Building health system resilience to public health challenges

Guidance for implementation in countries

World Health Organization

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Abbreviations

EPHF	essential public health function
HeRAMS	Health Resources and Services Availability Monitoring System
IHR	International Health Regulations
NHSSP	National Health Sector Strategic Plan
PHC	primary health care
SARA	Service Availability and Readiness Assessment
SDG	Sustainable Development Goal
SMART	specific, measurable, achievable, relevant, and time bound
SPAR	State Party Self-assessment Annual Reporting
STAR	Strategic Tool for Assessing Risks
WHO	World Health Organization

How to use this technical product

Below is a summary of how to use the contents of this technical product.

First familiarize yourself with the context and conceptual aspects of health system resilience	Explore the roadmap for building health system resilience, including examples of required actions, technical and strategic tools and stakeholders' roles	Utilize the decision-making flowchart and template to guide actions in applying the roadmap for building health system resilience
Section 1 and 2	Section 3	Section 3 and Annex

Executive summary

Context

Health systems are responsible for the provision of essential health services alongside protecting populations from public health challenges, including changing patterns of epidemiology and demography and large-scale shocks caused by emerging infectious threats or conflict, and the effects of climate and environmental changes. Experience has demonstrated that resilience is not an inevitable by product of any investment in health but must be intentionally operationalized with necessary input, investment and contextualization. Based on a global review, the World Health Organization (WHO) Health Systems Resilience Toolkit highlighted the scarcity of guidance on implementing the concept in national health systems.

Purpose

This technical product aims to guide national, subnational and global health actors to operationalize the concept of health system resilience for advancement of universal health coverage, health security and ultimately better health for all. It supports the translation of relevant conceptual guidance and high-level recommendations into practical actions. The specific objectives are to:

- present a concise overview of the concept of health system resilience;
- provide a roadmap outlining practical and foundational steps for building health system resilience to be adapted to different contexts;
- share examples of actions and tools, including stakeholder roles, to support country application of the roadmap.

Fundamentals of health system resilience

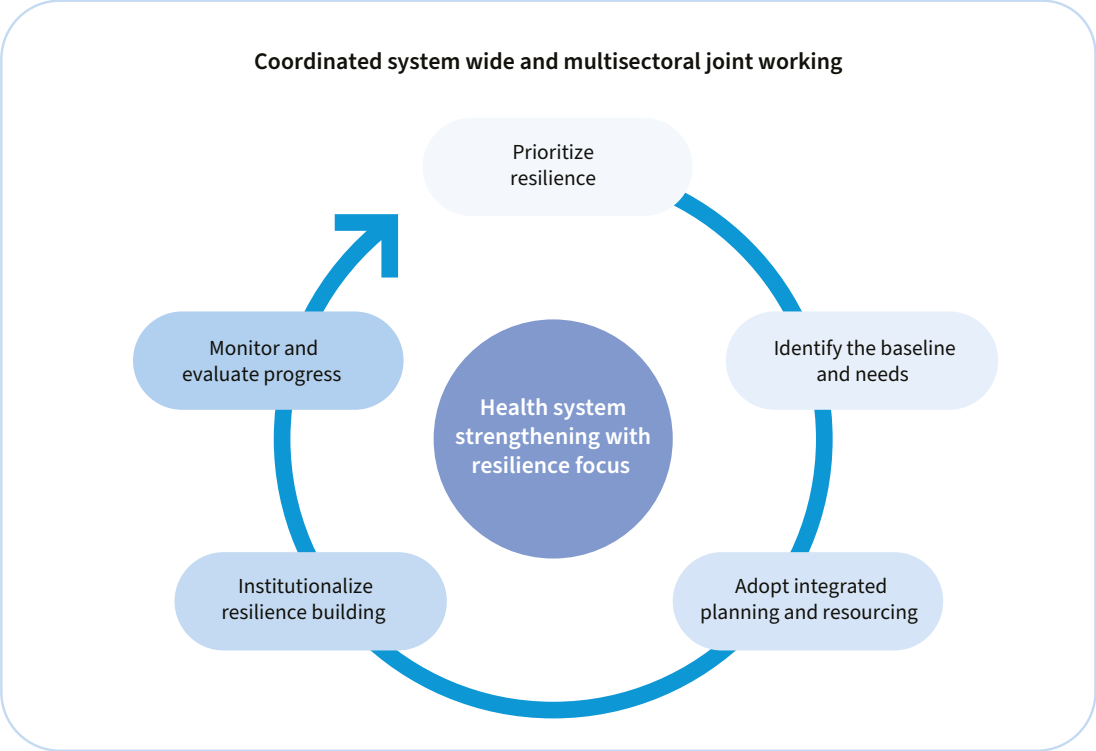
Health systems consist of the people and actions whose primary purpose is to improve health. Like any other system, all parts of the health system are interdependent and must work and be strengthened together to be effective in delivering its core functions and collaborating with other sectors to meet the health needs of people.

