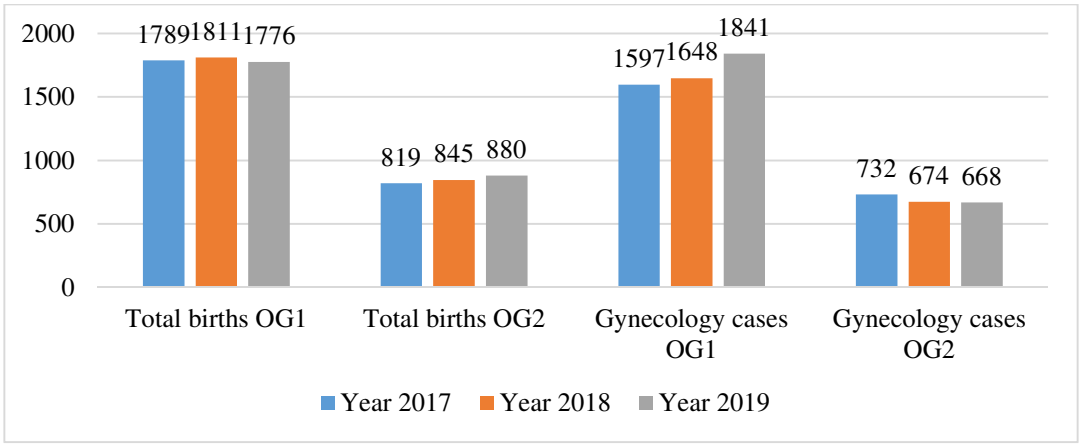
If we analyze the distribution of caesarean births in the two wards, an upward trend can be observed during the period of analysis (2017-2020), with OG1 ward registering a higher percentage of cases than OG2 ward.

Table 3. Distribution of cases by pathology in wards OG1 and OG2

YEAR	% Total births OG1	% Total births OG2	% Gynecological cases OG1	% Gynecological cases OG2
2017	52,84%	52,80%	47,16%	47,20%
2018	52,36%	55,63%	47,64%	44,37%
2019	49,10%	56,85%	50,90%	43,15%

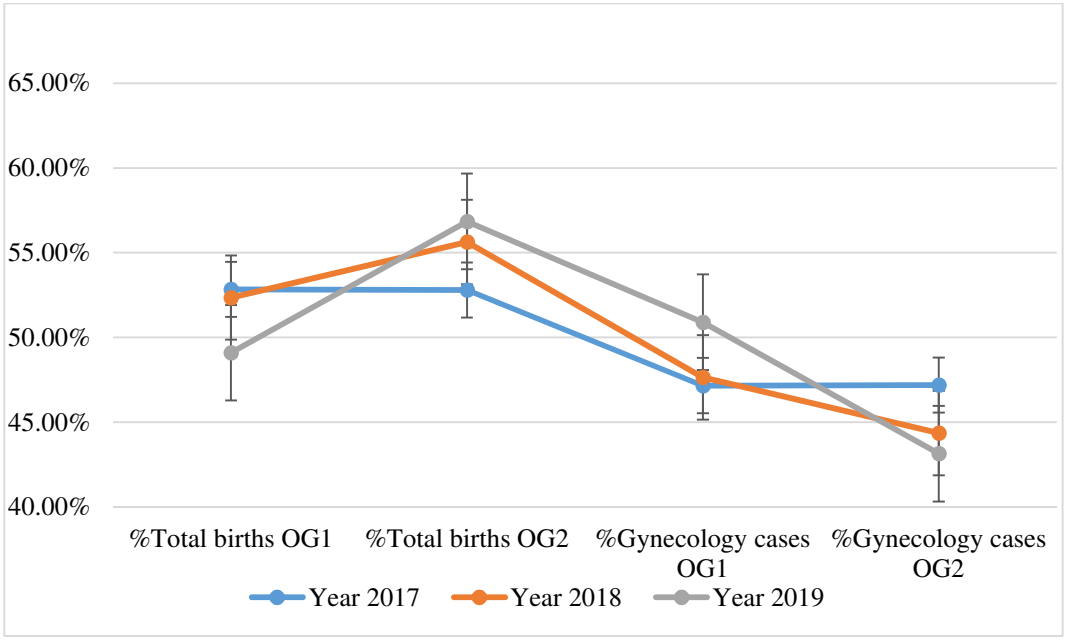
Source: by authors

In terms of types of medical interventions at the level of the health unit, a higher proportion of gynecological cases treated in the OG1 ward compared to OG2.



Graph 4. Distribution of cases in wards OG1 and OG2

Source: by authors



Graph 5. Distribution of cases hospitalized in both wards

Source: by authors

The different distribution of cases in two wards with similar facilities within the same hospital reflects the fact that *there are patient requests for medical treatment "on demand", which is not reflected in the Romanian health care legislation.*

✓ Developing a model for efficiency within the Romanian health insurance system

Study premises

The premises of the study are the following:

- The analysis of the occupancy rate of clinical wards is directly reflected in the revenue and expenditure budget, and the final result of the financial year (profit or loss) is dependent on this occupancy rate.
- Indirect (constant) costs of clinical wards - unit costs, decrease as occupancy increases.
- In the private system, Caesarean sections are seen as a profitable business. In state hospitals, there are guidelines and protocols that refer to norms and rules adapted to obstetric practice. They include recommendations on how and in what situations cesarean delivery is required. Under no circumstances is it recommended as a more convenient option at the expense of natural childbirth.
- If a major complication occurs, the case from the private system ends up in the state system; either for the care of the premature baby - here where Maternitatea Bega is classified as a grade III maternity hospital (the best rated in terms of material and human resources), or for providing medical support for the mother.

