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LEGAL AND ECONOMIC MECHANISMS OF INSTITUTIONAL RESILIENCE: GLOBAL TRENDS AND IMPLICATIONS FOR HEALTH SYSTEMS

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INTRODUCTION

The intertwined legal and economic dimensions of institutional resilience in health systems have been thrust into the global spotlight by recent systemic shocks, such as the COVID-19 pandemic. Institutional resilience refers to the capacity of governance structures to absorb disturbances, adapt to evolving circumstances, and transform in ways that preserve essential health functions and uphold equitable access. In the context of sustainable development, ensuring that health systems can persist and adapt legally and economically is not merely a technical challenge but a foundational necessity.

The relevance of this dual (legal-economic) lens lies in the fact that resilience requires more than regulatory frameworks: it demands financial stability, flexible resource allocation, and economic incentives that align with legal mandates. Legal norms define who is responsible, how decisions are made, and what minimum standards must be met; economic mechanisms, in turn, ensure these norms are actionable – through funding, contingency reserves, purchasing arrangements, and more.

The aim of this chapter is to analyze how legal and economic instruments contribute to institutional resilience in health systems globally, and to draw out lessons for sustainable health governance.

Objectives: to conceptualize institutional resilience from both legal and economic perspectives; to identify and evaluate legal mechanisms (e.g., regulatory regimes, emergency law, public-private governance) that support resilient health systems; to examine economic instruments (financing, contingency funds, risk-sharing arrangements) that underlie resilient system performance; to analyze empirical case studies and global trends, highlighting good practices and challenges; to pinpoint gaps in current legal-economic strategies and propose recommendations for policy and regulatory reform.

Methods: This study employs a comparative-legal method, combined with economic policy analysis and structural-functional analysis. It uses content analysis of legal documents, policy frameworks, and academic literature (peer-reviewed articles), together with a systems approach to examine interactions between law and economic policy in different health system contexts.

Institutional resilience in health systems has been studied by a number of scholars, but significant gaps remain. Paschoalotto, Lazzari, Rocha, Massuda, and Castro (2023) critically revisit the concept of resilience in light of the COVID-19 pandemic, showing that even health systems once considered “resilient” collapsed under unprecedented stress. Their qualitative study with international experts

highlights limits in current analytical frameworks.[1] Furthermore, their earlier work (2022) proposes a research agenda for resilience based on governance, financing, resources, and service delivery, but this agenda has not yet fully translated into integrated legal-economic reform.[2] On the legal-regulatory side, frameworks that explicitly tie law to economic resilience are less developed: many resilience studies focus conceptually on adaptive capacities without sufficiently considering how legal mandates are financed, regulated, and enforced in the long term.

The problem of institutional resilience in health systems has been actively addressed in recent years, particularly in response to the growing volatility of global health threats. A significant part of contemporary scholarship focuses on the interaction between legal regulation, economic mechanisms, and system adaptability. Øyri and Wiig (2024) explore how regulatory frameworks can either constrain or enhance resilience capacities, arguing that regulation and resilience should not be viewed as opposing paradigms but rather as mutually reinforcing components of system improvement[3]. In another study, Øyri and Wiig (2022) analyze resilience across multiple system levels, demonstrating how regulatory alignment between micro-, meso-, and macro-structures supports more adaptive responses during crises[4].

Embrett, Carson, Sim and colleagues (2025) examine resilience from the perspective of institutional learning and research system responsiveness, highlighting how governance structures, decision-making authority, and funding channels influence the ability of health systems to generate and use evidence under crisis conditions[5]. Their findings underscore a persistent gap between legal mandates for evidence-based decision-making and the economic capacity to sustain research infrastructure during emergencies.

Radford, Karanikolos, and Cylus (2024) focus on pandemic preparedness and resilience across European health systems, identifying inconsistencies in the legal-regulatory architecture and financing models that hinder timely crisis response.[6] The authors point out that fragmented emergency legislation, underfunded contingency mechanisms, and weak cross-border coordination remain structural vulnerabilities that limit institutional resilience at both national and regional levels.

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[1] Paschoalotto, M. A. C., Lazzari, T. K., Rocha, R., Massuda, A., & Castro, M. C. (2023). Revisiting health system resilience: Learning from the impacts of COVID-19. *The Lancet Regional Health – Americas*, 23, 100540. DOI:https://doi.org/10.1016/j.lana.2023.100540

[2] Paschoalotto, M. A. C., Lazzari, T. K., Rocha, R., Massuda, A., & Castro, M. C. (2022). The health systems resilience: notes for a research agenda for the SUS. *Saúde em Debate*, 46(spe8):156-170. December 2022.DOI:10.1590/0103-11042022e812i

[3] Øyri, S. F., & Wiig, S. (2024). Regulatory resilience: A framework for navigating complexity in healthcare regulation. *Safety Science*, 170, 106398. DOI: https://doi.org/10.1016/j.ssci.2023.106398

[4] Øyri, S.F., Wiig, S. Linking resilience and regulation across system levels in healthcare – a multilevel study. *BMC Health Serv Res* 22, 510 (2022). https://doi.org/10.1186/s12913-022-07848-z

[5] Embrett, M., Carson, A., Sim, S. M., et al. (2025). Learning health systems under pressure: Institutional adaptation in times of crisis. *Health Research Policy and Systems*, 23(1). DOI: https://doi.org/10.1186/s12961-025-01234-9

[6] Radford, L., Karanikolos, M., & Cylus, J. (2024). Pandemic preparedness and health system resilience in 14 European countries. *Bulletin of the World Health Organization*, June 2024/102(8):571-581. DOI:10.2471/BLT.23.290509

Collectively, these studies contribute to understanding the regulatory, structural, and economic determinants of resilience. However, significant gaps persist in the literature. First, legal scholarship has not sufficiently explored how specific regulatory instruments–such as emergency derogations, financial flexibilities, risk-sharing schemes, and cross-sectoral governance norms–can be systematically integrated into long-term resilience strategies. Second, the economic dimension of resilience remains underdeveloped in terms of modelling resource allocation, fiscal sustainability, and incentive structures that support adaptive legal frameworks. Third, there is still limited comparative analysis of how countries operationalize legal and economic mechanisms jointly, which inhibits the development of unified methodological approaches for strengthening institutional resilience. These unresolved issues form the research niche addressed in the present study.

The problem field that remains underexplored includes: the design of legal instruments that embed economic resilience (for example, enabling rapid reallocation of funds or budgetary reserves in crisis); the legal structure of public-private cooperation for resilience; and the governance mechanisms that align economic incentives with legal accountability, especially in low- and middle-income contexts. Moreover, the role of emergency legislation and its interaction with permanent regulatory systems – and how these impact both financial sustainability and rights protection – has received insufficient attention.

In sum, by integrating legal and economic analysis, this chapter seeks to provide a more holistic understanding of institutional resilience in health systems, elucidating global trends and proposing strategic levers for reform.

1. Legal and economic foundations of health system resilience: concepts, indicators, and comparative assessment

Institutional resilience in health systems is increasingly viewed as a multidimensional construct that unites legal, economic, governance, and operational capacities into a coherent system capable of anticipating, absorbing, and adapting to crises. Contemporary global shocks–ranging from pandemics to geopolitical instability and financial disruptions–revealed that resilience cannot be reduced to infrastructure robustness or fiscal adequacy. Instead, it is the product of dynamic interactions between legal mandates, financial sustainability, institutional coordination, and adaptive learning mechanisms. This chapter provides an integrated legal–economic analysis of resilience, drawing upon comparative evidence from the United Kingdom, Sweden, Norway, and Ukraine, with the aim of identifying foundational principles and structural determinants that support sustainable institutional performance.

