ISSN: 2586-6036
JWMAP website: http://accesson.kr/jwmap
doi: http://dx.doi.org/10.13106/jwmap.2026.vol9.no1.79

Inter-Union Health Governance on the Korean Peninsula: A Risk Governance Model to Prevent Cascading Health Risk Transfers

Yulee SHIN[1]

1. First Author Researcher, Department of Industrial Engineering, Sunmoon University, Republic of Korea.
Email: nanumnetworks@sunmoon.ac.kr

Received: January 31, 2026. Revised: February 24, 2026. Accepted: February 28, 2026.

Abstract

Purpose: This study aims to reconceptualize health policy as an integrated social safety and risk governance framework rather than a sector confined to medical service provision. It addresses the growing tendency of health risks—such as infectious disease outbreaks, healthcare access disparities, and systemic disruptions in essential medical services—to cascade into broader social risks affecting labor markets, welfare systems, public safety, and societal stability. **Research design, data and methodology:** The study adopts a qualitative, design-oriented research approach grounded in institutional analysis and normative policy design. Instead of empirical measurement, it develops a conceptual and institutional framework for integrated risk management, focusing on governance architecture, policy triggers, coordination mechanisms, and performance evaluation structures applicable to complex and high-uncertainty environments. **Results:** The analysis identifies four interdependent pillars of effective health risk governance: prevention of health-to-social risk transfer, integration of health and welfare policies to mitigate vulnerability among high-risk populations and regions, institutionalized coordination among health systems, disaster safety, public safety, border management, and local governance, and performance evaluation mechanisms based on social safety indicators rather than conventional input–output metrics. The results demonstrate that fragmented, sector-based health governance structures are structurally inadequate to prevent cascading social risks. **Conclusions:** The study concludes that these four pillars operate cumulatively as a unified governance architecture that enables health policy to function as a core infrastructure of health security and social resilience. It implies that health policy effectiveness must be assessed by its capacity to reduce social vulnerability and stabilize interconnected systems, providing a normative foundation for redesigning health governance beyond traditional administrative and medical paradigms.

Keywords : Health risk transfer; Inter-union governance, Social safety, Risk pooling, Health security

JEL Classification Code: I18, H51, D81, K32

1. Introduction

In recent years, public health risks have increasingly transcended the boundaries of the healthcare sector, evolving into complex social safety challenges that affect labor markets, social welfare systems, public order, and overall societal stability. The spread of infectious diseases, widening health disparities, disruptions in essential medical

services, population aging, and the growing burden of chronic illnesses no longer remain confined to individual health outcomes. Instead, they generate cascading effects across employment, household income, caregiving systems, community resilience, and public safety, thereby amplifying structural vulnerabilities within society.

The COVID-19 pandemic has further underscored this transformation of health risks into multidimensional social risks. Identical health threats have produced markedly asymmetric consequences depending on socioeconomic conditions, institutional capacity, and the distribution of vulnerable populations. These experiences suggest that strengthening healthcare capacity alone is insufficient to manage contemporary health risks. Rather, effective risk governance requires institutional mechanisms capable of preventing the transmission of health risks into broader domains of social insecurity.

Despite this structural shift, existing policy and legal frameworks in many countries continue to operate on a fragmented basis. Health policy, labor policy, welfare policy, disaster management, and public safety are often designed and implemented as parallel but disconnected systems. As a result, early warning signals generated within the health sector frequently fail to trigger timely responses in adjacent policy domains. This fragmentation increases the likelihood that health risks will escalate into cumulative social crises, characterized by employment instability, caregiving gaps, regional inequality, and heightened social unrest.

Against this backdrop, there is growing recognition of the need to reconceptualize health security not merely as a matter of medical preparedness, but as a core component of social safety governance. This reconceptualization entails designing institutional linkages through which health risk signals automatically activate coordinated responses across welfare, labor, safety, and regional governance systems. Such an approach shifts the focus from reactive policy coordination toward preventive and anticipatory risk management.

This challenge is particularly salient in divided or politically sensitive regions, where health risks are shaped by institutional asymmetry, cross-border externalities, and limited policy integration. In such contexts, conventional models based on system unification or full institutional integration are neither feasible nor desirable. Instead, what is required is a functional governance framework that enables cooperative risk management while preserving institutional independence. An inter-union approach to health governance offers a viable alternative by emphasizing coordination, interoperability, and shared risk management without presupposing structural integration.

Accordingly, this study proposes a social safety–based integrated risk management framework and explores a stepwise strategy for establishing inter-union health governance. Rather than focusing on healthcare delivery or humanitarian assistance, the analysis centers on institutional design mechanisms that prevent health risks from cascading into broader social safety risks. The study further conceptualizes governance tools based on triggers, standardized response protocols, and feedback mechanisms to ensure continuous policy adjustment and resilience.

The objectives of this study are as follows:

1. To conceptualize health risks as social safety risks and identify key pathways through which health shocks cascade into labor, welfare, and public safety domains.
2. To design an integrated risk management framework that links health policy with social safety systems through trigger-based and protocol-driven mechanisms.
3. To propose a phased strategy for inter-union health governance that enables cooperative risk management while maintaining institutional autonomy.
4. To contribute to the development of a governance model that enhances social resilience and health security under conditions of institutional fragmentation and political uncertainty.

2. Literature Review

Existing scholarship on health security and public health governance has increasingly emphasized that contemporary health risks cannot be adequately addressed within the confines of the healthcare sector alone. Early studies on health security primarily focused on infectious disease control, medical preparedness, and healthcare system capacity, treating health risks as discrete biomedical events requiring sector-specific regulatory responses. However, more recent literature has demonstrated that health risks frequently generate secondary and tertiary effects across labor markets, welfare systems, public order, and community stability, thereby transforming health shocks into broader social safety risks.

Within public policy and governance studies, this recognition has led to the emergence of integrated risk management and whole-of-government approaches. These studies argue that policy fragmentation—where health, labor, welfare, disaster management, and public safety operate as parallel but disconnected systems—undermines the effectiveness of risk response by delaying intervention and amplifying cumulative social damage. In particular, research on cascading crises highlights that the severity of societal impact is often determined less by the initial health event

itself than by the failure of institutional linkages that should prevent risk transmission across policy domains. Despite this insight, much of the existing literature remains focused on coordination mechanisms or administrative collaboration, without sufficiently specifying the legal and institutional conditions under which cross-sectoral responses are automatically activated.

Legal scholarship has also addressed the limits of sector-specific regulation in managing complex risks. Studies on administrative law and regulatory governance have noted that risk governance increasingly requires anticipatory mechanisms rather than reactive measures. Nevertheless, these discussions often stop short of articulating how early warning signals in one regulatory field can be normatively connected to binding obligations in others. As a result, the literature tends to acknowledge the need for integration while leaving unresolved the question of institutional design—namely, which triggers initiate cross-sectoral action, how standardized response protocols are structured, and how outcomes are evaluated and fed back into subsequent policy cycles.

