



Comparative Analysis of the Health Care Institutions' Competitiveness Level

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ABSTRACT

The purpose of this article is the evaluation of competitive positions of Ukraine, Poland and Russia based on the economic competitiveness index at the global level and comparative analysis of the medical institutions' competitiveness indicator in these countries as one of the key indicators of the global ranking. To achieve this goal, the ranking method, the method of generalization, as well as systematic, comparative and statistical analysis were chosen. The research showed that according to the Global Competitiveness Index in 2016-2017, the Polish economy ranked 36th, the Russian economy - 43, and the Ukrainian - 85th place in the world ranking. According to the "health and primary education" indicator, Poland ranked 38th, Ukraine ranked 54th, and Russia ranked 62nd among all countries participating in the ranking. More dipper analysis of activity indicators of health care institutions in Ukraine, Poland and Russia showed that Poland is a leading country based on the set of key indicators, that show the health care systems' competitiveness level, Ukraine took the second place and Russia is in outsider's group. The research showed the importance of effectiveness' evaluation of the health care institutions' activity, because this help not only rank countries in the middle of the statistical sample but also focuses on stronger countries achievements, implement their experience, skills and good practices and help those healthcare institutions that occupy the top positions in the domestic markets not stop on current level.

INTRODUCTION

In the modern world increasing competitiveness is an important task for private business and countries as well. The transformation processes in the economy have gained high speed. The facts show that the variability of business conditions can both raise the competitive position of the business and rapidly lower them in a single moment. All depends on competent management' responsiveness on market changes. There is similar regularity in the estimation of global competitiveness, where ranking not only individual enterprises or industries but the whole economies. The success

of the country in competition in the global market depends on the success of their enterprises' potential realisation. The key factors that can lead to sustainable economic growth in the long term are, first of all, reforms, proper investment, progress in various fields and a willingness of staff to mobilize resources, time and efforts for the benefit of their citizens. These factors are equally important for all country types: developed, with transition economies and developing countries.

1. LITERATURE REVIEW

According to the key global competitiveness indicators, one of the basic characteristics goes to the healthcare sector. This field is rather ambiguous in view of the specificity of the medical services market, since the implementation of the market into medicine is only possible by presupposing at least three implications: (a) the patient as consumer, (b) medical care as commodity, (c) competitiveness as criteria for good medicine (Maio, 2008). In fact, first of all the pharmaceutical sector (Kanavos, 1998) is best suited to such characteristics, as one of the many elements of the healthcare industry, because ill customers (patients) automatically become consumers, and medicines play the role of goods (albeit specific), and the competitiveness of pharmacists can be easily seen on the shelves of pharmacies. However, more and more scholars and practitioners believe that the health care industry has become the focus of international investment (Tsai and Lin, 2012). And here we are talking about the whole health care system. Medical tourism also enhances the investment attractiveness of the healthcare sector. The leading countries in the field of medical tourism are the USA, Germany, Israel, Switzerland, Canada, the Netherlands. European Union countries such as Greece, Poland, Czech Republic, Slovakia (Zoltaszek, 2014), Latvia (Behmane and Rutitis, 2018) actively engage in medical tourism market, as well as Russia (Ziganshina, 2018), Korea (Byung and Sam-Hun, 2018; Junio et al., 2017) and some other Southeast Asia countries, including India, Thailand, Singapore, Malaysia, and the Philippines (Bajgier-Kowalska et al., 2016). The ever-increasing number of participants in the medical tourism market is driving international competition (Kankaanpaa et al., 2011; Glennerster, 1998; Rice et al., 2000). Medical institutions are forced to fight for their competitive advantage not only by nominally fulfilling the international health system requirements set out in the Directive 2011/24/EU (Kovac, 2013) or other regulations in force in each country. Medical institutions are also should offer their patients better medical services (Bris et al., 2016; Kister, 2018) by improving the professional skills of medical staff, providing medical tourism counseling, forming service complex, providing follow-up services, ensuring medical security for each type treatment, keeping ethical issues and patients' rights, improving the health care management system, modeling the brand of health care services, and more. Achieving these competitiveness enhancement methods is possible through the usage of various service technologies in healthcare facilities, regular evaluation of the quality of medical and organizational-administrative processes (Pashkus et al., 2017; Yaghoubi et al., 2017; Bajgier-Kowalska et al., 2016), as well as through the assessment of material, financial (Klapkiv, 2016; Klapkiv et al., 2017) and staff providing.

