

Development of the healthcare system as a component of human capital in strategic regulatory acts of Ukraine

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ABSTRACT

Aim: To analyze Ukraine's current strategic documents on human potential development with a view this the healthcare component.

Materials and Methods: The methodological basis of this research work is based on a systematic approach. Methods of structural and logical analysis, bibliosemantic, abstraction and generalization were used in this article.

Conclusions: Human development indicators from UN specialized agencies – UNDP and the World Bank – indicate significant challenges faced by the health system as a result of overcoming the consequences of the COVID-19 pandemic, Russia's full-scale invasion of Ukraine as part of a change in the world order. There is a massive disruption of economic activity chains and destruction of infrastructure. The recovery of Ukraine requires a systemic approach, primarily in terms of human potential and human capital development. Current strategic documents need to be updated to take into account new challenges, new initiatives and global leadership.

KEY WORDS: human capital, human potential, public health, strategy, demographic development

Wiad Lek. 2025;78(5):1189-1193. doi: 10.36740/WLek/205395 DOI

INTRODUCTION

In the current conditions of globalization processes, rapid transformations in the socio-economic environment and the influence of innovations, human capital is one of the most significant components of the development of any country. This concept includes not only the educational level, professional training, experience and intellectual potential of an individual, but also his physical and mental state, which determine the ability of a person to work effectively and actively participate in social life. Health is the basis for the implementation of this capital, since it directly affects the productivity and general well-being of society.

At the same time, the concept of human potential is broader and more multifaceted, as it encompasses not only physical and intellectual resources, but also moral, social and cultural aspects of personality development. The development of this potential largely depends on the living conditions of a person, his access to quality education and health services, as well as on the level of social support that ensures health and well-being at the individual and societal levels. In this context, the

relationship between health, social living conditions and the level of human capital becomes key to ensuring the effective development of society.

The study of these relationships is important for the formation of effective development strategies aimed at improving the quality of life, improving access to medical services and education, as well as creating favorable social conditions for all segments of the population. After all, without a healthy and educated population that has access to medical and social services, it is impossible to achieve sustainable economic growth and social stability. Thus, the study of human capital and potential with a socio-medical bias is relevant for the development of policies in the fields of health, education and social protection, which will contribute to the harmonious development of the individual and the effective functioning of society as a whole.

AIM

To analyze Ukraine's current strategic documents on human potential development with a view this the healthcare component.

MATERIALS AND METHODS

The methodological basis of research work is based on a systematic approach. Methods of structural and logical analysis, bibliosemantic, abstraction, and generalization were used in this article. An analysis of the current legislative framework of Ukraine for 1991-2025 on the development of human potential and human capital, as well as relevant acts of international law, was conducted (a total of 4687 documents from the official websites of the authorities of Ukraine, the United Nations Development Program, the World Bank, using the keywords “strategy”, “human capital”, “human potential”, “public health”).

REVIEW AND DIACUSSION

Human capital is defined as “the skills possessed by the workforce and considered as a resource or asset” [1]. It encompasses the concept of investment in people and how these investments increase human productivity. The modern concept of human capital (2022) involves four aspects: its impact on earnings, high returns from childhood investments, the well-understood technology for basic skills, and the technology for advanced skills [2].

Human potential is interpreted as the ability of people to self-improve through education, training and practice in order to reach the limit of their ability to develop abilities and skills and realize themselves in society [3]. In a broad sense, human potential is the totality of the capabilities of society, the state and individuals in the field of using human resources and productive human traits for any socially useful activity [4,5,6]. Human potential is the basis for human development in all areas of life, and the concept of “human capital” can include only that part of human potential that can be used by a person to obtain economic benefit (income). The human capital, as the part realized in profit, can be assessed using statistical data of economic indicators, while assessing the entire human potential of a person is practically impossible [7].