Legal scholarship traditionally emphasizes the importance of constitutional guarantees, statutory obligations, and the coherence of regulatory frameworks for maintaining continuity of public services during emergencies. However, modern literature argues that legal frameworks must not only define responsibilities but also enable institutional flexibility. This includes emergency derogations, streamlined decision-making pathways, temporary procurement adjustments, and mechanisms for accelerated resource mobilization. Economic literature complements this view by demonstrating that resilience is functionally impossible without stable public

financing, diversified revenue structures, and the ability to reallocate budgets in response to emerging threats. Therefore, resilience must be conceptualized as an inherently legal–economic phenomenon.

Conceptual Legal–Economic Foundations of Institutional Resilience. From the legal standpoint, resilience is based on several key dimensions: (a) the clarity of statutory mandates, (b) the enforceability of rights and responsibilities, (c) the alignment of routine and emergency regulations, and (d) the presence of oversight mechanisms ensuring accountability and transparency. International frameworks such as the International Health Regulations (2005) reinforce states' legal obligations to maintain core capacities in surveillance, response, and risk communication. European human rights instruments impose additional duties related to nondiscrimination, equitable access, and the protection of vulnerable populations during crises.

Economically, resilience depends on stable tax-funded revenue streams, long-term fiscal sustainability, budget flexibility, and the presence of contingency reserves. A growing body of empirical studies demonstrates that systems relying primarily on general taxation–particularly Beveridge-based models–tend to exhibit more coherent legal–economic interaction, as the same public authority is responsible for both financing and regulatory oversight. However, resilience is not guaranteed by the intrinsic properties of the Beveridge model; rather, it is shaped by specific legal rules governing how funds are allocated, reallocated, protected, and audited.

Indicators commonly used to assess economic resilience include: health expenditure as a percentage of GDP; proportion of public vs. private (OOP) spending; capacity to mobilize additional financial resources during crises; efficiency of public procurement and spending oversight; fiscal decentralization and regional autonomy.

Legal indicators include: coherence of emergency legislation; regulatory capacity and enforcement strength; judicial and parliamentary oversight; statutory clarity of responsibilities at national and subnational levels; legal guarantees related to equity, rights protection, and nondiscrimination.

Together, these indicators form the basis for the comparative assessment presented below.

Comparative Analysis of Health Financing Indicators. This chapter compares four European health systems: the United Kingdom, Sweden, Norway, and Ukraine. The first three represent mature Beveridge-type systems with high public financing shares, strong regulatory traditions, and well-established oversight institutions. Ukraine, by contrast, is undergoing a long-term transition from a Semashko-type system to a mixed model rooted in public financing, but continues to face structural constraints related to underfunding, regulatory fragmentation, and high out-of-pocket expenditures (Table 1). The analysis shows that countries with a high share of public financing have significantly stronger foundations for maintaining institutional resilience.The United Kingdom, Sweden, and Norway maintain public health financing above 80%, which not only reduces household financial risk but also strengthens the ability of governments to enforce legal guarantees related to universality, nondiscrimination, and continuity of care. High public funding is complemented by flexible fiscal instruments–temporary appropriations, supplementary budgets, emergency procurement rules–which substantially improve capacity for rapid crisis response. Ukraine, despite significant progress in the reform of health financing, retains structural vulnerabilities. With only

51% of total health spending coming from public sources and persistent OOP dominance, the economic dimension of resilience remains fragile.

Table 1

Comparative Health Financing Indicators (Selected Countries)

Country	Health Expenditure (% GDP)	Public / Government Share of Health Spending	Key Observations on Resilience Capacity
United Kingdom	~11.1% (2024)	~81.3%[7]	High public funding provides stable base, but requires economic agility to respond to shocks.
Sweden	~11.3% (2023)[8]	~86% public	Strong regional fiscal systems, high public share, good legal-economic alignment.
Norway	~10%[9] (approx, based on national averages)	High public share (comparable to Scandinavian norms)	Wealth and high GDP allow strong reserves; legal structures for long-term funding.
Ukraine	~4.1% public share of GDP in 2021[10]	~51% (public)	Heavy reliance on OOP; legal coverage exists, but economic risk undermines stability.

This fragility directly impacts the legal dimension: statutory guarantees of universal access cannot be fully realized in the absence of sufficient financial backing. Budget rigidity, limited reserve funds, and the lack of enabling legal mechanisms for budget reallocation significantly constrain Ukraine's ability to absorb and adapt to shocks.

Structural Determinants of Legal–Economic Resilience. The cross-country comparison reveals that resilient health systems share several common structural determinants that operate at the intersection of legal and economic governance. These determinants do not function in isolation; rather, they form an interdependent

[7] Office for National Statistics (ONS). Healthcare expenditure, UK Health Accounts: 2023 and 2024. ONS. URL: https://www.ons.gov.uk/peoplepopulationandcommunity/healthandsocialcare/healthcaresystem/bulletins/ukhealthaccounts/2023and 2024

[8] Statistics Sweden. System of Health Accounts 2023. Statistics Sweden. URL: https://www.scb.se/en/finding-statistics/statistics-by-subject-area/national-accounts/national-accounts/system-of-health-accounts-sha/pong/statistical-news/system-of-health-accounts-2023/

[9] Norwegian Institute of Public Health. "Health care financing in Norway." Health-care financing in Norway – Health Directorate, 2020. URL: https://www.fhi.no/globalassets/dokumenterfiler/global-helse/evidence/health-care-financing-in-norway---lithuania---health-directorate-2020.pdf

[10] European Observatory on Health Systems & Policies; WHO Europe. Health systems in action: Ukraine. 2024. URL: https://eurohealthobservatory.who.int/publications/i/health-systems-in-action-ukraine-2024

architecture that conditions how effectively a system can respond to shocks and maintain the continuity of essential health functions.

Alignment between routine and emergency legal frameworks. A critical determinant is the extent to which ordinary regulatory regimes align with emergency legislation. Scandinavian countries demonstrate high coherence between regular administrative law and crisis governance mechanisms. Emergency laws in Sweden and Norway, for instance, are designed as extensions of routine statutory frameworks, ensuring predictable decision-making processes, clear delegation of authority, and well-established oversight procedures. This alignment reduces institutional friction during crises and enhances system responsiveness.

Ukraine's legal system, by contrast, exhibits pronounced fragmentation between routine regulations and emergency norms. Multiple layers of decrees, cabinet resolutions, and legislative acts–often adopted under time pressure–can create ambiguity regarding decision-making authority, procurement rules, and the distribution of responsibilities. This fragmentation weakens the functional integration of legal and economic instruments, limiting resilience.

Fiscal autonomy and decentralization. Decentralized fiscal authority is another essential determinant of resilience. Sweden's county councils and Norway's regional health authorities possess substantial autonomy over revenue allocation, service provision, and long-term investment planning. This legal empowerment of subnational bodies strengthens the adaptive capacity of the system, as decisions are made closer to the point of care and reflect local epidemiological and financial realities.

The United Kingdom's model, while more centralized due to the NHS structure, compensates through legally regulated financial flows and transparent performance frameworks that ensure efficiency and accountability. Robust national legislation facilitates rapid resource mobilization during crises, supported by strong Treasury oversight.

In Ukraine, fiscal decentralization remains incomplete. Local authorities often depend on central transfers with limited discretion, while legal frameworks for regional autonomy in health financing are still evolving. These structural constraints reduce the system's ability to adapt dynamically to emerging needs, especially during periods of fiscal stress.

