ASSESSMENT OF THE FUNDING LEVEL OF THE MEDICAL UNITS WITHIN THE PUBLIC HEALTH SYSTEM

Oana Pricope-Păduraru[1*#], Călin Păduraru[2#], Liviu Stafie[3], Letiția-Doina Duceac[4], Mona Calipsoana Matei[3]

[1] PhD student at "Grigore T. Popa" University of Medicine and Pharmacy of Iași, Romania;
[2] PhD student at "Dunărea de Jos" University of Galați, Romania;
[3] "Grigore T. Popa" University of Medicine and Pharmacy of Iași, Romania;
[4] "Dunărea de Jos" University of Galați, Romania.

Corresponding author: OANA Pricope-Păduraru, PhD student, Faculty of Medicine, Public Health and Management, Grigore T. Popa University of Medicine and Pharmacy, 13 Grigore Ghica Vodă Street, Iași 700259, Romania, E-mail: oanaforest71@yahoo.com.
Authors had the same contribution

Abstract

This study aims to present an analysis of the funding level of the medical units within the Romanian public health system before the pandemic. Results showed that medical services do not meet the standards required by patients, though the budget of hospitals comes from multiple sources. At the same time, health expenses in Romania are among the lowest ones in the EU, despite the increases registered over time. This short presentation of the funding level of the Romanian medical units before the pandemic helps us establish a reference base so as to understand the way in which funds were mobilised in Romania from the beginning of the COVID-19 pandemic.

Keywords: funding level, medical units public health system

1. Introduction

Countries all over the world have faced over the last few years diverse crises generated by one of the most severe pandemics, the COVID-19 pandemic. This pandemic has deeply affected the economies of the countries all over the world. It has also worsened the issues of different health systems while highlighting even more the existing difficulties (Liu et al., 2020; OECD/European Union, 2022). For example, the COVID-19 pandemic disrupted the provision of primary medical care, screening and cancer treatment, the continuous care for the individuals suffering from chronic diseases and elective surgery (for cases that did not represent an emergency) mainly in the periods where quarantine measures were imposed. To cope with the pandemic challenges, numerous countries had to supplement their budgets allocated to the health sector thus prioritizing certain expense categories.

Although there have been ample discussions about the health-related expenses being rather an investment than a cost, healthcare policies had not changed significantly before the pandemic. Health-related expenses largely focused on curative care, and only 3%, on average, of all these expenses were meant for prevention (OECD/European Union, 2022). In 2020, most EU countries significantly increased their prevention-related expenses to fund the testing and identification of contacts, their supervision and the information campaigns relating to the pandemic. In 2021, major additional resources were allocated for the conduct of vaccination campaigns against COVID-19.

At world level, health-related expenses increased to 9 trillion USD in 2020 or about 10.8% of the global GDP. In 2020, the expansion of health-related expenses was caused by the governmental expenses, and the average public expenses per capita

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in terms of healthcare reached quite high values for all categories of incomes. On the other hand, in 2020 the amounts allocated by the population for the healthcare services decreased due to the reduction of their use. In the case of countries with lower revenues, in 2020 expenses per capita from the external aid did not grow very much as compared to 2019 (World Health Organization, 2022).

In 2020, the structure of expenses remained unchanged, despite the pandemic and the major disturbances to the basic healthcare service package in many countries. Official data show that the services regarding the hospitalized patients, outpatient care and medical goods accounted for more than 60% of the healthcare-related expenses. Despite all that, the expenses related to healthcare services per capita increased very much (by 32% for prevention; by 10% for hospitalization). Expenses related to governance and administration increased by 7%, expenses related to medical goods increased by 3%, while the expenses related to outpatient care remained stable in the interval 2019 – 2020 (World Health Organization, 2022).

The available (though limited) official data show that countries allocated significant amounts of their public expenses for activities connected to COVID-19. COVID-19 healthcare-related expenses represented on average 8% of the governmental expenses for healthcare in 2020, and on average 1% of all general public expenses. In the developed countries, most COVID-19 healthcare-related expenses were allocated for treatment, testing and hospital care. In exchange, in the underdeveloped and developing countries most expenses were intended for prevention as well as the management and coordination of the health system.

The very fact that there are certain difficulties in estimating the real healthcare-related expenses during the COVID-19 pandemic shows that these difficulties are bigger. Moreover, in 2020, vaccines were not available in very many countries. The first estimates show that the expenses level increased in 2021 due to the higher and higher amounts allocated for case monitoring, testing and vaccination.

In 2020, the distribution of healthcare-related expenses was unequal among the categories of revenues. Thus, in the developed countries, where the population having a high income represents 15% of the world population, the healthcare-related expenses amounted to 80% of all expenses at global level. As for the developing countries where the population has an average income and represents more than 75% of the world population, the total expenses for healthcare were about 20% of all expenses at global level while in the underdeveloped countries whose populations represent 8% of the world population, healthcare-related expenses amounted to 0.2% of all expenses at global level (World Health Organization, 2022).

When comparing several countries in terms of level of healthcare-related expenses we may also notice the contribution of other factors (demographic factors, social factors, governments' role) to the funding the health systems. For example, countries that have higher revenues and the highest number of adults as well as the lowest number of school-age children registered higher public expenses for healthcare and social protection in 2019, and lower expenses for education than the countries having low revenues. Between 2000 and 2019 healthcare-related expenses became more and more unequal. The stagnation of governmental expenses for healthcare in the countries with low revenues left them even further behind. In exchange, governmental expenses for education slightly increased as a share of GDP.

