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**THE ROLE OF HEALTH REGULATORY POLICIES IN ACHIEVING
SUSTAINABLE DEVELOPMENT GOALS: SCOPING REVIEW
РОЛЬ РЕГУЛЯТОРНОЇ ПОЛІТИКИ У СФЕРІ ОХОРОНИ ЗДОРОВ'Я
У ДОСЯГНЕННІ ЦІЛЕЙ СТІЙКОГО РОЗВИТКУ: СКОПІНГОВИЙ
ОГЛЯД**

Summary. *Introduction. Regulation of health markets represents a fundamental prerequisite for achieving the Sustainable Development Goals. Through the correction of market failures, redistribution of financial risks, and promotion of equitable access to essential healthcare services, health regulatory policy provides the institutional basis for achieving Universal Health Coverage.*

Effective regulation ensures that healthcare functions as a public good, upholding principles of equity and protecting populations from financial vulnerability. The integration of robust regulatory frameworks into broader sustainable development strategies is therefore essential to ensure that progress toward good health and well-being, and the 2030 Agenda as a whole, remains inclusive, resilient, and sustainable.

Purpose. The purpose of the study is to substantiate the significance of regulatory policy in the field of healthcare for mitigating the negative effects of health market failure on ensuring equitable access to medical care for different segments of the population, as one of the key directions for achieving the Sustainable Development Goals.

Materials and methods. The study analyzed an array of English-language scientific publications from 2020–2024, drawn from journals indexed in the Scopus database and focused on issues of regulatory policy in healthcare. The PRISMA 2020 methodology was applied to systematize and select the final set of articles. An in-depth bibliometric analysis was conducted using Bibliometrix, an open-source R package designed for quantitative analysis of academic literature. The process was implemented through Biblioshiny, a web-based interface integrated with Bibliometrix that enables interactive data processing and visualization. The analysis covered 2 595 articles, which were pre-processed and standardized in BibTeX format. To identify research trends and thematic relationships, visualization tools such as word clouds and cluster analysis were employed.

Results. The study demonstrates the key role of regulatory policy in the healthcare sector in overcoming the negative effects of market imperfections and ensuring fair and equitable access to medical services for all segments of the population, in line with the Sustainable Development Goals. The main motives and prerequisites for government intervention in the regulation of the healthcare market have been identified. The leading directions of scientific research in the

field of healthcare regulatory policy have been analyzed. An approach to the classification of regulatory measures aimed at eliminating or mitigating the negative effects of market failures has been proposed to promote greater equity in access to healthcare services.

Further research in the area. A promising direction for further research in this field is the comparative analysis and scientific justification of the most effective regulatory mechanisms in health care across different countries and regions, considering the existing models of health systems.

Key words: healthcare, regulatory policy, sustainable development

Анотація. Вступ. Регулювання ринку охорони здоров'я є фундаментальною передумовою для досягнення Цілей сталого розвитку. Через усунення недосконалостей ринку, перерозподіл фінансових ризиків та сприяння справедливому доступу до основних медичних послуг, регуляторна політика у сфері охорони здоров'я забезпечує інституційну основу для досягнення загального охоплення послугами охорони здоров'я (Universal Health Coverage). Ефективне регулювання гарантує функціонування системи охорони здоров'я як суспільного блага, підтримуючи принципи справедливості та захищаючи населення від фінансової вразливості. Отже, інтеграція дієвих регуляторних механізмів у ширші стратегії сталого розвитку є необхідною умовою для забезпечення того, щоб прогрес у досягненні здоров'я і благополуччя, а також реалізації Порядку денного до 2030 року, залишався всеохопним, стійким і тривалим.

Мета. Мета роботи полягає у обґрунтуванні значення регуляторної політики в галузі охорони здоров'я для усунення негативних впливів недосконалостей медичного ринку на забезпечення справедливого і рівного доступу різних верств населення до медичної допомоги як одного з напрямів цілей стійкого розвитку.