Health system resilience means that systems (including the institutions, infrastructure and populations) are able to anticipate, prevent, prepare for, absorb and adapt in response to, and recover from a wide variety of shocks and stressors while delivering quality individual and population health services as needed, utilizing lessons from experiences within and outside their settings to continuously improve on their baseline capacities and performance in all contexts. This is achieved through the process of strengthening health systems to deliver and maintain quality individual and population health services based on population needs in all contexts, by embedding considerations for resilience within all relevant health system components, including capacities for comprehensive and integrated delivery of public health functions and services, and ensuring the systematic capture and the systematic translation of lessons into action at all levels in health and allied sectors.[1]

1 A wide range of sectors are typically outside the health sector but significantly contribute to public health or are responsible for health determinants, for example agriculture and food, environment, transport, education, finance, urban planning, sports, and social care.

Building resilience is a continual process dependent on interconnected, proactive actions by stakeholders at all levels within and beyond the health sector. All health programmes, irrespective of their specific objectives, can contribute to resilience by using an integrated approach that strengthens the baseline health system capacities in a unified, rather than fragmented, manner. Harnessing these complementarities supports the development of resilience as a necessity for common objectives of advancing universal health coverage, health security and other interconnected Sustainable Development Goal targets.

Figure ES.1 **Roadmap for building health system resilience**



Building health system resilience: a roadmap for action

A roadmap is defined in this technical product to guide country-level actions. It will help in elucidating the status of health system capacity and capability, systematically embedding resilience-focused input and orientation, and increasing resilience in health systems (Figure ES.1).

This roadmap consists of five interconnected, interdependent and continuous steps (Figure ES.1). While some steps may overlap, the stepwise approach is important, as each subsequent step depends on the preceding steps for success. The starting point in applying the roadmap should be determined by the achievement of the preceding steps, followed by progressively working through the next steps and building on previous achievements for continuous improvements in resilience. Table ES.1 presents an example scenario of a country application of the roadmap starting from step 1.

Table ES.1 **Example scenario of country application of the roadmap to build health system resilience**

Roadmap steps	**Examples of actions** The country:
Step 1: Prioritize resilience	starts with reviewing the existing national health strategy, policy or plan from a resilience perspective through intersectoral coordination and sound understanding of the concept.
Step 2: Identify the baseline and needs	identifies critical capacities and gaps in health and allied sectors applying relevant health system resilience-focused indicators, informed by (for example) multisectoral health sector review during or after the COVID-19 pandemic, health facility assessment, post-disaster needs assessment, IHR *(2005)* Monitoring and Evaluation Framework.
Step 3: Adopt integrated planning and resourcing	uses the data from steps 1 and 2 to update existing or develop new health sector strategy, policy or plan that synergizes investments in universal health coverage, health security and other priorities, with health system resilience as a cross-cutting priority.
Step 4: Institutionalize resilience building	establishes functional intersectoral accountability with funding to implement adopted plan at all levels. This could involve an empowered role for the ministry of health, the national public health institute, One Health coordination platform and other coordinating entities.
Step 5: Monitor and evaluate progress	conducts a periodic functional review of intersectoral coordination and implementation of the plan and impact of resilience measures on health outcomes, and uses the results to inform decisions regarding the next roadmap steps to implement.