The expansion of governmental expenses for healthcare during the first

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year of COVID-19 pandemic belonged to a series of much ampler fiscal programmes that aimed at all categories of revenues, thus governments' role increasing considerably. In the countries with an average income and in those with a low income, increase was mainly determined by the higher priority given to health within the fiscal measure packages. In exchange, in the countries with high revenues the expansion of governmental expenses for healthcare was due first of all to the higher global governmental expenses. At the same time, healthcare-related expenses and social care-related expenses considerable increased in these countries because governments tried to protect their population from the economic impact of the pandemic. There are not available any consistent data regarding the social care-related expenses for the countries with low and average revenues. Unlike healthcare-related expenses and social care-related expenses, the increase of expenses for education was more reduced in 2020.

The continuous challenge is to sustain the governmental expenses for healthcare in order to satisfy population's needs (Gasper & Gómez, 2023). Several decades of experience and the pandemic experience have showed that the governmental expenses for healthcare are essential. Governmental investments in public health are also crucial for the consolidation of health security.

New challenges are going to come in sight as a higher level of uncertainty, complexity and volatility will manifest (UNPD, 2022). In the context of the COVID-19 pandemic, new ways of healthcare service delivery to the different categories of population in most countries will appear. In this respect, Narayan et al. (2022) show that the effects of pandemic experienced at macroeconomic level produce not only a slower growth but also the increase of unequal revenues and the increase of poverty within countries, and this aspect will significantly hallmark the health services. Moreover, the new health threats will influence the capacity of health systems. This will focus more on the development of some more efficient health systems.

Therefore, health threats may have major effects and endanger economic stability. The supplementary public expenses are also essential in order to tackle with the higher and higher inequities and poverty. These are challenges mainly for the underdeveloped countries where the largest part of the population has a low income. They will keep on relying on external funding in order to support public expenses and to make sure that the poor and vulnerable individuals may get access to the essential healthcare services when necessary. Last but not least, the situation created by the war in Ukraine exacerbates these threats by affecting the global supply of food, inflation and world trade (Toygar & Yildirim, 2023).

In Romania, according to the Law no. 95/2006 on the reform of the health sector, article 188 stipulates that "public hospitals are public institutions integrally funded from their own revenues and operating on the financial autonomy principle. The revenues of the public hospitals come from the amounts collected for medical services, other services provided based on contracts as well as from other sources, under the law". The organization of hospital activity relies "on its own income and expenditure budget as approved by the unit management and with the agreement of the hierarchically superior authorising officer". The preparation of the income and expenditure budget is made based on the evaluation of revenues in the budget year and the distribution of expenses based on the substantiated proposals of the hospital wards and departments.

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1.1 Usefulness of the proposed research

The assessment of the funding level of the medical units especially during pandemics plays an essential role in the development and making the health system of any country more efficient, and it represents one of the most important factors for increasing the efficient use of the material and human resources as well as of the competitiveness of an economy on the long run, which is a defining plus point in the current global circumstances marked by a high level of instability and uncertainty of the potential short and medium-term evolutions.

Starting from the more and more important role of scientific research and technological progress in the control of effects of epidemics, the global healthcare-related expenses in most countries of the world have significantly increased (World Health Organization, 2022). To better highlight the size and gravity of manifestation of diverse pandemics that mankind has faced in recent years (2000-2023), besides COVID-19 pandemic, Table 1 presents a synthesis of their characteristics.

Table 1: Epidemics and pandemics taking place in the period 2000-2023 at world level

Period	Epidemic/ Pandemic	Country of origin	Description
2002-2003	Severe acute respiratory syndrome (SARS)	China	It belongs to a family of viruses causing respiratory symptoms such as cough and breathing difficulty, and it was first identified at the end of 2002 in south China. SARS spread in more than 20 countries on 4 continents and infected more than 8000 individuals. SARS killed almost 800 individuals, most of deaths taking place in China and Hong Kong until the outbreak was suppressed in 2003. The virus was transmitted to people following the contact with civets.
2009-2010	H1N1	Mexico, USA	It started spreading out at the beginning of 2009 in Mexico and the United States. Unlike other flu strains, H1N1 disproportionately affects children and young individuals. CDC (Centre of Disease Control) calls it "the first global flu pandemic in forty years". The World Health Organization declares PHEIC (Public Health Emergency of International Concern) in April 2009, then calls the H1N1 spreading a pandemic in June, after the virus had reached more than 70 countries. As a response, some countries restrict population's travels to North America, and China imposes mandatory quarantines for patients and their close contacts. CDC (Centre of Disease Control) estimates that between 151,700 and 575,400 individuals died in the whole world - about 12,500 in the United States – in the first year since the virus had been discovered. Approximately 80% of the dead were aged less than 65 years old. The World Health Organization announced the end of the pandemic in August 2010, though the strain has continued circulating seasonally.
2012	MERS (Middle East Respiratory Syndrome)	Saudi Arabia	A new coronavirus called Middle East Respiratory Syndrome (MERS) was transmitted to people by camels in 2012 in Saudi Arabia. The largest outbreak was in the Arabic Peninsula in the first half of 2014. In 2015, South Korea registered the second largest outbreak. More than 20 countries reported cases of viral respiratory disease in the following years, though most cases were in Saudi Arabia. The virus usually causes pneumonia in the infected individuals and has a quite high mortality rate; out of the 2,500 individuals diagnosed with MERS since the discovery thereof more than 850 individuals died because of this disease.
2014	Poliomyelitis	Africa, Asia	In May 2014, the general manager of the World Health Organization declared a PHEIC (Public Health Emergency of International Concern) in connection with the increase of the number of cases of poliomyelitis in Africa and Asia. The virus which had paralysed or killed hundreds of thousands of people annually was almost eradicated after the mass vaccination campaigns that started at the end of the 1950s. The disease that mainly attacks young people proved hard to eliminate especially in the conflict areas. The widely spread lack of trust in the vaccination campaigns is a major challenge. PHEIC (Public Health Emergency of International Concern) for the potential spreading of poliomyelitis has