Structurally, human potential includes several components (socio-economic, socio-cultural, activity and socio-demographic), of which socio-demographic potential is directly socio-medical in nature. It covers quantitative and qualitative characteristics of the population (number, life expectancy, health status, age and gender balance, level and quality of education). At the same time, other components are indirectly related to the health status of the population [5].

The issues of human potential and human capital development in Ukraine are defined in a number of strategic regulatory acts, primarily in the National Security Strategy of Ukraine, approved in 2020 [8]. It defines,

in particular, that among the priorities of Ukraine’s national interests and ensuring national security are: “(...) social development, primarily the development of human capital”. The direction of implementation of this priority is also declared: “(...) development of human capital of Ukraine, in particular through the modernization of education and science, healthcare, culture, social protection”, thus defining the main vectors of human capital development [8].

The Human Development Strategy, adopted in 2021 to implement the security strategy [9], is dedicated to the formation of responses to challenges that have a significant impact on the socio-economic situation. It is stated that the current demographic situation is characterized by relatively low birth rate and high mortality, deterioration of the medical and demographic characteristics of the population due to the increase in morbidity, the spread of chronic, infectious diseases, the preservation of a high level of occupational morbidity, industrial and domestic injuries. The demographic development of Ukraine is characterized by the formation and strengthening of such negative trends as a decrease in the population: at the beginning of 2010 – 46 million, at the beginning of 2021 – 41.6 million, excluding data on the population of the temporarily occupied Crimean territories. The challenges of the demographic crisis deepened, the population of Ukraine by July 2024 decreased to 35.8 million people, including 31.1 million people in the fully-controlled territories which led to the adoption in 2024 of the Demographic Development Strategy of Ukraine [10].

Healthcare occupies a prominent place in both strategic documents. In particular, the Human Development Strategy recognizes that “the imperfection of the healthcare system, the low level of awareness of the value of health as an asset, the lack of an educational component for the population on healthy lifestyle issues, and the fact that the vast majority of the population lives in conditions of socio-economic instability lead to the creation of unfavorable conditions for maintaining a healthy lifestyle.” That is why the first strategic goal to be achieved is “Improving the medical and demographic situation in Ukraine,” which provides for the creation of a balanced healthcare system; the introduction of the latest technologies in the healthcare sector; the development of an effective state public health system in order to ensure the sanitary and epidemiological well-being of the population, biological safety and biological protection, the prevention of infectious and non-communicable diseases; and the adoption of measures to stimulate the birth rate [9].

The Demographic Development Strategy of Ukraine for the period up to 2040 also includes a number of

measures to develop the healthcare system. In particular, to implement strategic goal 2 (Creating conditions for increasing the birth rate, supporting the family), it is envisaged to improve the reproductive health of the nation, and to achieve strategic goal 3 (Reducing premature mortality) – to promote a healthy lifestyle and responsibility for one's own health; early detection and prevention of diseases that most often lead to premature mortality or loss of health; reducing risk factors for injury or mortality in everyday life; increasing the level of accessibility of medical care and its quality; preserving human dignity and a high level of quality of life during illness and treatment; developing infrastructure for healthy leisure. The target indicator for reducing premature mortality is defined as reducing the probability of death under the age of 65 to the average for EU countries: 16.3 percent among men, 8.3 percent for women (in Ukraine, the corresponding indicators, according to 2020 data, were 40 percent and 16.8 percent, respectively) [10].

In January 2025, the Ukrainian Government approved the Healthcare System Development Strategy for the period up to 2030 and approved an operational plan of measures for its implementation in 2025–2027. The preamble of this Strategy states that “the protection and promotion of motherhood, the health care of mothers and children are guaranteed by the state, necessary for the reproduction of the population and the restoration of the human potential of the entire country” [11]. The fundamental principle of the Healthcare System Development Strategy for the period up to 2030 is the implementation in Ukraine of “the principle of ‘health in all policies’, taking into account health consequences when making decisions among different sectors, seeking synergies and avoiding harmful health consequences in the process of implementing policies in other sectors in order to improve both population health and health equity”. This is provided for, in particular, by strategic objective 2 of the Strategy, which states strengthening intersectoral coordination of state policies affecting the healthcare system. Important principles include further separation of functions of health policy formation and implementation, digitalization, and sustainable and flexible financing of the healthcare system [11].