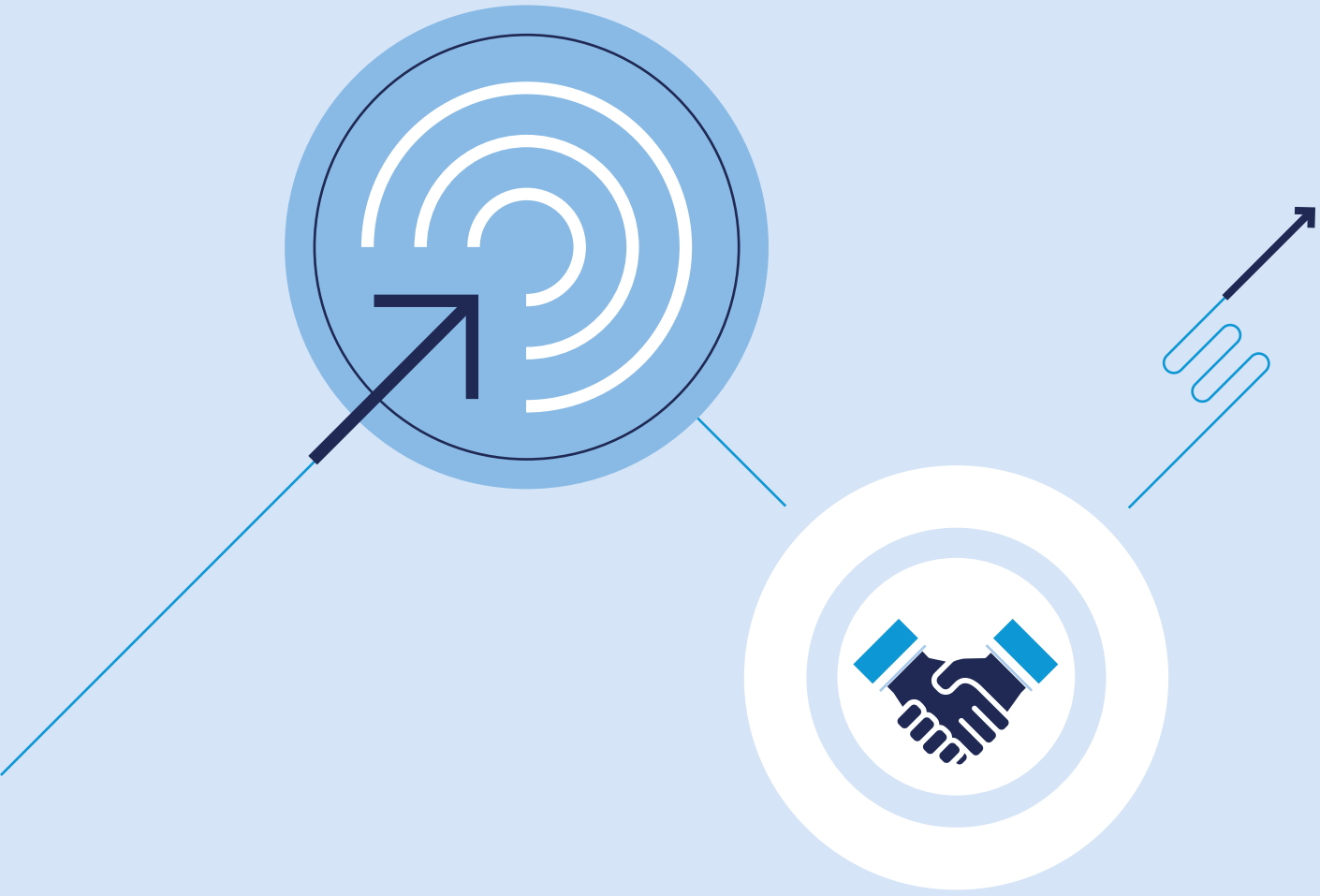
Building health system resilience requires the joint efforts of all stakeholders led by the ministry of health with support from the national public health institute (or equivalent) at all levels, each with their own unique roles and actions that cut across the process of building resilience, represented by the above roadmap. This roadmap should be applied within existing institutions, processes and programmes, ensuring progressive improvements that reflect key guiding principles: integration, sustainability and equity. It promotes primary health care and essential public health functions (EPHFs) as key requirements for making health systems more resilient.

Conclusion

As countries are reflecting on their experiences of the COVID-19 pandemic and other emergencies and conflicts, there is a window of opportunity to change the way health systems are developed, strengthened, and coordinated with other sectors. Measures of resilience should guide smart use of existing investment in health while building operational collaboration with other sectors with direct and indirect responsibility for population health. The guidance contained within this document will help countries to develop a roadmap for building health system resilience. Given the evolving and expanding landscape of public health challenges – climate change, ageing populations, rising rates of antimicrobial resistance, political instability and mass displacements – building health system resilience represents a worthwhile investment for healthier and safer populations as the foundation for stable and sustainable social development and economic prosperity.