Матеріали і методи. У дослідженні проаналізовано масив англомовних наукових публікацій за 2020–2024 роки з журналів, індексованих у базі Scopus, присвячених проблемам регуляторної політики у сфері охорони здоров'я. Для систематизації та відбору фінального набору статей застосовано методологію PRISMA 2020. Поглиблений бібліометричний аналіз проведено із використанням Bibliometrix — відкритого пакета R для кількісного аналізу наукової літератури. Процес реалізовано через Biblioshiny, вебінтерфейс, інтегрований із Bibliometrix, який забезпечує інтерактивну обробку та візуалізацію даних. Аналіз охопив 2 595 статей, попередньо очищених і стандартизованих у форматі BibTeX. Для виявлення дослідницьких трендів і тематичних взаємозв'язків застосовано інструменти візуалізації, зокрема хмару слів та кластерний аналіз.

Результати. У дослідженні доведено ключову роль регуляторної політики у сфері охорони здоров'я в подоланні негативних наслідків недосконалостей медичного ринку та забезпеченні справедливого й рівного доступу всіх верств населення до медичних послуг, що відповідає цілям сталого розвитку. Визначено основні мотиви й передумови державного втручання в регулювання ринку охорони здоров'я. Проаналізовано провідні напрями наукових досліджень у галузі регуляторної політики у сфері охорони здоров'я. Запропоновано підхід до групування комплексу регуляторних заходів, спрямованих на усунення або мінімізацію негативних ефектів ринкових збоїв для досягнення більшої справедливості у доступі населення до медичної допомоги.

Перспективи. Перспективним напрямом подальших досліджень у цій сфері є порівняльний аналіз та наукове обґрунтування найбільш ефективних регуляторних механізмів у охороні здоров'я різних країн і регіонів з урахуванням існуючих моделей систем охорони здоров'я.

Ключові слова: охорона здоров'я, регуляторна політика, стійкий розвиток.

Statement of the problem. In the context of the global sustainable development agenda, the regulation of health markets has become a pivotal factor in shaping equitable, efficient, and resilient health systems. Since the adoption of the United Nations 2030 Agenda for Sustainable Development in 2015, the interdependence between health, social stability, and economic growth has been increasingly recognized as a cornerstone of sustainable development [1]. Among the 17 Sustainable Development Goals (SDGs), Goal 3 "Ensure healthy lives and promote well-being for all at all ages" holds a central position, as it both reflects and enables progress across the entire SDG framework. Within this goal, Target 3.8 on Universal Health Coverage (UHC) emphasizes the need for ensuring equitable access to essential health services and financial protection for all individuals, irrespective of socioeconomic status, gender, or place of residence [2].

Health market regulation represents a fundamental mechanism for translating this global commitment into tangible national outcomes. Health care markets, unlike those for conventional goods, are characterized by asymmetric information, externalities, and uncertainties regarding demand and supply, which collectively produce significant market failures [3, 4]. These failures often manifest as inequitable access to care, inefficiencies in resource allocation, and exposure of households to catastrophic health expenditures. Accordingly, government intervention through comprehensive regulatory frameworks serves as a corrective mechanism to mitigate these inefficiencies, safeguard equity, and protect public welfare. Moreover, health regulatory policies exert a cross-sectoral influence that extends beyond the health domain. By improving population health, regulation enhances labor productivity, supports educational attainment, and promotes economic resilience, all of which contribute to a positive feedback loop

of sustainable development [5]. Therefore, the regulation of health markets should be regarded not as a technical administrative function, but as a strategic component of national development policy and global health governance.

The regulation of health markets constitutes a structural prerequisite for achieving the Sustainable Development Goals. By correcting market failures, redistributing financial risks, and promoting equitable access to essential services, health regulatory policy establishes the institutional foundation for Universal Health Coverage. Regulation ensures that healthcare operates as a public good, safeguarding equity and protecting citizens from financial hardship. Integrating regulatory frameworks into broader sustainable development strategies will be critical for ensuring that progress toward SDG 3, and the 2030 Agenda as a whole, is inclusive, resilient, and enduring.