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			remained in force since 2022, and the disease is still endemic in Afghanistan and Pakistan.
2014-2016	Ebola	Africa	At the beginning of 2014, the Ebola virus caused a rare and severe infectious disease resulting in the death of half of the infected individuals. The first cases were identified in Guinea, Liberia and Sierra Leone. It was the first time when the disease reached the densely populated urban areas thus allowing for a rapid spreading. The outbreak expanded to other 7 countries, including most of the European countries and the United States causing more than 11,000 deaths in total. The lack of trust in the health workers and rumours were again challenges for isolation. In September 2014, the UN Security Council adopted a resolution by which member states were asked to pool the global resources in order to control the crisis.
2015	Malaria, Dengue fever	Africa, Asia	WHO reported in 2015 that the malaria infections diminished by more than a third at world level as compared to 2000. Malaria still kills several hundreds of thousands of individual each year, out of which two thirds are children aged less than five. The eradication efforts focus on the eleven countries where the large majority of malaria cases appeared, all of them being in Sub-Saharan Africa, except for India. Meanwhile the dengue fever (which is another mosquito-transmitted disease) cases increased between 2000 and 2015, partially due to the increased reports. Dengue fever is endemic in more than one hundred countries, most of the 100-400 million cases appearing in Asia. These diseases proved difficult to eliminate because researchers face numerous challenges when developing successful vaccines.
2015-2016	Zika	Brazil	An outbreak of Zika virus discovered for the first time in Uganda in the 1940s and transmitted mainly by mosquitoes occurred in Brazil at the beginning of 2015. Thousands of women infected with this virus during pregnancy gave birth to babies with microcephaly, a disorder where a baby's head is less than the normal head, and other congenital disorders. Some governments recommended women to delay pregnancy in the context of the outbreak. The World Health Organization declared the end of the epidemic in November 2016.
2018-2020	Ebola	Congo	In August 2018, the Democrat Republic of Congo declared an Ebola outbreak in the north-east part of the country. More cases were subsequently reported in Uganda. The prolonged conflict in the region prevented a response since the health workers faced some attacks from armed groups; misinformation and the lack of trust among the local population are also provocations. Until June 2019, the Ebola outbreak became the second largest outbreak in history, and in July the World Health Organization declared a PHEIC (Public Health Emergency of International Concern) while asking for an increased international support to end the crisis. More than 3,400 individuals got infected with this virus and almost 2,300 died. In June 2020, almost two years since the beginning of outbreak, the World Health Organization declared it as extinguished. Despite all that, smaller outbreaks continue appearing in certain parts of the country.
2019-2023	COVID-2019	China	A new coronavirus appeared in the Chinese province of Hubei at the end of 2019 while rapidly spreading to other parts of China. The virus quickly spread to the rest of the world, and in March 2020, the World Health Organization declared this outbreak as a PHEIC (Public Health Emergency of International Concern). Many governments imposed restrictions in order to stop the spreading of the virus, including the obligation to wear face masks, the limitation of the number of people that may gather for large meetings, and quarantines for the infected individuals. After three years the official number of deaths announced by the World Health Organization due to COVID-19 is close to 7 million individuals, though the real number is 3 times higher. The economic downturn is described as being more serious than during the Great Depression with disturbances of the supply chains and labour force which reverberate all over the world. At the same time, the world witnesses the fastest development of safe and efficient vaccines. Despite all that, the unequal distribution of vaccines and the appearance of some more dangerous variants hinder authorities' efforts to end the pandemic. In May 2023, 70% of the world population had at least one dose of vaccine and a diminution of deaths and hospitalizations connected to COVID-19 was registered.

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2022-2023	Mpox (Monkeypox)	UK	An mpox case, previously known as monkeypox, a rare zoonotic virus, was reported in the Great Britain in May 2022. The virus is similar to smallpox since it has some similar symptoms. Despite all that, mpox is considered to have a lower transmission rate and to be less lethal. The virus spread quickly in the countries where it was not endemic; almost 16,000 cases and 3 confirmed deaths were reported until July and the disease is present in at least 75 countries. Since the vaccines against smallpox may be used to control smallpox, countries tried to expand the limited availability. A fast global response to this outbreak resulted in the significant slowing down of its spreading until May 2023, with 87,000 reported cases and 140 confirmed deaths in 111 countries.

Source: https://www.cfr.org/timeline/major-epidemics-modern-era - accessed on 27/08/2023

Therefore, it may be considered that the theme proposed for research is relevant, and there are many aspects that have not been sufficiently explored so far. Consequently, we may infer that the scientific usefulness of the topic proposed for research is high since the results thereof may lead to valuable contributions in the field of healthcare, and in the economic and social fields.

1.2 Funding sources of the medical units in the public health system

Public hospitals must insure the collection of funds and substantiate their expenses in terms of their actions and objectives during the budget year by titles, articles and paragraphs, according to the budget classification.