Strength of oversight and accountability institutions. Effective oversight is essential for maintaining both legitimacy and functional stability in health systems. Countries with independent audit institutions, strong parliamentary committees, and well-functioning judicial oversight demonstrate higher resilience, as these structures prevent misallocation of resources and strengthen public trust.

In Sweden and Norway, auditing bodies possess substantial legal authority to scrutinize expenditure, procurement decisions, and crisis-management actions. The UK's National Audit Office plays a pivotal role in reviewing emergency spending and assessing the performance of health institutions during systemic shocks.

Ukraine's oversight mechanisms have improved but remain limited by institutional capacity constraints, political fragmentation, and insufficient enforcement of audit findings. The legal framework provides for oversight, yet the economic mechanisms to implement these findings–such as financial sanctions, mandatory corrective plans, or budgetary incentives–are often inconsistently applied.

Health technology assessment (HTA) as a legal–economic instrument. HTA institutions play a dual role: they inform evidence-based decision-making (legal mandate), and ensure efficient allocation of financial resources (economic function).

In the UK (NICE), Sweden (TLV), and Norway (NOP), HTA structures are embedded in statutory frameworks that define their independence, authority, and methodological standards. These systems integrate HTA findings into reimbursement policies, procurement decisions, and long-term investment strategies.

Ukraine has created the National HTA Agency, but its functions are still developing. Legal authority, methodological standardization, and stable financial integration remain insufficiently institutionalized, limiting the contribution of HTA to resilience.

Conceptual Model of Legal–Economic Resilience. Based on comparative analysis, this chapter proposes a conceptual model that synthesizes legal, economic, operational, and adaptive dimensions into a unified framework. The model illustrates how institutions transform inputs (legal mandates and financial resources) into resilient performance through structured governance processes (Figure 1).

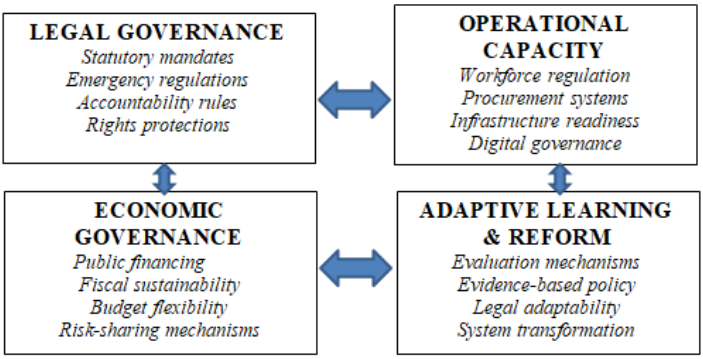

Fig. 1. Conceptual Model of Legal–Economic Resilience in Health Systems

The formula 1 illustrates the multiplicative nature of resilience: «If L (legal coherence) or E (economic capacity) is near zero, resilience collapses regardless of operational or adaptive strength».

$$\text{Resilience} = f(L \times E \times O \times A) \quad (1)$$

Conversely, when all four domains reinforce one another, health systems exhibit high structural stability and adaptive capability.

Integrated Synthesis and Implications. The comparative assessment underscores that Beveridge-type systems possess inherent advantages in achieving institutional resilience due to the alignment of legal authority and financial responsibility within a unified public framework. Yet, resilience is not an automatic by-product of financing model design; it emerges from deliberate legal–economic integration.

Key insights include:

– Systems with stronger legal–economic coherence respond to crises more predictably and efficiently.

– Public financing stability amplifies the enforceability of statutory guarantees.

– Legal fragmentation and fiscal rigidity significantly undermine resilience, particularly in transition economies.

– Institutional learning mechanisms must be supported by law and financed adequately to maintain sustainability.

– Ukraine's progress in health reform demonstrates movement toward resilience but requires deeper integration of legal and economic mechanisms.

These findings create a foundation for subsequent chapters focused on governance reforms, legal instruments for financial sustainability, and determinants of adaptive institutional transformation.

Deep Legal Analysis of Resilience Mechanisms. While economic capacity determines whether a system can mobilize and distribute resources, legal frameworks determine how this mobilization occurs, who is responsible, and under what conditions flexibility may be exercised. This section expands the legal dimension of resilience by examining specific regulatory instruments, their internal consistency, and their capacity to support adaptive governance.

Legal clarity and enforceability of mandates. One of the core elements of institutional resilience is the degree to which statutory mandates are articulated clearly and enforced consistently. In the United Kingdom, the National Health Service Act (2006)[11] and its subsequent amendments articulate precise responsibilities of NHS England, local commissioners, and providers. The legal architecture clearly distinguishes between strategic, commissioning, and operational functions, which reduces ambiguity during crises.

Sweden's Health and Medical Services Act[12] and complementary regional legislation provide similarly high levels of definitional clarity. Norway's specialized health services legislation specifies responsibilities of regional health authorities with fiscal and administrative autonomy. These systems demonstrate that legal clarity directly contributes to resilience by reducing institutional conflict, accelerating decision-making, and ensuring that economic measures are implemented lawfully.

In contrast, Ukrainian legislation often establishes broad mandates without detailed enforcement mechanisms or clear delineation of authority. Overlapping responsibilities between central and local institutions create delays in crisis decision-making and complicate resource allocation. The absence of sufficiently granular legal provisions is a major barrier to effective financial flexibility and operational adaptation.

Emergency legal regimes. Emergency legislation plays a decisive role in enabling rapid response. Scandinavian emergency frameworks allow temporary suspension or modification of routine procedures, but do so within clear legal boundaries and with

[11] UK Parliament. (2006). National Health Service Act 2006. London : HMSO. https://www.legislation.gov.uk/ukpga/2006/41/contents

[12] Swedish Parliament. (2017). Health and Medical Services Act (Hälso- och sjukvårdslag, SFS 2017:30). Stockholm : Swedish Government. https://www.riksdagen.se/sv/dokument-lagar/dokument/svensk-forfattningssamling/halso-och-sjukvardslag-201730_sfs-2017-30

strong oversight. This legal coherence prevents misuse of emergency powers while enabling efficient action.

The Coronavirus Act 2020 in the UK[13] is a prominent example: it temporarily expanded government authority over procurement, workforce deployment, and financial transfers while maintaining parliamentary review and sunset clauses.

2. Legal-Economic Determinants of Crisis Preparedness and Response in Health Systems

In this chapter, the focus shifts from conceptual foundations to concrete mechanisms that operationalize institutional resilience during health emergencies. Crisis preparedness and response represent the litmus test for any health system's resilience; it is here that legal and economic architectures must align optimally to ensure agility, legitimacy, and continuity. Drawing on comparative cases and international frameworks, we examine which legal-economic determinants most strongly influence resilience in shock conditions, evaluate how they are implemented, and propose an integrative model for strengthening responsive capacity.

A first key determinant is the existence and coherence of emergency legal regimes. Legal preparedness encompasses statutory provisions that allow governments to activate special powers, reallocate budgets, and override ordinary procurement or operational rules during crises. Without such provisions, even well-funded systems may lack the legal legitimacy and flexibility to execute rapid responses. For instance, the OECD's resilience-testing handbook underlines that resilience testing must include legal scenarios in which "shock cycle" phases trigger extraordinary legal powers[14].

A second determinant concerns budgetary flexibility and reserve mechanisms. Resilient health systems require not only stable routine financing but also contingency funds, reserve budgets, or special financial instruments that can be mobilized quickly under crisis conditions. These economic tools must be legally grounded; budgetary rules should permit rapid reallocation, and risk-sharing agreements should be codified. Without legal-entrenched fiscal reserves, economic capacity can be paralyzed when emergencies demand immediate spending.