Analysis of recent research and publications. The problems of market imperfections in medical services and regulatory policy in the healthcare sector have been the focus of numerous studies by contemporary economists. For instance, Garattini L. and Padula A. note that «healthcare can be considered a typical example of “market failure” in economic theory from both the demand and supply sides» [6, p. 6]. Vaithianathan R. [7], Mak H.Y. [8], Mwachofi A., Al-Assaf A.F. [9], Pillai R.K. [10] examined the general issues of imperfect competition in the healthcare market. As noted by Iszaid I., Hafizan A.H., Muhamad H. J. «healthcare market is not a good place for competitive market as a number of professional groups have developed a mechanism to control the entry to the healthcare market and make it a noncompetitive market» [11, p.19]. At the same time, the works of Bloom G., Standing H., Lloyd R. [12], He D. [13], Mishra A., Pandey N. [14], focus primarily on the problem of information asymmetry and its impact on the behavior of consumers and service providers in the healthcare market. Researchers such as Ong M. A. [15], Rao P., Fischer S. H., Vaiana M. E., Taylor E. A. [16], Baker M.C., Stratmann T. [17] emphasize the existence of multiple barriers in healthcare markets that restrict access and competition. In

addition to these issues, particular attention is devoted to equity in the distribution of healthcare services and to mechanisms that ensure free access to essential health services for socially vulnerable groups. These questions are raised in the scientific works of Carson B. [18], Cullinan J., Lorgelly P. [19], Siciliani L., Straume O. R. [20]. Thus, health market failure, the causes of which have been analyzed in the aforementioned studies, along with the necessity to maintain equality of access to healthcare across social groups, are among the main factors that determine the need for government intervention and the development of adequate regulatory policies in this area.

The problems of regulatory policy in healthcare have been addressed in the works of Yazbeck A.S., Soucat A. [21], Finch D., Briggs A., Tallack C. [22], Trottmann M., Stam P., Visser J., Brammli-Greenberg S. [23], Watts J.J., Segal L. [24], Chaudhuri S., Dwibedi J.K., Biswas A. [25], Booth P. [26] and others

Consequently, various aspects of healthcare market regulation aimed at mitigating the negative effects of its imperfect functioning have been examined by contemporary researchers. However, given the ongoing changes in the socio-demographic structures of populations across countries, as well as in their political and economic environments, this topic remains highly relevant and requires further analysis within the context of current global conditions.

The purpose of the study is to substantiate the significance of regulatory policy in the field of healthcare for mitigating the negative effects of health market failure on ensuring equitable access to medical care for different segments of the population, as one of the key directions for achieving the Sustainable Development Goals. To achieve the stated purpose, the article addresses the following tasks: to determine the motives and reasons for government intervention in regulating the healthcare market; to identify the main directions of scientific research in the field of regulatory policy in healthcare; and to substantiate directions of regulatory policies aimed at eliminating or mitigating

the negative effects of health market failure for ensuring equitable access to medical care for different population groups.

Materials and methods. In this study, the information base consisted of English-language scientific publications from 2020–2024, drawn from peer-reviewed journals indexed in the Scopus database and dedicated to issues of regulatory policy in the healthcare sector. To systematically select the final dataset of articles for in-depth analysis, the PRISMA 2020 methodology was applied, following a structured algorithm for publication filtering based on the standardized flowchart approved within this approach. An in-depth bibliometric analysis was conducted using Bibliometrix, an open-source R package designed for comprehensive science mapping and quantitative analysis of academic literature. The analytical process was implemented through Biblioshiny, a web-based graphical user interface (GUI) integrated with the Bibliometrix package in the R environment. The dataset obtained from Scopus was uploaded in BibTeX format and pre-processed in Biblioshiny to remove duplicates and standardize author and source information. The final sample of 2 595 scientific articles was analyzed using the functional modules embedded in Bibliometrix. Visualization tools integrated within Biblioshiny - including word clouds and clustering dendrograms - were employed to identify emerging research areas and relationships among key topics in the field of healthcare regulatory policy.

Presentation of the main material of the research. One of the key directions in achieving the Sustainable Development Goals is ensuring fair and equitable access to healthcare services for all segments of the population. Nevertheless, the characteristics of the healthcare market are such that, for a number of reasons, it cannot independently meet the needs of all population groups for high-quality medical care without state intervention. Health market failure refers to situations where health care markets do not function efficiently or equitably, leading to sub-optimal outcomes. Several reasons for health market failure are identified in contemporary scientific researches. A general list of these

reasons, formed as a result of the analysis of scientific works of modern scholars, is given in the table 1.

