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Socio-Economic Determinants of Healthcare System Reform: A Comparative Analysis of Ukraine and Northern European Countries

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Introduction

Socio-economic determinants of health, including income level, housing conditions, education, and social integration, have a substantial impact on population survival both within individual countries and globally. According to previous studies, these determinants account for approximately 20–40% of overall health outcomes. In contrast, healthcare systems contribute approximately 8–10% to life expectancy in developed countries, whereas in Ukraine their impact is considerably greater due to structural imbalances and inequalities in access to healthcare services [1; 2].

The growing prevalence of antimicrobial resistance represents one of the most serious threats to the effectiveness of healthcare systems, leading to increased mortality from infectious diseases [3]. This problem has become global in scope and has acquired a systemic character. In Ukraine, its impact is further aggravated by socio-economic instability and the consequences of military conflict, which have resulted in deteriorating living conditions, population displacement, and reduced accessibility of healthcare services [4].

Healthcare financing is another key determinant of healthcare system performance. Numerous studies have demonstrated a positive association between healthcare expenditure and life expectancy. Primary health care (PHC) plays a central role in ensuring equitable access to healthcare services, addressing the majority of the population's essential medical and pharmaceutical needs [5–7].

The experience of the Nordic countries demonstrates that successful healthcare reforms are based on prioritizing primary health care, ensuring sustainable financing, and strengthening institutional capacity. In this context, a comparative assessment of the socio-economic determinants underlying healthcare reform in Ukraine and the Nordic countries is of particular scientific and practical importance.

The aim of this study was to analyze the socio-economic determinants of healthcare system reform and to evaluate their impact on healthcare system performance in Ukraine and the Nordic countries.

Purpose is to conduct a comparative analysis of the socio-economic determinants of healthcare system reform and to assess their impact on the performance of the healthcare sector in Ukraine and the Nordic countries.

Object, materials and research methods

The study employed systemic and comparative approaches to investigate the socio-economic determinants of healthcare system reform. The information base included statistical data on healthcare financing, demographic indicators, mortality rates, and the organization of healthcare delivery, particularly primary health care, in Finland, Sweden, and Ukraine.

Quantitative analytical methods were applied to assess temporal trends in the selected indicators, whereas qualitative analysis was used to interpret institutional transformations and the specific features of healthcare reform implementation.

Research results

The comparative analysis demonstrated that healthcare reforms in the Nordic countries were implemented under

favorable socio-economic conditions characterized by stable economic growth, high population income, and well-developed public institutions. Since the mid-twentieth century, the development of primary health care has been accompanied by a sustained increase in public financing, exceeding 2% of gross domestic product (GDP), which has significantly improved access to healthcare services and contributed to declining mortality rates.

In Ukraine, healthcare reform accelerated after 2018 through the introduction of the "money follows the patient" financing model, digital transformation of healthcare services, and implementation of electronic prescribing. However, socio-economic constraints, unstable financing, and ongoing institutional changes have limited the overall effectiveness of the reform process.

The study found that expenditure on primary health care accounted for only 0.356% of Ukraine's GDP in 2023, which is substantially lower than the corresponding figures reported for the Nordic countries. Such underinvestment limits the healthcare system's capacity to provide accessible and high-quality healthcare services.

Another important finding concerns the widespread irrational prescribing of antibiotics, particularly macrolides, despite the availability of evidence-based clinical guidelines promoting their rational use. This indicates insufficient effectiveness of regulatory policies and healthcare quality assurance mechanisms and contributes to the growing burden of antimicrobial resistance.

Since the 1960s, healthcare systems in most European countries have undergone successful reforms based on prioritizing primary health care. These reforms established the coordinating role of general practitioners (family physicians) within healthcare delivery systems. Family medicine was institutionalized in Finland, while patient list systems were introduced in Germany [8], France [9], Finland [10], and Norway [11]. In the United Kingdom, general practitioner fundholding schemes and Primary Care Trusts were established to strengthen the organization and financing of primary care services [12].

Table 1 summarizes the legislative reforms, including the responsibilities assigned to governmental and non-governmental institutions, that supported the transformation of healthcare regulation through primary healthcare reform in the Nordic countries with the aim of improving equity and accessibility of healthcare services.

Healthcare reforms in Northern and Western Europe were primarily based on reallocating financial resources in favor of primary health care. Before these reforms, PHC received substantially lower funding than specialized healthcare services. In Sweden, Finland, and the United Kingdom, expenditure on primary health care accounted for approximately 30% of total healthcare spending [13]. To accelerate PHC development, governments adopted strategic decisions to redistribute human, financial, and material resources toward primary care. As a result, PHC funding increased annually by approximately 4–6%, while overall healthcare expenditure remained under control.

In Sweden, healthcare reform was also associated with a substantial expansion of community health centres [14]. Between 1973 and 1985, this policy reduced the number of short-term hospital beds by approximately 2.6%, while simultaneously increasing the capacity of primary healthcare facilities [14].

Legislative reforms also enabled a significant increase in total healthcare expenditure. On average, healthcare spending reached approximately 7% of GDP across the reformed countries, while in Sweden it increased to approximately 9% of GDP [15].

Figures 1–4 illustrate the trends in healthcare financing in Finland, highlighting the prioritization of primary health care (PHC) as a key component of healthcare system development. During the 12-year period from 1973 to 1984, total healthcare expenditure increased by 1.3 percentage points of gross domestic product (GDP), rising from approximately 5.6% to 6.9% of GDP. Over the same period, expenditure on primary health care increased by 1.2 percentage points, from 0.8% to 2.0% of GDP.

Between 1963 and 1971, Finland experienced a marked increase in the annual growth rate of real expenditure on primary health care (PHC), rising from 3.7% to 12.5%. In contrast, the annual growth rate of expenditure on specialized healthcare services declined substantially, from 8.5% to 2.5% over the same period (Figure 2).

Real expenditure growth for primary health care (PHC) day hospitals increased from only a few percentage

Table 1

Healthcare Innovations in Selected Nordic Countries during the 1970s–1980s

Country	Institutional Innovation
Sweden	Since the mid-1970s, financial resources have gradually been reallocated in favor of Primary Health Care (PHC). A Parliamentary Commission developed the national programme Health Services in Sweden in the 1990s, with the primary objective of strengthening PHC infrastructure and expanding primary healthcare services [14].
Finland	In 1972, the Primary Health Care Act was enacted. In 1985, the Government published the Health Policy Report. In 1987, the Government adopted the National Strategy "Health for All". In addition, the Health and Medical Care Act, aimed at ensuring equity and universal access to healthcare services, was enacted in 1983 [13; 16; 17].
Norway	The Municipal Health Services Act (1984) introduced the integration of preventive and curative healthcare services, outpatient nursing care, and rehabilitation within a unified municipal healthcare system [18].
Denmark	In 1985, the Ministry of the Interior issued a policy report recommending the reallocation of healthcare resources from specialized medical care to primary healthcare services. Particular emphasis was placed on strengthening coordination between the healthcare and social service sectors [18].