1

Introduction



1.1 Context

Health systems are responsible for the provision of routine health services, alongside protecting populations from public health challenges, including natural and anthropogenic hazards, changing patterns of epidemiology and demography, shortages of medical products and health workers *(1)*, and supply chain deficiencies. In recent years, the need for health system resilience has become more prominent because of the increasing frequency and scale of public health emergencies, including the 2014–2016 outbreak of Ebola virus disease in West Africa and the COVID-19 pandemic, and their devastating impacts on health, society and economies. While these acute shocks highlight the need for resilience, health systems also need to develop resilience to the more prevalent and chronic stressors, including climate change-related events, economic contractions, war and conflict, antimicrobial resistance, and the growing burden of noncommunicable diseases. These stressors have arguably had more devastating impacts on populations and health system functionality, over time, than the above-mentioned shocks *(2, 3)*.

An important reflection from experiences with public health events is that resilience is not merely a by-product or an inevitable outcome of any investment in the health sector. As demonstrated over the course of the COVID-19 pandemic, across countries from various income groups, resilience is also not achieved by simply developing epidemiological capacities and building more health care facilities. Resilience must be proactively and intentionally programmed into health system strengthening and other complementary public health efforts, including those targeting health security, specific diseases, and life course-related and environmental issues. In addition, resilience-focused efforts must be contextualized, for example to the specific needs of fragile, conflict-affected, and vulnerable settings or of Small Island Developing States.

Many efforts to improve health systems and services have, however, been siloed and fragmented in their approach, resourcing, and implementation, without clear prospects for contributing to resilience. For example, despite the acknowledgement that investing in primary health care (PHC) can enable health systems to deliver essential health services and public health functions equitably and comprehensively during and beyond emergency contexts, primary care remains widely underdeveloped and underutilized. This failure to adequately consider and apply the requirements for resilience explains the persistence of foundational gaps in many health systems and their ongoing susceptibility to shocks and stressors, despite continuous investment.

Public spending on the health sector tends to be limited, with the bulk of available funding focused on curative health care rather than preventive services and promoting health and well-being *(4)*. This inadequate and often siloed investment in public health has significantly hindered the development of capacities for resilience, which is key to the attainment of universal health coverage, health security and healthier populations as interdependent objectives. In October 2021, the World Health Organization (WHO) published its position on *Building health systems resilience for universal health coverage and health security during the COVID-19 pandemic and beyond (5)* to guide Member States in recovery and building back better, fairer, and more resilient health systems. WHO regional offices, national authorities, and various agencies have also released resolutions and strategies identifying and recommending health system resilience as a priority agenda moving forward *(6–8)*. A 2023 report of the Organisation for Economic Co-operation and Development identified s underinvestment among the major health system vulnerabilities. The report recommended an annual targeted investment of 1.4% of gross domestic product to build health system resilience *(8)*.

The renewed attention and commitment provide opportunities to use the lessons from various shocks and day-to-day stressors to guide investment in health systems and enhance their ability to manage ongoing and future threats without compromising the delivery of essential services.

1.2 Purpose, approach and target audience

There is broad consensus on the principal features and attributes of health system resilience *(9)*, however, there is a gap in the availability of technical resources to support implementation at country level *(10, 11)*. This technical product has been produced to address current gaps in global guidance for national and global health actors to operationalize health system resilience, building towards the advancement of universal health coverage, health security and ultimately better health for all.

The specific objectives are to:

- provide a concise overview of the concept of health system resilience;
- provide a roadmap outlining practical and foundational steps for building health system resilience to be adapted to different contexts;
- share examples of actions and tools, including stakeholder roles, to support country application of the roadmap.

This work complements and builds on existing knowledge, technical resources, and experience in supporting countries with varying contexts to make their health systems more resilient. It should be used with reference to WHO's previous work on health system resilience, including the WHO position paper on *Building health system resilience for universal health coverage and health security during the COVID-19 pandemic and beyond (5)*, health systems resilience toolkit *(10)*, the training package *An integrated approach to building health systems resilience (12)*, health system resilience indicators *(13)*.