Research on health governance under conditions of institutional asymmetry or political division has followed a somewhat different trajectory. In this body of literature, cooperation is commonly framed in terms of humanitarian assistance, technical exchange, or project-based collaboration facilitated by international organizations. While these studies provide valuable insights into the practical challenges of cooperation, they often presuppose either eventual system integration or rely on ad hoc arrangements vulnerable to political disruption. Consequently, the sustainability of cooperation has remained a persistent concern, with repeated interruptions attributed not to resource scarcity alone but to the absence of institutionalized channels for information sharing, joint risk assessment, and coordinated response.

In response, some scholars have proposed functional or incremental cooperation models that avoid assumptions of full institutional unification. These approaches emphasize interoperability, mutual recognition, and limited coordination in areas with significant cross-border externalities. However, the legal form and normative structure of such cooperation remain underdeveloped in the literature. In particular, there is insufficient analysis of how cooperation can be stabilized through minimal yet binding institutional arrangements that continue to operate even under adverse political conditions. The concept of risk-sharing, for example, is frequently invoked but rarely defined with precision, often conflated with fiscal integration or unified insurance systems, which may be neither feasible nor normatively justified in asymmetric contexts.

From a constitutional and public law perspective, the relationship between health security and state responsibility has been examined through the lens of fundamental rights and social state principles. In the Korean constitutional framework, Article 10 establishes the duty of the state to protect fundamental rights grounded in human dignity, while Article 34 guarantees the right to a humane standard of living, and Article 36(3) provides that all citizens shall be protected by the state with respect to health. Constitutional jurisprudence and academic commentary generally agree that these provisions do not mandate specific policy instruments but impose a duty on the state to establish reasonable and proportionate institutional safeguards against foreseeable and serious risks to life and health. Nevertheless, existing studies have tended to focus on substantive entitlements or welfare benefits, rather than on the procedural and structural dimensions of risk prevention, particularly where health risks threaten to undermine the effective enjoyment of multiple social rights simultaneously.

Taken together, the existing literature reveals several limitations. While there is broad consensus that health risks increasingly function as social safety risks, prior studies have not sufficiently translated this insight into a concrete governance framework capable of preventing risk transmission across policy domains. Moreover, research on cooperative health governance under conditions of institutional separation has highlighted the need for functional coordination but has not fully addressed how such coordination can be legally stabilized through minimal yet effective mechanisms. Finally, constitutional analyses have underscored the state's protective obligations but have rarely connected these obligations to the design of trigger-based, protocol-driven, and feedback-oriented governance structures.

This study builds on these strands of literature by conceptualizing health risks explicitly as potential triggers of social safety risks and by proposing an integrated risk management framework grounded in institutional design rather than policy aspiration. By focusing on triggers, standardized response protocols, and feedback mechanisms, the study seeks to bridge the gap between normative recognition and operational governance. In doing so, it contributes to the literature by offering a legally grounded model of inter-union health governance that prioritizes risk prevention and systemic resilience without presupposing institutional integration or political convergence.

3. Research Methods

This study adopts a qualitative, design-oriented research methodology aimed at developing an institutional governance framework rather than testing causal hypotheses or estimating statistical relationships. In line with its

objectives, the methodology emphasizes conceptual clarification, institutional analysis, and normative design, which are commonly employed in constitutional law, public policy, and governance research addressing complex and cross-sectoral risks.

First, the study clarifies core concepts such as health risk, social safety risk, cascading risk transmission, and inter-union health governance through analytical and conceptual methods. These concepts are operationalized by distinguishing health risks confined to the healthcare system from those that generate external effects across labor, welfare, public safety, and regional governance. This distinction provides the analytical basis for explaining why sector-specific policy responses are structurally inadequate.

Second, the study conducts an institutional analysis of policy fragmentation and risk transmission pathways. Rather than engaging in article-by-article legal comparison, the analysis focuses on how health-related early warning signals are generated, transmitted, or blocked within existing policy architectures. By examining statutory mandates and administrative practices across health, welfare, disaster management, and public safety, the study identifies structural design gaps that impede anticipatory risk management.

Third, based on this analysis, the study applies a normative design methodology to construct an integrated risk management framework organized around three elements: triggers, response protocols, and feedback mechanisms. The design prioritizes internal coherence, legal feasibility, and adaptability to evolving risk environments, without prescribing a single institutional model.

Fourth, a phased governance design approach is applied to inter-union health cooperation, distinguishing short-, medium-, and long-term stages based on functional necessity and risk externality. This approach identifies minimal yet binding arrangements capable of stabilizing cooperation under political uncertainty.

Finally, the proposed framework is subjected to a constitutional and public law–based normative review, assessing its consistency with state protective obligations concerning life, health, and social security. The validity of the findings is evaluated through logical coherence, institutional feasibility, and alignment with established legal and policy principles, rather than quantitative verification.

4. Results and Discussion

4.1. Phased Strategies for Designing Union-Level Health and Healthcare Governance

The concept of inter-union health governance refers to a cooperative framework in which multiple health systems—each maintaining its own institutional, policy, insurance, and fiscal structures—are functionally interconnected to recognize and manage public health risks as shared concerns. This model does not presuppose political unification or the formation of a single, integrated health system. Rather, it represents a form of functional coupling in which institutional independence and mutual interdependence are balanced within clearly defined risk-response domains. In this sense, inter-union health governance should not be understood as a political integration project, but as a risk-management mechanism designed to prevent public health threats from cascading into broader social safety risks.

4.1.1. Short-term phase: Establishing a minimum safety floor through information exchange, epidemic response, and human-resource connectivity

Within a phased strategy for cooperation between institutionally heterogeneous health systems, the short-term phase possesses a distinct character. Its primary objective is not the expansion of cooperation or the generation of visible outcomes, but the restoration and stabilization of minimum functional infrastructure necessary to ensure the continuity of cooperation itself. Previous experiences of cooperation between highly asymmetric health systems demonstrate that the success or failure of such efforts has depended less on financial scale or project visibility than on whether basic cross-system crisis-management functions—such as epidemic information sharing, risk alerts, and response procedures—were sustainably maintained.

In many cases, repeated disruptions of health cooperation have not resulted from the absence of facilities or formal institutions, but from the lack of institutionalized mechanisms for mutual notification, coordination, and response. Accordingly, the central goal of the short-term phase should not be framed as the expansion of cooperative activities, but as the establishment of a minimum institutional safety floor that prevents core public health risk-response functions from being suspended due to political, military, or external environmental fluctuations.