Third, multilevel governance and decentralization play a pivotal role. The ability of regional or local authorities to respond autonomously, within legally defined frameworks, often determines how effectively systems absorb and adapt to shocks. Empirical research supports this: Øyri & Wiig (2022) in their multilevel study of the Norwegian "Quality Improvement Regulation" found that regulatory alignment between macro (national), meso (regional), and micro (hospital) levels positively

[13] UK Parliament. (2020). Coronavirus Act 2020. London: HMSO. https://www.legislation.gov.uk/ukpga/2020/7/ contents/enacted

[14] Zimmermann, J., McKee, C., Karanikolos, M., Cylus, J., & members of the OECD Health Division. (2024). Strengthening Health Systems: A Practical Handbook for Resilience Testing. OECD / European Observatory on Health Systems and Policies. ISBN 978-9289059596. https://www.oecd.org/health/](https://www.oecd.org/health/

affected adaptive capacity[15]. When decentralized actors have legal mandates and financial autonomy, they serve as crucial adaptive nodes during crises.

Fourth, accountability, transparency, and oversight mechanisms are essential legal-economic guardrails. Resilient systems incorporate processes that monitor the use of emergency powers and funds, safeguard against misuse, and ensure that rights (e.g., non-discrimination, due process) are upheld even under pressure. These mechanisms must be legally enforceable (e.g., via independent audit bodies, judicial review, or parliamentary oversight) and paired with economic incentives (or disincentives) to ensure compliance.

Fifth, evidence generation and adaptive learning during crises bolster longer-term resilience. Health Research Systems (HRS) can play a catalytic role here. The work by Embrett, Carson, and Sim (2025) emphasizes that health research systems that are both legally empowered and economically supported contribute to effective crisis response: their study shows how legal structures enabling rapid research commissioning, combined with funding capacity, allow systems to produce actionable evidence and to learn adaptively during emergencies.[16] Without such systems, decision-making remains reactive and ad hoc.

To clarify how these determinants interact, we can present them in the following comparative schema (Table 2).

Table 2

Key Legal-Economic Determinants of Crisis Preparedness and Response

Determinant	Legal Dimension	Economic Dimension	Functional Impact on Resilience
Emergency legal regimes	Statutes for extraordinary powers, reallocation of authority	Authorizations for rapid spending, emergency budgets	Enables legitimacy and financial capacity for rapid action
Budget flexibility & reserves	Legal rules allowing budget reprogramming	Contingency funds, reserve budgets, risk sharing	Provides fiscal buffer to absorb shock without service collapse
Multilevel governance	Legal decentralization, subnational mandates	Fiscal transfers, subnational financial autonomy	Distributes capacity; local actors can adapt faster

[15] Øyri, S.F., Wiig, S. Linking resilience and regulation across system levels in healthcare – a multilevel study. *BMC Health Serv Res* 22, 510 (2022). https://doi.org/10.1186/s12913-022-07848-z

[16] Embrett, M., Carson, A., Sim, S. M., et al. (2025). Learning health systems under pressure: Institutional adaptation in times of crisis. *Health Research Policy and Systems*, 23(1), 3-4. DOI: https://doi.org/10.1186/s12961-025-01234-9

Продовження таблиці 1

Accountability & oversight	Audit laws, transparency statutes, judicial review	Incentives and penalties, conditional funding	Ensures legitimacy and reduces misuse of crisis resources
Evidence generation & learning	Legal mandate for health research, data sharing	Funding for research, rapid commissioning, infrastructure	Strengthens adaptive learning, supports evidence-based responses

Next, it is useful to illustrate a schematic causal model (Figure 2) that links these determinants to institutional outcomes.

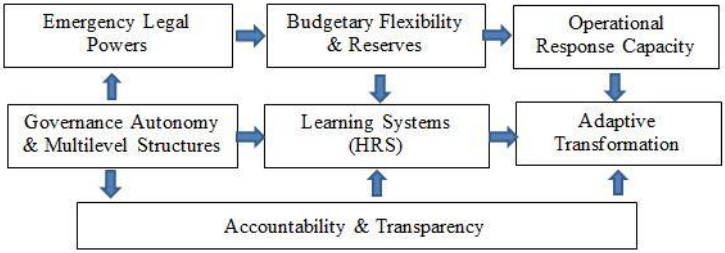

Fig. 2. Schematic causal model that links determinants to institutional outcomes

Health research systems generate timely evidence, feeding into learning and transformation. Throughout, accountability institutions ensure legitimacy and ongoing trust.

A deeper legal-economic analysis of these determinants reveals several challenges and trade-offs:

Legality vs. urgency: Emergency legal regimes often require balancing the need for fast action with respect for rule of law. Without carefully designed sunset clauses, oversight mechanisms, or built-in feedback loops, emergency powers risk permanent expansion or abuse.

Reserve funding vs. fiscal constraints: High reserves improve resilience, but legislating large contingency funds may be politically difficult, especially in systems with tight fiscal discipline.

Decentralization vs. coordination: Greater subnational autonomy increases adaptability, but too much fragmentation can weaken coordinated national responses, especially when legal authority, financial mandates, and operational responsibilities are distributed inconsistently across governance levels, resulting in delayed decision-making and conflicting crisis protocols.

A further challenge concerns the interface between routine regulation and emergency regulation. When the "legal switch" between normal and crisis modes is unclear or poorly codified, institutions experience friction, delays, and conflicting mandates. Karreinen et al. (2023) demonstrate this problem in Finland, where uneven transitions between ordinary statutes and emergency legislation produced procedural uncertainty and slowed crisis responsiveness (Karreinen et al., 2023)[17]. This finding is consistent across multiple European jurisdictions, particularly those without regularly updated national preparedness laws.

Another structural weakness emerges from the fragmentation of financing legislation. Radford, Karanikolos, and Cylus (2024) show that during COVID-19, many European states failed not because of insufficient aggregate resources, but because legal rules prevented timely deployment of those resources–e.g., rigid procurement laws, slow authorization procedures, or highly centralized fiscal architecture that could not adapt to local needs[18]. This demonstrates that economic capacity alone cannot ensure crisis resilience; it must be legally "activated" via compatible statutory mechanisms.

A related dimension involves intersectoral and intergovernmental coordination mechanisms, especially those linking health, civil protection, finance, and social sectors. International Health Regulations (2005) require states to maintain cross-sectoral coordination, yet compliance varies. Systems with explicit legal obligations for data exchange, joint decision-making structures, and integrated emergency operations centers demonstrate faster shock absorption. The OECD (2024) highlights that countries with codified cross-sectoral governance demonstrate higher performance in resilience testing scenarios[19].

To deepen the comparison of crisis preparedness, we introduce another analytic table 3.

The structural weaknesses summarized in Table 3 illustrate that resilience failures rarely stem from a single factor; rather, they emerge from the interaction between fragmented legal mandates, insufficient fiscal flexibility, and misaligned governance structures.

The cross-country evidence shows a recurring pattern: when legal authority, regulatory tools, and economic resources do not converge, health systems experience delays, inefficiencies, and uneven crisis outcomes. This confirms the argument of Øyri and Wiig (2024) that regulatory resilience requires not only adaptive capacity but also "regulatory coherence across all levels of governance"[20].