Representatives of professional associations recognize that this is an ethical breach. At least in the case of Caesareans on demand. But they say they can't fight it. According to the National Institute of Statistics (INS), 8 in 1,000 births end in tragedy. Our country also leads the world in the number of unattended pregnancies, one of the main causes of increased mortality, along with poverty.

The efficiency model of a health facility. Statistical study in OG1 and OG2 wards

In order to realize an efficiency model, we first assessed the situation of the number of cases in the period 2017-2019, 2020 not being a relevant year due to the epidemic and the fact that Bega Maternity Hospital was declared Covid Maternity Hospital.

The eligible population was represented by women of reproductive age, residing in one of the 5 counties in the western part of Romania (Timis County, Caras-Severin County, Arad County, Hunedoara County and Bihor County). This region of Romania includes 443,473 women aged between 14 and 49. The largest county in this region, and indeed in the country, is Timiș county, with its administrative capital in Timișoara. The number of live births in Timiș County was 6689 in 2020, 6808 in 2021 and 4272 by September 2022. In 2020, the fertility rate in Romania was 1.8 times higher than in the European Union, where it was 1.5 (Romania Health System Information).

The difference between a proposed occupancy rate (between 50 and 85%, increasing every 5 percent) and the actual occupancy rate of the hospital unit was calculated for the health unit efficiency model. This difference is related to an average hospitalization time of 4 days/patient, resulting in the number of patients who could benefit from paid medical services in the 2 section of the Maternity "Bega" of the County Emergency Hospital Timișoara.

Table 4. Actual ward occupancy and difference from planned occupancy

Year	**Section**	**Effective utilization rate**	The difference up to the utilization rate of**:**							
			85%	**80%**	**75%**	**70%**	**65%**	**60%**	**55%**	**50%**
2017	OGI	76.38%	8.62	3.62	-	-	-	-	-	-
	OGII	46.51%	38.49	33.49	28.49	23.49	18.49	13.49	8.49	3.49
2018	OGI	74.79%	10.21	5.21	0.21	-	-	-	-	-
	OGII	47.42%	37.58	32.58	27.58	22.58	17.58	12.58	7.58	2.58
2019	OGI	73.59%	11.41	6.41	1.41	-	-	-	-	-
	OGII	47.93%	37.07	32.07	27.07	22.07	17.07	12.07	7.07	2.07

Source: by authors

It shows that between 238 patients (a proposed occupancy rate of 50%) and 4683 patients (a proposed occupancy rate of 85%) could have received on-demand caesarean section surgery between 2017-2019 (Table 5).

Table 5. Patients potentially covered by fee-for-service medical services by ward occupancy

Year	Section	Patients potentially covered by medical services against payment							
		85%	**80%**	**75%**	**70%**	**65%**	**60%**	**55%**	**50%**
2017	OGI	393	165						
	OGII	1124	978	832	686	540	394	248	102
2018	OGI	466	238	10					
	OGII	1097	951	805	659	513	367	221	75
2019	OGI	521	292	64					
	OGII	1082	936	790	644	498	352	206	60
Total		4683	3561	2502	1990	1552	1114	676	238

Source: by author

We aim to answer the following question: *Does the revenue/case collected from the patient cover the average calculated cost/case and the physician's fee?Can on-demand medical interventions be profitable for the health facility?*

The estimated additional revenue generated by on-demand medical interventions has been calculated in all variants (proposed occupancy from 50% to 85%), taking into account that the difference between the proposed and actual occupancy level will be dedicated only to women who will be provided with on-demand Caesarean section.

Several variants of the proposed occupancy rate (every 5 percent) were taken to demonstrate the profitability of the on-demand medical intervention measure, in several situations, as it was not clear how many patients would request this service. The proposed maximum occupancy level of 85% was chosen to reserve free beds in the emergency ward.

The amounts were considered in the national currency of Romania, i.e. the Romanian leu (RON), and in euro (EUR). The RON-EUR conversion was carried out at the average exchange rate of the National Bank of Romania (1 EUR = 4.9321 RON).

In order to determine the costs per patient (case), data extracted from the annual expenditure reports of the OG1 and OG2 wards of the "Pius Brinzeu" Emergency Clinical Hospital Timișoara (SCJUPBT) were used. Thus, the average cost for a natural childbirth is 3.532 lei per case (case 716,12 euro) and 5.166 lei per case (case 1047,42 euro) for a cesarean section.

The proposed additional fee for the surgical team, according to the tariffs practiced by private clinics, is 3.500 lei per case (709,63 euro per case) per caesarean section. The proposed unit prices for fee-for-service medical services are similar to those in private clinics (90%), at 12,000 RON (2433 EUR) for caesarean operations.

A patient will choose between the services offered by a state or a private hospital according to the cost and the quality of the medical services, as it is known that private hospitals do not treat cases that may lead to complications. For a hospital to become efficient, it must determine a break-even point, where all costs (fixed and variable) are covered by revenues from public and/or private sources of funding.