According to a joint assessment, with total losses to the health system as a result of a full-scale invasion estimated at around US\$17.8 billion, the total recovery needs are at least US\$14.2 billion, of which over US\$872 million are urgent recovery needs in 2024. In addition, the restoration of medical care, organization, and control over its provision in the deoccupied territories will require additional human and material resources [11].

Given the high human, resource, and economic losses caused by a full-scale invasion by the Russian Federa-

tion, the healthcare system must use all available and potentially available medical technologies and solutions that, through early and effective interventions, make it possible to reduce the burden of disease in the future, accelerate recovery, and preserve the country's human potential [11].

A UNDP working group led by Pakistani economist Mahbub ul-Haq developed an integral indicator – the Human Development Index (HDI). This indicator is calculated annually on the basis of three components: life expectancy (evaluates the health status of the population), the average number of years spent on education and the expected duration of education (evaluates the level of education of the population) and gross national income per capita at purchasing power parity in US dollars (evaluates the socio-economic standard of living) [12, 13].

The UNDP Human Development Report 2023–2024 states that numerous protracted geopolitical conflicts caused by the changing balance of power between states are leading to a new set of uncertainties that are worrying all of humanity and hindering its development. For the first time in the history of observations, a decrease in the global Human Development Index was noted – in 2020 and 2021. However, since then the global significance of the HDI has begun to grow, and in 2023 it is estimated to reach a record high level, but despite the projected achievement of a new maximum, the global HDI value is still below trend. At the same time, the global HDI value masks alarming differences between countries: while for all member countries of the Organization for Economic Cooperation and Development is projected to recover, a similar forecast is valid for only about half of the least developed countries [14].

Ukraine's HDI, according to the Human Development Report 2023–2024, is 0.734, making it a country with a high level of human development. Ukraine ranks 100th in the overall ranking out of 193 countries and territories [15].

At the same time, Ukraine is acutely feeling the negative impact of declining human development, as this indicator has dropped to its lowest level since 2004 [15].

Correlation analysis showed for Ukraine in 1990–2019 the interdependence of the economy and medical-social components of the HDI (life expectation at birth and GNI per capita. At the same time, the trend towards stabilization of HDI in Ukraine during the first decades of the 21st century with a simultaneous increase of life expectation at birth from 67.3 (2000) to 72.1 years (2019) and GNI per capita from \$7025 (2000) to \$13216 (2000) is insufficiently embodied in the achievements in public health area [16].

A new UNDP report says that uneven development progress around the world is leaving the poorest countries

behind, deepening inequality and increasing political polarization globally, creating a dangerous impasse that urgently needs to be broken through collective action [15].

The World Bank (2020) [17] introduced another integral indicator – the Human Capital Index (HCI). It is based on three components: Survival (percentage of children who survive beyond age 5), School (expected number of years of schooling before age 18 and harmonized test scores) and Health (percentage of 15-year-olds who survive to age 60) and healthy growth among children (the rate of stunting in children under 5 years of age) [15].

The methodologies for assessing HCI were described in the World Bank publications [18,19]. The researchers stated that human capital, which includes resources related to people's knowledge and skills, is an extremely important element for economic progress. They also noted that to assess it, it is necessary to apply relevant research not only in developed countries (this especially applies to the education component), but also in developing countries. A global comparable database was created for 164 countries representing 98% of the world's population, and two-thirds of the countries included belong to developing countries [18].