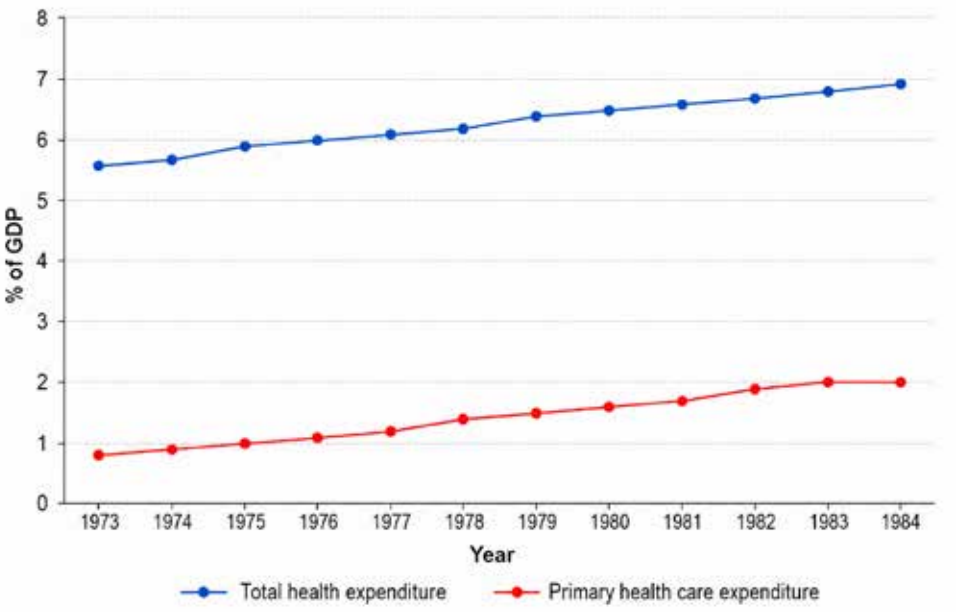


Fig. 1. Trends in healthcare expenditure and primary health care (PHC) expenditure as a percentage of GDP in Finland, 1973–1984 [13]

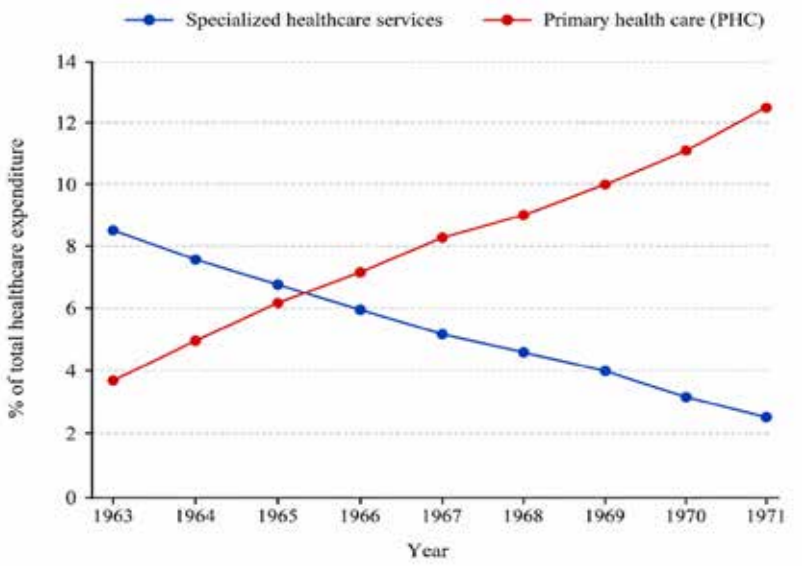


Fig. 2. Trends in the shares of primary health care (PHC) and specialized healthcare expenditure within total healthcare expenditure in Finland, 1963–1971 [13]

points in 1963 to 20.3% in 1971, while expenditure growth for PHC outpatient services rose from 3.7% to 9.6% over the same period (Figure 3).

These reforms resulted in a reduction in the annual growth rate of PHC expenditure from 12.5% to 8.3% and of specialized healthcare expenditure from 2.5% to 1.25% between 1971 and 1983 (Figure 4) [13].

During the same period, the annual growth rate of expenditure on specialized outpatient care declined from 10.7% to 3.7%, while expenditure growth for specialized inpatient care decreased from 7.8% to 2.1%. Between 1971 and 1983, the annual growth rate of expenditure on PHC day hospitals also declined from 20.3% to 11.0%, whereas that for PHC outpatient services decreased from 9.6% to 6.0%. Over the same period, expenditure growth for specialized inpatient healthcare further declined from 2.1% to 0.2%, whereas expenditure on specialized outpatient care increased slightly from 3.7% to 4.1% [13; 16].

Government regulation of expenditure growth for PHC day hospitals contributed to a more efficient allocation of healthcare resources while maintaining improvements in healthcare delivery. Within several years after the implementation of these reforms, Finland achieved a reduction in the annual growth rate of overall healthcare expenditure while successfully advancing healthcare reform based on the prioritization of primary health care (PHC).

Since the mid-twentieth century, healthcare reforms in Finland have focused on establishing a clearly structured

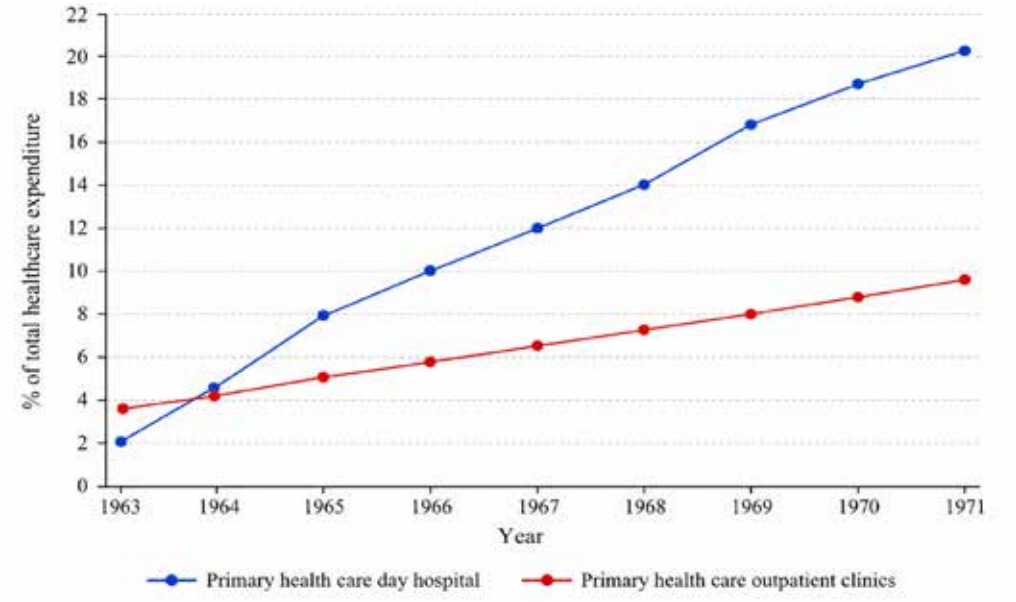


Fig. 3. Growth in expenditure on primary health care (PHC) day hospitals and outpatient services in Finland, 1963–1971 [13]

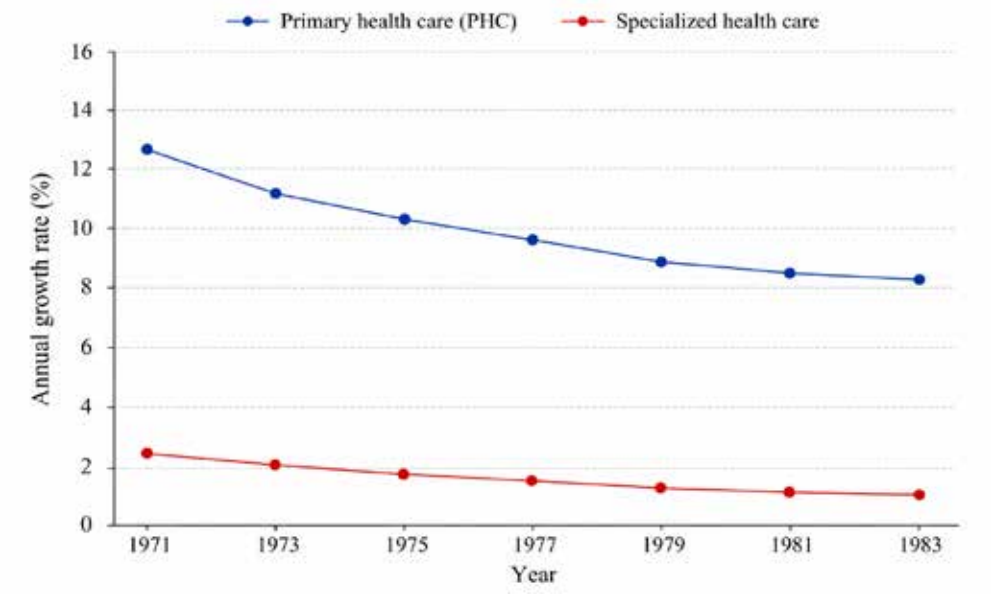


Fig. 4. Reduction in the annual growth rates of primary and specialized healthcare expenditure as a proportion of total healthcare expenditure in Finland, 1971–1983 [13]