The document was informed by literature reviews conducted to underpin a recent synthesis of concepts of resilience to inform operationalization of health systems resilience *(9)* and the WHO Health System Resilience Toolkit *(10)*. It was developed by consolidating, building on, and complementing previous technical guidance provided by WHO on health system resilience. It represents the collective knowledge and experience of the experts involved in and consulted in its development, including their experience in supporting countries with varying contexts to make their health systems more resilient. This included experts across the three levels of WHO.

The target audience for this work is the various stakeholders involved in strengthening health systems and public health including emergency management (from prevention and preparedness to response and recovery) in countries. This ranges from the donors, policy-makers and decision-makers at global, national and subnational levels to the implementing institutions and line managers of health system functions and services across the health system building blocks.

2

Fundamentals of health system resilience

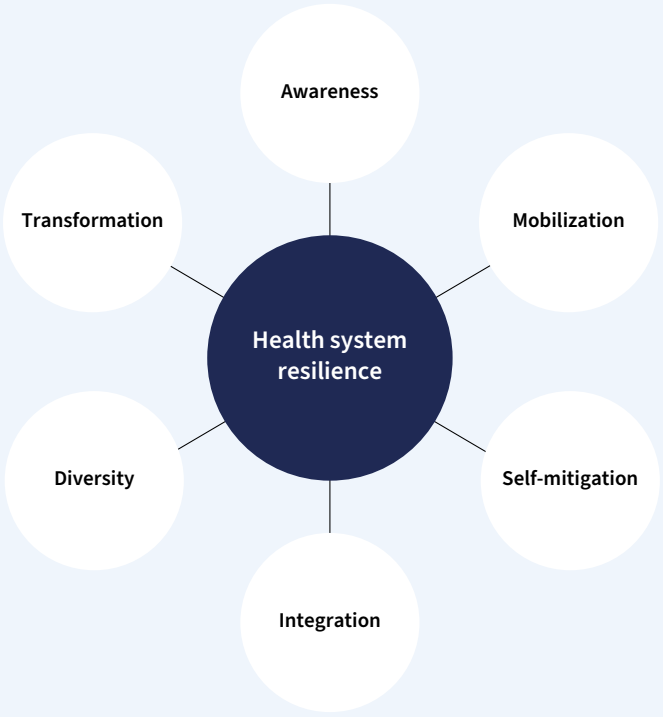
Health systems consist of the people and actions whose primary purpose is to improve health *(14)*. These elements within health systems have been organized into six interconnected building blocks: leadership and governance; health financing; health workforce; health information; medicines, other medical products, technologies and infrastructure; and service delivery, with people and communities recognized as central to decision-making and action. All parts of the health system are interdependent and must work together to be effective, ensuring necessary interlinkages with other systems that contribute to or impact health. The functionality of the health system is demonstrated in the delivery of comprehensive individual and population services to meet individual and population health needs, from prevention to palliation.

Health system resilience means that systems (including institutions, infrastructure, and populations) are capable of anticipating, preventing, preparing for, absorbing, adapting in response to, and recovering from a wide variety of shocks and stressors while delivering quality individual and population health services as needed, and utilizing lessons from experiences within and outside their settings to continuously improve on their baseline capacities and performance in all contexts *(9, 10)*. While resilience is demonstrated during public health events, it must be built over time, ideally before the shock or stressor, and further developed with each experience and learning across all the health system building blocks. Building resilience is therefore not limited to the response phase of shock events but cuts across the entire cycle from prevention to preparedness, response and recovery.

Box 1 describes the main attributes of health system resilience.

Box 1. Health system resilience attributes

The resilience of health systems can be portrayed through several attributes (see figure). These enable health systems to recognize their risks and capacities (awareness), mobilize and coordinate the required resources and support (mobilization), make the decisions required to manage risks and respond to threats, thereby limiting their negative impacts (self-mitigation), integrate health system strengthening and public health, including health security actions (integration), provide the range of services needed to meet population needs in all contexts (diversity), and apply lessons identified from experience with health system challenges and shocks (transformation). These allow health systems to anticipate risks in order to forecast, prevent and prepare as needed, and to absorb, adapt, and transform, as necessary, to maintain services while responding effectively, and – incorporating lessons learned and experience – recover quickly to a higher level of functioning.