In our case, the financial assumptions underlying the study are centralized in the following table:

Table 6. Determination of net income/type of intervention (natural childbirth/ caesarean section)

Estimated unit price for natural childbirth services (lei/case) - contract	10000	lei/case
Estimated unit price of caesarean delivery services (lei/case) - contract	12000	lei/case
Average cost of natural childbirth (lei/case)	3532	lei/case
Average cost of caesarean delivery (lei/case)	5166	lei/case
Additional salary cost medical staff - natural childbirth:	2500	lei/case
Additional salary cost for medical staff - cesarean delivery:	3500	lei/case
Total estimated cost - natural childbirth	6032	lei/case
Total estimated cost - caesarean delivery	8666	lei/case
Estimated net income - natural childbirth	3968	lei/case
Estimated net income - caesarean delivery	3334	lei/case

Source: by authors

The average share of the types of medical intervention in the total number of interventions performed on each ward, according to the history of interventions in the wards in the period 2017-2019, is shown in the following table:

Table 7. Average share of types of medical intervention

	Natural childbirth	Cesarean delivery
OG1	41%	59%
OG2	47%	53%

Source: by author

These percentages have been used in the study and in the calculation of the number of interventions of each type until the proposed occupancy rate is reached.

The hospital will get additional revenue that can be estimated according to the formula:

$$Net\ additional\ income/section = f(n_{n,}\ t_{n,}\ v_{n,}\ g_o$$

where:

n_n = number of births

t_n = type of medical intervention (natural childbirth/caesarean section)

v_n= net income/type of medical intervention

g_o= bed utilization in a ward

The additional net revenues that can be obtained by implementing the system of payment for medical services are presented in the following tables (Table 19-25), detailed for the three years of study, for each ward and for each type of intervention, compared to a proposed occupancy rate in the range of 50% - 85%, with analysis for each step of 5%.

Table 8. Net additional net revenue / ward from interventions - by bed utilization

Year	Ward	Type	Total (lei)	Total (lei)	Total (lei)	Total (lei)	Total (lei)	Total (lei)	Total (lei)	Total (lei)
			85%	80%	75%	70%	65%	60%	55%	50%
2017	OG1	Natural	639832	268700	-	-	-	-	-	-
		Cesarean section	773620	324885	-	-	-	-	-	-
	OG2	Natural	2096043	1823759	1551475	1279191	1006907	734623	462339	190054
		Cesarean section	1985968	1727983	1469998	1212013	954028	696043	438058	180073
2018	OG1	Natural	757852	386720	15588	-	-	-	-	-
		Cesarean section	916318	467582	18847	-	-	-	-	-
	OG2	Natural	2046488	1774204	1501919	1229635	957351	685067	412783	140499
		Cesarean section	1939015	1681030	1423045	1165060	907075	649090	391105	133120
2019	OG1	Natural	846923	475791	104659	-	-	-	-	-
		Cesarean section	1024015	575279	126543	-	-	-	-	-
	OG2	Natural	2018715	1746431	1474146	1201862	929578	657294	385010	112726
		Cesarean section	1912700	1654715	1396730	1138745	880761	622776	364791	106806

Source: by author

In the analysis process, if the actual occupancy was higher than proposed, no further calculations were made.

Table 9. Evolution of net revenue by bed utilization in 2017

Summary	**Employment 85%**	**Employment 80%**	**Employment 75%**	**Employment 70%**	**Employment 65%**	**Employment 60%**	**Employment 55%**	**Employment 50%**
Natural OG1 - 2017	639832	268700	-	-	-	-	-	-
C-section OG1 - 2017	773620	324885	-	-	-	-	-	-
Natural OG2 - 2017	2096043	1823759	1551475	1279191	1006907	734623	462339	190054
C-section OG2 - 2017	1985968	1727983	1469998	1212013	954028	696043	438058	180073

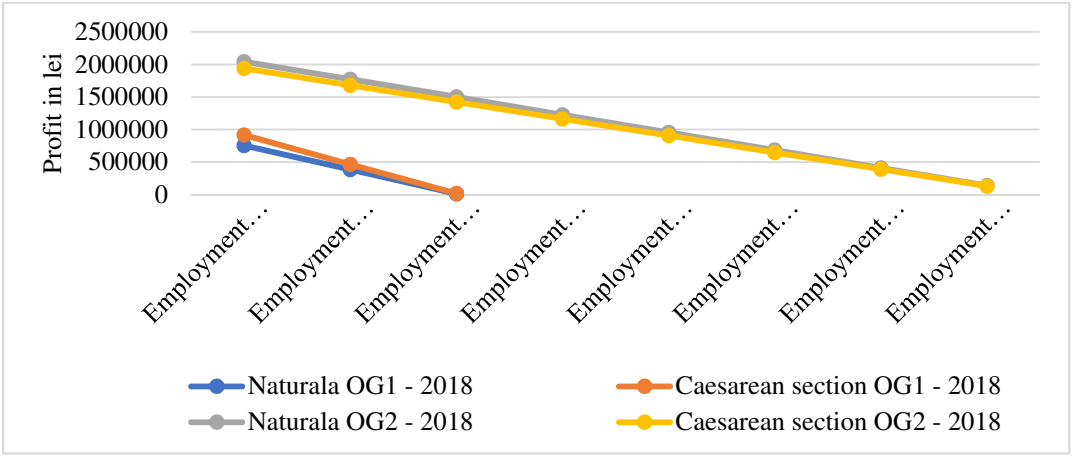
Source: by author

It can be seen that the net income that could have been recorded in 2017 would have been between 180,073 lei and 2,096,043 lei depending on the degree of employment (between 50% and 85% and the type of birth) (5).