Article 189 of the same law shows that "the healthcare service provision contract of the public hospital with the health insurance fund represents the main source of revenue in the income and expenditure budget and it is negotiated by the manager with the management of the health insurance fund depending on the indicators established in the healthcare service provision framework contract. If wither party refuses to sign the healthcare service provision contract, a mediation committee will be established from the representatives of the Ministry of Public Health, the competent ministry as well as of the health insurance fund which will settle the divergences within 10 days at the latest. Hospitals may also conclude healthcare service provision contracts with private health insurance funds. The salary rights of the personnel employed for scientific research and preventive medicine activities held within the organisational structure of the medical unit with beds shall be borne by hospital's own revenues. As of January 1, 2008, the salary rights of the staff employed for research activities shall be borne by the state budget".

Article 190 of the same law stipulates that "public hospitals shall receive additional amounts from the state budget or the local budgets that will be used only for the purposes for which they were allocated, as follows:

a) from the **state budget** through the budget of the Ministry of Public Health or of the ministries or central institutions having their own medical network as well as from the budget of the Ministry of Education and Research for the clinical hospital with teaching departments;

b) from the **county's budget**, for the country hospitals;

c) from the **local budgets**, for the county or local hospitals".

Law no. 95/2006 stipulates that the **state budget** will cover:

a) the carrying out of the activities contained in the national health programmes;

b) the endowment with medical equipment, under the law;

c) the investments connected to the building of new hospitals, including the completion of the ones being in process of construction;

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d) the expertise, transformation and consolidation of the buildings seriously affected by earthquakes and other cases of force majeure;
e) the modernization, transformation and expansion of the existing buildings as well as the carrying out of the capital repairs;
f) the activities specific to units and institutions having their own medical network;
g) the didactic and research activities;
h) other current expenses and capital expenditures.

Local budgets help "funding some administration and operational expenses, namely goods and services, capital repairs, consolidation, expansion and modernization, endowment with medical equipment of the public medical units at county and local level within the limit of budgetary credits approved for this purpose in the local budgets".

Public hospitals may obtain **additional revenues** from:
a) donations and sponsoring;
b) investment associations in medical fields or for medical and pharmaceutical research;
c) renting of medical spaces, medical equipment and devices to other medical service providers, under the law;
d) contracts on the provision of medical services concluded with the private health insurance funds or the economic agents;
e) editing and distribution of certain medical publications;
f) medical services, hotel services or of other kind of services provided on third parties' request;
g) medical care services at home provided on patients' request;
h) research contracts and other sources;
i) other sources, under the law.

According to Vlădescu et al. (2018), in the past "Romania used to have parallel health systems funded by ministries such as the Ministry of Transports, the Ministry of National defence, the Ministry of the Interior, and the Intelligence Service. These systems currently have small sizes due to the closing down of certain institutions such as rest homes and rehabilitation centres for the disabled within the Ministry of Labour, Family, Social Protection and Elderly People or the transfer of others to the Ministry of Health. This includes, for instance, the transfer of many hospitals from the Ministry of Transports to the Ministry of Health in 2013 together with the closing down of the special health insurance funds for the employees working in the field of transports".

Another funding source for the Romanian public hospitals is represented by the **European Union funded programmes**. In October 2019, the Ministry of Regional Development and Public Administration (MDRAP) launched the call afferent to Axis 14 –Regional Emergency Hospitals within the Regional Operational Programme 2014 – 2020 (ROP). The investments made by this programme will continue in the period 2021-2027 as well. This allows the beneficiary (the Romanian Ministry of Health) to submit to AM POR an application for funding for the construction of 3 regional hospitals, one of them in Iași. The investment for the Regional Emergency Hospital of Iași amounts to 500 million EUR, and the feasibility survey has already been completed and delivered (Fig. 1).

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Source: Press release (http://mfe.gov.ro/finantarea-europeana-pentru-spitalele-regionale-continua/ - accessed on 03/03/2020)

Fig. 1. Funding stage of the Regional Emergency Hospital of Iași, Romania

According to the press releases on the official website of the Ministry of Health[1], out of the 3 hospitals whose construction and endowment are ensured through European funding programmes, the Regional Emergency Hospital of Iași is the most advanced project for which the evaluation phase has been completed and the contracting phase has begun. In parallel, the Ministry of Health has initiated the public procurement procedure for design services for the elaboration of the technical project.

Other funding sources are the **National Insurance Fund for work accidents and occupational diseases** (regulated by the Law 346/2002). This fund is funded by the contributions paid by employers and it covers medical care, transport, medical devices, rehabilitation and balneotherapy treatments. It also includes sickness benefits for insured persons' temporary incapacity. Despite all that, the individuals working for certain enterprises and ministries such as the Ministry of National Defence, the Ministry of Justice, the Ministry of the Interior, the Romanian Intelligence Service, the External Intelligence Service, the Security and Protection Service and the Special Telecommunication Service are insured against work accidents and occupational diseases by their own systems (Vlădescu et al., 2008b).

Voluntary/charity funding is another funding source for health. Despite that in recent years the charity funding from foreign agencies has decreased, there is a higher and higher number of initiatives of the local companies (or the local branches of the international companies) which fund health projects. These practices are encouraged by legislation; for example, the Government Emergency Ordinance of March 2015 stipulates that at least 40% of the donations made by the state companies should be spent for health and education and 20% at most for other needs. There are legislative proposals for the introduction of fiscal deductibility for the donations made by natural persons and for the increase of the fiscal deductibility limit for the donations made by companies from 0.3% to 0.6% of their turnover (Vlădescu et al., 2018).