Table 1

Reasons of market failure in contemporary scientific researches

Reason of market failure	Description	Scholars
Imperfect competition	Health markets rarely meet the conditions of perfect competition due to monopolistic or oligopolistic behavior by providers, hospitals, or insurers, leading to inefficiencies and higher prices.	Garattini L. & Padula A., Vaithianathan R., Mak H. Y., Mwachofi A., Al-Assaf A.F., Rajamohanan K. P., Iszaid I. , Hafizan A.H , Muhamad H. J.
Externalities	Health-related behaviors and interventions (e.g., vaccination, smoking, pollution) generate benefits or costs for third parties not reflected in market prices, justifying public regulation.	Jacobsson F., Carstensen J., Borgquist L., Jnawali K., Tyshenko M. G., Oraby T.
Principal-Agent Problem and information asymmetry	Providers (agents) possess more information than patients (principals), which can lead to supplier-induced demand, moral hazard, and inefficiency in healthcare delivery.	Bloom G., Standing H., Lloyd R., He D., Mishra A., Pandey N.
Third-Party Payers	The presence of insurers or public payers distorts the price signals between patients and providers, potentially leading to overconsumption and cost escalation.	Sheholli N., Terrell T., Buff M.
Irrational Consumers	Patients often make health decisions under emotional stress or lack of understanding, leading to suboptimal consumption of health services and dependence on provider guidance.	Col N., Correa-de-Araujo R.
Uncertainty	Both demand (illness risk) and supply (treatment outcome) in health markets are unpredictable, complicating price formation and efficient risk pooling.	Arrow K. J., Hillen M. A., Gutheil C. M., Strout T. D., Smets E. M. A., Han P. K. J.
Barriers to Entry	High fixed costs, licensing requirements, and professional regulation limit market entry and competition among healthcare providers and insurers.	Ong M. A., Rao P., Fischer S.H., Vaiana M.E., Taylor E.A., Baker M. C., Stratmann T.
Merit / Public Goods	Healthcare services such as immunization, health education, and epidemic control are	Cserne P., Desmarais-Tremblay M., Carson B.,

	non-excludable and socially valuable, but underprovided by private markets.	Cullinan J., Lorgelly P., Siciliani L., Straume O. R.
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Source: systematized by the author based on [6-33]

Another strong rationale for government involvement in healthcare markets is the need to ensure equitable distribution of healthcare opportunities to promote social justice and equality.

According to WHO data, between 2000 and 2021, the share of the global population lacking access to essential health services declined by approximately 15%, although progress slowed significantly after 2015. In 2021, an estimated 4.5 billion people still did not have full coverage for essential health services. Around 2 billion individuals experienced financial hardship related to healthcare, including about 1 billion facing catastrophic out-of-pocket expenditures (SDG indicator 3.8.2) and approximately 344 million people pushed further into extreme poverty as a result of health costs [34].

Health regulation also serves a critical redistributive function. By subsidizing low-income populations, regulating private insurance markets, and setting price ceilings for essential medicines and devices, governments can reduce socioeconomic disparities in access to health care [35]. Such interventions promote both vertical equity—allocating resources according to need — and horizontal equity — ensuring similar treatment for individuals with similar health needs. Hence, health regulation becomes an essential instrument for realizing not only SDG 3 but also SDG 1 (No Poverty) and SDG 10 (Reduced Inequalities).

Empirical evidence demonstrates that unregulated or weakly regulated health systems exacerbate inequalities, leaving vulnerable populations exposed to catastrophic health expenditures and financial impoverishment [36]. Conversely, countries with well-developed regulatory and financing institutions, such as national health insurance systems, pharmaceutical price boards, and accreditation agencies, tend to perform better in terms of both service coverage and financial

protection. This correlation underscores that regulatory capacity is a core determinant of progress toward UHC and, by extension, toward SDG 3.