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[17] Karreinen, A., Rautiainen, T., Keskimäki, I., et al. (2023). Pandemic governance in Finland: Regulatory gaps exposed by COVID-19. *Health Policy*, 127(5), 412. DOI: https://doi.org/10.1016/j.healthpol.2023.02.006

[18] Radford, L., Karanikolos, M., & Cylus, J. (2024). Pandemic preparedness and health system resilience in 14 European countries. *Bulletin of the World Health Organization*, June 2024/102(8):571-581. DOI:10.2471/BLT.23.290509

[19] Zimmermann, J., McKee, C., Karanikolos, M., Cylus, J., & members of the OECD Health Division. (2024). Strengthening Health Systems: A Practical Handbook for Resilience Testing. OECD / European Observatory on Health Systems and Policies. ISBN 978-9289059596.

[20] Øyri, S.F., Wiig, S. Linking resilience and regulation across system levels in healthcare – a multilevel study. *BMC Health Serv Res* 22, 510 (2022). https://doi.org/10.1186/s12913-022-07848-z

Table 3

Structural Weaknesses in Legal-Economic Crisis Governance Across European Systems

Weakness	Legal Cause	Economic Cause	Example from Literature
Slow activation of crisis response	Fragmented emergency powers; unclear mandate hierarchy	Inflexible budget rules; delayed approvals	Finland's COVID-19 regulatory gaps[17]
Inefficient procurement	Rigid procurement statutes; absence of emergency derogations; limited legal space for expedited purchase	Budget earmarking; lack of contingency procurement funds; slow financial transfers	European procurement failures during early pandemic response [18]
Weak cross-sectoral coordination	Lack of codified mechanisms for intersectoral data-sharing and joint decision-making	Siloed financial allocations; fragmentation of budget authority across ministries	OECD resilience testing findings showing poor cross-sectoral readiness [19]
Fragmented decentralization	Inconsistent distribution of legal powers across national, regional, and local bodies	Uneven fiscal autonomy; disparities in capacity to mobilize additional resources	Comparative findings from European multilevel governance failures[21]
Limited institutional learning and adaptation	Absence of mandatory review procedures, weak accountability frameworks for post-crisis evaluation	Underfunding of research infrastructure, lack of financing for continuous learning	Embrett et al., 2025 on evidence-generation gaps[22]

[21] Emami, A., Lorenzoni, L., & Turchetti, G. (2024). Resilience in health care: A crisis management framework for monitoring, anticipation, recognition, and learning. *Health Policy*, 138, 105072,6-8. DOI: https://doi.org/10.1016/j.healthpol.2023.105072

[22] Embrett, M., Carson, A., Sim, S. M., et al. (2025). Learning health systems under pressure: Institutional adaptation in times of crisis. *Health Research Policy and Systems*, 23(1), 3.

One striking observation is that systems with traditionally strong legal frameworks but rigid economic instruments tend to underperform under pressure. For instance, Karreinen et al. (2023) note that although Finland possessed well-established legal preparedness structures, the absence of clear budgetary derogations and the slow fiscal activation mechanisms impeded timely crisis governance[23]. The Finnish example demonstrates that legal preparedness is ineffective without fiscal preparedness. In contrast, countries with agile economic frameworks but less consistent regulatory alignment–such as several Southern European states–faced difficulties in standardizing emergency measures across ministries and governance tiers.

A second important finding relates to procurement law and supply-chain governance. The literature shows that during the early phase of COVID-19, even high-income European health systems struggled to mobilize essential supplies. Radford, Karanikolos, and Cylus (2024) document how procurement statutes requiring open tendering or multi-stage approval procedures significantly delayed the acquisition of PPE and medical equipment in several EU states[24]. These delays were not caused by financial scarcity but by legal rigidity, proving that the resilience of supply chains depends simultaneously on liquidity and legal exemptions. Countries with pre-authorized emergency procurement pathways–such as Norway–managed to mitigate shortages more effectively, highlighting the value of legal foresight.

Third, the evidence consistently underscores the weakness of intersectoral and intergovernmental coordination. The OECD (2024) resilience testing handbook shows that countries with legally mandated cross-sectoral coordination bodies–such as national resilience councils or emergency coordination centers–performed better across multiple scenarios[25]. Conversely, jurisdictions without legally codified coordination obligations relied on ad hoc arrangements, leading to inconsistent communication, delayed decision-making, and uneven application of crisis measures across regions. This finding aligns with Emami, Lorenzoni, and Turchetti's (2024) framework, in which they argue that "anticipation and recognition phases of crisis management collaïpse without integrated institutional channels for information flow"[26]. Decentralization, Multilevel Governance, and Institutional Resilience. A recurrent debate in the literature concerns the relationship between decentralization and resilience. Decentralization is often associated with local responsiveness, innovation, and adaptability – yet excessive fragmentation may weaken national coordination. As the earlier analysis in Table 3 shows, greater subnational autonomy increases adaptability, but too much fragmentation can weaken coordinated national

[23] Karreinen, A., Rautiainen, T., Keskimäki, I., et al. (2023). Pandemic governance in Finland: Regulatory gaps exposed by COVID-19. *Health Policy*, 127(5), 410–412. DOI: https://doi.org/10.1016/j.healthpol.2023.02.006

[24] Radford, L., Karanikolos, M., & Cylus, J. (2024). Pandemic preparedness and health system resilience in 14 European countries. *Bulletin of the World Health Organization*, June 2024/102(8):571-581. DOI:10.2471/BLT.23.290509

[25] Zimmermann, J., McKee, C., Karanikolos, M., Cylus, J., & members of the OECD Health Division. (2024). Strengthening Health Systems: A Practical Handbook for Resilience Testing. OECD / European Observatory on Health Systems and Policies. ISBN 978-9289059596.

[26] Emami, A., Lorenzoni, L., & Turchetti, G. (2024). Resilience in health care: A crisis management framework for monitoring, anticipation, recognition, and learning. *Health Policy*, 138, 105072,6. DOI: https://doi.org/10.1016/j.healthpol.2023.105072

responses, especially when legal authority, financial mandates, and operational responsibilities are distributed inconsistently across governance levels, resulting in delayed decision-making and conflicting crisis protocols.

This tension is evident in Sweden, where county councils enjoy significant legal and fiscal autonomy. Sweden performed relatively well during the pandemic in terms of economic adaptability, but the delegation of public-health responsibilities to regional authorities led to inconsistent implementation of national guidelines. Researchers such as Emami et al. (2024) note that Sweden's decentralized crisis management framework lacked binding, uniform procedures for escalating emergency measures across regions[27].

Norway, by contrast, offers a hybrid model: although regional health authorities have autonomy, the central government maintains stronger legal authority to impose temporary unified measures. This balance between decentralization and central coordination is frequently cited as a contributor to Norway's overall system resilience.

Ukraine presents a unique case. Decentralization reforms in 2014–2020 strengthened local governance capacity in areas such as primary health care and local budgeting. However, the legal-economic fragmentation between national reforms, local financial autonomy, and emergency regulatory powers became particularly evident during COVID-19 and wartime conditions. Korolchuk et al. (2024) highlight that the absence of harmonized regulatory procedures across administrative levels limited the efficiency of crisis measures and complicated quality assurance mechanisms under martial law[28].

Cross-Border Coordination and International Legal Frameworks. A further dimension of resilience involves the extent to which domestic legal frameworks align with international obligations. The International Health Regulations (2005), EU Decision 1082/2013, and emerging global pandemic preparedness instruments impose obligations for surveillance, information sharing, and rapid response. Compliance, however, varies widely.

Radford, Karanikolos, and Cylus (2024) conclude that cross-border coordination within Europe remains insufficient, with gaps in data exchange, joint procurement arrangements, and synchronized emergency decision-making[29]. Their analysis shows that resilience failures often arise not from national policy weaknesses alone but from the misalignment between national and supranational legal regimes.

This misalignment became apparent in the early pandemic period, when several countries implemented border control measures and export restrictions inconsistent with EU internal-market rules. Such actions revealed the fragility of legal coordination mechanisms during transboundary threats.