Moreover, according to the Fiscal code of 2004, taxpayers were allowed to allocate 2% of their income tax to an NGO. In 2018, the Ministry of Public Finances reported that 1.7 million people (representing 25% of taxpayers) redirected 2% of their income tax (more than 30 million EUR) to more than 26,000 NGOs, including the NGOs created by hospitals for resource mobilization (Vlădescu et al., 2018).

2. Funding characteristics of the Romanian public health system as compared to the European Union countries

According to the European Committee[2], "the public sector plays a principal role in funding healthcare

[1] http://www.ms.ro/2019/12/13/spitale-regionale-de-urgenta/ - accessed on 03/02/2020

[2] https://ec.europa.eu/info/sites/info/files/file_import/european-semester_thematic-factsheet_health-systems_ro.pdf - accessed on 29/09/2023.

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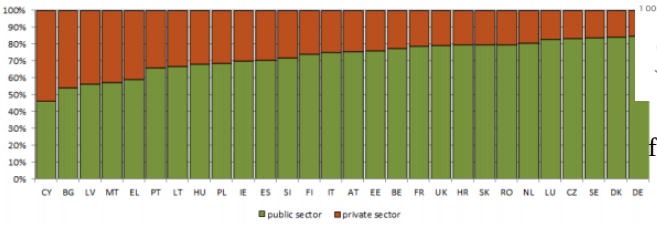
services: in two thirds of the member states more than 70% of the healthcare-related expenses are funded by the public sector. This situation risks to endanger the sustainability of public finances, especially in the context of population's growing old".

Figure 2 presents the public and private funding of the healthcare systems in the EU states. The member states where a quite high share of healthcare-related expenses comes from the private environment are Bulgaria (46% of total healthcare-related expenses), Greece (more than 41%), Cyprus (54%), Latvia (44%) and Malta (43%).

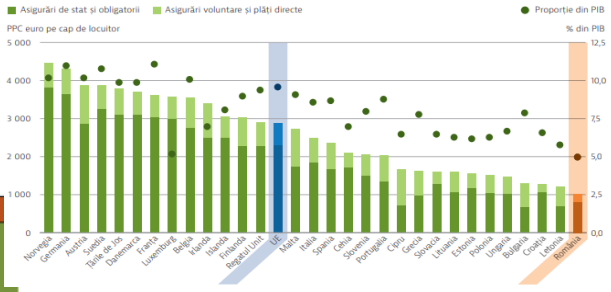


Source: https://ec.europa.eu/info/sites/info/files/file_import/european-semester_thematic-factsheet_health-systems_ro.pdf - accessed on 29/02/2020.

Fig. 2. Healthcare-related expenses according to funding agent – data of 2016 or more recent

The member states where healthcare-related expenses are preponderantly funded by the government are the Czech Republic (83%), Denmark (84%), Germany (85%), Luxemburg (83%), the Netherlands (81%) and Sweden (84%).

According to an OECD report showing the country profile in 2019 in terms of healthcare[3], Romania spends less than any other EU state on healthcare, both in terms of per capital and as a share of GDP. Although healthcare-related expenses have increased in recent years, in 2017 Romania spent 1,029 EUR per individual for healthcare (value adjusted according to differences in terms of purchasing power), which is less than half of the EU average of 2,884 EUR (Fig. 3), or 5% of GDP (as compared to EU average of 9.8%). More than three quarters of healthcare-related expenses are funded from public funds (79.5% in 2017), in concordance with the EU average of 79.3%.



Source: OECD statistics of 2019 in the health field (data refer to 2017).

Fig. 3. Healthcare-related expenses in EU states in terms of GDP share

The second source of revenue in the order of importance is direct payments which accounted for 20.5% of healthcare-related expenses in 2017. The same OECD report shows that the expenses borne by the patient represent about a fifth of the current healthcare-related expenses in Romania (20.5% in 2017 as compared to 15.8% in EU) (Fig. 4).

More than two thirds of this share of the expenses borne by the patient is used to pay for the medicines bought outside hospitals. Copayments for these medicines prescribed during outpatient medical care vary between 10% of the consumer price of generic medicines and 80% for the new medicines based on medical prescription and may prevent access to the necessary medicines.

Despite all that, Romania has registered some progress in the improvement of access to expensive medicines. For example, as of 2016 access

3 https://ec.europa.eu/health/sites/health/files/state/docs/2019_chp_romania_romanian.pdf - accessed on 25/09/2023;

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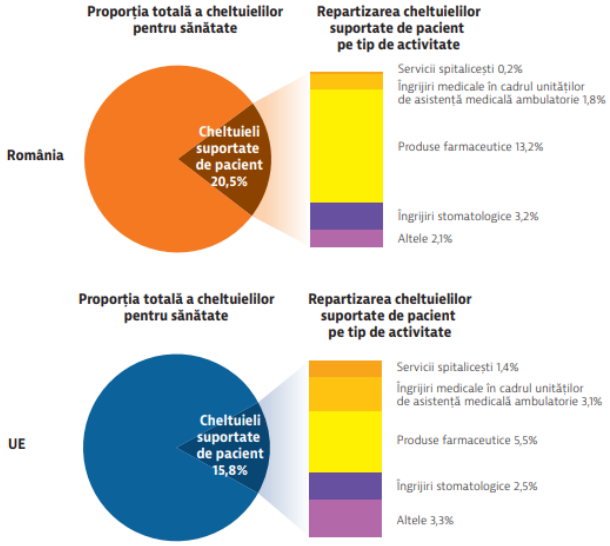
to direct action antiviral medicines for hepatitis C has been expanded (from about 6,000 patients in 2016 to 13,000 patients in 2018) and the number of contracted suppliers has also increased. Parallel exports and the deficiencies resulted from medicines and vaccines represent another obstacle against access.