In addition to promoting equity, regulation is indispensable for ensuring quality and safety in healthcare delivery. Accreditation systems, licensing mechanisms, and product control agencies, covering pharmaceuticals, medical devices, and facilities, uphold the integrity and trustworthiness of health systems [37]. Effective regulation ensures adherence to evidence-based standards, thereby improving health outcomes and strengthening public confidence. This regulatory assurance contributes to broader SDG linkages, notably SDG 9 (Industry, Innovation, and Infrastructure), through the promotion of safe and innovative health technologies.

However, one of the most debated issues remains the determination of regulatory priorities to ensure that government interventions produce predominantly positive effects. As Finch D., Briggs A., Tallack C. note, "it is widely accepted that the state needs to play a major role in ensuring high-quality health care is available to everyone, and – as the coronavirus outbreak demonstrates – control infectious disease. But beyond tackling acute health need there is far less consensus around the state's role in keeping us healthy in the first place" [38].

To systematize researchers' views on this issue, this study conducted a review of recent scientific publications devoted to healthcare regulation, published in peer-reviewed journals indexed in the Scopus database. Initially, the search covered all English-language articles in the database using specific keywords, which resulted in 10 567 papers. Through a stepwise process applying inclusion and exclusion criteria, 2 595 studies were selected for the final analysis. The analysis employed the methods embedded in Biblioshiny (specialized web-based application for the R-package Bibliometrix, which is a tool for comprehensive bibliometric analysis), while the overall logic and research design

were based on the PRISMA 2020 framework (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) and are presented in fig. 1.