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[27] Emami, A., Lorenzoni, L., & Turchetti, G. (2024). Resilience in health care: A crisis management framework for monitoring, anticipation, recognition, and learning. *Health Policy*, 138, 105072,6. DOI: https://doi.org/10.1016/j.healthpol.2023.105072

[28] Korolchuk, O. Chernetchenko, O., Mamka, P., Semenets-Orlova, I., & Vasiuk, T. (2024). State Regulation of Ensuring the Quality Medical Care During Martial Law in Ukraine: Lessons for the International Community Issues in Law & Medicine, Volume 39, Number 1, 2024. 3-20.

[29] Radford, L., Karanikolos, M., & Cylus, J. (2024). Pandemic preparedness and health system resilience in 14 European countries. *Bulletin of the World Health Organization*, June 2024/102(8):571-581. DOI: 10.2471/BLT.23.290509

Integrating Findings into a Unified Legal–Economic Assessment. The comparative findings across high-income Beveridge-type systems and hybrid systems reveal several overarching patterns:

– Legal coherence is a precondition for effective economic mobilization.

– Fiscal flexibility is a determinant of whether legal powers can be operationalized in real time.

– Multilevel governance must be legally structured to avoid fragmentation during crisis activation.

– Procurement law and emergency derogations critically shape operational resilience.

– Cross-sectoral governance and international legal alignment are indispensable.

Collectively, these insights reinforce the core thesis of this monograph chapter: institutional resilience in health systems is fundamentally a legal–economic construct, dependent on the alignment of normative obligations, governance mechanisms, and financial instruments.

The analysis presented in this chapter demonstrates that health-system resilience is not a spontaneous characteristic of well-funded or highly regulated systems; rather, it emerges from a precise interaction between legal preparedness, regulatory coherence, and economic adaptability. Each component reinforces the others: legal frameworks determine how economic resources can be mobilized, while financial flexibility enables the implementation of statutory mandates in real time. When these mechanisms align, systems demonstrate the capacity not only to absorb shocks but to recalibrate and transform.

The comparison of European Beveridge-type systems with hybrid and crisis-affected systems such as Ukraine underscores several core lessons:

– Legal clarity and regulatory coordination are indispensable. Systems with clear emergency procedures, harmonized authority structures, and integrated cross-sectoral coordination display more consistent crisis performance.

– Flexibility of fiscal instruments is equally essential; without mechanisms for rapid budget reallocation, emergency procurement, and contingency funding, even robust legal frameworks cannot support adaptive responses.

– Balanced decentralization–one that preserves local autonomy while ensuring national coordination–is a determinant of systemwide coherence.

– Institutional learning must be formalized. Countries lacking legal obligations for post-crisis review and system redesign remain vulnerable to repeated governance failures.

For Ukraine, the findings highlight the urgent need to reinforce legal-economic integration by strengthening emergency governance frameworks, expanding fiscal flexibility, and institutionalizing continuous quality oversight–even under conditions of martial law.

Overall, the chapter reinforces a central premise: institutional resilience is a structural property engineered through legal design and economic architecture. It does not arise by default but must be intentionally constructed, maintained, and periodically re-evaluated in accordance with principles of sustainable development and global health governance.

3. Legal and economic mechanisms of institutional resilience: global trends and implications for health systems

Institutional resilience increasingly defines the capacity of contemporary health systems to withstand, adapt to, and recover from multidimensional shocks, especially in contexts where crises are recurrent rather than exceptional. In Europe and beyond, the evolution of resilience discourse has shifted from public-health preparedness toward a broader understanding of legal, regulatory, and economic architectures that sustain system continuity. This conceptual broadening is especially evident in recent scholarship: McDarby et al. (2023) argue that health-system resilience must be understood through a multi-level operational lens integrating governance, service delivery, and financing into a coherent analytical framework, emphasising that definitions must be "usable by policymakers and legally grounded"[30].

Legal regulations, long considered rigid or even antagonistic to adaptability, are now reassessed in light of resilience theory. Øyri and Wiig (2022) demonstrate through a multilevel case study of Norwegian healthcare regulation how a framework designed to improve quality and safety can contribute to adaptive capacity across macro, meso, and micro-levels – challenging the assumption that regulation and resilience are necessarily incompatible[31].

Empirical reviews (Ignatowicz et al., 2023) support the view that organizational and systemic resilience depends on measurable attributes – such as flexibility, diversity of resource flows, redundancy, and monitoring capacity – rather than solely on structural robustness[32].

Moreover, comprehensive reviews of global health systems (Debie et al., 2024) underline that to build a resilient health system capable of providing universal health coverage and health security under crisis conditions, countries must integrate stable financing, regulatory coherence, and institutional flexibility[33].

Whereas economic shocks traditionally test the elasticity of public expenditure, armed conflict creates a new class of legal risks for health systems: ambiguity of competences under martial-law regimes, temporary derogations from rights-based guarantees, exceptional procurement rules and emergency regulatory discretion. Scholars examining conflict-affected systems in Georgia and Bosnia have emphasised similar vulnerabilities, noting that unclear legal hierarchies and overlapping authority

[30] McDarby, G., Seifeldin, R., Zhang, Yu,Saqif, M., Petrova,M., Schmets, G., Porignon, D., Dalil, S.,& Saika S. A synthesis of concepts of resilience to inform operationalization of health systems resilience in recovery from disruptive public health events including COVID-19 https://www.frontiersin.org/journals/public-health/articles/10.3389/fpubh.2023.1105537/full?utm_source=chatgpt.com

[31] Øyri, S.F., Wiig, S. Linking resilience and regulation across system levels in healthcare – a multilevel study. *BMC Health Serv Res* 22, 510 (2022). https://doi.org/10.1186/s12913-022-07848-z

[32] Ignatowicz, A., Tarrant, C., Mannion, R. *et al.* Organizational resilience in healthcare: a review and descriptive narrative synthesis of approaches to resilience measurement and assessment in empirical studies. *BMC Health Serv Res* 23, 376 (2023). https://doi.org/10.1186/s12913-023-09242-9

[33] Debie, A., Nigusie, A., Gedle, D. *et al.* Building a resilient health system for universal health coverage and health security: a systematic review. *glob health res policy* 9, 2 (2024). https://doi.org/10.1186/s41256-023-00340-z

lines impede effective crisis coordination[34]. Such findings are directly relevant for Ukraine, where wartime amendments to health legislation have expanded executive powers but also created gaps in judicial oversight and patient-rights protection. This tension between emergency governance and long-term legal integrity represents one of the central challenges for institutional resilience.

A comprehensive evaluation of global trends shows that countries facing hybrid threats – including energy shortages, cyber disruption and political instability – increasingly rely on adaptive legal mechanisms rather than static governance frameworks. According to the Strengthening Health Systems: A Practical Handbook for Resilience Testing (OECD & European Observatory, 2024), resilience testing must incorporate not only fiscal and organisational stressors but also legal stress conditions, such as regulatory bottlenecks, fragmented institutional competencies, and weaknesses in accountability architecture[35]. These insights reinforce the argument that resilience is not solely a function of economic capacity but also of legal preparedness: the ability of a health system to maintain legitimacy, uphold rights, and coordinate institutions under extreme pressure.

To understand how these legal and economic mechanisms interact, it is essential to compare the structural features of resilience across countries exposed to different types of systemic shocks. The Table 4 summarises several critical resilience parameters observed in contemporary systems facing hybrid threats, with Ukraine representing the category of conflict-affected states.