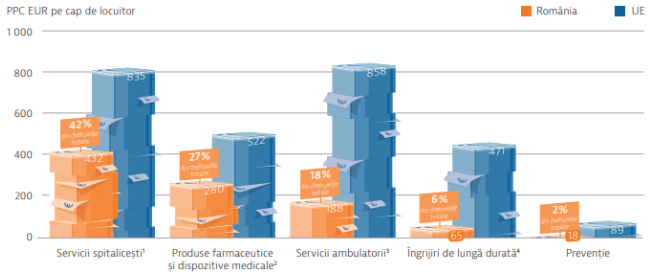
Source: OECD statistics of 2019 in the health field (data refer to 2017)

Fig. 4. Expenses borne by the patient for pharmaceutical products

Despite all that, the real value of expenses borne by the patient is difficult to precisely assess due to the widely spread informal payments (especially during hospital care) and to the fact that private suppliers report lower levels of their revenue. Sanctions for the suppliers accepting under-the-counter money have intensified since 2014, and it is possible that the result may have been a reduction of this practice.

The transition to outpatient healthcare is in an incipient phase, more than 42% of the healthcare-related expenses being still directed to hospital services (as compared to EU average of 29%), though total value per capita remains low in absolute terms while totalizing about half of the total EU expenses (European Commission, 2019a). An additional percentage of 27% is spent on pharmaceutical and medical use products. This value is high as compared to that of other countries and it occupies the third place in EU after Bulgaria and Slovakia.

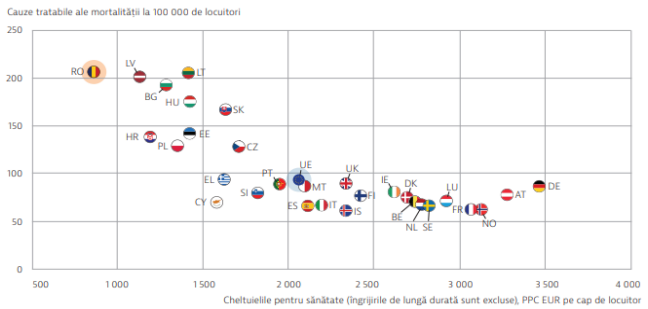
But the absolute value of expenses per capital for pharmaceutical products (280 EUR) remains low, Romania spending slightly more than half of the EU average (522 EUR) (Fig. 5).



Source: https://ec.europa.eu/health/sites/health/files/state/docs/2019_chp_romania_romanian.pdf - accessed on 29/02/2020

Fig. 5. Expenses borne by the patient for pharmaceutical products

Therefore the increase of healthcare-related expenses might improve the access to efficient and timely medical care, if funds were used efficiently, which might reduce mortality due to treatable causes (Fig. 6).



Source: https://ec.europa.eu/health/sites/health/files/state/docs/2019_chp_romania_romanian.pdf - accessed on 29/02/2020

Fig. 6. Expenses level in healthcare associated to avoidable deaths due to treatable causes

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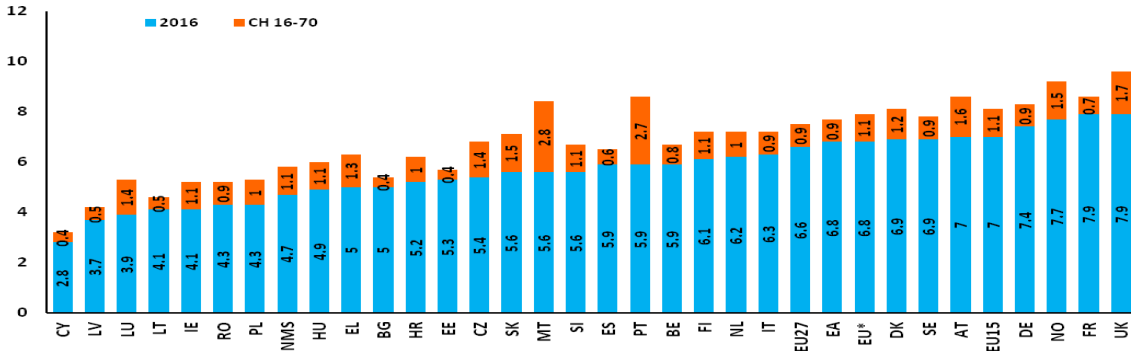
Health insurance contributions represent the main funding source but if we take into consideration the large range of exempts, practically only a quarter of the total eligible population effectively pays their contribution (European Commission, 2019b).

Solving this problem would increase the funding base and consolidate the health insurance system.
Diverse measures to reduce the number of exempts and to increase contribution rates have been taken in recent years, but the reduced proportion of payment population shows that the system is extremely underfunded.

According to the European Committee the share of public healthcare-related expenses relative to GDP is expected to grow until 2060. The main factors determining this increase are:

- increase of revenues and the higher and higher expectations in terms of the high quality medical care services;
- demographic ageing;
- technological progress.