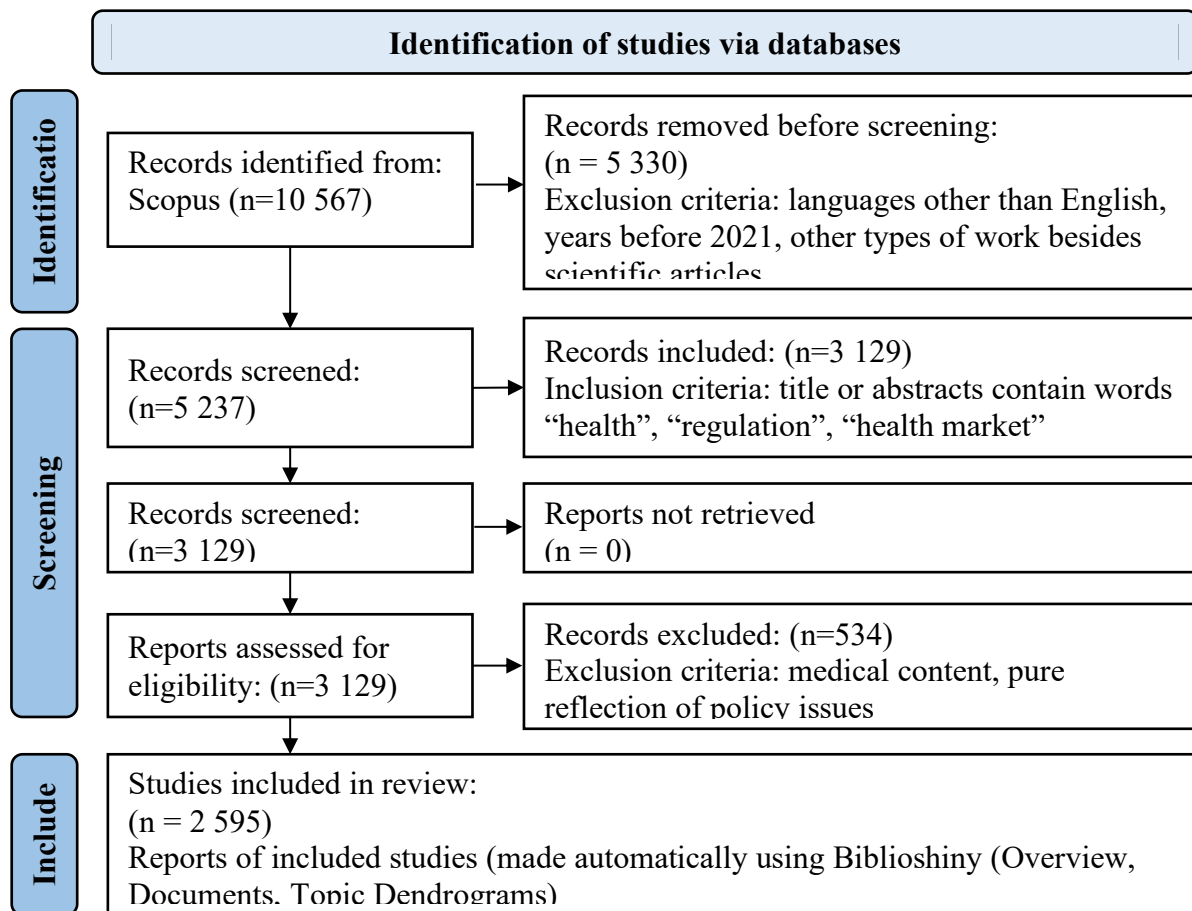


Fig. 1. The logic and design of the study based on the PRISMA 2020 framework

Source: elaborated by the author

Scientific interest in healthcare regulation has significantly increased over the past four years. The general characteristics of the final array of articles included to in-depth analysis are presented in fig. 2.

the word cloud provides only a visual representation of the most prominent research themes related to healthcare market regulation.

To identify priority areas of regulatory policy more precisely, the study employed the *Biblioshiny* tree clustering method. The results of this clustering analysis, based on keywords and abstract texts of the selected articles, are shown in Figure 4.

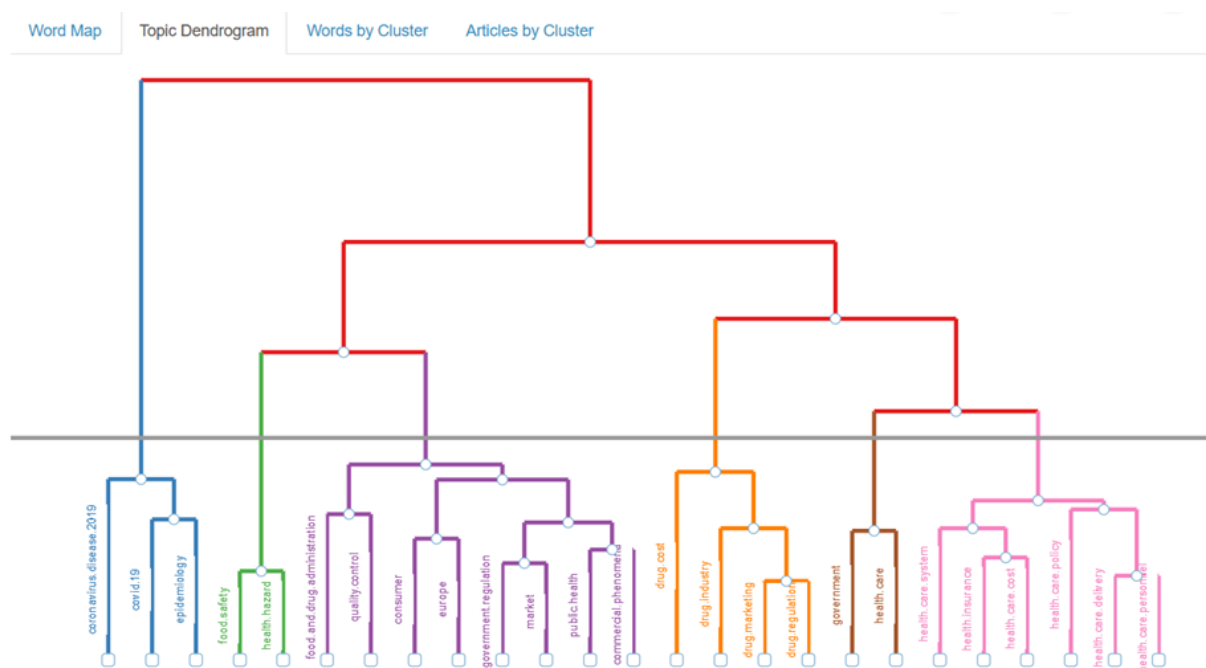


Fig. 4. Main topics clusters - Topic Dendrogram (2021-2024)