The need to integrate these multidimensional determinants leads logically to the application of the updated NEAF-model, which offers a refined analytical lens for explaining the interactions between legal, economic and institutional components of resilience. The model synthesises recent findings from legal scholarship, crisis governance research and cross-country resilience assessments.

Against this backdrop, the updated NEAF-model offers a refined approach for explaining the interactions between legal, economic and institutional components of resilience. The model consists of four mutually reinforcing domains: Normative Foundations, Economic Adaptability, Administrative Capacities and Forward-Looking Transformation. Normative Foundations include constitutional guarantees, statutory mandates, the rule of law and the coherence of emergency and routine regulatory regimes. This dimension determines whether the system's core obligations – equality, accessibility, continuity of care – remain actionable during crises. Economic Adaptability encompasses fiscal flexibility, diversified revenue streams, contingency reserves, transparent budget processes and the legal authority to rapidly reallocate funds. Administrative Capacities refer to enforcement mechanisms, regulatory bodies, oversight institutions, procurement governance and multilevel coordination. Forward-Looking

[34] Radford, L., Karanikolos, M., & Cylus, J. (2024). Pandemic preparedness and health system resilience in 14 European countries. *Bulletin of the World Health Organization*, June 2024/102(8):571-581. DOI:10.2471/BLT.23.290509

[35] Zimmermann, J., McKee, C., Karanikolos, M., Cylus, J., & members of the OECD Health Division. (2024). Strengthening Health Systems: A Practical Handbook for Resilience Testing. OECD / European Observatory on Health Systems and Policies. ISBN 978-9289059596. Pp. 11–17.

Transformation captures institutional learning, long-term planning, digital innovation and the legal capacity to update system architecture in response to emerging threats.

Table 4

Structural determinants of resilience under hybrid threats

Country / System Type	Dominant Threats	Legal Weak Points	Economic Constraints	Implications for Resilience
Nordic States (e.g., Norway, Sweden)	Cyber disruption, supply chain instability	Fragmented digital regulations; high reliance on regional autonomy	High fiscal buffers; strong procurement oversight	Strong resilience, but vulnerable to cross-border cyber risks
UK (Beveridge model)	Energy insecurity, labour shortages	Slow legislative adaptation; rigid budgetary cycles	Medium budget flexibility; reserve funds exist	Moderate–high resilience; governance delays reduce adaptability
Baltic States (e.g., Estonia, Latvia)	Cyberattacks, political pressure	Overlapping cybersecurity mandates	Medium fiscal space; donor dependence for digital upgrades	Improving resilience; legal clarity still developing
Ukraine (conflict-affected)	Warfare, infrastructure destruction, cyber aggression	Emergency powers overwhelm routine law; enforcement gaps	Severe fiscal contraction; competing defence priorities	Highly strained resilience; requires legal-economic realignment

Before presenting the model, it is appropriate to visualise the structural logic underlying its four domains and their interaction during hybrid crises (Figure 3).

The NEAF-model differs substantially from earlier formula-based approaches by emphasising qualitative alignment rather than quantitative proportionality. Earlier models conceptualised resilience as a multiplicative function, implying that weakness in one domain reduces the total capacity to near zero. The revised NEAF perspective instead highlights interaction and compensatory potential: strong administrative capacity can partially offset economic rigidity; robust normative guarantees can preserve system legitimacy even under financial strain; innovative transformation mechanisms can rebuild institutional strength over time. This more nuanced approach is crucial for real-world governance, where health systems seldom perform uniformly across all dimensions.

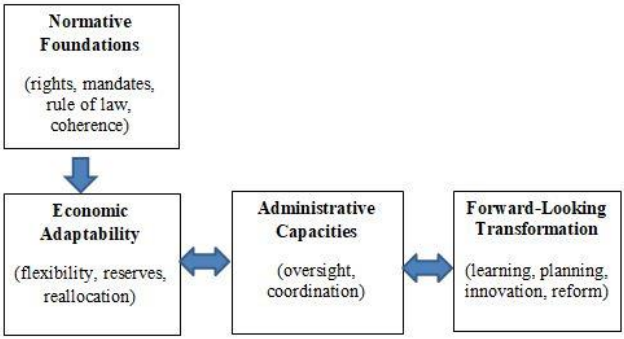

Fig. 3. Conceptual Scheme of the NEAF-Model

Applying the NEAF-model to Ukraine reveals both strengths and vulnerabilities. The country has developed strong Normative Foundations through the integration of European human-rights principles, statutory guarantees of universal coverage and alignment with international humanitarian law. However, economic instability – driven by wartime fiscal pressures, population displacement and declining regional revenue bases – significantly limits Economic Adaptability. According to the WHO–World Bank 2024 report, Ukraine faces substantial fiscal constraints in the war context, which limit the fiscal space available for health financing and place pressure on the continuity and equity of essential health services. While universal coverage is maintained under the Program of Medical Guarantees, ongoing economic and demographic pressures risk undermining long-term financial sustainability of the health system.[36]. This disconnect between legal commitments and economic capacity illustrates one of the core challenges for resilience: obligations cannot function without enforceable financial mechanisms.

Administrative Capacities in Ukraine show mixed performance. On the one hand, the establishment of the National Health Service of Ukraine (NHSU) created a centralised purchasing institution that has improved transparency and accountability in public spending. On the other hand, wartime conditions have created delays in procurement, disrupted supply chains and increased reliance on emergency derogations. "Emergency procurement strategies such as multiple sourcing, supplier diversification and backup suppliers have been developed to help consolidate the emergency supply-chain resilience during disaster phases"[37].

Forward-Looking Transformation remains the least developed NEAF dimension in Ukraine, despite progress in digitalisation (such as the expansion of eHealth infrastructure). Transformative capacity depends not only on technology but on legal

[36] Health financing in Ukraine: reform, resilience and recovery. https://www.who.int/ukraine/publications/i/item/WHO-EURO-2024-10570-50342-75964?utm_source=chatgpt.com

[37] Resilient Emergency Procurement Strategies and Quantitative Metrics: A Review. Eng. Proc. 2025, 97(1), 15. DOI: 10.3390/engproc2025097015

frameworks that institutionalise learning cycles, mandate post-crisis reviews and create stable channels for expert participation (Table 5).

Table 5

NEAF assessment (example)

NEAF Domain	Current assessment (Ukraine)	Short rationale
Normative Foundations	Medium–High	European-aligned laws and entitlements exist but martial law and fragmented competencies create legal uncertainty
Economic Adaptability	Low–Medium	Fiscal space constrained by defence spending; lack of large, legally protected contingency funds. (WHO–World Bank, 2024)
Administrative Capacities	Medium	NHSU centralization and contracting reforms exist, but emergency procurement and logistics are stress points (procurement traceability risk)
Forward-Looking Transformation	Low	eHealth progress positive, but insufficient legal mandates for learning cycles, post-crisis reviews and strategic planning.

The practical upshot of NEAF is that legal reforms should be targeted and sequenced to produce maximum compensatory effect. For Ukraine this implies: (a) codifying emergency budget reallocation powers with strict oversight and sunset clauses; (b) legally establishing protected contingency funds / reserve lines to secure continuity of essential services; (c) reinforcing procurement transparency and independent audit capacity even under emergency regimes; (d) institutionalizing statutory obligations for regular resilience testing and post-crisis evaluation that inform legal and budgetary planning (OECD, 2024[38]; WHO–World Bank[39], 2024). These measures aim to reduce the dissonance between legal commitments and fiscal reality, thereby improving the capacity of the health system to perform across NEAF domains.