Table 10. Evolution of net additional income by bed utilization in 2018

Summary	Employment 85%	Employment 80%	Employment 75%	Employment 70%	Employment 65%	Employment 60%	Employment 55%	Employment 50%
Natural OG1 - 2018	757852	386720	15588	-	-	-	-	-
C-section OG1 - 2018	916318	467582	18847	-	-	-	-	-
Natural OG2 - 2018	2046488	1774204	1501919	1229635	957351	685067	412783	140499
C-section OG2 - 2018	1939015	1681030	1423045	1165060	907075	649090	391105	133120

Source: by author



Graph 6. Net income by employment in 2018

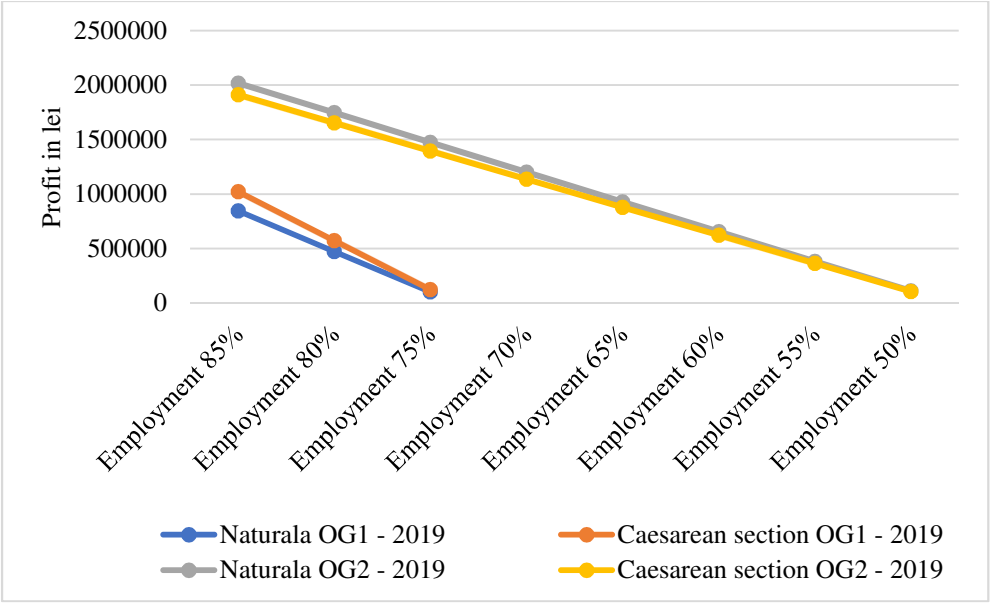
Source: by author

It can be seen that the net income that could have been recorded in 2018 would have been between 133,120 lei and 2,046,488 lei depending on the degree of employment (between 50% and 85% and the type of birth).

Table 11. Evolution of net revenue by bed utilization in 2019

Summary	Employment 85%	Employment 80%	Employment 75%	Employment 70%	Employment 65%	Employment 60%	Employment 55%	Employment 50%
Natural OG1 - 2019	846923	475791	104659	-	-	-	-	-
Caesarean section OG1 - 2019	1024015	575279	126543	-	-	-	-	-
Natural OG2 - 2019	2018715	1746431	1474146	1201862	929578	657294	385010	112726
Caesarean section OG2 - 2019	1912700	1654715	1396730	1138745	880761	622776	364791	106806

Source: by author



Graph 7. Evolution of net income by employment in 2019

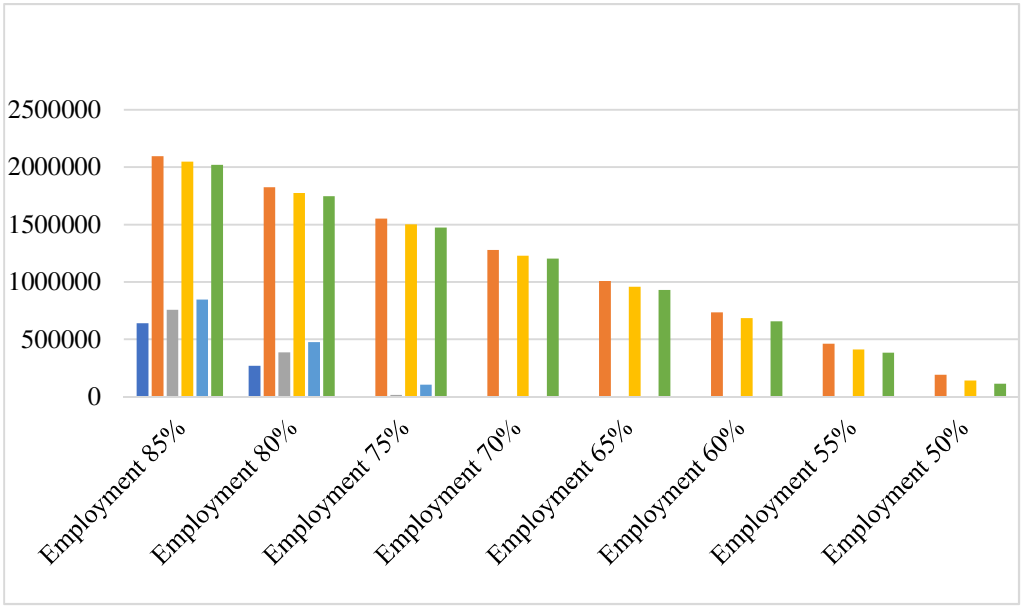
Source: by authors

It can be seen that the net income that could have been recorded in 2019 would have been between 106,806 lei and 2,018,715 lei depending on the degree of employment (between 50% and 85% and the type of birth).