healthcare delivery system. Primary health care (PHC) services have been provided predominantly through municipal health centres (approximately 160 nationwide), specialized healthcare through hospital districts (20 districts until the early 2000s), and highly specialized medical care through five university hospital districts serving populations of approximately one million each (Figure 5).

The Ministry of Social Affairs and Health of Finland was responsible for developing national health policy, defining strategic priorities, and implementing key healthcare reforms, while the private sector provided approximately 25% of health and social care services [19]. Oversight of the healthcare system at the national level was carried out by dedicated supervisory authorities, whereas monitoring at the regional and municipal levels was performed by the respective local government authorities. Responsibility for promoting health and well-being rested primarily with municipalities, in addition to individual responsibility. Municipalities became responsible for coordinating healthcare services, including mental health and dental care. Furthermore, every healthcare institution appointed a Patient Ombudsman to safeguard patients' rights.

Despite the effectiveness of the Finnish healthcare system, several major public health challenges remained. In 2014, approximately 500.000 people (out of a population of 5.4 million) engaged in hazardous alcohol consumption,

around 250.000 individuals were living with diabetes, and nearly 900.000 accidents occurred annually. In addition, approximately 25% of people aged over 75 years required long-term care because of dementia, while only 30% of young people achieved the level of physical activity recommended for maintaining good health [19].

To address these challenges, Finland implemented comprehensive healthcare reforms throughout the 2000s aimed at strengthening the administrative and financial capacity of municipalities. Legislative amendments were introduced to consolidate municipalities and reorganize service delivery.

These reforms sought to ensure that municipalities possessed sufficient territorial coverage and population size to maintain sustainable healthcare infrastructure through their own economic capacity, supplemented by central government support where necessary. Municipalities were also permitted to establish joint service organizations with neighboring municipalities and assumed responsibility for providing part of specialized healthcare services. In addition to healthcare, municipalities became responsible for essential public services, including water supply, electricity distribution, and other municipal utilities [19]. The reforms also envisaged the consolidation of hospital districts to improve administrative efficiency and optimize resource allocation.

Strengthening the financing of primary health care (PHC) was closely associated with policies promoting the rational use of pharmacotherapy. During the 1990s, Finland experienced a substantial increase in erythromycin resistance among Group A streptococci. In response, national outpatient antibiotic prescribing policies were revised, and evidence-based clinical guidelines recommending reduced use of macrolide antibiotics for respiratory tract and skin infections were introduced. These interventions resulted in a significant decline in erythromycin resistance among Group A streptococcal isolates [20].

In 2000, Finland introduced its first intersectoral national guidelines on antimicrobial resistance surveillance and antimicrobial use policy, representing an important milestone in efforts to combat inappropriate antibiotic prescribing in primary health care and to strengthen antimicrobial stewardship nationwide [21].

Reduction in Mortality in Sweden and Finland

The positive impact of comprehensive reforms, particularly those implemented within the healthcare sector since the 1960s, contributed to the stabilization and subsequent reduction of mortality rates in both Sweden and Finland (Table 2, Figures 6 and 7).

Sweden, one of the world's oldest populations, ranked as the eighth oldest country globally, with approximately 5% of its population aged 80 years or older and 20% aged 65 years or older. Despite this demographic structure, Sweden ranked seventh worldwide in terms of preparedness for population ageing and the quality of care provided to older adults, reflecting the effectiveness of its health and social care system [22].

In Finland, healthcare reforms were complemented by investments in education, the promotion of social responsibility, and long-term public policies aimed at sustainable societal development [22]. Nevertheless, the relatively low mortality rates observed in both countries were largely attributable to the high quality, accessibility, and efficiency of healthcare and pharmaceutical services, particularly those delivered through the primary health care (PHC) system.

Healthcare Reforms in Ukraine

Healthcare reform in Ukraine officially commenced in 2018 with the establishment of the National Health Service of Ukraine (NHSU), a new public institution responsible for purchasing and financing healthcare services.

The reform was accompanied by changes in the country's administrative and territorial organization

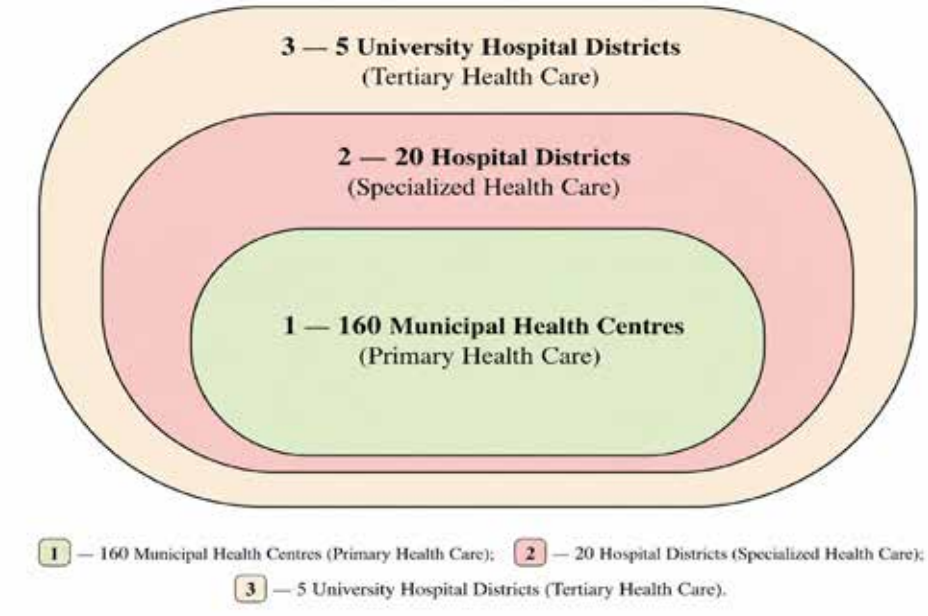


Fig. 5. Organization of healthcare delivery by level of care in Finland [19]

Table 2

Trends in Crude Mortality Rates in Finland and Sweden, 1963–2023

Country	Year							
	1963	1972	1984	1994	2004	2014	2019	2023
Finland	9.28	9.4	9.23	9.43	9.1	9.55	9.77	10.95
Sweden	10.05	10.34	10.85	10.15	10.06	9.17	8.63	8.95

[23; calculated by P. Shevchuk, PhD in Economics, and O. Korniichuk, Senior Research Fellow]