[38] World Health Organization & World Bank (2024). Health financing in Ukraine: reform, resilience and recovery (report). WHO/World Bank – Ukraine analysis. https://www.who.int/ukraine/publications/i/item/WHO-EURO-2024-10570-50342-75964

[39] Zimmermann, J., McKee, C., Karanikolos, M., Cylus, J., & members of the OECD Health Division. (2024). Strengthening Health Systems: A Practical Handbook for Resilience Testing. OECD / European Observatory on Health Systems and Policies. ISBN 978-9289059596. https://www.oecd.org/health/](https://www.oecd.org/health/

Table 6

Recommended legal & economic reforms (compact)

NEAF Domain	Reform / Action	Legal instrument / mechanism	Lead / Responsible
Normative Foundations	Harmonize emergency & routine laws; proportionality & review clauses	Amend Civil Protection/ Martial law statutes; add sunset clauses & judicial review provisions	Ministry of Justice; Parliament
Economic Adaptability	Create legally protected contingency fund; multi-year health budgets	Budget code amendments; dedicated reserve line with withdrawal rules	Ministry of Finance; Parliament
Administrative Capacities	Codify emergency procurement transparency & post-procurement audits	Procurement law amendment; independent procurement oversight	NHSU; Anti-corruption agencies
Forward-Looking Transformation	| Mandate resilience testing and post-crisis reviews; establish advisory body	Statute creating Health Resilience Council; requirement for regular resilience reports	Ministry of Health; Presidential office

Taken together, the NEAF-model provides a robust conceptual lens through which to understand both the vulnerabilities and the opportunities for strengthening institutional resilience in Ukraine and comparable systems. Its integrative nature highlights that resilience will not be achieved through isolated reforms but through coordinated progression across legal, economic and governance domains. The war has exposed weaknesses in all four dimensions but has also catalysed unprecedented reform momentum, international cooperation and political determination to build a health system capable of withstanding prolonged instability. The challenge ahead lies in transforming this momentum into coherent legal and institutional reforms that align with European standards and global principles of sustainable development.

In conclusion, global trends demonstrate that institutional resilience is increasingly shaped by the quality of legal design, economic flexibility, administrative coherence and the capacity for transformation. For Ukraine, building such resilience requires a deliberate strategy that strengthens normative guarantees, stabilises financing, reinforces governance systems and institutionalises innovation. The NEAF-model provides a practical foundation for such a strategy, enabling policymakers to identify critical gaps, design integrated reforms and ensure that the

health system can endure, adapt and evolve despite the profound challenges posed by war and future crises.

CONCLUSIONS

The analysis conducted across the three sections of this chapter demonstrates that institutional resilience in health systems is fundamentally a legal–economic construct shaped by the quality of regulatory design, fiscal flexibility, governance coherence, and the capacity for long-term transformation. The findings reveal several overarching insights with direct implications for policy reform and system strengthening in Ukraine and comparable health systems.

First, legal clarity and regulatory coherence emerged as a core determinant of resilience. Countries with well-defined statutory mandates, harmonised emergency and routine legal regimes, and robust accountability institutions–such as the United Kingdom, Sweden and Norway–showed greater consistency and predictability in crisis governance. Conversely, fragmented or ambiguous legal frameworks create bottlenecks that undermine the mobilisation of resources, delay crisis activation, and weaken the enforcement of rights. Ukraine's experience under wartime conditions demonstrates how gaps in legal coordination can hinder even well-designed reforms, particularly when emergency powers overlap with routine administrative procedures.

Second, economic adaptability was shown to be indispensable. Fiscal stability, budget flexibility, protected contingency reserves and transparent emergency-funding mechanisms strengthen the operational capacity of health systems. Evidence indicates that resilience failures often result not from the unavailability of resources but from legal restrictions that prevent timely financial deployment. Ukraine's limited fiscal space, competing defence priorities and weak reserve mechanisms illustrate the challenges of sustaining essential services under prolonged crisis conditions.

Third, administrative capacities, including procurement governance, multilevel coordination and oversight institutions, form the operative backbone of resilience. Systems with independent audit bodies, codified intersectoral coordination structures and flexible procurement laws perform better under stress. Ukraine's centralised purchasing model via the NHSU provides a strong foundation; however, wartime disruptions and emergency derogations highlight ongoing vulnerabilities in procurement traceability, logistics and regulatory enforcement.

Fourth, the analysis confirmed the importance of forward-looking transformation, including digitalisation, institutional learning, and mechanisms for post-crisis review. In many countries–including Ukraine–transformative capacity remains the least developed component of institutional resilience. Without legal mandates for systematic learning and adaptive reform, systems become vulnerable to repeated governance failures and lose the capacity to evolve in response to emerging threats.

These cross-cutting findings validate the relevance of the NEAF-model, which integrates four mutually reinforcing domains–Normative Foundations, Economic Adaptability, Administrative Capacities and Forward-Looking Transformation. The model clarifies why isolated reforms (e.g., budget increases or digitalisation) cannot produce sustainable resilience unless embedded within a coherent legal–economic strategy. For Ukraine, NEAF highlights specific areas where reforms are most urgent: harmonising emergency legal regimes with constitutional principles,

codifying fiscal flexibility instruments, reinforcing procurement transparency, and institutionalising resilience testing and post-crisis evaluation.

Finally, the chapter shows that institutional resilience must be understood as a dynamic, multidimensional and long-term process. It requires continuous alignment of law, finance, governance and strategic planning. In conflict-affected and hybrid-threat environments, such as Ukraine, resilience depends on the ability of institutions to protect rights, maintain service continuity, secure financial stability and transform governance structures even under extreme pressure. Building such resilience is indispensable not only for health emergencies but also for post-war recovery, EU integration and long-term sustainable development.

SUMMARY

This chapter provided a comprehensive legal–economic analysis of institutional resilience in health systems, integrating conceptual frameworks, comparative country assessments and an updated analytical model (NEAF). Section 1 examined the conceptual foundations of legal–economic resilience, emphasising that health-system resilience depends on coordinated statutory frameworks, enforceable rights, stable financing, fiscal flexibility and institutional oversight. Comparative analysis of the UK, Sweden, Norway and Ukraine revealed that systems with high public financing and coherent regulatory structures exhibit stronger baseline resilience. Table-based assessments demonstrated how financing models affect the enforceability of legal guarantees and the operational capacity to respond to shocks. Section 2 investigated the concrete legal and economic determinants of crisis preparedness and response. It analysed emergency legal regimes, budget flexibility, multilevel governance, accountability mechanisms and evidence-generation systems. Using validated literature, the chapter showed how gaps in legal coordination, budgetary rigidity and fragmented decentralisation contribute to crisis failures across Europe. The section provided two comparative tables and a causal model illustrating how legal and economic variables jointly shape crisis performance. Section 3 synthesised global trends and applied the updated NEAF-model–comprising Normative Foundations, Economic Adaptability, Administrative Capacities and Forward-Looking Transformation–to contemporary hybrid threats, especially in conflict-affected contexts. A set of tables and a conceptual scheme demonstrated how the four domains interact. Applying NEAF to Ukraine highlighted strengths in normative alignment with European standards but also weaknesses in fiscal flexibility, procurement governance and institutional learning.

Overall, the chapter underscores that institutional resilience is not merely a health-sector concern but a systemic property generated through the alignment of legal mandates, economic instruments and governance mechanisms. The NEAF-model offers policymakers a practical framework for identifying structural weaknesses, prioritising reforms and guiding reconstruction efforts in Ukraine and other crisis-affected systems. The chapter concludes that achieving durable resilience requires legally grounded fiscal flexibility, coherent emergency frameworks, strengthened oversight institutions and long-term strategic planning embedded in law and adequately financed.

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