2.1 Building health system resilience: key areas of focus

Building resilience is a continual process dependent on interconnected actions to enable, develop and sustain it (Box 2). Operationally, health system resilience is built through the process of strengthening health systems with a focus on public health and learning from shocks and day-to-day stressors in order to deliver and maintain quality individual and population health services based on population needs, in all contexts (for example, before, during and beyond shocks).

2.1.1 Resilience-focused health system strengthening

Health system strengthening includes an array of initiatives and actions that enable and develop or strengthen core health system capacities in a holistic and integrated way, ensuring proportionate focus on all components of the health system[2] and relevant risks. Integrating considerations for resilience enables continuous improvement of the functionality and ability of the health system, to sustainably meet the evolving health needs of populations served, in routine times as well as in the contexts of shocks. Health system strengthening to improve performance in routine contexts without due attention to building resilience leaves health systems highly vulnerable to potentially disruptive events, and small-scale events can easily become large-scale shocks.

Efforts to make health systems more resilient without systematically and proactively addressing the foundational gaps in health systems will at best produce short-term results at a higher cost in the long term. This kind of unbalanced and fragmented approach to resilience, which has been referred to as 'bad resilience' *(15)*, will at best produce short term results with a higher long-term cost as demonstrated through lessons from public health emergencies, including the Ebola virus disease outbreak *(2014–2016)* and the COVID-19 pandemic. Building resilience should therefore be considered as an integral part of health system foundational design or redesign, development, and operation and strengthening, rather than an external attribute to be added or developed in parallel, when health systems are faced with crises. This entails embedding consideration for resilience across health system building blocks including public health functions and ensuring continuous learning and utilization of lessons (Box 2).

2.1.2 Comprehensive and integrated delivery of public health functions and services

Investments in health systems often fail to recognize public health capacities (Box 3) as an inherent aspect of health systems and disproportionately prioritize individual hospital-based care, disease-focused interventions, and reaction to emergencies over public health as a whole *(16)*. This has meant that many health systems are not structured, equipped, or operated in a way that enables them to address everyday public health challenges and are even less likely to effectively manage unusual or disruptive events while maintaining their regular functions and services, irrespective of how well resourced they are. Efforts to strengthen, reform or rehabilitate, and stabilize health systems must therefore include comprehensive and coordinated application of public health within the health system and across allied sectors (food and environment, planning, and social services) for sustainable resilience *(17)*.

2 Strong governance and stewardship backed up with information, evidence-based legislation, policies and plans; functional mechanisms of collecting, pooling and allocating funds; competent and motivated health workforce; well maintained service delivery platforms and infrastructure; and a reliable and adequate supply of medicines, other medical products and technologies.

Box 2. Key starting points for building health system resilience

Building resilience is a process dependent on interconnected actions that cut across all contexts (routine and emergency). It is described operationally as the process of strengthening health systems to deliver and maintain quality individual and population health services in all contexts by embedding considerations for resilience within all health system components. This includes embedding capacities for comprehensive and integrated delivery of public health functions and services, and ensuring the systematic capture and translation of lessons into actions at all levels in health and allied sectors *(9)*. When countries embark upon building health system resilience, it is important they begin by embedding consideration for resilience within each health system building block. This can include (but is not limited to):

Health system building blocks	**Actions that support embedding consideration for resilience**
Leadership and governance	• Identifying a responsible entity or focal point for resilience • Ensuring a multisectoral approach to public health issues • Ensuring integration between health security and health system actors • Promoting meaningful community participation • Ensuring systematic learning from public health events • Integrating public health functions and services into the everyday functioning of health and allied sectors
Health financing	• Ensuring that resilience-building activities in routine and emergency contexts, are represented in relevant budgets, and funded
Health workforce	• Ensuring the health workforce is of sufficient number, distribution, and orientation to ensure the delivery of essential individual and population-focused health services in all contexts
Health information	• Ensuring comprehensive and integrated surveillance, assessment, and monitoring with regards to population health needs, risks, health system performance and resilience in all contexts
Service delivery	• Ensuring comprehensive delivery and continuity of quality individual and population-focused (public health) services based on population need in all contexts
Medicines, other medical products, technologies, and infrastructure	• Ensuring appropriate medicines, medical supplies and products and infrastructure are available where and when needed and support quality and continuity of services in all contexts

Box 3. Essential public health functions

The weaknesses in public health capacities demonstrated by experience with COVID-19 and other public health emergencies has led to global recognition of the role of essential public health functions (EPHFs) for advancing the interconnected agendas of universal health coverage, global health security and other Sustainable Development Goal (SDG) targets *(18)*. The EPHFs are the fundamental set of activities that must be ensured by the state (through national or subnational government entities) to support effective public health action in all contexts *(19)*. By applying the EPHFs, health systems can have public health capacities systematically integrated into their foundations, including at primary care levels, while drawing on and coordinating the required inputs of other sectors, as a necessity for building resilience. Consideration of the EPHFs in health system strengthening allows proportionate consideration for population-based health services and due focus on the social determinants of health and equity in service delivery, with a particular focus on including marginalized and hard-to-reach populations.