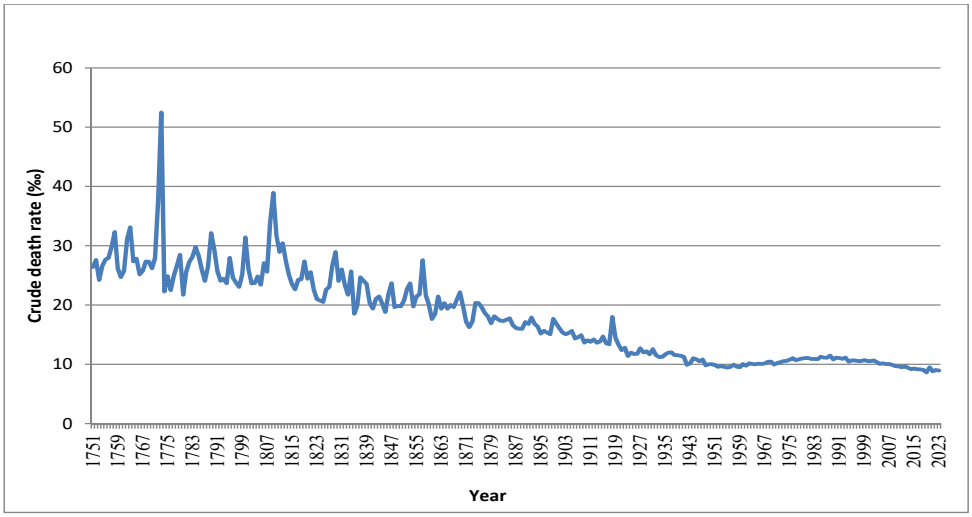


Fig. 6. Crude mortality rate in Sweden, 1751–2021

[23; calculated by P. Shevchuk, PhD (Economics), and O. Korniichuk, Senior Research Fellow].

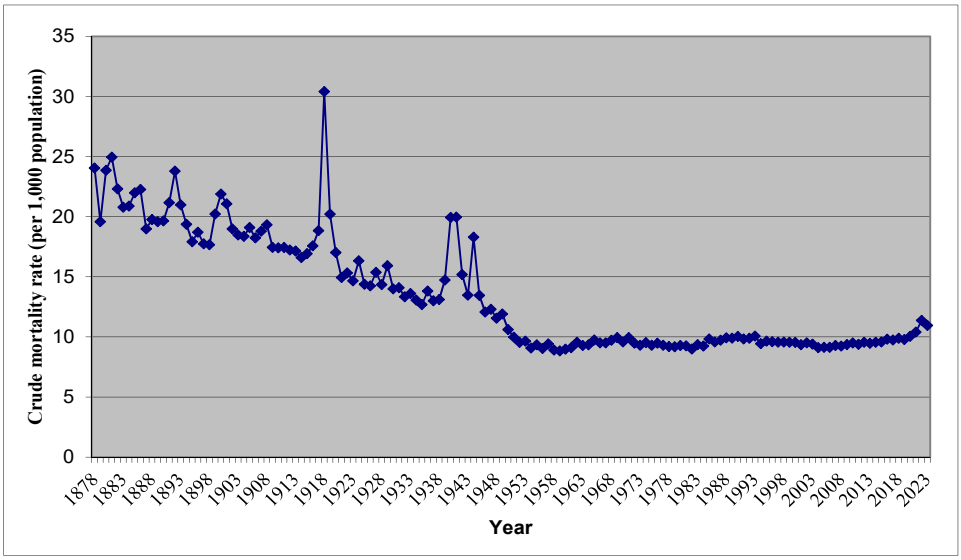
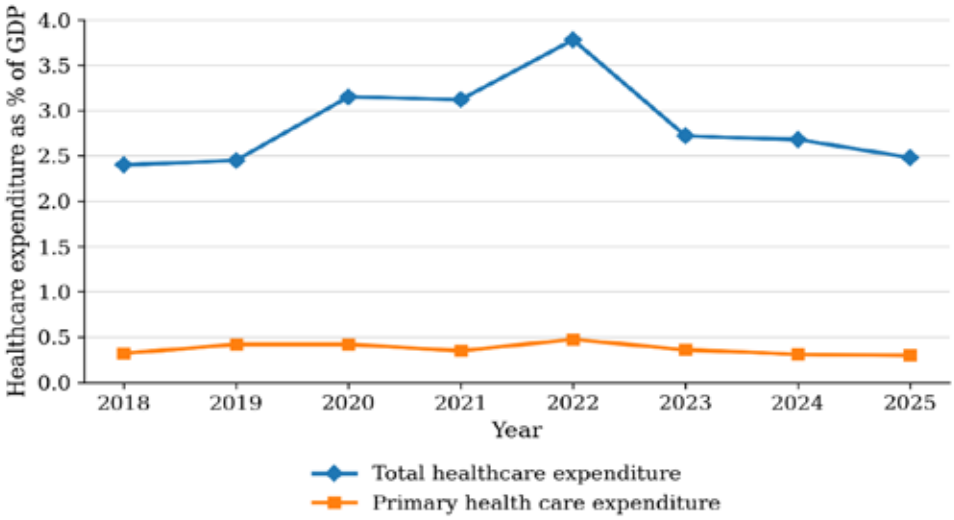


Fig. 7. Trends in the crude mortality rate in Finland, 1878–2023

Source: Adapted from [23]; calculations by P. Shevchuk, PhD (Economics), and O. Korniichuk, Senior Research Fellow.

and local self-government system. Responsibility for organizing primary health care (PHC) services was transferred to territorial communities, specialized healthcare to district authorities, and highly specialized healthcare to regional authorities. Government subventions allocated to PHC amounted to UAH 11.2 billion in 2017 and UAH 8.6 billion in 2018 [24]. During the second half of 2018, healthcare providers that had signed contracts with the NHSU were financed under the Medical Guarantees Programme, receiving a total of UAH 3.5 billion, whereas providers without NHSU contracts continued to receive government subventions [24; 25].

Consequently, total PHC financing reached UAH 12.1 billion in 2018. The increase in PHC expenditure as a share of gross domestic product (GDP), from 0.42% in 2019 to 0.475% in 2022, indicated the beginning of positive changes in strengthening the primary healthcare system (Figure 8).



Fig, 8. Trends in total healthcare expenditure and primary health care (PHC) expenditure as a percentage of gross domestic product (GDP) in Ukraine, 2018–2025 [24; 25]

A cornerstone of the reform was the introduction of free patient choice of a primary care physician, regardless of the place of residence, through the signing of declarations with family physicians, general practitioners, or pediatricians. This established the "money follows the patient" financing model, whereby healthcare providers receive funding according to the number of registered patients. At the same time, the national eHealth system was introduced, enabling electronic health records, electronic prescriptions, and electronic referrals.

Since 2020, the NHSU has served as the single purchaser of PHC services. This created new financial incentives for healthcare professionals, with remuneration becoming dependent on the number of registered patients, quality of care, and adherence to clinical care pathways. As a result, the financing system became more transparent, while patients' interaction with healthcare services became more efficient.

Another major achievement of the reform was the expansion of the national reimbursement programme "Affordable Medicines", initially covering patients with cardiovascular diseases, type 2 diabetes mellitus, and bronchial asthma, and subsequently including epilepsy and depression. The introduction of electronic prescribing enabled patients to obtain reimbursed medicines free of charge or with partial co-payment from participating pharmacies, thereby improving access to essential medicines at the primary healthcare level.

Electronic prescriptions, electronic referrals, and other digital tools were further implemented to integrate pharmaceutical care into the overall PHC system. Electronic prescribing became mandatory for antibiotics and reimbursable medicines, substantially improving control over medicine utilization and reducing inappropriate prescribing practices [26].

However, the proportion of PHC expenditure within total healthcare expenditure showed a declining trend between 2020 and 2025. At the beginning of the reform, PHC accounted for 13.9% and 17.2% of total healthcare expenditure in 2018 and 2019, respectively, representing the highest shares observed during the study period. Subsequently, this proportion gradually declined to 11.7% in 2024, with 11.8% planned for 2025 (Figure 8).

In 2023, PHC expenditure as a percentage of GDP decreased by approximately 25% compared with 2022, falling from 0.475% to 0.356%.