Table 12. Evolution of net additional income by bed utilization for natural childbirth cases, 2017-2019

Summary	Employ-ment 85%	Employ-ment 80%	Employ-ment 75%	Employ-ment 70%	Employ-ment 65%	Employ-ment 60%	Employ-ment 55%	Employ-ment 50%
Natural OG1 - 2017	639832	268700	-	-	-	-	-	-
Natural OG2 - 2017	2096043	1823759	1551475	1279191	1006907	734623	462339	190054
Natural OG1 - 2018	757852	386720	15588	-	-	-	-	-
Natural OG2 - 2018	2046488	1774204	1501919	1229635	957351	685067	412783	140499
Natural OG1 - 2019	846923	475791	104659	-	-	-	-	-
Natural OG2 - 2019	2018715	1746431	1474146	1201862	929578	657294	385010	112726

Source: by authors



Graph 8. Additional annual net income for natural childbirths

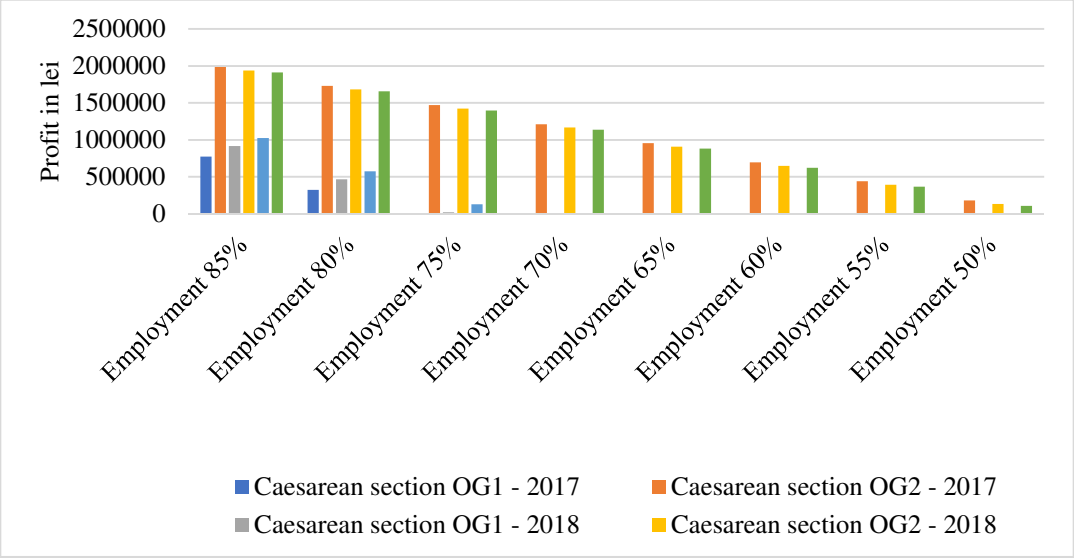
Source: by authors

The data summarized in Table 23 and Graph 37 demonstrate that the realization of on-cost, on-demand interventions for patients who wish to have a natural childbirth can generate additional revenue for the health facility.

Table 13. Evolution of net revenue by bed utilization between 2017 and 2019 for caesarean births

Summary	Employ-ment 85%	Employ-ment 80%	Employ-ment 75%	Employ-ment 70%	Employ-ment 65%	Employ-ment 60%	Employ-ment 55%	Employ-ment 50%
C-section OG1 - 2017	773620	324885	-	-	-	-	-	-
C-section OG2 - 2017	1985968	1727983	1469998	1212013	954028	696043	438058	180073
C-section OG1 - 2018	916318	467582	18847	-	-	-	-	-
C-section OG2 - 2018	1939015	1681030	1423045	1165060	907075	649090	391105	133120
Caesarean section OG1 - 2019	1024015	575279	126543	-	-	-	-	-
Caesarean section OG2 - 2019	1912700	1654715	1396730	1138745	880761	622776	364791	106806