From this perspective, several key elements must be prioritized in the short-term phase. First, the functional restoration of mutual notification systems concerning infectious disease outbreaks and containment measures is essential. Such information exchange should operate as a standing procedure independent of the status of diplomatic or administrative channels, and should encompass not only basic outbreak data but also risk levels, response stages, containment measures, and quarantine standards. Second, the comparative review and alignment assessment of response guidelines and protocols for major public health risks are required. Even in the absence of joint responses, mutual understanding of procedural differences can significantly reduce the risk of cross-border or adjacent-area

transmission.

Third, the establishment of permanent technical consultation channels regarding quarantine and medical support procedures in adjacent regions is necessary. These channels do not presuppose joint operations; rather, they function as policy buffers that prevent containment measures implemented in one system from generating secondary risk effects in another. Fourth, the gradual restoration of human-resource connectivity—including reciprocal visits, training programs, and professional exchanges among health practitioners and administrators—serves as a critical stabilizing mechanism. Beyond technical knowledge transfer, such exchanges create an interpersonal foundation that preserves minimal communication capacity and practical understanding even when formal cooperation is temporarily disrupted.

In sum, the purpose of the short-term phase lies not in broadening the scope of health cooperation, but in reconstructing the information–alert–response linkage that constitutes the foundation for long-term institutional accumulation. This phase must be clearly distinguished from discussions of fiscal integration, facility sharing, or insurance coordination. Its core task is to institutionalize a non-political cooperation axis that is automatically activated by risk occurrence itself, rather than by political consensus or diplomatic conditions. Without such a safety floor, initiatives involving infrastructure support, financial assistance, or workforce cooperation are likely to remain vulnerable to repeated suspension. Consequently, the short-term phase should be understood not as a precursor to integration, but as a structural safeguard that suppresses the risk of cooperation breakdown. Only upon this foundation can the institutional accumulation envisaged in the medium- and long-term phases acquire practical significance.

4.1.2. Medium-term phase: Modernization of pharm aceuticals, equipment, and facilities, and joint accu mulation of operational capacity

The objective of the medium-term phase is not the short-term expansion of medical infrastructure or the provision of material assistance per se, but the accumulation of operational capacity that enables health systems to function autonomously even after cooperative projects are concluded. At the core of this phase lies the formation of a self-sustaining structure, in which supplied pharmaceuticals, medical equipment, facilities, and related technologies continue to operate regardless of the presence or absence of external support. Such a structure can generate substantive effects only when it is built upon the information, alert, and response infrastructure established during the short-term phase. In this sense, self-sustaining capacity functions as a critical risk-buffering mechanism, ensuring the continuity of public health responses independently of external financing, political consensus, or the duration of individual cooperative programs. Past experiences of cooperation between institutionally heterogeneous health systems indicate that when support was designed as donor-centered, one-off infrastructure provision, initial achievements were often followed by rapid functional deterioration due to the absence of maintenance capacity, spare-parts supply chains, and trained operational personnel. Accordingly, the essence of the medium-term phase should be understood as the institutional and practical accumulation of operational capability, rather than the physical expansion of facilities.

From this perspective, the design of cooperation in the medium-term phase should be structured around at least three key design axes. First, the establishment of a public procurement foundation for pharmaceuticals, medical consumables, and diagnostic equipment is required. Procedural consistency in procurement, transparency in price determination, and the clarification of quality standards constitute essential preconditions for the stability of medical services and serve as core institutional safeguards against supply shortages or disruptions that may generate public health risks. Second, the provision of medical facilities and equipment must be designed to ensure feasibility of maintenance, repair, and replacement of consumables, rather than remaining at the level of simple material transfer. This approach evaluates support not by the nominal lifespan of equipment, but by its effective operational duration, and necessitates the parallel transfer of maintenance know-how and the training of local technical personnel in order to mitigate imbalances between provided assets and on-site technical capacity. Third, the institutionalization of practice-oriented education, training, and capacity-building systems in key operational domains—such as hospital management, infection control, and emergency medical services—is indispensable. This does not refer to ad hoc personnel dispatches or short-term workshops, but to field-based capacity development that incorporates emergency response procedures, in-hospital infection control protocols, and workforce reallocation mechanisms capable of addressing predictable risks and demand fluctuations in healthcare operations.

Ultimately, the fundamental purpose of the medium-term phase is not the parallel expansion of facilities and personnel, but the construction of a cooperative structure that organically integrates infrastructure support with the strengthening of human and organizational capacity. When external inputs are not closely linked to the formation of operational capability, the expansion of cooperative projects paradoxically deepens dependency, producing a fragile structure that is most vulnerable to political, fiscal, or diplomatic shocks. Conversely, when operational capacity is sufficiently accumulated during the medium-term phase, a durable health security foundation can be established in

which minimum functional performance is maintained regardless of the scale of external assistance. In this regard, the medium-term phase represents not only a stage of expansion, but also a transitional phase that tests whether cooperative arrangements have attained genuine self-sustainability. If cooperative structures fail to reach a level of autonomous operation at this stage, subsequent efforts to develop insurance linkages, fiscal coordination, workforce integration, or risk-sharing mechanisms in the long-term phase become structurally infeasible.

In sum, the medium-term phase constitutes a pivotal process through which cooperation between institutionally heterogeneous health systems is transformed from a relationship of unilateral support into a risk-sharing partnership grounded in the joint accumulation of institutional, technological, and operational capacity. Only after such structural accumulation has been achieved can discussions on insurance coordination, fiscal linkage, workforce frameworks, and formalized risk-pooling mechanisms be meaningfully advanced, positioning the medium-term phase as an indispensable bridge toward the institutional design envisaged in the long-term stage.

4.1.3. Long-term phase: Phased linkage of insurance, finance, and workforce, and the establishment of risk-sharing mechanisms

The central objective of the long-term phase does not lie in the physical expansion of cooperative projects, but in the construction of a structural foundation through which public health risks arising across a divided space can be recognized as shared risks and managed through coordinated institutional arrangements. At the core of this foundation is the establishment of a risk-pooling mechanism, which does not presuppose political unification or the formation of a single health system. Rather, it seeks to institutionalize joint response capacity in domains where health risks generate significant external effects, while preserving the independence of heterogeneous institutional, policy, insurance, and fiscal structures. In this sense, the long-term phase should be understood not as a process of institutional integration or policy absorption, but as the construction of a cooperative model in which autonomy and functional linkage are carefully balanced.

From this perspective, priority in the long-term phase should be given not to the transfer of financial resources or the unification of policy frameworks, but to the development of complementary linkages and burden-sharing arrangements among insurance systems, health financing structures, and medical workforce capacity. Linkage in health financing and insurance does not imply the creation of a single system; rather, it refers to the establishment of shared risk-bearing arrangements limited to areas with pronounced externalities, such as infectious disease response, emergency medical services, maternal and child health, and the management of chronic conditions. In other words, the emphasis lies not on fiscal consolidation, but on structured mechanisms of mutual contribution that enable responsibility sharing without institutional merger. Such risk-sharing arrangements should be purpose-specific and domain-limited, ensuring that cooperation does not evolve into de facto system integration. Given the propensity of public health risks to propagate beyond local boundaries and affect social safety, economic security, and population health more broadly, the establishment of a minimum infrastructure for joint risk management constitutes a core element of the long-term phase's institutional legitimacy.