The NHSU and the Ministry of Finance do not publish separate data on expenditure for PHC day hospitals [24; 25]. Furthermore, according to expert assessments, Ukraine's healthcare system continues to retain certain post-Soviet organizational characteristics, including resistance by some hospitals to separating primary healthcare units into independent legal entities.

Delays in improving the quality of pharmaceutical care within PHC are illustrated by the gap between legislative initiatives and their practical implementation in the areas of rational antimicrobial therapy and antimicrobial resistance (AMR) control. Retail sales of antibiotics through community pharmacies are approximately eight times higher than antibiotic use in the hospital sector [27], highlighting the critical importance of strengthening antimicrobial stewardship, particularly within primary health care.

According to an Order of the Ministry of Health of Ukraine, the Antimicrobial Stewardship (AMS) Programme was introduced in 2021 [28]. As part of its implementation, infection prevention and control units were established in hospital healthcare facilities, and the position of clinical pharmacist was introduced to coordinate antimicrobial stewardship activities. However, these organizational changes were implemented exclusively within the hospital sector and did not extend to primary health care (PHC).

In 2023, the Standard of Medical Care "Rational Use of Antibacterial and Antifungal Medicines for Therapeutic and Prophylactic Purposes" was revised [29]. The updated

standard introduced healthcare quality indicators, including the proportions of patients prescribed antibiotics from the Access, Watch, and Reserve groups according to the WHO AWaRe classification. For PHC providers, the target value for one of the key quality indicators-the proportion of patients receiving Access-group antibiotics-was established at not less than 95%. However, neither legislative nor financial mechanisms to achieve this target within the PHC system were specified.

Consequently, in 2023 and 2024, Access-group antibiotics accounted for only 41% and 45%, respectively, of all antimicrobial prescriptions issued in primary health care, representing less than half of the recommended target. At the same time, macrolides remained the most frequently prescribed antibiotic class, with azithromycin alone accounting for 18% of all antibiotic prescriptions [27].

These findings indicate that, until recently, primary health care in Ukraine continued to demonstrate an unfavorable prescribing pattern characterized by the preferential use of Watch-group antibiotics, particularly macrolides. This prescribing profile is consistent with the antimicrobial use patterns commonly observed in low- and middle-income countries, whereas in high-income countries, extended-spectrum penicillins remain the most frequently prescribed antibiotics in primary care [30].

Demographic Trends in Ukraine

The long-term trend in mortality in Ukraine since the late eighteenth century has generally followed a pattern similar to that observed in Finland and Sweden (Figure 9). The declining mortality trend was consistent with the demographic transition theory, which began in Ukraine at the end of the nineteenth century, although it had started earlier in Finland and Sweden. The lowest mortality rate in Ukraine was recorded in the mid-1960s, after which mortality gradually increased.

The chronological series presented in Figure 9 is based on the results of a demographic reconstruction conducted by O.P. Rudnytskyi (M.V. Ptukha Institute for Demography and Quality of Life Studies of the National Academy of Sciences of Ukraine). The reconstruction was performed within the territorial boundaries of Ukraine as of 1991 and was limited to 2013 because of the outbreak of the Russian-Ukrainian war in 2014. Following the occupation of Crimea and parts of the Donetsk and Luhansk regions, the territory under the control of the Government of Ukraine-and consequently the area where demographic events were officially registered-decreased substantially. After the full-scale Russian invasion in 2022, the frontline and the territory under government control changed continuously, making spatial comparisons of demographic indicators considerably more difficult. These challenges were further compounded by large-scale international migration of the Ukrainian population. In addition, the State Statistics Service of Ukraine suspended the publication of official demographic statistics. Under these circumstances, demographic reconstruction of key indicators, including the total population size, became necessary.

Figure 10 presents crude mortality rates for the period 2014–2024. It should be noted that the territory under the control of the Government of Ukraine differed across the periods 2014, 2015, 2016–2021, and 2022–2024, which should be taken into account when interpreting temporal trends and comparing mortality indicators across years.

During 2014–2019, crude mortality rates in Ukraine remained relatively stable. The increase observed in 2020, and particularly in 2021, was primarily associated with the COVID-19 pandemic. In 2021, COVID-19 accounted for 12.3% of all registered deaths, becoming the second leading cause of death after cardiovascular diseases and surpassing malignant neoplasms.

The sharp rise in overall mortality in 2021, when the crude mortality rate reached 19.3 deaths per 1.000 population (17.2% higher than in 2020), likely reflects the combined impact of the COVID-19 pandemic, the increased burden on the healthcare system,

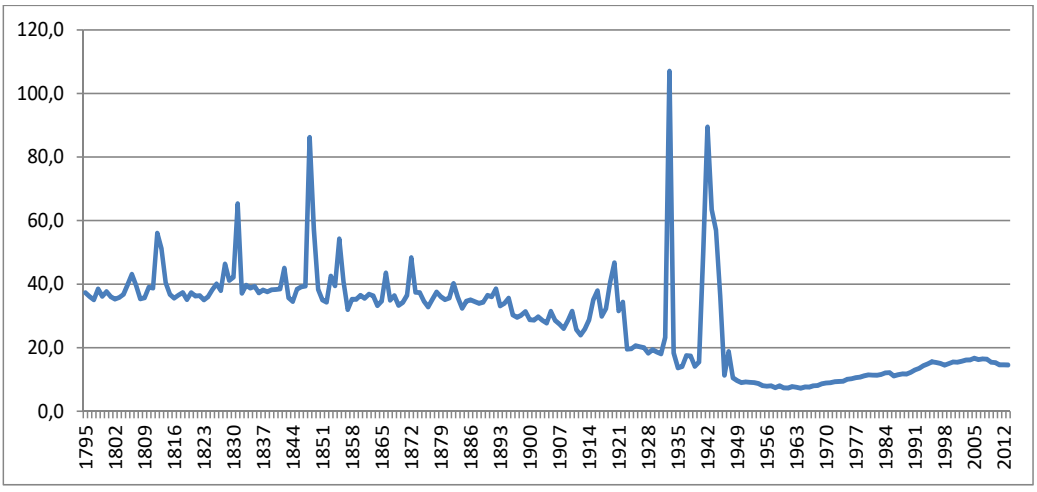


Fig. 9. Trends in the crude mortality rate in Ukraine (1991 territorial boundaries), 1795–2013 (per 1.000 population)

Source: Reconstructed time series for 1795–2013 (O.P. Rudnytskyi) and data from the State Statistics Service of Ukraine.

and the limited capacity of primary health care (PHC) to fully meet the substantially increased healthcare needs of the population during the public health emergency.

It should also be noted that crude mortality estimates for 2014 and 2022–2024 were influenced by incomplete registration of deaths resulting from the temporary occupation of parts of the country and the ongoing military conflict. The decline in mortality observed in 2022 may be attributed to several factors: (1) a substantial reduction in COVID-19-related mortality compared with 2021; (2) under-registration of war-related deaths, particularly among the civilian population; and (3) uncertainty regarding the size of the resident population in the territory under the control of the Government of Ukraine, which complicated the calculation and interpretation of mortality indicators.

Discussion of research results

The findings of this study suggest that preserving the health of the Ukrainian population, as a fundamental prerequisite for the country's sustainable development, requires the implementation of modern approaches to healthcare financing based on further administrative-territorial reform, strengthening local self-government, consolidating municipalities and districts, and promoting metropolitan governance at the regional level. Increasing the territorial coverage and population size of municipalities and districts is expected to enhance their financial capacity to support healthcare delivery, enabling municipalities to finance primary health care (and, where appropriate, part of specialized care), districts to provide specialized healthcare services, and regional authorities to ensure the provision of highly specialized healthcare. Such an approach would facilitate the continued development of primary health care in Ukraine based on the principles of family medicine.