Source: by authors



Graph 9. Additional annual net income for caesarean births

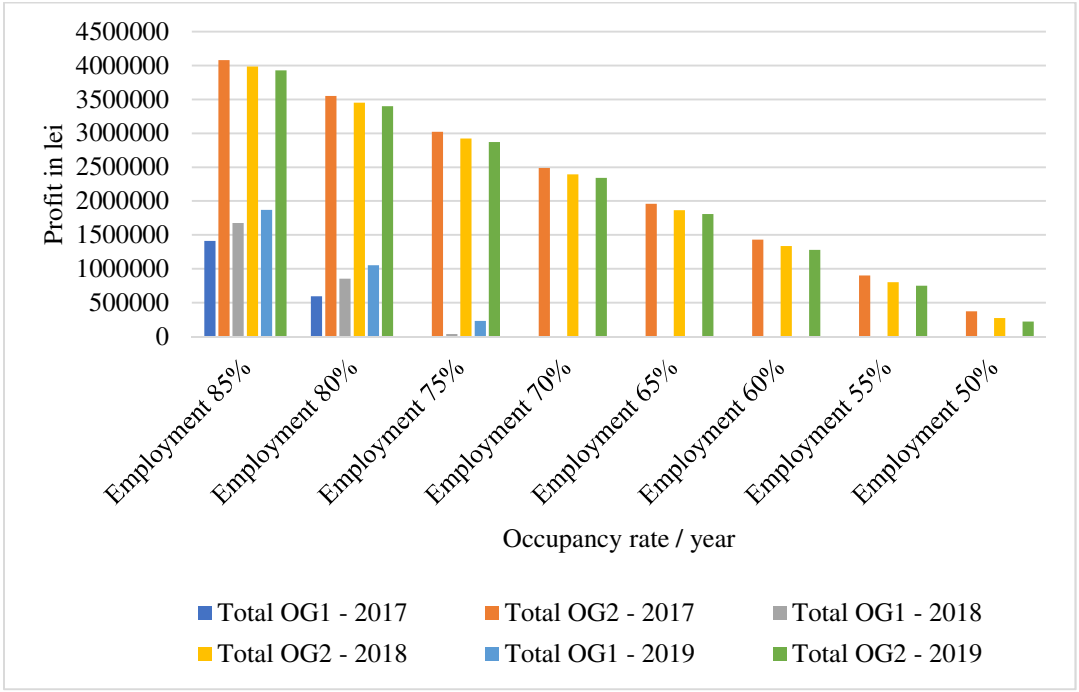
Source: by authors

The data summarized in Table 13 and Graph 9 demonstrate that performing on-cost, on-demand interventions for patients who wish to have a caesarean section can generate additional revenue for the health facility.

Table 14. Evolution of net revenue by bed utilization/ each ward, 2017-2019

Summary	Employ-ment 85%	Employ-ment 80%	Employ-ment 75%	Employ-ment 70%	Employ-ment 65%	Employ-ment 60%	Employ-ment 55%	Employ-ment 50%
Total OG1 - 2017	1413452	593585	-	-	-	-	-	-
Total OG2 - 2017	4082011	3551742	3021473	2491204	1960935	1430666	900397	370127
Total OG1 - 2018	1674170	854302	34435	-	-	-	-	-
Total OG2 - 2018	3985503	3455234	2924964	2394695	1864426	1334157	803888	273619
Total OG1 - 2019	1870938	1051070	231202	-	-	-	-	-
Total OG2 - 2019	3931415	3401146	2870876	2340607	1810339	1280070	749801	219532

Source: by authors



Graph 10. Total annual additional income / each ward compared to proposed occupancy

Source: by authors

Following the results we can state the following:

- *In our sample, the caesarean section rate was between 53.6 and 60.7%, many of which were performed on request even if this was not declared.* Romanian legislation does not regulate the conditions under which such a procedure can be performed at the mother's request. However, in order to reduce the number of unnecessary Caesarean sections, a co-payment system for on-demand Caesarean sections has been introduced, but is not yet implemented.

- *An interesting result of this study was the substantial difference in actual occupancy rates between the two wards of the same hospital*. This may be due to the fact that legislation in Romania allows the patient to choose his or her doctor without additional payment.

- *the calculations for determining the additional net income that can be obtained through the provision of medical services - natural births/caesarean section, took into account the possibility of providing medical services* by the County Emergency Hospital "Pius Brînzeu" Timisoara, *paid by the patients, who have the possibility to benefit in this way from all the facilities offered by the private system in a state clinic, additionally benefiting from the services of other specialties in case of medical complications (6).*

- *the estimated annual net additional income*, at 85% employment, over the study period 2017-2019 is:

  - Section OG1 - (RON 1.41 million - RON 1.87 million)
  - Section OG2 - (3.93 mil. lei - 4.08 mil. lei)

Starting from the fact that a country can only develop in the context of a healthy and young population, ***we can state that beyond genetic, climatic, educational, etc. factors, the premises allocated to health and the way in which the health system is financed are determining factors in the health of the population of the country concerned***.

Since the Second World War, a statistically significant difference in the birth rate in Romania has been statistically significant for several decades compared to

Western European countries. The social and economic changes have had a strong impact on the population and its structure, and with it on the evolution of the birth rate and mortality. The birth rate in Romania has had a downward curve. Thus, the reproductive model, formed in Western European countries in the 1970s, has influenced the reproductive model in our country: couples want a small number of children, brought into the world at a higher age of the mother - with an increase in the incidence and occurrence of malformations. This pattern has become increasingly widespread since 1990, and the process accelerated after that year.

Consequently, *we can say that the birth rate is one of the most important components for the development of a country.* From all the research carried out, we have observed that a country's health system must also serve the population with risk factors, whether insured or uninsured, such as pregnancy.

The private system should, from a legislative point of view, also be able to deal with the complications that can arise from any medical activity or, as happened during the pandemic years, be able to manage positive cases of Covid. However, in order to achieve a birth rate indicator comparable with those in developed countries, it is imperative to achieve a percentage of GDP allocated to health spending comparable to theirs, which is between 7 and 8%, if we look at things at macroeconomic level, and at the level of each state health institution with beds, the interest of the manager should be directed towards creating additional sources of funding.