Another critical pillar of the long-term phase is the development of mutual support structures for essential medical workforce capacity. This does not entail unrestricted personnel mobility, cross-appointment, or mutual recognition of professional qualifications. Instead, it should be understood as the gradual construction of capacity-enhancing mechanisms—such as specialized training programs, professional exchanges, and emergency deployment frameworks—focused on life- and health-critical domains including infectious disease control, emergency medicine, intensive care, and maternal health. As with facility support, workforce cooperation is inherently vulnerable if not embedded within a stable administrative and fiscal foundation. Without such support, accumulated capacity is likely to dissipate upon the conclusion of short-term projects. Accordingly, the purpose of workforce capacity-building in the long-term phase lies not in the temporary dispatch of specialists, but in the continuous renewal of field-based operational capability capable of sustaining service delivery and preventing breakdowns in the care continuum.

Closely linked to these elements is the definition of a basic health service package designed to guarantee a minimum level of health protection. In contexts characterized by significant institutional and economic disparities, pursuing full service standardization is neither realistic nor desirable. Instead, long-term institutional design should prioritize the establishment of a minimum health safety threshold, centered on domains of high social and health-security importance—such as severe and emergency care, infectious disease control, and the protection of vulnerable populations—while allowing for differentiated service provision beyond this baseline. This approach not only mitigates disparities in access to essential services, but also reorients health policy away from a paradigm of division management toward one of social safety infrastructure building. Importantly, it enables the maintenance of a baseline level of health services irrespective of fluctuations in political or security conditions, thereby fulfilling a preventive and stabilizing function.

Ultimately, the institutional design of the long-term phase aims at independent, phased, and functionally differentiated linkage, as opposed to unitary system integration or absorptive models. Rather than pursuing comprehensive unification, this approach builds risk-sharing structures incrementally in domains with high institutional compatibility, thereby accumulating resilience against public health crises and disasters. Through such arrangements, health cooperation can evolve beyond the fragility of project-based continuity and function as an institutional safety device capable of jointly controlling health risks across the divided space.

In sum, the long-term phase represents the institutional apex of cooperation oriented toward shared risk management, rather than the unification of insurance, finance, workforce, or service delivery systems. When the information-sharing, response capacity, and operational competence established in the short- and medium-term phases are translated into structured risk-sharing arrangements at this stage, cooperative health governance can be reconstituted as a sustainable public health partnership resilient to external shocks. Moreover, the institutionalization of a minimum health safety threshold transcends considerations of technical efficiency and can be understood as the implementation of a constitutional minimum, corresponding to the protection of fundamental social rights—such as the right to life and the right to a dignified standard of living—guaranteed under the Constitution of the Republic of Korea. In this respect, the long-term phase derives its normative legitimacy from its role in safeguarding a baseline level of health rights irrespective of the trajectory or timing of broader systemic change.

4.1.4. A cyclical governance model based on continu ous evaluation, adjustment, and expansion

The final stage of inter-union health governance should not be understood as a declaration of policy completion or the terminal expansion of cooperative arrangements. Rather, it represents the institutionalization of continuous verification, adjustment, and expansion functions within the governance framework itself. This design principle reflects the inherently dynamic nature of public health risks and social safety challenges, which evolve in response to changing epidemiological patterns, demographic structures, configurations of vulnerable populations, and disparities in healthcare access. Accordingly, long-term stability cannot be secured through fixed governance architectures; it can only be achieved through a cyclical mechanism that enables the cooperative framework to revise and recalibrate itself in response to shifting risk environments.

From this perspective, a governance model grounded in continuous evaluation, adjustment, and expansion does not treat the persistence of cooperation as an objective in itself. The continuation of cooperation should be regarded as a conditional state, justified only insofar as cooperation demonstrably contributes to the reduction of infectious disease transmission, healthcare inequality, vulnerability-related risks, and broader social safety threats. In other words, neither the scale nor the frequency of cooperative activities constitutes a valid measure of success. Instead, the legitimacy of cooperation must be assessed against objective indicators reflecting tangible improvements in health security, measurable reductions in risk exposure, and the mitigation of social vulnerability.

Within this framework, the most critical institutional component is an institutionalized periodic assessment mechanism. Continuous evaluation should not be reduced to a formalized reporting requirement or an administrative monitoring exercise. Rather, it must function as a normative decision-making framework that determines the substance, scope, modality, and pace of cooperation. Specifically, cooperation should be periodically assessed using core health security indicators—such as infectious disease incidence rates, access to emergency medical services, treatment delay metrics, maternal and child health outcomes, healthcare workforce availability, and pharmaceutical supply stability. These assessments must be embedded within a feedback structure that allows evaluation outcomes to be immediately translated into deliberation and adjustment within the cooperative system. When such a structure is institutionalized, cooperation becomes not merely something that continues, but something that continues only to the extent that it contributes to risk reduction.

Equally important is the prevention of structural rigidity within the cooperative framework. Past instability in health cooperation has often resulted not from a lack of political consensus or financial resources, but from the entrenchment of fixed agendas and standardized project types that failed to adapt to changing external conditions. Accordingly, the cyclical governance model should adopt a risk-based expansion principle, under which decisions regarding the selection, modification, or expansion of cooperative domains are guided by the likelihood of health risks, their potential for diffusion, and their capacity to generate social safety externalities. Under this principle, cooperation is expanded not in response to political rapprochement or ad hoc project proposals, but in accordance with the anticipated effectiveness of cooperation in mitigating concrete risk pathways. This approach prioritizes substantive risk containment over the outward expansion of cooperative agendas.

In addition, continuous evaluation and adjustment mechanisms should be complemented by systematic alignment with international health regimes. Given the

complex risk environment characterized by military tension, sanctions frameworks, and heterogeneous disease control systems, the sustainability and legality of cooperation depend on compatibility with the standards, procedures, surveillance mechanisms, and information systems of global and regional health security regimes, including those coordinated by the World Health Organization. Such external reference frameworks function both as stabilizing buffers against fluctuations in intergovernmental trust and as instruments of external validation, ensuring that cooperation in sensitive areas—such as infectious disease control, pharmaceuticals, and health data—remains consistent with international norms.

In sum, the cyclical governance model should be understood not as a supplementary arrangement introduced after the completion of long-term cooperation, but as a meta-framework that underpins the entire cooperative architecture. Even where a temporal sequence exists—ranging from short-term information sharing and response coordination, through medium-term capacity accumulation, to long-term risk-sharing mechanisms—the absence of an embedded feedback loop of continuous evaluation, adjustment, and expansion leaves cooperation structurally vulnerable to external shocks. Conversely, once such a cyclical structure is institutionalized, inter-union health cooperation can transcend dependence on political, military, or diplomatic fluctuations and function as an autonomous and enduring mechanism for mitigating health security and social safety risks.