Reducing population mortality should also rely on strengthening public health education aimed at promoting socially responsible behaviour, including the rational use of antibiotics and the adoption of healthy lifestyles.

Strict adherence to evidence-based standards for antimicrobial therapy and perioperative antimicrobial prophylaxis would contribute to reducing antimicrobial resistance and, consequently, decreasing mortality associated with infectious diseases.

Study Limitations

This study has several limitations. First, it focuses primarily on selected aspects of healthcare system performance, particularly primary health care and antimicrobial resistance as indicators of institutional effectiveness. Consequently, the analysis does not comprehensively address all socio-economic determinants of healthcare reform, including broader macroeconomic and political-institutional factors. Second, limited access to up-to-date statistical information, particularly under martial law, constrained the scope of the comparative analysis and may have affected the completeness of the findings.

Prospects for further research

Future research should expand the analysis of socio-economic determinants of healthcare reform by examining the contribution of human capital, institutional quality, and healthcare financing models to health system performance. Particular attention should also be given to evaluating the role of clinical pharmacists in improving the effectiveness of pharmacotherapy as an essential component of healthcare quality at the primary care level. Furthermore, investigating the knowledge, attitudes, and practices (KAP) of primary care physicians regarding the rational use of medicines may provide valuable evidence on the effectiveness of institutional regulation and antimicrobial stewardship policies.

Following the end of the war and the completion of a new national population census, demographic reconstruction should be undertaken to restore intercensal demographic estimates. This would enable a more accurate assessment of the impact of socio-economic determinants on demographic trends and on the outcomes of healthcare system reform.

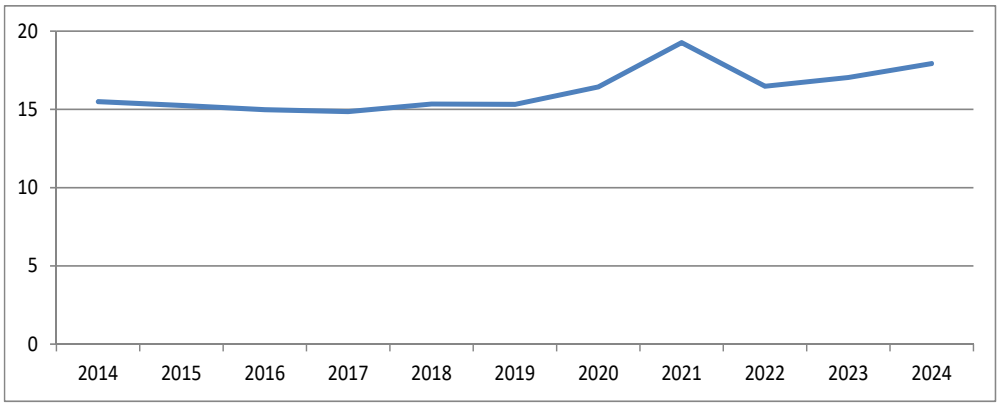


Fig. 10. Crude mortality rates in Ukraine (current territorial boundaries), 2014–2024 (per 1.000 population)

Source: Reconstructed time series (O.M. Hladun) and data from the State Statistics Service of Ukraine and the Ministry of Justice of Ukraine.

Conclusions

The findings confirm that socio-economic determinants play a pivotal role in shaping both the direction and outcomes of healthcare system reform. The comparative analysis of Ukraine and the Nordic countries demonstrates that the effectiveness of healthcare reforms depends largely on the level of economic development, the sustainability of healthcare financing, and institutional capacity.

To improve the effectiveness of healthcare reform in Ukraine, it is essential to ensure the continuity of transformation processes, increase investment in the healthcare sector-particularly in primary health care-and strengthen institutional governance mechanisms. At the same time, improving the rational use of medicines, especially antimicrobial agents, should be regarded as an integral component of overall health system performance, reflecting the quality of healthcare delivery and contributing to better public health outcomes.

Bibliography

1. Marmot M. Social determinants of health inequalities. Lancet. 2005;365(9464):1099–1104. DOI: https://doi.org/10.1016/S0140-6736(05)71146-6.
2. Braveman P, Gottlieb L. The social determinants of health: it's time to consider the causes of the causes. Public Health Rep. 2014;129(Suppl 2):19–31. DOI: https://doi.org/10.1177/00333549141291S206.
3. GBD 2021 Antimicrobial Resistance Collaborators. Global burden of bacterial antimicrobial resistance 1990–2021: a systematic analysis with forecasts to 2050. Lancet. 2024;404(10459):1199–1226. DOI: https://doi.org/10.1016/S0140-6736(24)01867-1.
4. Demyanyuk O, Symochko L, Vlasenko I, Kashtanova T, Blenda A. Antimicrobial resistance: challenges in wartime – Ukrainian perspective. Mikrobiol Zh. 2024;86(3):88–105. DOI: https://doi.org/10.15407/microbiolj86.03.088.
5. Barnes L, Hall PA, Taylor RCR. The Structural Sources of Socioeconomic Inequalities in Health: A Cross-National Perspective. Socius. 2023;9:1–17. DOI: https://doi.org/10.1177/23780231231174832
6. World Health Organization. Primary health care on the road to universal health coverage: 2019 monitoring report. Geneva: World Health Organization; 2019. URL: https://www.who.int/publications/i/item/9789240029040.
7. Organisation for Economic Co-operation and Development. Realising the potential of primary health care. Paris: OECD Publishing; 2020. DOI: https://doi.org/10.1787/8eeb4a8a-en.
8. Bundesministerium für Frauen, Jugend und Gesundheit. Gesundheitsreform 2000. Berlin: Bundesministerium für Frauen, Jugend und Gesundheit; 2000.
9. Aguzolli F, Aligon A, Com-Ruelle L, Frerot L. Choisir d'avoir un médecin référent: une analyse réalisée à partir du premier dispositif mis en place début 1998. Paris: CREDES; 1999.
10. Vehvilaeinen AT, Kumpusalo EA, Takala JK. A list system can help to reduce the proportion of out of hours referrals for male patients. Scandinavian Journal of Primary Health Care. 1996;14:148–151.
11. Alban A, Christiansen T. The Nordic Lights: New Initiatives in Health Care Systems. Odense: Odense University Press; 1995.
12. Le Grand J, Mays N, Mulligan JA, editors. Learning from the NHS Internal Market: A Review of Evidence. London: King's Fund; 1998.
13. Ministry of Social Affairs and Health. Health for All by the Year 2000. The Finnish National Strategy. Helsinki: Ministry of Social Affairs and Health; 1987.
14. The Swedish Health Service. Health in Sweden: Facts from Basic Studies under the HS 90 Programme. Stockholm: The Swedish Health Service; 1982.
15. WHO Regional Office for Europe. Health Services Planning and Management for Health in the Netherlands: Contribution to the WHO European Conference on Planning and Management for Health. Copenhagen: WHO Regional Office for Europe; 1984.
16. Finnish Government. Health Policy Report by the Government to Parliament. Helsinki: Finnish Government; 1985.
17. Pekurinen M, Vohlonen L, Häkkinen U. Reallocation of resources in favour of primary health care: the case of Finland. World Health Stat Q. 1987;40(4):313–325.
18. World Health Organization. Evaluation of the Strategy for Health for All by the Year 2000. Seventh Report on the World Health Situation. European Region. Vol. 5. Geneva: World Health Organization; 1986.
19. Матвієнко Ю. Система охорони здоров'я Фінляндії. Медицина світу. 2014;(4). Доступно: http://msvitu.com/archive/2014/october/article-11.php.
20. Mölstad S, Lundborg CS, Karlsson AK, Cars O. Antibiotic prescription rates vary markedly between 13 European countries. Scandinavian Journal of Infectious Diseases. 2002;34(5):366–371. DOI: https://doi.org/10.1080/00365540110080034.
21. Skajaa N, Gehrt L, Nieminen H, et al. Trends in antibiotic use in Danish, Finnish, Norwegian and Swedish children. Clinical Epidemiology. 2022;14:937–947. DOI: https://doi.org/10.2147/CLEP.S362262.
22. Бут М. Що не так зі скандинавами? Правда і міфи про найщасливіших людей. 2-ге вид. Київ: Наш Формат; 2022.
23. Human Mortality Database [Internet]. Berkeley (CA): University of California, Berkeley; Rostock: Max Planck Institute for Demographic Research; [цит. 12 лип. 2026]. Доступно: https://www.mortality.org/.
24. Міністерство фінансів України [Інтернет]. [цит. 12 лип. 2026]. Доступно: https://mof.gov.ua/uk/.
25. Національна служба здоров'я України [Інтернет]. [цит. 12 лип. 2026]. Доступно: https://nszu.gov.ua/.
26. Habicht J, Hellowell M, Kutzin J. Sustaining progress towards universal health coverage amidst a full-scale war: learning from Ukraine. Health Policy and Planning. 2024;39(7):799–802. DOI: https://doi.org/10.1093/heapol/czae041.
27. Хайтович МВ, Дідковський ВЛ, Полякова ДС, Турчак ДВ. Динаміка та структура споживання антимікробних препаратів в Україні у 2020–2023 роках. Український медичний часопис. 2024;(165):119–123. DOI: https://doi.org/10.32471/umj.1680-3051.165.257677.