2. AIMS

The purpose of this article is to evaluate the competitive position of Ukraine, Poland and Russia in terms of economic competitiveness at the global level and to conduct a comparative analysis of the medical institutions' competitiveness in these countries as one of the key indicators of the global ranking. To achieve this goal, 2 sections were formed in the article. In the first was examined the essence of the global competitiveness indicator and researched the rating positions for this indicator for different countries of the world (including for Ukraine, Poland and Russia - as the countries selected for this study). The second section provides a more in-depth analysis of key industry indicators broken down into 5 groups (demographic assessment, use of processes and service technology, material supplying, financial supplying, staffing) and characterizing the activities of

healthcare institutions in Ukraine, Poland and Russia. Such a breakdown allowed rating of health institutions in Ukraine, Poland and Russia among themselves and identifying key success factors of stronger countries. This will allow them to learn from their experience, skills and current "good practices" that are mentally close to the countries analyzed, and therefore easier and more natural to follow.

3. MATERIALS AND METHODS

The Global Economic Forum's Global Competitiveness Index data, which takes into account the complexity of economic processes and represents a weighted average of more than 100 different components, was used to analyze the global competitiveness of countries. The data from the Human Development Reports published by the United Nations Development Program were used for comparative assessment of human development indicators in the health sector in Ukraine, Poland and Russia. The estimation of GDP by type of economic activity was carried out based on data presented in the statistical yearbooks of the researched countries. For comparative evaluation of the activities of medical institutions of Ukraine, Poland and Russia in terms of demographic assessment, use of processes and technology of service, level of material security, level of financial security and staffing, the data of the European database "Health for all" were processed. The method of generalization, as well as systematic, comparative and statistical analysis, were used in the elaboration of the materials for the article, in particular in the study of the indicators of the evaluation of the health care system in Ukraine, Poland and Russia; the ranking method was used to assess the level of health systems competitiveness. The ranking method is chosen to assess the level of competitiveness of health care systems, that gave the possibility to compare the subject matter with a group of competing countries and to determine its place in a competitive environment. Although this method does not contain fundamental mathematical calculations, it is suitable for establishing the position of the leading country in the results of medical institutions from among the generated statistical population.

4. CONDUCTING RESEARCH AND RESULTS

4.1. Global competitiveness as an impetus for the development of countries

A global study of the competitiveness level and ranking of countries by economic competitiveness is conducted by the World Economic Forum, which, since 1979, reflects this data in the Global Competitiveness Report every year. The main purpose of the Fund was to enable countries to learn from each other's experiences and learn new practices for their growth (Ukrainian Regions' Competitiveness Report, 2013). In the Global Competitiveness Report, countries are ranked by the Global Competitiveness Index, which takes into account the complexity of economic processes and represents a weighted average of over 100 different components, each reflecting one aspect of competitiveness. All of these indicators are grouped into 12 key components of competitiveness, which are closely interrelated and can contribute to both strengthening and mutually reinforcing (The Global Competitiveness Report 2016–2017):

A. Basic requirements subindex – key for factor-driven economies:

1. Institutions;
2. Infrastructure;
3. Macroeconomic environment;
4. Health and primary education;

B. Efficiency enhancers subindex – key for efficiency-driven economies:

5. Higher education and training;

6. Goods market efficiency;
7. Labor market efficiency;
8. Financial market development;
9. Technological readiness;
10. Market size;

C. Innovation and sophistication factors subindex – key for innovation-driven economies:

11. Business sophistication;
12. Innovation.

All components of the Global Competitiveness Index are of some importance to all economies in the world, but they may have different effects on the level of development of different countries. That's why economic growth was delimited in 3 stages of development:

- Countries with factor-oriented economies that compete with each other at the expense of resources (labour and minerals).
- Countries where economic growth depends on their effectiveness. In such economies, the key to success is the introduction of more efficient production processes and improved product quality.
- Countries with innovation-oriented economies. This stage of country development is characterized by the fact that new or unique types of products, services, models or processes are the basis of their competition.