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CONCLUSIONS AND FUTURE DIRECTIONS FOR MAKING THE ROMANIAN HEALTH INSURANCE SYSTEM MORE EFFICIENT

The reform of the Romanian healthcare system started in 1990, but is still not finalized. *Chronic underfunding and poor performance of the health system have had unfavorable effects on the population and perceptions of quality of life, leading politicians to opt for the introduction of a new social health insurance system.*

An important milestone was the adoption in 1997 of the Law on Social Health Insurance (Law No. 145/1997), which changed the way the health system was financed (it was taxed nationally, and then by budgetary allocation from the Ministry of Health), introducing as a novelty the individual payroll tax. These funds, collected in this way, are administered by the National Health Insurance House, which then transfers the resources to the County Health Insurance Houses. This change was then followed by a series of amendments to the legislative framework under which the National Health Insurance House operates, adding new functions and regulations. Thus, 41 County Public Health Directorates plus the Bucharest County Public Health Directorate appeared within the Ministry of Health. Also, in 1995, the current Romanian College of Physicians (which has under its subordination 42 colleges of physicians from as many counties) was created; the system is organized on different levels (primary, secondary and tertiary). Different associative structures of medical specialties (professional societies), but also of health system institutions - the Hospitals Association - have also emerged; later the National Authority for Quality Management in Health (ANMCS) also appeared.

The law that governs the current health system is Law No. 95 of 2006 on health reform, which, since its inception, when it was intended to bring reform to the system, has undergone numerous amendments, modifications and additions, which, however, has led to instability in the system and prevents the development of a coherent long-term strategy in the health system. *The lability, inconsistency and*

paradox of the legislative framework, together with the countless changes of direction in terms of the role and place of the health system, are the problems of principle which can be identified at the moment in the Romanian health sector.

Another major problem in the health system is underfunding. In addition to the fact that money for health is scarce, there is poor prioritization. A comparative analysis of how health care spending is allocated shows that preventive and curative services have a low share in relation to the treatments administered. The allocation of resources is not based on impact analyses or cost-effectiveness studies and is not based on transparent, objective and consistent criteria, but rather on individual and group interests, financial or administrative interests.

In addition to legislative and financial problems, there are also staffing issues. *Workforce management in the Romanian health sector also needs to be improved at a time when the number of doctors and health professionals in our country in relation to the population is much lower than European averages. The exodus of white coats is a phenomenon which Romania has faced on a massive scale since joining the European Union due to austerity measures.* Beyond the statistics which indicate a worrying situation, the human resource which is constantly emigrating is another particularly important aspect.

Life expectancy has risen significantly in recent decades, along with the total cost of living, but the average retirement age has generally remained close to its original level of around 65. Thus, for about 20 years, a citizen has to bear the costs of health care by paying contributions. Today, people who are of an age at which they can still work have to bear the cost of their children's health needs, even up to the third and fourth generations. Workforce contributions legislated 30 years ago are certainly not enough to cover today's health care costs, while over 30 contributions might be enough to cover health care costs, but that would make the labor force extremely expensive. Therefore, only the savings from taxing all income produced by society, including wealth and capital, can provide a sustainable source of long-term financing. *Health system financing can highlight how health systems cope with*

pressures without loss of equity, quality of service delivery or financial sustainability.

Health insurance can also have negative consequences on the labor market, damaging competitiveness through high labor costs. This is important in monetary unions where currency depreciation, especially during economic downturns, is not an option and competitiveness gains are the only way for the economy to adjust to pre-crisis situations. Moreover, as unemployment rises, incomes start to fall, and pressures on the health budget and public substructure are taken to extremes, the evidence shows that public health systems that are financed through taxation can cope better with economic pressures and be more effective in stabilizing health spending.

We believe that a shift towards general taxation to meet health care needs can encourage economic growth through increased competitiveness and achieve major non-health objectives such as equity, financial sustainability, quality and responsiveness even during economic crises, and that the sustainability of the health system (seen as the ultimate goal) must move towards financing by gradually taxing all income groups.

When we refer to the economic sustainability of any health care system we are referring to the level and rate of growth of health care spending, but we need to consider that health care spending has an opportunity cost. Thus, every penny spent on health care is one less penny to spend in other valuable areas of economic activity, such as education, national defense, housing, leisure, and so on. How much resources are allocated to health care in a country highlights the value and importance attached to health, or more precisely how many resources are allocated to quality health care relative to the resources allocated to the benefits from other economic activities. There is a high value placed on health care and health maintenance, so people are willing to forgo a profitable business in the interest of maintaining good health.

However, putting so much emphasis on health care does not mean giving up other activities, so when non-health spending is sufficiently threatened by health spending, the value we place on other areas of economic activity will start to increase

relative to the value we place on health care. As long as the value produced by health care exceeds its opportunity cost, the increase in health care spending is economically sustainable (value above cost can be seen as a measure of economic sustainability). Once the opportunity cost of health spending is too high, health spending becomes economically unsustainable.

Allocating resources directly to beneficiaries can be achieved by considering several factors: firstly, *financial allocation based on the needs of the population*, this allocation aims to increase equity between different population groups in terms of the pathway of access to health care services and to increase the level of funding where the needs are greatest. In order for population needs to be identified, certain indicators are used to measure the health status of individuals and the factors that influence it. Second, *efficiency-based financial allocation*. Making the most efficient use of scarce resources in the face of ever increasing costs is a challenge for all health systems. In this respect, better cost control can be achieved by allocating financial resources to the most cost-effective services.