Ultimately, this stage does not represent the endpoint of cooperation, but rather the transition toward an institutional ecosystem in which health cooperation is continuously tested, recalibrated, and renewed. The objective is not to preserve cooperation for its own sake, but to ensure that cooperation remains substantively effective in reducing public health risks. In this sense, the cyclical governance model constitutes both the final stage of an inter-union health system and the foundational infrastructure that sustains the cooperative framework as a whole. Future health cooperation, therefore, cannot rely solely on project-based or donor-centered approaches. Its sustainability and normative legitimacy can be secured only within an inter-union governance framework that reflects the reality in which southern and northern systems, together with international health regimes, simultaneously function as normative and institutional boundary conditions. The ultimate purpose of cooperation lies not in system integration or exceptional exchange, but in the establishment of a structural foundation through which distinct systems, while maintaining their independence, can jointly manage public health risks as a shared concern.

4.2. Designing a Social Safety–Based Integrated Risk Management Framework

4.2.1. Operational Mechanism for Interrupting Cascading Health Risk Transfers

The preventive effectiveness of the proposed union-level health governance framework depends on its capacity to interrupt the institutional pathways through which health-related disruptions propagate into interconnected social systems. Health risks rarely remain confined to healthcare delivery alone. When healthcare systems experience sustained stress—such as surges in hospitalization demand, disruption of essential services, or regionally concentrated outbreaks—secondary pressures emerge in labor markets, social protection systems, and local administrative capacities. In the absence of structured institutional response linkages, these pressures tend to accumulate and expand outward, resulting in workforce instability, interruption of income continuity, and increased demand for emergency social assistance. These downstream effects represent the sequential transmission of risk across functionally interconnected governance domains rather than independent or isolated disruptions.

The governance framework proposed in this study intervenes at this transmission stage by establishing institutionalized linkages between risk recognition and coordinated policy response. Once health-related stress signals reach administratively significant levels, coordinated actions are activated across relevant policy sectors, including health systems, social protection institutions, emergency management bodies, and local governance structures. Such actions may involve the temporary adjustment of workplace safety requirements, activation of income stabilization measures, mobilization of administrative support capacities, and reinforcement of essential service continuity. By ensuring that institutional responses occur in a timely and synchronized manner, the governance framework reduces the likelihood that localized health disruptions escalate into broader systemic instability affecting social safety and economic continuity.

In addition, the governance process incorporates structured evaluation and adjustment mechanisms that enable continuous institutional learning. By assessing the effectiveness of prior interventions in stabilizing healthcare delivery, maintaining social protection continuity, and preventing systemic disruption, governance actors can refine institutional response parameters and improve future preparedness. This adaptive process strengthens governance resilience by ensuring that institutional arrangements evolve in response to changing risk conditions rather than remaining static.

Through these institutional processes, union-level health governance functions not merely as a coordination arrangement, but as a structural safeguard designed to

prevent the cross-sectoral amplification of health risks. Its primary effect lies in limiting the transmission of disruption across interconnected governance domains, thereby preserving systemic stability under conditions of elevated health risk.

For operational viability, trigger thresholds and coordinated response activation should be institutionally anchored within designated governance bodies possessing both technical expertise and administrative authority. These may include national public health authorities, inter-agency coordination councils, or jointly designated institutional platforms responsible for integrated risk monitoring and response coordination. Clear allocation of decision-making authority, predefined escalation procedures, and structured communication channels help minimize inter-agency conflicts and ensure timely implementation of coordinated measures. Furthermore, institutional arrangements supporting data sharing, resource coordination, and mutual support should be formalized through administrative regulations, inter-institutional agreements, or equivalent governance instruments. Such institutional anchoring ensures continuity, predictability, and reliability in coordinated responses, thereby enhancing the practical feasibility of preventing cascading risk transmission.

4.2.2 Institutional Feasibility: Coordinated Health Risk Governance in the European Union

The institutional feasibility of governance arrangements designed to prevent cross-jurisdictional risk transmission can be observed in existing supranational health coordination mechanisms, particularly those developed within the European Union. While differing in legal structure and political context, these mechanisms demonstrate how structured coordination and shared risk recognition can mitigate the systemic consequences of health emergencies across multiple jurisdictions.

The European Union has established institutional channels enabling member states to exchange information on emerging health threats and align response strategies in a timely manner. These arrangements facilitate collective awareness of evolving risk conditions and support coordinated institutional responses aimed at preserving healthcare system functionality and maintaining broader social and economic stability. Rather than relying on centralized authority, this governance approach operates through structured cooperation among national public health authorities, technical coordination bodies, and administrative governance systems.

During recent public health emergencies, including the COVID-19 pandemic, such coordination mechanisms contributed to reducing uncertainty, facilitating resource mobilization, and supporting continuity of essential services across participating jurisdictions. By enabling early recognition of shared vulnerabilities and facilitating synchronized institutional responses, these arrangements helped limit the broader destabilizing effects that could otherwise arise from fragmented or delayed responses.

This experience demonstrates the practical viability of governance structures designed to link early risk recognition with coordinated institutional response while preserving institutional autonomy. The union-level governance framework proposed in this study builds upon similar institutional principles, extending their application beyond public health coordination to encompass integrated social safety stabilization. By embedding structured response linkages across health, welfare, safety, and administrative governance systems, the proposed framework enhances the capacity of governance institutions to contain health-related disruptions before they evolve into multidimensional social crises.

4.2.3. Preventing the cascading transfer of health risks into labor, economic, welfare, and public security domains

Health risks are no longer confined to the traditional domains of medical care and disease control. The spread of infectious diseases, inequalities in access to healthcare, gaps in essential medical services, and the growing burden of population aging and chronic illness extend beyond individual health outcomes to generate direct and indirect effects on labor market participation, household income stability, caregiving systems, the accumulation of social vulnerability, and ultimately levels of crime and public security. As demonstrated during recent global pandemic responses, the intensity of these spillover effects varies asymmetrically depending on the underlying socioeconomic structure and the distribution of vulnerability. Accordingly, the management of health risks cannot be reduced to the provision of medical services or the reinforcement of disease-control measures alone. Rather, it requires the design of a national risk management device capable of preemptively blocking the pathways through which health risks cascade into broader social safety risks.