Source: obtained by the author after automatic analysis of the included array of articles in the Biblioshiny (built-in functional module “Topic dendrogram”)

As a result, six main thematic clusters of current research on healthcare regulatory policy were identified:

1. Healthcare service regulation during the COVID-19 pandemic, which revealed the unpreparedness of many national health systems for emergencies and global health crises.
2. Public health issues related to insufficient regulation of the food industry and nutrition.
3. Commercial determinants of health and their regulatory implications.

4. Pharmaceutical market control and drug regulation, focusing on pricing, quality assurance, and access to essential medicines.

5. General issues of public health policy and healthcare market governance, including institutional design and accountability mechanisms.

6. Healthcare service delivery, health system structure, health expenditure, and human resources for health, emphasizing efficiency and sustainability.

Considering these identified priority areas of healthcare regulatory policy that emerge in the scientific discourse, and taking into account the discussed reasons and motivations for government intervention in the healthcare market, it is reasonable to propose a systematized list of regulatory policy measures aimed at addressing the root causes of market failure. These measures are presented in table 2.

Table 2

Directions of regulatory policies and government interventions for eliminating or mitigating the negative effects of health market failure

Reasons of market failure and redistribution	Directions of regulatory policies and government interventions
Imperfect competition	Antitrust enforcement, price regulation, promoting competition
Externalities	Vaccination programs, subsidies for preventive care
Principal-Agent Problem and information asymmetry	Payment reform, auditing, performance-based pay, Transparency policies, mandatory disclosure, eHealth platforms, quality reporting
Third-Party Payers	Co-payments, deductibles, managed care
Irrational Consumers	Health literacy programs, regulation of advertising, evidence-based guidelines
Uncertainty	Social insurance schemes, risk pooling, subsidies
Barriers to Entry	Support for new providers, digital health expansion
Merit / Public Goods	Public financing, government provision of merit goods
Equity Concerns	Antitrust enforcement, price regulation, promoting competition

Source: elaborated by the author based on [6-33]

The provided list of regulatory policy measures is extensive but not exhaustive. In practice, the choice of specific instruments depends on the particular direction and objectives of regulation.

Effective implementation of regulatory policy in the healthcare sector will contribute to the principle of equity in access to healthcare services and promote the achievement of the Sustainable Development Goals, particularly in improving population well-being and advancing universal health coverage.

Conclusions and prospects for further research. The study presents an analysis of contemporary scientific publications indexed in the Scopus database that address issues of health regulatory policy. The findings demonstrate that the concept of Universal Health Coverage, which constitutes the operational foundation of the Sustainable Development Goals, is grounded in the implementation of effective regulatory mechanisms. These mechanisms are categorized according to the underlying causes of market failure that they are designed to prevent or mitigate.

In conclusion, the primary purpose of health regulation is to mitigate information asymmetry between providers and patients, uphold quality and safety standards, and prevent monopolistic or profit-driven behaviors that could compromise public welfare. Regulatory policy in the health sector encompasses a broad spectrum of instruments, including legislation, licensing, accreditation, price regulation, and insurance oversight, all aimed at maintaining the balance between efficiency, equity, and quality of care.

Through these mechanisms, regulatory policy serves as a foundation for accountability and quality assurance, ensuring that healthcare systems function in the public interest rather than being dictated solely by market forces. From an economic standpoint, effective regulation strengthens the long-term sustainability of health systems by fostering cost-efficient resource allocation and enhancing the overall value of health expenditures. Tools such as health technology assessment (HTA), pharmaceutical price control, and standardized clinical guidelines

optimize the use of limited resources and ensure that investments translate into tangible health gains. This role is especially crucial in low- and middle-income countries, where financial limitations heighten the need for regulatory frameworks that maintain equity, efficiency, and financial sustainability in health financing systems.

A promising direction for further research in this field is the comparative analysis and scientific justification of the most effective regulatory mechanisms in health care across different countries and regions, considering the existing models of health systems.

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