Identifying and attracting sources of external funding can be a pillar for the continuation of the modernization process, the exploitation of the potential of the Romanian health system and its adaptation to the requirements of the new international environment. Non-reimbursable external funds offer the health system the possibility of financing, innovative ideas and projects and create favorable premises for achieving the ambitious objective of transforming the Romanian health system.

Health budgets and how the health system is financed are key determinants of the health of a country's population. Romania has one of the lowest health expenditures as a share of gross domestic product (GDP) among European Union (EU) Member States (5.16%). Romania also has one of the highest rates of caesarean section in Europe; many of these are performed at the mother's request, even though this is not regulated. Thus, *this study aimed to highlight the budgetary impact of implementing a system of payment for on-demand caesarean section.*

In our sample, the caesarean section rate was between 53.6 and 60.7%, many of which were performed on request even if this was not stated. Romanian legislation does not regulate the conditions under which such a procedure can be performed at the mother's request. However, in order to reduce the number of unnecessary Caesarean sections, it has introduced a co-payment system for on-demand Caesarean sections, but this is not yet implemented. Another interesting result of this study was the substantial difference in actual occupancy rates between the two wards of the same hospital. This may be due to the fact that legislation in Romania allows the patient to choose his or her doctor without additional payment.

The recommendations arising from the study conducted as part of this retrospective work can be grouped into:

- *concrete proposals to increase public revenues in the state health care system;*
- *concrete proposals to open up state health services to the privatized sector within the state ward (with a proposal to rationalize medical care and, implicitly, the related expenses; the patient chooses her doctor and can also choose the type of delivery);*
- *to assess how the Ministry of Health and the National Health Insurance House (CNAS) are fulfilling their transparency obligations to date, in close correlation with the legislation in force, concluding that we need to do much more to improve the management of these cases.*

In Romania, responsibility for the overall governance of social health insurance (SSA) is provided by the Ministry of Health, part of the National Government, while the national health insurance system is administered by the National Health Insurance House (CNAM) which governs the Health Insurance Fund.

In recent years, Romania has significantly increased its level of health financing, but it remains one of the EU countries with the lowest health spending per capita and as a share of gross domestic product (GDP).

Hospitals receive potential payments, which are a combination of payment methods. The total hospital contract value is composed of: diagnosis-related groups (DRGs), case-related payments, per diem rates, a fixed amount dedicated to national curative public health programs, and free-for-service (FFS) payments for services provided by outpatient wards. Emergency services, such as emergency caesarean sections, are paid from the state budget.

A high number of caesarean sections will put financial pressure on the National Health System. To reduce the number of unnecessary Caesarean sections, Romania has recently introduced a co-payment system for on-demand Caesarean sections, but this system has yet to be implemented.

One of the most important ethical dilemmas in the decision making process regarding the choice of caesarean delivery method concerns the correct understanding of informed consent, which was introduced in Romania in 2003. Under the Health Care Reform Law 95/2006 - a system which requires patients over 18 years of age to sign a consent form, the patient has the right to be informed about the risks associated with clinical investigations and treatments. Caesarean section was introduced as a failure of natural childbirth due to particular obstetric conditions, but because of fear of legal repercussions that could result from complications during labor, doctors recommended caesarean section even in the absence of medical indications. A long-standing problem in medicine is that physicians' fears of malpractice lead to defensive medicine, with cesarean section rates thought to be specifically influenced by fears of malpractice liability. In addition, financial incentives have an important effect on the likelihood of cesarean surgery. Physician satisfaction is associated with professional bonuses, with salary increases in the Romanian healthcare system having a positive effect on physician motivation.

In low-risk populations, elective caesarean section appears to be more expensive than vaginal birth. However, in Romania, performing elective caesarean sections on demand is a big business in the private healthcare system. The price of such a procedure is over €2,000 in most private maternity hospitals and part of the profit goes to the obstetrician. However, it is not unexpected that the percentage of

women giving birth in some clinics and hospitals in Romania has reached 80%, as the average household income has increased substantially.

The calculations for determining the additional net income that can be obtained by providing medical services - a caesarean section operation - took into account the possibility of providing medical services by the County Emergency Hospital "Pius Brînzeu" Timisoara, paid by the patients, who can thus benefit from all the facilities offered by the private system in a state clinic, benefiting additionally from the services of other specialties in case of medical complications.

When an occupancy rate of 85% is opted for, in order to ensure the administrative activity in optimal conditions, the estimated additional annual net income in the study period 2017-2019 is: 1.41 million lei - 1.87 million lei for the OG1 department, respectively, and 3.93 million lei - 4.08 million lei for the OG2 department.

This paper has some limitations. First, *the study has a retrospective design and data were obtained from a single clinic.* Second, given that this *study was conducted in a tertiary clinic, these results require confirmation by highlighting data from other lower-level hospitals.* In addition, *it is not known exactly how many patients would choose an on-demand cesarean section if there were a fee. Further survey-based studies would be needed to implement such a system.*

The birth rate is one of the most important components of a country's development. However, in order to achieve a birth rate comparable with those existing in developed countries, it is imperative to reach a percentage of GDP allocated to health spending comparable to theirs, which is between 7% and 8% if we look at the macroeconomic level, and at the level of each state health institution with beds, the interest of the manager should be directed towards creating additional sources of funding. Implementing a system of on-demand payment for caesarean operations in Romania would bring significant profits to the hospital budget.

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