In 2016-2017, the ranking of countries by the Global Competitiveness Index was formed among 138 economies in the world. However, since the subject of the study in this article is the competitiveness of Ukraine and two neighbouring countries - Poland and Russia, only these three countries are evaluated below. Considering that according to the classification of countries based on the stages of development, Ukraine was assigned to the countries whose activity is focused on the efficiency of economies (the second stage of development), while Poland and Russia - to the countries in transition process which are between the second to the third stages of economic development, the Ukrainian economy ranked 85th in the world rankings, and Poland and Russia ranked 36th and 43rd respectively. Switzerland, Singapore, the United States, the Netherlands, Germany, Sweden, the United Kingdom, Japan, the Hong Kong Special Administrative Region and Finland have been ranked among the world leaders in 2016-2017 by competitiveness criteria. Ukraine's relatively low ranking in the world rankings is further explained by the downturn in economic activity and rising inflation due to the unresolved military conflict in eastern Ukraine, which has severely affected Ukraine's public finances. Moreover, Ukraine lost 6 positions in the ranking compared to 2015-2016, while Poland and Russia climbed 5 and 2 positions respectively.

In order to increase its competitive position, Ukraine should make maximum efforts to, first of all, resolve the military conflict in the east of Ukraine, as well as to further intensify the factors that enhance the efficiency of the economy, and as much as possible to promote in all sectors of the economy highly advanced processes and business models and independently creation and introduction the latest technologies. How different will the situation be with regard to the level of competitiveness of the countries of the world, if only the factor "health and primary education" is taken as the basis? The top ten countries include Finland, Singapore, Belgium, the Netherlands, Japan, New Zealand, Iceland, Switzerland, Canada and Australia. Poland was ranked 38th, Ukraine ranked 54th, and Russia ranked 62nd among all countries participating in the rating.

These statistics suggest that the health of Ukrainians is not a deterrent to improving the country's competitiveness. The workforce has a fairly high level of productivity, which favourably affects the success of a business. Therefore, investments in the health care system are sufficient to accelerate Ukraine's entering into the transition economies group between the second (efficiency-oriented countries) and the third (innovation-oriented countries) stages of economic development.

In the same time, deeper conclusions about the health status of individual countries (including Ukraine, Poland and Russia) can only be made based on a more detailed analysis of key industry indicators.

4.2 Competitiveness of medical institutions: a comparative analysis

In a broad sense, the concept of competitiveness is a universal concept that can be applied to any market for goods and services. At the same time, each of the branches of the economy has its own characteristics that imprint its features on the formation of a competitive environment within a specific industry. The healthcare sector is no exception. I. Tohunov (2005, p.13) quite well described the concept of competition in healthcare, he stated that "*competition in health care is the state and process of relations between the subjects of production and consumption of medical services within the specific civilized form of competition between medical workers (physicians) in order to achieve the highest degree of satisfaction of the target needs patient*". In other words, in determining the level of competitiveness of medical institutions, special attention is given to the targeted needs of patients (direct consumers of this type of service), which is characteristic of all sectors of the economy without exception. G. Maio (2008) more clearly describes the specifics of the formation of the health care market, through distinguishing of the 3 preconditions - the existence of a patient as a consumer of medical services, the existence of medical service as a commodity, and competitiveness as an evaluation criterion for good treatment. We believe that the conditions given by the author fully characterize the existence of a market in which the existence of competition between its participants - medical institutions of different forms of ownership is possible. In general, the medical sphere (if paid medical services are provided), nevertheless, has only peculiar features of its formation of competitive environment:

- Prices for medical services are not always regulated by the market laws - traditional balancing of supply and demand on services. Quite often prices are high even with high demand on a certain type of medical service.
- The right to receive a medical service declared by the constitutional law of each state (e.g., Article 49 of the Constitution of Ukraine (The Constitution of Ukraine, 1996), Article 68 of the Constitution of the Republic of Poland (The Constitution of the Republic of Poland, 1997), Art. 41 of the Constitution of the Russian Federation (The Constitution of the Russian Federation, 1993) and ensure general access to medical services for all citizens of the country, does not depend on the cost of the equipment and technology that this right is exercised. Therefore, free-market laws are again ignored.
- Demand for medical services (despite their high cost at times) will always exist in varying degrees, since patients will always seek medical help, even in the absence of sufficient savings for the treatment they need.
- The introduction of health innovations does not affect the expansion of markets and the further reduction in the price of health care.
- Poor quality of medical services will not lead to a rapid reduction in the number of applications, even if the patient has previous negative experience in receiving medical services.