Nevertheless, Korea's existing policy and legal architecture has been developed on the premise of a compartmentalized administrative structure, in which health, labor, economic policy, welfare, education, and public security operate as largely insulated domains. Infectious disease response is treated as a health-sector issue, income loss and unemployment as matters of labor policy, caregiving gaps as welfare concerns, and crime and insecurity as public safety issues. Within this fragmented configuration, it is institutionally difficult to control the channels through which health risks propagate across social domains. When health risks are not addressed in a timely manner or when risk-related information is discontinuous, a

cumulative cycle of social risk may emerge—characterized by labor market contraction, income decline, household caregiving instability, the expansion of informal labor and socioeconomic vulnerability, and heightened insecurity and crime. This pattern underscores that health risks constitute structural risks that cannot be effectively managed through the actions of a single administrative authority.

For this reason, attempts to strengthen health security while maintaining a parallel and segmented relationship between health policy and social policy are inherently limited. A national risk management framework must be redesigned around legal and administrative interfaces that transmit early warning signals generated during the emergence and spread of health risks and immediately activate corresponding responses across labor, welfare, education, community protection, and public security systems. This does not entail a simple expansion of the authority of health agencies or the ad hoc establishment of coordination bodies. Rather, it involves the institutionalization of normative and systemic linkage devices through which detected health risks function as triggers that automatically activate social safety responses.

For example, a system in which the escalation of an infectious disease alert simultaneously and sequentially triggers telework transition guidelines in the labor sector, emergency caregiving measures in education policy, intensified outreach and non-face-to-face services for vulnerable populations in welfare policy, and localized safety response plans by municipal governments represents a prototypical operational model of the social safety–based integrated risk management framework proposed in this study. When such automatic linkage mechanisms are institutionalized, the relationship between health policy and social safety policy shifts from ex post coordination to ex ante, preventive, and integrated risk management.

Ultimately, establishing a framework that prevents health risks from transforming into social safety risks is not merely a matter of enhancing administrative efficiency or promoting inter-ministerial cooperation. It entails a legal and normative redefinition of health risks as a national public security issue directly linked to the structural stability of society as a whole. From this perspective, health policy must be repositioned beyond its traditional role of protecting life and health, and recognized as a core component of the national social safety infrastructure responsible for maintaining the continuity and resilience of social, economic, and security systems. This conceptual shift functions as a precondition for the inter-union health governance design discussed in subsequent sections and provides a decisive framework for institutionalizing health security in conjunction with social safety, economic stability, and national crisis management systems.

4.2.4. An Integrated Health–Welfare Model for Add ressing Vulnerable Populations and Regional Dispar ities

Health risks are not distributed evenly across the population. As multiple vulnerability factors—such as income level, age, employment type, educational attainment, migration status, disability, and regional disparities in healthcare accessibility—accumulate, the social impact of identical health risks increases exponentially. In particular, risks related to infectious diseases, chronic illnesses, emergency medical access, and long-term care and caregiving burdens do not remain confined to individual health outcomes. Rather, they tend to cascade into broader socioeconomic domains, including household income reduction, prolonged unemployment, expansion of informal labor, caregiving gaps, heightened risks of child and elderly neglect, housing instability, and the erosion of local community cohesion. In this respect, health vulnerability functions not merely as a consequence of social disadvantage but as an early indicator of emerging social vulnerability and social safety risks.

Despite this reality, Korea's current policy and legal framework continues to treat health policy and welfare policy as parallel but largely disconnected domains. Although various forms of health-related data—such as designations of medically underserved areas, identification of high-risk groups for infectious diseases, and classifications related to disability, aging, and chronic illness—are individually accumulated, there is no institutionalized legal mechanism through which these health indicators automatically trigger interventions in income support, caregiving services, employment protection, housing stabilization, or broader social services. Under such a fragmented policy structure, welfare interventions are typically activated only after health risks have already materialized as social crises, resulting in responses that are inherently reactive and cost-amplifying.

Accordingly, a meaningful reduction of disparities among vulnerable populations and regions requires not an expansion of welfare benefits ex post, but the institutionalization of an integrated risk management system in which health indicators function as formal triggers for social policy intervention. Specifically, health risk–based classifications—such as high-risk infectious disease groups, medically underserved regions, populations with limited access to emergency care, and groups vulnerable due to long-term care needs or chronic conditions—should be legally linked to predefined welfare interventions. These may include home-based caregiving services, family support programs, community-based integrated care, prioritized allocation of public health center resources, deployment of mobile healthcare services, and early intervention programs for at-risk households. From a

regional perspective, this approach also necessitates the coordinated design of welfare policy with the proactive allocation of public health infrastructure, emergency medical facilities, and public healthcare personnel in areas with structural medical shortages. Such a model does not imply the medicalization of welfare or the welfareization of healthcare, but rather represents an integrated risk management paradigm aimed at interrupting the pathways through which health vulnerabilities escalate into broader social safety risks.

The legal institutionalization of this health–welfare integration model requires a normative reconfiguration that goes beyond ad hoc policy coordination. It entails a shift away from welfare eligibility criteria based exclusively on traditional indicators such as income, age, disability status, or household composition, toward a framework in which health risk itself is recognized as a legitimate and independent trigger for social policy intervention. Once such a transformation is achieved, health indicators cease to function merely as technical data within the medical domain and instead become central variables in national risk governance—activating social safety policies, determining priority-setting, and guiding resource allocation. As a result, health risks can be institutionally absorbed and mitigated before they evolve into full-scale social crises, while disparities affecting vulnerable populations and regions can be managed through preventive, rather than remedial, regulatory mechanisms.

In sum, the integrated health–welfare model for addressing vulnerable populations and regional disparities is not designed to expand the scope of welfare policy per se. Its core constitutional and policy significance lies in strengthening the overall resilience of the national risk management system by structurally blocking the social cascade of health risks. Only through such institutional transformation can health policy transcend its traditional role of protecting life and physical well-being and be repositioned as a foundational pillar of national social safety infrastructure—supporting the long-term sustainability of the economy, society, and local communities.

4.2.5. Interlinkage among Health, Disaster Safety, P ublic Safety, Border Management, and Local Health Systems

The interlinkage among health, disaster safety, public safety, border management, and local health systems constitutes a core institutional requirement of the health security environment on the Korean Peninsula. In this context, interlinkage does not refer to organizational consolidation or the creation of a single supervisory authority. Rather, it denotes the institutionalization of normative and administrative interfaces that enable disaster safety, border control, public safety, and local health systems to be activated without delay once health risk signals are detected. Crises originating in the health domain—such as infectious disease outbreaks, functional collapse of medical infrastructure, or disruptions in pharmaceutical supply chains—are not confined to the medical sector. They possess a structural propensity to evolve into cascading crises that simultaneously affect border control, public order, and community safety. Given the Peninsula's structural characteristics, including contiguous border areas, densely populated metropolitan regions, concentration of logistics and military corridors, and persistent political and security tensions, public health emergencies are particularly prone to escalating into border management risks, social instability, and failures in disaster response. Under such conditions, the conventional approach of designing health policy and safety policy as separate domains is fundamentally inadequate for risk control in a high-risk society.