28. Міністерство охорони здоров'я України. Наказ № 1614 від 03 серпня 2021 року «Про організацію профілактики інфекцій та інфекційного контролю в закладах охорони здоров'я та запровадження адміністрування антимікробних препаратів» [Інтернет]. [цит. 12 лип. 2026]. Доступно: https://phc.org.ua/sites/default/files/users/user92/наказ.pdf.

29. Міністерство охорони здоров'я України. Наказ № 1513 від 23 серпня 2023 року «Раціональне застосування антибактеріальних і антифунгальних препаратів з лікувальною та профілактичною метою» [Інтернет]. [цит. 12 лип. 2026]. Доступно: https://moz.gov.ua/uk/decrees/nakaz-moz-ukraini-vid-23082023--1513-pro-zatverdzhennja-standartu-medichnoi-dopomogi-racionalne-zastosuvannja-antibakterialnih-i-antifungalnih-preparativ-z-likuvalnoju-ta-profilaktichnoju-metoju.

30. Klein EY, Impalli I, Poleon S, Denoel P, Cipriano M, Van Boeckel TP, Pecetta S, Bloom DE, Nandi A. Global trends in antibiotic consumption during 2016–2023 and future projections through 2030. Proceedings of the National Academy of Sciences of the United States of America. 2024;121(49):e2411919121. DOI: https://doi.org/10.1073/pnas.2411919121.

References

1. Marmot M. Social determinants of health inequalities. The Lancet. 2005;365(9464):1099–1104. DOI: https://doi.org/10.1016/S0140-6736(05)71146-6.

2. Braveman P, Gottlieb L. The social determinants of health: It's time to consider the causes of the causes. Public Health Reports. 2014;129(Suppl 2):19–31. DOI: https://doi.org/10.1177/00333549141291S206.

3. GBD 2021 Antimicrobial Resistance Collaborators. Global burden of bacterial antimicrobial resistance 1990–2021: A systematic analysis with forecasts to 2050. The Lancet. 2024;404(10459):1199–1226. DOI: https://doi.org/10.1016/S0140-6736(24)01867-1.

4. Demyanyuk O, Symochko L, Vlasenko I, Kashtanova T, Blenda A. Antimicrobial resistance: Challenges in wartime – Ukrainian perspective. Mikrobiolohichnyi Zhurnal. 2024;86(3):88–105. DOI: https://doi.org/10.15407/microbiolj86.03.088.

5. Tang KC, Rashid MA, Chia KS, et al. Macroeconomic determinants of health and health inequalities: A cross-country analysis. Health Policy. 2023;128(1):34–42. DOI: https://doi.org/10.1016/j.healthpol.2023.02.009.

6. World Health Organization. Primary health care on the road to universal health coverage: 2019 monitoring report. Geneva: World Health Organization; 2019. Available from: https://www.who.int/publications/i/item/9789240029040.

7. Organisation for Economic Co-operation and Development. Realising the potential of primary health care. Paris: OECD Publishing; 2020. DOI: https://doi.org/10.1787/8eeb4a8a-en.

8. Bundesministerium für Frauen, Jugend und Gesundheit. Gesundheitsreform 2000 (Health Care Reform). Berlin: Bundesministerium für Frauen, Jugend und Gesundheit; 2000.

9. Aguzolli F, Aligon A, Com-Ruelle L, Frerot L. Choisir d'avoir un médecin référent. Une analyse réalisée à partir du premier dispositif mis en place début 1998. Paris: CREDES; 1999.

10. Vehviläinen AT, Kumpusalo EA, Takala JK. A list system can help to reduce the proportion of out-of-hours referrals for male patients. Scandinavian Journal of Primary Health Care. 1996;14:148–151.

11. Alban A, Christiansen T. The Nordic Lights: New Initiatives in Health Care Systems. Odense: Odense University Press; 1995.

12. Le Grand J, Mays N, Mulligan JA, editors. Learning from the NHS Internal Market: A Review of Evidence. London: King's Fund; 1998.

13. Ministry of Social Affairs and Health. Health for All by the Year 2000. The Finnish National Strategy. Helsinki: Ministry of Social Affairs and Health; 1987.

14. The Swedish Health Service. Health in Sweden. Facts from Basic Studies under the HS 90 Programme. Stockholm: The Swedish Health Service; 1982.

15. WHO European Region. Health services planning and management for health in the Netherlands: Contribution to the WHO European Conference on Planning and Management for Health. The Hague: World Health Organization Regional Office for Europe; 1984.

16. Finnish Government. Health Policy Report by the Government to Parliament. Helsinki: Finnish Government; 1985.

17. Pekurinen M, Vohlonen L, Häkkinen U. Reallocation of resources in favour of primary health care: The case of Finland. World Health Statistics Quarterly. 1987;40(4):313–325.

18. World Health Organization. Evaluation of the Strategy for Health for All by the Year 2000. Seventh Report on the World Health Situation. European Region. Vol. 5. Geneva: World Health Organization; 1986.

19. Matviienko Yu. Systema okhorony zdorovia Finliandii. Medytsyna svitu. 2014;(4). Available from: http://msvitu.com/archive/2014/october/article-11.php [in Ukrainian].

20. Mölstad S, Lundborg CS, Karlsson AK, Cars O. Antibiotic prescription rates vary markedly between 13 European countries. Scandinavian Journal of Infectious Diseases. 2002;34(5):366–371. DOI: https://doi.org/10.1080/00365540110080034.

21. Skajaa N, Gehrt L, Nieminen H, et al. Trends in antibiotic use in Danish, Finnish, Norwegian and Swedish children. Clinical Epidemiology. 2022;14:937–947. DOI: https://doi.org/10.2147/CLEP.S362262.

22. But M. Shcho ne tak zi skandinavamy? Pravda i mify pro naishchaslyvishykh liudei. 2nd ed. Kyiv: Nash Format; 2022. [in Ukrainian].

23. Human Mortality Database [Internet]. Berkeley (CA): University of California, Berkeley; Rostock: Max Planck Institute for Demographic Research. Available from: https://www.mortality.org/.