Assessment of the competitive environment should begin with the overall characteristics of the key factors that characterize the health care system's effectiveness in the countries studied. It is considered that key performance indicators of the health system are to ensure the life expectancy of the citizens (Beztesna, 2010, p.177). In our opinion, this indicator should be clarified for two separate cases - the prognosis of life expectancy at birth and the prediction of life expectancy when a person reaches 60 years of age. In addition, these indicators should be supplemented with infant mortality rates of up to 1 year (as an indicator that is an important characteristic of the over-

all health and standard of living of the country's population) and an indicator of the share of health care expenditures in the gross domestic product (as an indicator that is one of the most important indicators of economic development and serves as a major indicator for compatibility with the UN system of national accounts).

According to Human Development Report 2016 the highest life expectancy in 2015 at birth was in Poland. However, 77.6 years is lower than the average for countries with very high levels of human development (79.4 years). An even more negative assessment deserves an indicator of life expectancy at birth for Russian citizens; its level is even lower than that of countries with high levels of human development (70.3 years versus 75.5 years). Fairly pessimistic is the fact that for each of the estimated life expectancy at age 60 is in the total value lower than life expectancy at birth. This means that the new generation in Poland, Ukraine and Russia is estimated to live at 3.9, 7 and 8.1 years respectively less than the current one. The probability of child mortality from birth to reaching the age of one in 2015 in Poland and Ukraine is lower than the national average for the respective groups of countries with a positive level of human development. Instead, in Russia, this indicator is higher than the average for countries with very high levels of development, to which Russia is classified. The mortality rate of children under the age of 1 year reflects, to a certain extent, the civility of the population, that is, how parents care about their children and how the state protects the health of future generations. In addition, the infant mortality rate also partially characterizes the gene pool of parents and their ability to give birth to healthy children. Thus, statistics indicate that these issues are not given proper attention in Russia, and this is certainly annoying.

Health care expenditures as a percentage of GDP in 2014 in Ukraine are on 0.2% higher than the average for a group of countries with high levels of human development. In the same time in Poland and Russia, this indicator is in 3% and 3.8% lower, respectively, than the average for countries with very high levels of human development. Such values may be due to the fact that the economic indicators of development and progress in the health care system are sufficient for the residents of these countries, and that the lack of funds in this area may cause deterioration of the nation's health. Consider what proportion of each country's gross domestic product falls into the health sector. Due to the lack of information on production and distribution of gross domestic product by types of economic activity in the last 2016 in the statistical yearbook of Ukraine, we will conduct a comparative analysis by the studied countries for the previous 2015.

According to Statistical Yearbook of Ukraine for 2016 priority of health care sphere in 2015 for Ukraine ranks 12th out of the total of 17 key final goods and services produced in the state for the year in all sectors of the economy for consumption, export and storage, regardless of the nationality of the factors used production. The total amount of funds in this area is 51.480 million UAH, which is 2.6% of the total country's GDP. For the Polish economy, the state's care for the health of its inhabitants is greater, because of the total value of all benefits created in Poland, the amount of money that characterizes the indicator of health care and social assistance in the overall ranking of benefits has taken 9th place out of 17 key final goods and services specific to this country (Statistical Yearbook of the Republic of Poland 2017). In terms of value, this amounts to PLN 70.565 million, which is 4.4% of the total GDP. The analysis of the components of GDP in Russia showed that for the Russians, health care priority in 2015 ranks 10th out of 14 key end-products and services specific to this country, accounting for 3.4% of Russia's total GDP (Russian Statistical Yearbook 2017).

Thus, comparing the data on the GDP structure of all three countries, it can be argued that the highest importance is given to health care and social assistance in their country by the Polish leadership, and, unfortunately, the worst is the situation in Ukraine. This means that in Ukraine, a lack of funding in the medical field can cause a deterioration in the health of the entire nation. In assessing the level of competitiveness of medical services, prof. Togunov I.O. recommends focusing on 6 characteristic traits (Tohunov, 2005, p. 14):

- the object of the evaluation is the activity of an organization (medical-preventive institution, medical practice, etc.), which provide medical services;
- service evaluation is related to the quality assessment of the process and service technology;
- the evaluation of the activity of medical workers should be carried out solely by the consumer (patient);
- assessment of temporal characteristics of medical service provision;
- evaluation of the service provided for compliance with the quality of service standards (conditions and culture of service);
- evaluation and integration of the subjective opinions of patients who have received a one-off medical service.