According to "Ageing Working Group – AWG reference scenario", public expenses in the EU health sector will increase by 0.9% of GDP by 2070 (Fig. 7).



Source: adaptation after the reference scenario of the Ageing Working Group – AWG (2018)

Fig. 7. Expected increase of public expenses for medical care due to demographic changes in the period 2016-2070 as percentage of GDP

In the "AWG risk scenario" for Romania, an average increase of 0.9% of these expenses is expected by 2070. The highest increases of public healthcare-related expenses are expected to be in Malta (2.8%) and Portugal (2.7%).

3. Analysis of funding of the public medical units in the north-east region of Romania

At regional level, we may notice an increase of the healthcare-related expenses for public administration and defence, public system social insurances, education, healthcare and social care in the period 2013-2017 (Table 1).

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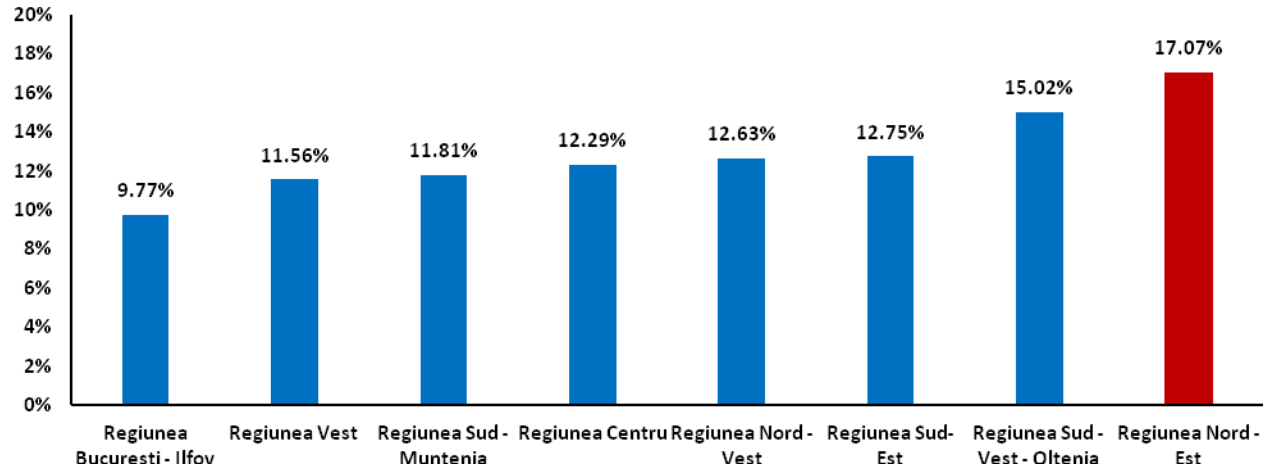
Table 1. GDP components for the north-east region, 2013-2017 (million lei)

Activity field	2013	2014	2015	2016	2017
Agriculture, forestry and fishing	5736.4	5395	4865	4915.8	5876
Extractive industry; manufacturing industry, production and supply of electricity and thermal energy, gas, hot water and air conditioning; sanitation, waste management, decontamination activities	13673.6	13363.7	13894	141111	16870
Construction	4493.9	4189.6	4362.9	4962.9	4917.3
Wholesale and retail trade; motor vehicle and motorcycle repair, transport and storage; hotels and restaurants	9099.8	10432.4	12629.7	14752.6	17176.5
Information and communications	1793.5	1527.2	2067.6	1980.4	2801.8
Financial intermediation and insurance	1085.8	993	1034.6	1281	992.8
Real estate transactions	7733.4	7766.8	8754.7	9737.2	9796.5
Professional, scientific and technical activities; administrative service activities and support service activities	2345.2	2491.9	3126	3120.9	3995
Public administration and defence; social insurance from the public system; education; health and social assistance	9898.5	11757.8	9884.7	12349.1	15164.1
Performance, cultural and recreational activities; household product repair and other services	1656.7	1916.6	2337.8	2143.4	2808.8
Regional GDP - total	65222.2	67636.7	71626.9	77337.4	88847.7

Source: Romanian National Institute of Statistics, Tempo database

In 2017, in the north-east region, the expenses related to public administration and defence, public system social insurances, education, healthcare and social care amounted to 15164.1 million lei representing 17.07% of total regional GDP. In comparison to other regions, the north-east region had the highest GDP percentage for these activities (Fig. 8).



Source: Romanian National Institute of Statistics, Tempo database

Fig. 8. Expenses related to public administration and defence, public system social insurances, education, healthcare and social care (as percentage of regional GDP) in 2017

Despite all that, the analysis of absolute numbers of regional GDP allocations for public administration and defence, public system social insurances, education, healthcare and social care in 2017 shows that the highest fund allocation is in Bucharest - Ilfov region (22.4 million lei) for a regional GDP more than twice higher than the average GDP of other regions (Fig. 9).