According to the 2020 Human Capital Index, Ukraine ranks 53rd out of 174 countries in the world (HCI=0.6314, down 19% from 2010). A child born in Ukraine will grow up to be 63% more productive than they could be if they had

a quality education and good health. This is lower than the average for the Europe and Central Asia region (69%), but higher than for lower-middle-income countries (48%) [19].

According to the World Bank (2019), despite the presence of a highly educated workforce in Ukraine, human capital accounts for only 34% of national wealth (while the average for Europe and Central Asia is 62%), and labor productivity accounts for only 22% of labor productivity in the European Union [20,21].


Thus, the indicated human capital indicators demonstrate the need to correct the relevant strategic documents and their effective implementation.

CONCLUSIONS

Human development indicators from various UN specialized agencies – UNDP and the World Bank – indicate significant challenges faced by the health system as a result of overcoming the consequences of the COVID-19 pandemic, Russia's full-scale invasion of Ukraine as part of a change in the world order. There is a massive disruption of economic activity chains and destruction of infrastructure. The recovery of Ukraine requires a systemic approach, primarily in terms of human potential and human capital development. Current strategic documents need to be updated to take into account new challenges, new initiatives and global leadership.

REFERENCES

1. Diebolt C, Hauptert M et al. Handbook of Cliometrics. Cham: Springer. 2024, p.2826. doi: 10.1007/978-3-031-35583-7. DOI
2. Deming DJ. Four Facts about Human Capital. Journal of Economic Perspectives. 2022;36(3):75–102. doi: 10.1257/jep.36.3.75. DOI
3. Vernon D. Human Potential: Exploring Techniques to Enhance Human Performance. London: Routledge. 2009, 267 p. doi:10.4324/9780203876473. DOI
4. Snyder TD, de Brey C, Dillow SA. Digest of Education Statistics 2015, 51st Edition. Washington: NCES. 2016, p.1042. <https://nces.ed.gov/pubs2016/2016014.pdf> [Accessed 27 January 2025]
5. Zvonar VP. Liudskyi potentsial. [Human potential]. Encyclopedia of Modern Ukraine. National Academy of Sciences of Ukraine, Shevchenko Scientific Society. Kyiv: The NASU institute of Encyclopedic Research. 2017. <https://esu.com.ua/article-59917> [Accessed 27 January 2025] (Ukrainian)
6. Miklovdva VP, Kubinii Nlu, Yurkovichova L et al. Liudskyi potentsial pidpriemnytskoi diialnosti [Human potential of entrepreneurial activity]. Uzhhorod: UzhNU «Hoverla». 2021, p.172. (Ukrainian)
7. Paimash HV. The relationship between the concepts of human potential and the capital of a person with special needs in social dimension. Scientific advances and innovative approaches : proc. of the 2nd Intern. Sci. and Practical Conf., January 19-20, 2023. Tokyo, 2023, p.18–27. <https://repository.kpi.kharkov.ua/handle/KhPI-Press/71670> [Accessed 27 January 2025] (Ukrainian)
8. Pro rishennia Rady natsionalnoi bezpeky i oborony Ukrainy vid 14 veresnia 2020 roku "Pro Stratehiiu natsionalnoi bezpeky Ukrainy" [On the decision of the National Security and Defense Council of Ukraine dated September 14, 2020 "On the National Security Strategy of Ukraine"]. Decree of the President of Ukraine dated September 14, 2020 No. 392/2020. <https://zakon.rada.gov.ua/laws/show/392/2020#n12> [Accessed 27 January 2025] (Ukrainian)
9. Pro rishennia Rady natsionalnoi bezpeky i oborony Ukrainy vid 14 travnia 2021 roku "Pro Stratehiiu liudskoho rozvytku" [On the decision of the National Security and Defense Council of Ukraine dated May 14, 2021 "On the Human Development Strategy"]. Decree of the President of Ukraine dated June 2, 2021 No. 225/2021. <https://zakon.rada.gov.ua/laws/show/225/2021#Text> [Accessed 27 January 2025] (Ukrainian)
10. Pro skhvalennia Stratehii demohrafichnoho rozvytku Ukrainy na period do 2040 roku [On approval of the Demographic Development Strategy of Ukraine for the period until 2040]. Resolution of the Cabinet of Ministers of Ukraine dated September 30, 2024 No. 922-r. <https://zakon.rada.gov.ua/laws/show/922-2024-%D1%80#Text> [Accessed 27 January 2025] (Ukrainian)