These criteria broadly characterize the competitiveness of health care services. Unfortunately, such metrics cannot be collected from publicly available data. That's why, in this situation, it is more appropriate to use a set of other criteria that will allow evaluation the quality of customer service in 5 key areas: equipment; materials and supplies; methods and technologies; personnel; atmosphere and environment (Vovk, 2017, p. 254). Both approaches complement each other and indicate that to evaluate the success of health care facilities, it is necessary to determine a list of key indicators on which to conclude. Moreover, the assessment can be made in time aspect and in spatial aspect. Given the limited public statistics, we will conduct a comparative evaluation of the activities of medical institutions of Ukraine, Poland and Russia in the 5 categories: demographic assessment, usage of service's processes and technologies, level of material supplying, level of financial supplying and staffing (Table 1). As the study period, the last 20 years were selected with an interval of 5 years.

Analysis of the indicators' dynamics by group "demographic assessment" shows that the estimated life expectancy of the population of all three countries over the past 15 years is increasing, which is estimated positively. Ukraine and Poland recorded an increase of 3.8 years in 2015 and 5.5 years of growth in Russia compared to the base year 2000 (on this indicator doesn't present information for all three countries in 1995). A similar positive trend is observed in the index analysis of this indicator: Poland and Russia are experiencing accelerated growth rates of estimated life expectancy from year to year. Only the situation in 2005, when the life expectancy of Ukrainians decreased by 0.7%, had a negative dynamics in Ukraine. However, in the following periods, this indicator increased, in particular in 2010 life expectancy of Ukrainians increased by 3.4% compared to 2000, and by 5.6% in 2015 compared to 2000.

The crude death rate (per 1000 persons) in Ukraine and Russia is higher than in Poland. The level of this coefficient in Ukraine ranges from 13.9 to 16.7, in Russia - from 14.2 to 16.1, and in Poland - from 9.6 to 10.4, which indicates a much better nature of population reproduction in the last country. In addition, data of the table 1 clearly shows that the crude death rate in Ukraine exceeded the level of the indicator for 1995 only in 2005 (by 7.7%), and in Poland - in 2015 (by 7.3%). This proves that overall living conditions and health outcomes in these two countries have a positive impact on the population. In Russia, the crude death rate was higher than the 2000 and 2005 baseline, which causes a lower rank. The crude death rate should not normally be used for international comparisons, as it is highly dependent on the age structure of the population being compared and may be misleading. However, since countries from groups with very high levels of human development and countries with high levels of human development have been selected for comparison, we assume that the age structure of the citizens of Ukraine, Poland and Russia does not contain serious differences.

Table 1. Performance indicators for health care institutions in Ukraine, Poland and Russia