The policy direction required is not the physical integration of health and safety institutions, but the embedding of interlinked operational principles within the institutional framework to preemptively sever the pathways through which risks propagate. Specifically, standardized interlinkage protocols must be legally established so that disaster safety, border management, public safety, and local health systems are automatically activated when infectious diseases or major health risks are identified. The critical issue is not the speed of inter-agency consultation or policy coordination per se, but the structural immediacy of command and operational linkages connecting "health risk detection" to "safety response." Such interlinked governance presupposes a standardized operational sequence aimed at preventing risk transmission: the issuance of early warnings for infectious and health risks; the activation of enhanced quarantine measures at borders, ports, and airports; the mobilization of regional emergency medical and infectious disease bed capacity; the reinforcement of protections for socially vulnerable populations; and the buffering of community-level risks through coordinated networks encompassing disaster safety, public safety, policing, and health authorities. Absent such a structure, health risks are likely to transition from short-term medical issues into systemic factors undermining the overall social stability index.

From this perspective, health security can no longer be positioned as a subcategory of healthcare policy. The effective operation of health security depends less on the resilience of hospitals or health ministries than on the capacity of border management, public safety, local policing, and disaster response systems to absorb, buffer, and control health-related risks. Medical system resilience alone is insufficient to ensure safety in high-risk societies; infectious diseases and medical risks must be structurally reconfigured as core input variables within safety policy design.

Institutionalizing interlinkage among these domains therefore constitutes not a matter of administrative coordination, but a normative intervention that disrupts the trajectories through which risks migrate across sectors.

Ultimately, the interlinkage among health, disaster safety, public safety, border management, and local health systems is neither an expansion of health policy nor an overextension of safety policy. It represents the fulfillment of the state's responsibility to construct an integrated risk management system that prevents health risks from diffusing into generalized social vulnerability. Only through such institutional reconfiguration can health security transcend its status as a technical policy domain and be repositioned as a foundational component of national social safety infrastructure. Moreover, such a governance model can sustain public health stability regardless of fluctuations in specific cooperation contexts or political environments, thereby providing a durable and adaptive framework for managing complex health risks on the Korean Peninsula.

4.2.6. A Social Safety Indicator–Based Performance Evaluation Framework for Health Policy

Redesigning the health policy performance evaluation system to be explicitly linked with social safety indicators constitutes the final pillar of the integrated risk management framework and represents the institutional completion of the health security concept. In Korea, existing health policy evaluations rely predominantly on input- and output-oriented administrative indicators, such as the volume of medical services provided, budget execution rates, numbers of hospital beds and facilities, and vaccination coverage. While these indicators are useful for measuring the scale of resource allocation and administrative efficiency, they are largely incapable of assessing whether health policies have effectively prevented health risks from cascading into broader forms of social vulnerability. In other words, quantitative measures of "how much was invested" and "how much was delivered" cannot adequately capture the core objective of health security—namely, the mitigation of social risk and the preservation of structural stability across society.

If infectious disease control and medical infrastructure expansion are to function not as isolated policy goals but as foundational measures for maintaining social safety and everyday societal functioning, performance indicators must be reoriented accordingly. Evaluation criteria should focus on the extent to which health policies have disrupted the transmission pathways through which health risks spread to vulnerable populations, labor markets, caregiving systems, local communities, and domains of public order and social conflict. Representative indicators in this regard include whether disparities in healthcare access among vulnerable groups have been substantively reduced, whether imbalances in health outcomes and service utilization in medically underserved regions have been alleviated, whether shocks to labor market participation, household income, and caregiving burdens during infectious disease outbreaks have been contained, and whether deterioration in public order, social conflict, and social isolation indicators has been prevented during crisis periods.

Such a performance evaluation framework entails more than the parallel presentation of health, welfare, and safety statistics. It presupposes a normative shift in which the reduction of social vulnerability is recognized as a central measure of health policy success. Moreover, evaluation outcomes must operate as criteria for determining the continuation, adjustment, or expansion of policies, and be institutionally linked to policy revision, budget allocation, program design, workforce deployment, and epidemic response strategies through a structured feedback loop. Only when such a cyclical mechanism is institutionalized can performance evaluation function not merely as an administrative reporting exercise, but as a substantive policy control mechanism that governs risk management and reinforces social safety.

The importance of this evaluation framework becomes more pronounced in contexts characterized by compounded geopolitical and social vulnerabilities. In environments where border proximity, health insecurity, information asymmetry, and latent social tensions coexist—as is particularly evident on the Korean Peninsula—linking health policy performance assessment to social safety variables should be understood not as a technical refinement, but as an institutional criterion that defines the very identity of health security governance. This approach is essential if health policy is to transcend its traditional role as a mechanism for allocating medical resources and instead operate as a foundational policy for sustaining overall social stability.

In sum, the establishment of a social safety indicator–based performance evaluation framework represents not merely an advancement in evaluation methodology, but the culmination of an institutional reconfiguration that repositions health security as a core pillar of social safety. Policy designs that block the social cascade of health risks, integrated health–welfare structures that mitigate disparities among vulnerable populations and regions, institutionalized interlinkages among health, disaster safety, public safety, border management, and local health systems, and a performance evaluation framework grounded in social safety indicators together constitute an interdependent and unified risk management architecture. The absence of any one of these components would structurally undermine the effectiveness of the entire framework. Only when all four pillars are cumulatively and coherently integrated can health policy move beyond a resource-supply–centered model and

be transformed into a health security system capable of sustaining and restoring structural stability and resilience across society. Accordingly, these four elements should be understood not as optional policy choices, but as mutually reinforcing components of an integrated strategic design.

5. Conclusions

This study has sought to reconceptualize health policy not as a sector-specific domain confined to medical services, but as a central pillar of social safety and integrated risk management. Starting from the observation that contemporary health risks—particularly infectious diseases, medical access disparities, and systemic healthcare disruptions—do not remain limited to the health sector, the analysis has demonstrated that such risks tend to cascade into labor instability, caregiving crises, regional inequality, social conflict, and public safety challenges. Under these conditions, health policy can no longer be evaluated solely by the scale of medical resource provision or administrative efficiency; it must instead be assessed by its capacity to prevent the social transmission of risk and to sustain structural stability across society.

To this end, the study proposed an integrated risk management framework composed of four interdependent design pillars. First, it emphasized the necessity of blocking the cascade of health risks into labor, economic, welfare, and public safety domains through early detection and preventive institutional linkages. Second, it advanced an integrated health–welfare model in which health vulnerability functions as a trigger for social policy intervention, thereby enabling preemptive protection of vulnerable populations and mitigation of regional disparities. Third, it articulated the importance of institutionalized interlinkages among health systems, disaster safety mechanisms, public safety structures, border management, and local health governance, highlighting that effective health security depends on the capacity of safety systems to absorb and buffer health risks rather than on healthcare resilience alone. Fourth, it argued for a social safety indicator–based performance evaluation framework that transforms policy evaluation from a retrospective reporting exercise into a forward-looking control mechanism governing policy adjustment, continuation, and expansion.