24. Ministry of Finance of Ukraine [Internet]. Available from: https://mof.gov.ua/uk/ [in Ukrainian].

25. National Health Service of Ukraine [Internet]. Available from: https://nszu.gov.ua/ [in Ukrainian].

26. Habicht J, Hellowell M, Kutzin J. Sustaining progress towards universal health coverage amidst a full-scale war: Learning from Ukraine. Health Policy and Planning. 2024;39(7):799–802. DOI: https://doi.org/10.1093/heapol/czae041.

27. Khaitovych MV, Didkovskyi VL, Poliakova DS, Turchak DV. Dynamika ta struktura spozhyvannia antymikrobnykh preparativ v Ukraini u 2020–2023 rokakh [Dynamics and structure of antimicrobial consumption in Ukraine in 2020–2023]. Ukrainskyi medychnyi chasopys. 2024;165(7):119–123. DOI: 10.32471/umj.1680-3051.165.257677. [in Ukrainian].

28. Ministry of Health of Ukraine. Order No. 1614 of August 3, 2021 "On the organization of infection prevention and infection control in healthcare facilities and the implementation of antimicrobial stewardship" [Internet]. Available from: https://phc.org.ua/sites/default/files/users/user92/наказ.pdf [in Ukrainian].

29. Ministry of Health of Ukraine. Order No. 1513 of August 23, 2023 "Rational use of antibacterial and antifungal medicines for therapeutic and prophylactic purposes" [Internet]. Available from: https://moz.gov.ua/uk/decrees/nakaz-moz-ukraini-vid-23082023--1513-pro-zatverdzhennja-standartu-medichnoi-dopomogi-racionalne-zastosuvannja-antibakterialnih-i-antifungalnih-preparativ-z-likuvalnoju-ta-profilaktichnoju-metoju [in Ukrainian].

30. Klein EY, Impalli I, Poleon S, Denoel P, Cipriano M, Van Boeckel TP, Pecetta S, Bloom DE, Nandi A. Global trends in antibiotic consumption during 2016–2023 and future projections through 2030. Proceedings of the National Academy of Sciences of the United States of America. 2024;121(49):e2411919121. DOI: https://doi.org/10.1073/pnas.2411919121.

The study of socio-economic determinants of healthcare system reform is an important scientific and practical task, as population income, accessibility of healthcare services, healthcare financing, institutional capacity, and social stability substantially influence public health outcomes and the performance of healthcare systems. The issue has become particularly relevant in the context of healthcare reform in Ukraine, socio-economic instability, and the need to implement effective management models based on international experience.

Purpose is to conduct a comparative analysis of the socio-economic determinants of healthcare system reform and to assess their impact on the performance of the healthcare sector in Ukraine and the Nordic countries.

Materials and Methods. The study was conducted using systemic and comparative approaches. The information base comprised statistical data on healthcare financing, demographic indicators, mortality rates, and the organization of primary healthcare services in Finland, Sweden, and Ukraine. The following research methods were applied: theoretical analysis and synthesis of scientific literature, systematization, comparative analysis, statistical analysis of indicator trends, and qualitative analysis of institutional changes and healthcare reform implementation mechanisms.

Results. The findings demonstrated that healthcare reforms in the Nordic countries were implemented under conditions of stable economic growth, high population income, and effective public governance. The prioritization of primary healthcare was accompanied by stable financing exceeding 2% of GDP, ensuring improved accessibility of healthcare services and contributing to reduced mortality. In Ukraine, healthcare reform intensified after 2018 through the introduction of the "money follows the patient" financing model, digitalization of healthcare services, and implementation of the electronic healthcare system. However, the share of primary healthcare expenditure accounted for only 0.356% of GDP in 2023, which is considerably lower than in the Nordic countries and limits the accessibility and quality of healthcare services. In addition, the widespread irrational prescription of antibiotics, particularly macrolides, indicates insufficient effectiveness of regulatory policies and healthcare quality control mechanisms, creating additional risks for the development of antimicrobial resistance.

Conclusions. The effectiveness of healthcare system reform is largely determined by socio-economic factors, particularly the level of healthcare financing, institutional capacity, and the effectiveness of public governance. The experience of the Nordic countries confirms the importance of prioritizing primary healthcare, ensuring sustainable public financing, and strengthening governance mechanisms. For Ukraine, key priorities include increasing investment in primary healthcare, ensuring the sustainability of healthcare reforms, improving institutional governance, and implementing effective policies for the rational use of antibacterial medicines, which will contribute to improving the quality of healthcare services and reducing the spread of antimicrobial resistance.

Key words: healthcare reform, socio-economic determinants, comparative analysis, Ukraine, Nordic countries, primary healthcare, healthcare financing, antimicrobial resistance.

Дослідження соціально-економічних детермінант реформування системи охорони здоров'я є актуальним науково-практичним завданням, оскільки рівень доходів населення, доступність медичної допомоги, фінансування галузі, інституційна спроможність та соціальна стабільність істотно впливають на показники громадського здоров'я та ефективність функціонування систем охорони здоров'я. Особливої актуальності проблема набуває в умовах реформування системи охорони здоров'я України, соціально-економічної нестабільності та необхідності впровадження ефективних моделей управління, заснованих на міжнародному досвіді.

Мета – здійснити порівняльний аналіз соціально-економічних детермінант реформування системи охорони здоров'я та оцінити їх вплив на ефективність функціонування галузі в Україні та країнах Північної Європи.

Матеріали та методи. Дослідження виконано із застосуванням системного та порівняльного підходів. Інформаційну базу становили статистичні дані щодо фінансування охорони здоров'я, демографічних показників, смертності населення, а також матеріали щодо організації первинної медичної допомоги у Фінляндії, Швеції та Україні. Використано методи теоретичного аналізу й узагальнення наукової літератури, систематизації, порівняльного аналізу, статистичного аналізу динаміки показників, а також якісного аналізу інституційних змін і механізмів реалізації реформ.

Результати. Встановлено, що країни Північної Європи здійснювали реформування систем охорони здоров'я в умовах стабільного економічного розвитку, високого рівня доходів населення та ефективного державного управління. Пріоритетний розвиток первинної медичної допомоги супроводжувався стабільним фінансуванням, яке перевищувало 2% ВВП, що забезпечило підвищення доступності медичних послуг і сприяло зниженню смертності населення. В Україні реформування системи охорони здоров'я активізувалося після 2018 року завдяки впровадженню принципу «гроші йдуть за пацієнтом», цифровізації медичних послуг та електронної системи охорони здоров'я. Разом із тим встановлено, що частка фінансування первинної медичної допомоги у 2023 році становила лише 0,356% ВВП, що суттєво поступається показникам країн Північної Європи та обмежує доступність і якість медичної допомоги. Визначено, що поширення необґрунтованого призначення антибіотиків, зокрема макролідів, свідчить про недостатню ефективність регуляторної політики та системи контролю якості медичної допомоги, що створює додаткові ризики розвитку антибіотикорезистентності.

Висновки. Ефективність реформування системи охорони здоров'я значною мірою визначається соціально-економічними детермінантами, насамперед рівнем фінансування, інституційною спроможністю та ефективністю державного управління. Досвід країн Північної Європи підтверджує доцільність пріоритетного розвитку первинної медичної допомоги, забезпечення стабільного фінансування та посилення управлінських механізмів. Для України пріоритетними напрямами є збільшення фінансування первинної медичної допомоги, забезпечення сталості реформ, удосконалення інституційного управління та впровадження ефективної політики раціонального використання антибактеріальних лікарських засобів, що сприятиме підвищенню якості медичної допомоги та зниженню поширення антибіотикорезистентності.

Ключові слова: реформа охорони здоров'я, соціально-економічні детермінанти, порівняльний аналіз, Україна, країни Північної Європи, первинна медична допомога, фінансування, антибіотикорезистентність.

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