Countries		Indicators													
		Years	1. Demographic assessment			2. Usage of service' s processes and technologies		3. Level of material supplying		4. Level of financial supplying			5. Staffing		
		Estimated life expectancy (years)	Crude death rate (per 1000 persons)	Acute care hospital discharges (per 100 persons)	Average length of stay, acute care hospitals only (number of days)	Average length of stay, all hospitals (number of days)	Hospital beds (per 100 000 persons)	Hospitals (per 100 000 persons)	Public-sector health expenditure as % of total health expenditure (WHO estimates)	Total inpatient expenditure as proportion of total health expenditure	Total pharmaceutical expenditure as proportion of total health expenditure	General practitioners (per 100 000 persons)	Physicians (per 100 000 persons)	Proportion of physicians working in hospitals	
Ukraine	2015	71,3	13,9	18,4	9,9	11,4	746	4,0	50,8	n/a	n/a	36	350	94,1	
	2010	69,8	15,3	21,9	10,6	12,5	938	6,0	56,6	32,6	4,2	35	349	91,7	
	2005	67,0	16,7	20,5	11,6	13,5	868	5,6	59,5	76,7	10,7	32	302	93,9	
	2000	67,5	15,4	18,4	12,7	14,9	882	6,2	51,8	64,0	11,6	26	300	94,7	
	1995	n/a	15,5	20,8	14,6	16,8	1189	7,2	72,6	82,0	12,0	n/a	n/a	n/a	
Poland	2015	77,5	10,4	16,6	6,6	6,9	652	2,8	71,0	n/a	n/a	22	227	n/a	
	2010	76,3	9,9	15,8	7,3	7,6	661	2,5	71,2	32,7	22,7	21	219	n/a	
	2005	75,0	9,7	13,9	7,9	8,2	652	2,3	69,3	29,4	28,0	14	214	50,3	
	2000	73,7	9,6	n/a	n/a	n/a	n/a	2,1	70,0	29,1	28,4	8	222	51,8	
	1995	n/a	10,0	n/a	n/a	n/a	n/a	1,9	72,9	n/a	n/a	n/a	232	n/a	
Russia	2015	70,5	n/a	20,6	9,7	11,4	818	3,5	52,2	n/a	n/a	32	331	n/a	
	2010	68,4	14,2	21,5	10,8	12,7	875	4,0	54,1	n/a	n/a	52	240	n/a	
	2005	65,0	16,1	21,4	11,9	13,8	974	6,2	62,0	n/a	21,0	39	233	n/a	
	2000	65,0	15,4	21,2	13,5	15,5	1089	6,9	59,9	n/a	22,0	38	235	58,0	
	1995	n/a	15,0	20,2	13,6	16,8	1187	7,8	73,9	73,6	n/a	41	233	n/a	

Source: prepared by the authors based on European Health for All family of databases, <http://www.euro.who.int/ru/data-and-evidence/databases/european-health-for-all-family-of-databases-hfa-db> (access: 17.03.2019)

The index of the acute care hospital discharges (per 100 persons) can be estimated from two sides. Since acute care hospitals are intended primarily to reduce the severity of the disease (injury), protect against exacerbation and / or complication of disease (injury) that may threaten the life or normal functioning of the patient, the increase in discharge from this unit indicates that physicians managed to complete their tasks. Statistics show that in Poland and Russia, these figures are higher than their baseline for the analyzed period. Instead, in Ukraine only in 2010, this indicator exceeded the baseline level - 1995. However, a decrease in the number of acute care hospital discharges may indicate a decrease in the number of cases where patients are admitted to such wards, as well as in the presence of fatal cases, which may merit an extremely negative assessment. An average length estimation of patients' stay in acute care hospitals compared to the average length of stay in all hospitals showed that in Ukraine and Poland, patients spend less time in intensive care units compared to the length of stay in intensive care units hospitals in the country. Moreover, the number of days spent in hospitals in these two countries is decreasing from year to year, indicating good medical progress. Instead, there are reversed trends in Russia - the average length of stay in acute care hospitals is higher than the average length of stay for patients in other hospitals. At the same time, the tendency for reducing the period of hospital stay for the last 20 years is positive and indicates the correct organization of the treatment process.

The level of financial supplying of health care institutions in Ukraine and Russia is significantly worsening, because in fact, we talk about the possibility of providing inpatient medical services for the citizens, many of which can be provided only with the use of specialized instruments and equipment, which make up a significant and integral part production process. The availability of hospitals and hospital beds for citizens in these countries has almost halved in the last 20 years. In Ukraine, the number of hospitals per 100,000 population in 2015 was 4, compared to 7.2 in 1995, accounting for only 55.6%. In Russia, this indicator is even worse - in 1995, there were 7.8 hospitals per 100,000 population, while in 2015 this indicator dropped to 3.5 hospitals, which is 44.9%. Similar negative phenomena are also observed in terms of the provision of hospital beds to the population. Positive changes were observed only in Poland, where the number of hospitals is increasing year by year (in 1995 it was 1.9 hospitals per 100,000 population, and in 2015 - 2.8 hospitals). However, it should be noted that despite the regular increase in this indicator, the number of hospitals in Poland in 2015 is lower than in Russia or Ukraine.