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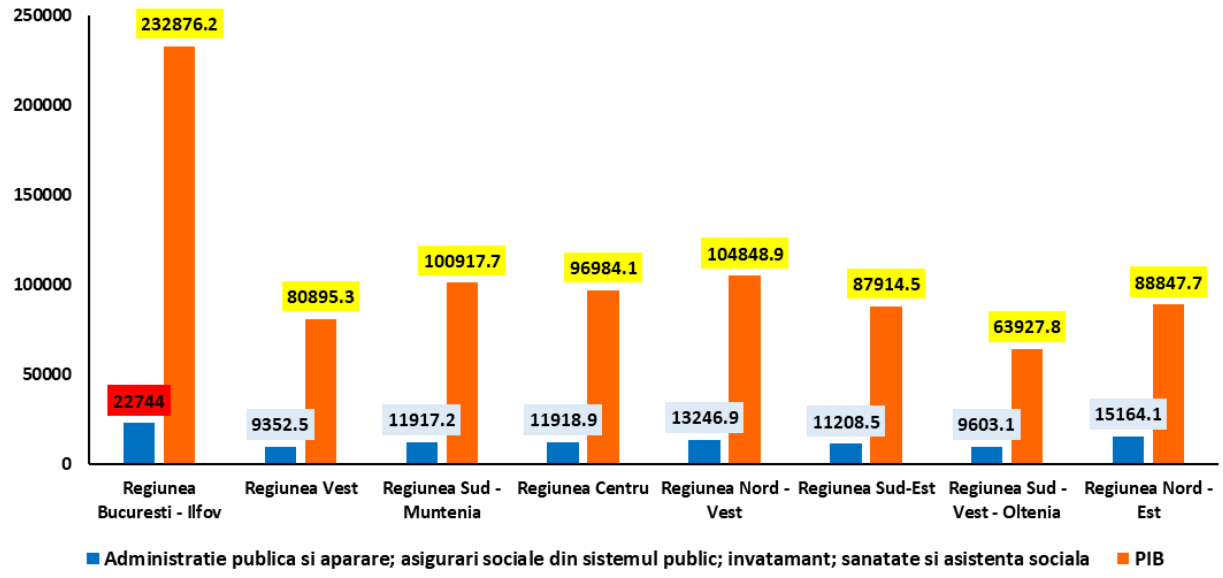

Source: Romanian National Institute of Statistics, Tempo database

Fig. 9. Expenses related to public administration and defence, public system social insurances, education, healthcare and social care (million lei) in relation to total regional GDP in 2017

4. Discussions

As it has been shown in the previous chapters, the funding of medical services in Romania and implicitly in the north-east region comes from public and private sources in proportion of 80% and 20%, respectively (this ratio has been approximately steady in the last 10 years). Public funding consists in the health insurance contributions and governmental resources while the private funding consists in service fees, copayments and supplier subscriptions, with a very low share of private health insurances.

According to CNAS (National Health Insurance Fund), FNUASS finances about 70% of the healthcare services provided in the north-east region. The Ministry of Health directly allocates ten percentages to diverse suppliers, and the rest are direct private payments paid by patients (20%).

Therefore, when we speak about the funding of public hospitals in the north-east region, the National Health Insurance Fund, which administers the National Unique Fund of Health Insurance, is the main actor in the market of healthcare services. By means of the 6 subordinated health insurance funds, it contracts suppliers and has the most levers to influence suppliers' behaviour, the quantity and quality of services provided to patients.

According to Khoo & Lantos (2020), while authorities focus on saving lives, an economic collapse is also an enormous risk for healthcare. Access to medical care is and will be a constant concern of maximum importance for those being in economic difficulty especially that the pandemic brought additional risks (World Economic Forum, 2020). Many companies have trained their personnel to work from home, but this is not a solution on the long run in all cases. Finally, the pandemic had a global economic impact. Thus, a series of adjustments related to economic policies was necessary. The reduction of interest rates and incentive packages were potential solutions. Despite all that, the impact is not a just a problem of demand management, but a problem with many faces requiring the implementation of new

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fiscal and health policies (McKibbin & Roshen, 2020; Küng H., 2014).

Therefore, the impact of COVID-19 pandemic exceeds by far the possibilities of the health systems, thus bringing bigger provocations for many aspects of the social and economic development. In the first year of pandemic, the healthcare systems of many countries faced huge challenges in supporting routine, providing healthcare services and COVID-19 testing, contact tracing and treatment. The total financial resources allocated for healthcare increased in 2020 following the expansion of governmental healthcare expenses in most countries.

The 2022 World Health Organization Report shows again that OOPS (Out-of-pocket costs) level has decreased due to the constraints posed by both supply and demand. Governmental healthcare-related expenses are essential to ensure an equitable access to healthcare services and to reduce the difficulties encountered by population when covering the payments for healthcare services whenever necessary. Governments also play a major role in providing public goods. As it has been mentioned above, the COVID-19 pandemic took most health systems by surprise and started economic crises (Sachs et al., 2022).

In 2020, almost all governments used more financial resources for healthcare in order to control the pandemic. As governmental expenses were higher, OOPS (Out-of-pocket costs) share within all healthcare-related expenses diminished.

Despite all that the pandemic highlighted the importance of improving the sustainability of national healthcare systems in order to respond the existing challenges such as demographic ageing, advanced technologies, environmental risks and the increase of inequities. The continuous monitoring of real healthcare-related expenses by governments is essential in order to trace these changes over time and to understand the way in which allocation and political responses affect these models. More up-to-date data remain essential in order to understand the healthcare-related expense models at national, regional and global level and the way in which these models lead to the universal cover of healthcare.

5. Conclusions

Our research aimed to assess the funding level of the medical units in our public health system. The research results help highlighting the main causes that determined the existence of some deficiencies in the structure of healthcare-related expenses thus resulting in the appearance of some disparities in terms of the quality of healthcare services.

This research represents a conceptual and methodological basis for future researches and may be used as a solid body for covering a large series of problems generated by the flawed management of the funds intended for health and healthcare at national and regional level, especially during the crisis periods.

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