2.1.3 Systematic capture and translation of lessons

Learning is consistently highlighted as central to building resilience and to supporting the transformation of health systems for better resilience to ongoing and future stressors or shocks. Despite this, limited attention and resources are devoted to ensuring learning. While most if not all countries participate in the systematic capture of lessons during and after acute events (for example, intra-action and after-action reviews, independent reviews), as well as having some level of quality improvement programmes, the translation of these lessons into practice is often not systematic. In the context of COVID-19, it quickly became apparent that many of the key lessons identified from previous experience with public health emergencies at both global and national levels had not been implemented. The systematic capture and translation of lessons identified from all contexts support continuous improvement in routine times while developing agility and adaptability that supports resilience during shocks and stressors. To support resilience, translation of lessons into actions must be seen in the planning, budgeting, resourcing, and measurement processes that enable results.

2.2 Many entry points, one health system

The multifaceted nature of health system challenges (Table 1) creates various entry points, including health system strengthening for universal health coverage; preparedness for health security, climate change, or antimicrobial resistance; disease-specific or life course-specific programmes; humanitarian response and recovery; and the humanitarian–development–peace nexus. While these efforts are important for meeting different population health and programme needs, their siloed pursuit creates gaps, misses opportunities to build core capacities, and thus sustains fragmentation, frustrating the prospect of sustainable impacts.

Table 1. **Range of events that can challenge the resilience of health systems**

Type	Health system stressors and shock events			
	Disease	Environmental	Economic	Sociopolitical
Acute: sudden onset, shorter duration	New or re-emerging disease event of sudden onset and expected shorter duration, for example, Ebola virus disease	Sudden disasters, such as floods, mudslides, or impact of acute climate event affecting health	Sudden fiscal event that changes available funding for health, for example, unexpected donor withdrawal, oil price shocks	Political events forcing a sudden change in health direction, for example, coup, political insurgence, sudden conflict, attack on health facilities or workers
Chronic: gradual onset, longer duration	New or re-emerging disease event of a longer-term onset and expected longer-term duration, for example, protracted cholera outbreaks, burden of noncommunicable diseases	Effects of climate change events affecting health, for example, drought	Progressive fiscal events changing available funding for health, for example, progressively reduced donor confidence, less government health prioritization	Political events leading to slow, sustained change in health direction, for example, due to imposed health stewardship or inadequate leadership capacity Protracted conflict or humanitarian event, for example, population displacement Economic recession with donor dependency

Source: Adapted from Karamagi et al. *(20)*.

All health programmes, irrespective of their specific objectives, can contribute to resilience by including consideration of the wider health system functions in their design and implementation. This includes health system strengthening-focused approaches, such as PHC and the EPHFs. as well as other global frameworks and approaches, such as the International Health Regulations (IHR) *(2005)*, emergency and disaster risk management, the humanitarian–development–peace nexus, and disease- and life course-specific programmes.

Integrating planning, resourcing and implementation of these priorities with systems thinking strengthens the entire system (including the workforce, supply chain and service delivery platforms) in a unified rather than fragmented manner, increasing and sustaining the impact of the various investments and supporting the common objectives of advancing health security, universal health coverage, and other interconnected SDG targets.