The level of public-sector health expenditure as % of total health care expenditure (WHO estimates) in all three countries was just a little bit over 70% in the base period. Only Poland has managed to keep this level relatively low; in Ukraine and Russia, in 2015, the share of public-sector health expenditure as % of total health care expenditure was 2/3 of the base period. This means that the population increase has to pay for their own treatment. The indicator of public-sector health expenditure as % of total health care expenditure shows the current (excluding investment/capital expenditures) costs of inpatient facilities (including public and private hospitals) for the treatment of acute and chronic illnesses. The level of this indicator in Poland in 2000, 2005 and 2010 was about 30%. Instead, in Ukraine, since 1995, this indicator has steadily decreased from 82% to 32.26% in 2010. The reason for this decline may be both a decrease in financial supplying of health care facilities and the shifting of responsibilities for the payment of treatment on the shoulders of patients themselves and the preference for outpatient (cheaper) treatment by patients. The indicator of the total pharmaceutical expenditure as a proportion of total health expenditure in Ukraine over the whole analyzed period is significantly lower than the indicator of public-sector health expenditure as % of total health care expenditure, that is positive since this fact indicates correct pharmaceutical appointments by doctors. In Poland, these two indicators have approximately the same values and do not exceed 33%. Such a correlation between the indicators combined with the non-exceedance of both indicators together, 60% of the total health care costs, indicates the correct treatment of patients not only in inpatient wards but also on an outpatient basis.

A special place in the evaluation of the activities of health care institutions is given to staffing (Dluhopolskyi et al., 2019). Statistics show that the number of general practitioners (traditionally referred to in this group of doctors include therapists or "family doctors") and the total number of practitioners, professionally active and licensed doctors providing medical services is the lowest in Poland. About half of all physicians work in hospitals. In Ukraine, there are between 300 and 350 general practitioners per 100,000 population, who are responsible for providing permanent and comprehensive health care to the population. Also, at least 90% of them work in hospitals. Most general practitioners are in Russia. Healthcare system staffing can be evaluated differently. On the one hand, having a sufficient number of qualified doctors within the population is a guarantee that you will receive the right treatment. However, on the other hand, a physician's salary is an order of magnitude higher than the salary of an average medical staff, which may adversely affect the cost of medical care. In highly developed countries, the ratio of middle nursing staff to physicians is 4:1 (Beztelesna and Pyvovarchuk, 2017, p. 100).

In order to summarize the data on the performance of health care institutions in three different countries, we will rank all quantitative indicators from Table 1 in Table 2. Creation of rankings for health care performance indicators will help to highlight the stronger competitive positions of individual countries (Afanasiev and Kudrov, 2019, p. 9). In the ranking the following principle is used: the lowest score will be given to those countries where the value of the estimated indicator is better than that of the competing countries; accordingly, the highest score is the worst. After setting the ranking points for the analyzed indicators for each evaluated aspect, it will be possible to distinguish the higher competitive positions among the three analyzed countries.

Table 2. Ranking of performance indicators for health care institutions in Ukraine, Poland and Russia in 2015

<i>Indicators</i>	<i>Ukraine</i>	<i>Poland</i>	<i>Russia</i>
1. Demographic assessment			
Estimated life expectancy (years)	<u>71.3</u> 2	<u>77.5</u> 1	<u>70.5</u> 3
Acute care hospital discharges (per 100 persons)	<u>18.4</u> 2	<u>16.6</u> 1	<u>20.6</u> 3
2. Usage of service's processes and technologies			
Average length of stay, acute care hospitals only (number of days)	<u>9.9</u> 3	<u>6.6</u> 1	<u>9.7</u> 2
Average length of stay, all hospitals (number of days)	<u>11.4</u> 2	<u>6.9</u> 1	<u>11.4</u> 2
3. Level of material supplying			
Hospital beds (per 100 000 persons)	<u>746</u> 2	<u>652</u> 1	<u>818</u> 3
Hospitals (per 100 000 persons)	<u>4.0</u> 1	<u>2.8</u> 3	<u>3.5</u> 2
4. Level of financial supplying			
Public-sector health expenditure as % of total health expenditure (WHO estimates)	<u>50.8</u> 3	<u>71.0</u> 1	<u>52.2</u> 2
5. Staffing			
General practitioners (per 100 000 persons)	<u>36</u> 1	<u>22</u> 3	<u>32</u> 2
Physicians (per 100 000 persons)	<u>350</u> 1	<u>227</u> 3	<u>331</u> 2
Total score	17	15	21
Final ranking place	2	1	3

Source: Prepared by authors

The data calculated in Table 2 gave a possibility to suggest that, with a set of key indicators on the competitiveness of health care systems, Poland is considered to be the leading country in terms of the minimum score, then Russia is an outsider. Ukraine ranks second in terms of health systems competitiveness. The major positive role in leadership for the Polish health systems was played by groups of demographic assessment, usage of service's processes and technologies and financial supplying. The largest among the groups of indicators analyzed are the problems of the Russian health care system that lie in the group of demographic assessment and the level of financial supplying.