11. Pro skhvalennia Stratehii rozvytku systemy okhorony zdorovia na period do 2030 roku ta zatverdzhennia operatsiinoho planu zakhodiv z yii realizatsii u 2025-2027 rokakh [On approval of the Strategy for the Development of the Healthcare System for the Period Until 2030 and approval of the operational plan of measures for its implementation in 2025-2027]. Resolution of the Cabinet of Ministers of Ukraine dated January 17, 2025 No. 34-r. <https://zakon.rada.gov.ua/laws/show/34-2025-%D1%80#Text> [Accessed 27 January 2025] (Ukrainian)
12. What is human development? UNDP Human Development Reports. 2025. <https://hdr.undp.org/about/human-development> [Accessed 01 March 2025]
13. Zamaraiev AV. Sutnist poniattia "liudskyi potentsial" v konteksti suspilnoho rozvytku [Essence of the concept "human potential" in the context of social development]. Derzhavne upravlinnya: udoskonalennya ta rozvytok. 2015;9:19–22. http://nbuv.gov.ua/UJRN/Duur_2015_9_19 [Accessed 27 January 2025] (Ukrainian)
14. UNDP (United Nations Development Programme). 2024. Human Development Report 2023-24: Breaking the gridlock: Reimagining cooperation in a polarized world. New York. <https://hdr.undp.org/content/human-development-report-2023-24> [Accessed 27 January 2025]
15. Ukraine still a country with high Human Development Index, new UNDP report says. UNDP official cite. March 13, 2024. <https://www.undp.org/ukraine/press-releases/ukraine-still-country-high-human-development-index-new-undp-report-says> [Accessed 27 January 2025]
16. Korolenko VV. Interrelation between economic and medico-social components of the human development index as a complex indicator of human potential. Scientific-practical conference with international participation for the World Health Day 2022. Wiad Lek, 2022;75(5):1120.
17. World Bank. The Human Capital Index 2020 Update: Human Capital in the Time of COVID-19. World Bank, Washington, DC. 2020. <http://hdl.handle.net/10986/34432> [Accessed 27 January 2025]
18. Angrist N, Djankov S, Goldberg PK et al. Measuring human capital using global learning data. Nature. 2021;592:403–408. doi: 10.1038/s41586-021-03323-7. 
19. Angrist N, Djankov S, Goldberg PK, Patrinos HA. Measuring Human Capital. Policy Research Working Paper. 2019. No. 8742. <http://hdl.handle.net/10986/31280> [Accessed 27 January 2025]
20. Definition of national wealth from the Cambridge Business English Dictionary. 2025. <https://dictionary.cambridge.org/dictionary/english/national-wealth> [Accessed 27 January 2025]
21. Doslidzhennia sfery osvity v Ukraini. Do bilshoi rezultatyvnosti, spravedlyvosti ta efektyvnosti [Research on the education sector in Ukraine. Towards greater effectiveness, equity and efficiency]. World Bank Group. 2019, p.33. <https://documents1.worldbank.org/curated/en/790931568661644788/pdf/Overview.pdf> [Accessed 27 January 2025]

The article was made in the framework of research works of Bogomolets National Medical University "Scientific substantiation of improving the organizational foundations of the health care system under conditions of modern transformational changes", (2023-2025, No state registration 0123U101432).

CONFLICT OF INTEREST

The Authors declare no conflict of interest

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RECEIVED: 22.01.2025

ACCEPTED: 27.04.2025