A central contribution of this study lies in framing health policy performance evaluation as a core component of governance rather than as an auxiliary administrative function. By linking evaluation criteria to social safety indicators—such as reductions in vulnerability, stabilization of labor and caregiving systems, containment of social conflict, and preservation of community resilience—the proposed framework aligns policy goals, implementation mechanisms, and feedback processes within a single strategic direction. This alignment ensures that health policy operates not as a collection of isolated programs, but as an integrated system designed to manage complex and evolving risks.

The analytical framework developed in this study carries particular relevance for contexts characterized by compounded vulnerabilities, including geopolitical tension, regional disparities, and information asymmetries. In such environments, exemplified by the Korean Peninsula, the effectiveness of health policy cannot be separated from its interaction with safety governance and social stability. However, the design principles articulated here are not limited to a specific regional context. Rather, they offer a generalizable model for societies confronting the convergence of health risks and social safety challenges under conditions of uncertainty and structural complexity.

In conclusion, this study argues that health security should be repositioned as a foundational element of national social safety infrastructure. The four pillars identified—risk cascade prevention, health–welfare integration, institutional interlinkage across safety domains, and social safety–based performance evaluation—are not optional policy choices but mutually reinforcing components of an integrated risk management architecture. The absence of any one pillar undermines the coherence and effectiveness of the entire framework. Only through their cumulative and coordinated implementation can health policy move beyond a resource-supply–centered model and evolve into a governance system capable of sustaining social stability, enhancing resilience, and responding adaptively to future health-related risks.

References

Alcántara-Ayala, I. (2025). Cascading hazards and compound disasters. *npj Natural Hazards, 2*, 54. https://doi.org/10.1038/s44304-025-00111-5

Alemanno, A. (2020). The European response to COVID-19: From regulatory emulation to regulatory coordination? *European Journal of Risk Regulation, 11*, 1–10. https://doi.org/10.1017/err.2020.44

Bengtsson, L. (2018). Securitisation across borders: The case of "health security" cooperation in the European Union. *West European Politics, 42*(2), 346–364. https://doi.org/10.1080/01402382.2018.1510198

Brusin, S. (2020). Systemic resilience to cross-border infectious disease threat events in Europe. *Transboundary and Emerging Diseases, 67*(5), 1853–1863. https://doi.org/10.1111/tbed.13211

Duff, J. H., Liu, A., Saavedra, J., Batycki, J. N., Morancy, K., Stocking, B., Gostin, L. O., Galea, S., Bertozzi, S., Zuniga, J. M., Alberto-Banatin, C., Dansua, A. S., del Rio, C., Kulzhanov, M., Lee, K., Scaglia, G., Shahpar, C., Ullmann, A. J., Hoffman, S. J., Weinstein, M., & Szapocznik, J. (2021). A global public

health convention for the 21st century. *The Lancet Public Health, 6*, e428–e433. https://doi.org/10.1016/S2468-2667(21)00070-0

Eerens, D., Hrzic, R., & Clemens, T. (2022). The architecture of the European Union's pandemic preparedness and response policy framework. *European Journal of Public Health, 33*(1), 42–48. https://doi.org/10.1093/eurpub/ckac154

European Centre for Disease Prevention and Control. (2022). *Recommendations for preparedness planning for public health threats.* https://www.ecdc.europa.eu

European Centre for Disease Prevention and Control. (2023). *Lessons from the COVID-19 pandemic.* https://doi.org/10.2900/151256

Food and Agriculture Organization of the United Nations, United Nations Environment Programme, World Health Organization, & World Organisation for Animal Health. (2022). *One health joint plan of action (2022–2026): Working together for the health of humans, animals, plants and the environment.* World Health Organization. https://www.who.int/publications/i/item/9789240059139

Goda, G. S., Jackson, E., Nicholas, L. H., & Stith, S. S. (2023). The impact of COVID-19 on older workers' employment and Social Security spillovers. *Journal of Population Economics, 36*, 813–846. https://doi.org/10.1007/s00148-022-00915-z

Homer-Dixon, T., Renn, O., Rockström, J., Donges, J. F., & Janzwood, S. (2022). *A call for an international research program on the risk of a global polycrisis* (Technical Paper No. 2022-3, Version 2.1). Cascade Institute. https://cascadeinstitute.org/technical-paper/a-call-for-an-international-research-program-on-the-risk-of-a-global-polycrisis/

Kang, S. (2020). The administrative act banning gatherings in the COVID-19 era and the state's constitutional obligation to compensate for related losses. *Legislation Research, 59*, 129–176. https://doi.org/10.22851/kjlr.2020..59.005

Kim, J. B. (2010). Objectivity of constitution and national obligation to protect fundamental rights. *Public Law Journal, 11*(4), 27–58. https://doi.org/10.31779/plj.11.4.201011.002

Lee, H. J. (2021). Legal study of strengthening health care publicness in the era of COVID-19. *Law Journal, 74*, 81–106. https://doi.org/10.17248/knulaw..74.202107.81

Ortenzi, F., Marten, R., Valentine, N. B., Kwamie, A., & Rasanathan, K. (2022). Whole-of-government and whole-of-society approaches: Call for further research to improve population health and health equity. *BMJ Global Health, 7*, e009972. https://doi.org/10.1136/bmjgh-2022-009972

Parkinson, S., Moriarty, S., Pisani, K., Olumogba, F., Sykes, K., Holz, D. M., & Rodriguez Rincon, D. (2025). *Preparedness of public health laboratories for respiratory infectious diseases: EU/EEA country perspectives on lessons learned from the COVID-19 pandemic.* European Centre for Disease Prevention and Control. https://doi.org/10.2900/2054985

Saikat, S., Seifeldin, R., Zhang, Y., Nweje, M., Shivji, S., Schmets, G., Squires, N., Viso, A.-C., & Selbie, D. (2025). Governance for public health across health and allied sectors: A scoping review. *BMJ Public Health, 3*, e003542. https://doi.org/10.1136/bmjph-2025-003542

Shawa, K. C., Hollingsworth, B., & Zucchelli, E. (2024). Joint effects of ill-health, health shocks and social protection on the intensive margin of labour supply: Evidence from Malawi. *Health Economics Review, 14*, 75. https://doi.org/10.1186/s13561-024-00548-w

World Health Organization. (2013). *Health in the post-2015 development agenda: An analysis of country positions* (WHO/HSE/HEA/HSP/2013.1).

World Health Organization. (2025). *Governance for public health across the health and allied sectors: A report to guide country-level institutional capacity for essential public health functions underpinning multisectoral approaches.* https://iris.who.int/