CONCLUSION AND DISCUSSION

Improving the competitiveness of health care facilities and having competitive advantages in the provision of health care services and the use of medical practices is of great importance for the future development of the healthcare system in any country in the world. Qualitative changes in the state of the healthcare system can be achieved by understanding the results of its activities, creating conditions for competition, launching mechanisms of civil competition between physicians, and by managing the competitiveness of medical institutions and medical practices.

This study aimed researching of the competitive position of Ukraine, Poland and Russia in terms of economic competitiveness at the global level and on conducting a comparative analysis of the medical institutions' competitiveness in these countries, using ranking methods, generalization, as well as methods of systematic, comparative and statistical analysis.

The study showed that according to the classification of countries due to the stages of global development, Poland and Russia are in group of countries that are in the process of transition from the second to the third stages of economic development (ie these countries are on the way to a group of countries with innovation-oriented economy), whereas Ukraine was attributed to countries on the second stage of global development (that is, to countries whose activities are focused on the efficiency of economies). At the same time, if only the factor "health and primary education" is taken in account for global ranking, Poland is ranked 38th, Ukraine ranks 54th, and Russia - 62nd among all countries participating in the rating. This distribution allows us to state that despite the fact that Ukraine has a level of global development lower than Russia, however, the state of health care and primary education in Ukraine has every reason to fight for the highest positions in the global ranking. Therefore, we believe that in order to further enhance Ukraine's competitive position in the world ranking, it is necessary to pay attention to the country's level of all 3 components of the Global Competitiveness Index, namely to achieve high positions on the subindexes "basic requirements", "efficiency enhancers" and "development and innovation factors" potential". In addition, the government should make every effort to disseminate in all sectors of the economy highly developed processes and business models that are already widely used in a number of countries in the third stage of global economic development, and pay as much attention to self-creation and implementation newest technologies.

A further deeper assessment of the competitiveness of Ukrainian, Polish and Russian medical institutions was conducted on the basis of a preliminary study of human development indicators in the field of health care and a broader study of the performance evaluation of health care institutions in Ukraine, Poland and Russia. The performance of health care facilities was assessed in five key categories: demographic assessment, usage of service's processes and technologies, level of material supplying, level of financial supplying and staffing levels over the past 20 years, at 5-year intervals. The ranking of the above indicators showed that the leading country in the set of key indicators is Poland, the second place is taken by Ukraine, and the last - by Russia. Success factors for the Polish health care system have been demographic assessment, usage of service's processes and technologies, level of material supplying, level of financial supplying groups. The strengths of the Ukrainian health care system were the staffing groups and partly the material

supplying indicators, but the financial supplying group and partly the usage of service's processes and technologies group are weak links in the activities of the Ukrainian healthcare institutions. Among the groups of indicators analyzed, the biggest problems of the Russian health care system lie in the group of demographic assessment indicators and level of financial supplying.

Results show that the evaluation of the performance of medical institutions is very useful. Especially when comparing homogeneous metrics globally. This allows not only to rank countries in the middle of a statistical sample group but also to focus on the achievements of stronger countries, imbibing their experience, skills and current "good practices" and not stopping at the level achieved by healthcare institutions located on top positions in the internal market.

In addition, the study provides the following recommendations: Firstly, health systems should be evaluated on a regular basis, that will allow them to accumulate an array of homogeneous information and track key trends through a set of important indicators; secondly, it is important to establish a competitive position in the medical field not only at the local level (more practically used) but also at the global level (at the level of different economies), as this approach will stimulate continuous improvement of the quality of medical services' delivering at all levels; thirdly, in taking care of their competitive position, medical institutions should not at the same time forget about their direct purpose - to provide medical services, which are declared by the constitutional law of every state of the world.

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