3

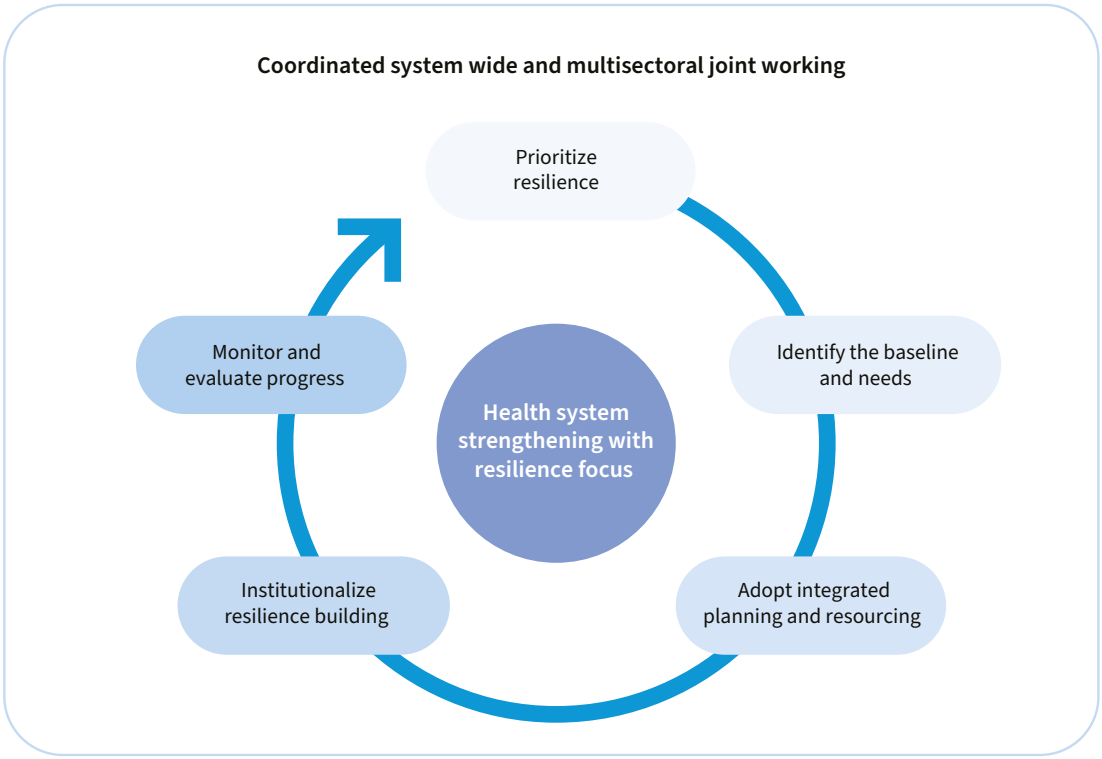
Building health system resilience: a roadmap for action

3.1 Introduction

This chapter describes what building health system resilience means in practice – what needs to be done and who should be involved.

These are explained using a roadmap (Figure 1) that provides stakeholders with steps to identify where they are and the relevant actions to take to make their health system more resilient.

Figure 1. **Roadmap for building health system resilience**



It is important to note that this is a continuous process, as resilience can and should be progressively enhanced to meet the ever-evolving challenges of health systems. The starting point in applying the roadmap should be determined by the achievement of the preceding step or steps, followed by progressively working through the next steps and building on previous achievements for continuous improvements in resilience. For example, if step 1 is already established, stakeholders can start with step 2, and so on. Where to start can therefore vary depending on the progress made in intentional efforts to build health system resilience. It is also important to note that given the interconnection between steps, some aspects may overlap or be pursued in tandem.

This roadmap does not represent a siloed or parallel approach but should be applied within existing health sector planning processes, institutions and operations. For example, it can be applied within efforts to promote PHC or emergency preparedness and response, creating a win–win situation by intentionally plugging consideration of resilience into existing priorities and programmes reflecting principles of integration, equity and sustainability (Box 4). The examples of actions indicated under each step of the roadmap are inexhaustive and focused on foundational aspects of building resilience across all building blocks of the health system. They are generic examples serving as pointers for stakeholders to apply or adapt to their contexts as needed. The more specific details of how to operationalize these examples and the indicated supportive tools will therefore depend on specific contextual considerations, including population need, existing services and delivery platforms, and risks such as those related to climate change or resulting from war or conflict.

Box 4. Key guiding principles

The following general principles should guide stakeholders in adapting the roadmap and related actions at country level.

- **Integration.** Integrated approaches to health system strengthening require intentional actions and a conscious shift from the status quo. Integration in building resilient health systems can be demonstrated by governance arrangements that promote synergies across health system components and priorities; collaborative working across disciplines and stakeholders within health and allied sectors; alignment of policies, plans, financing, operations, and monitoring and evaluation across the various entry points into the health system; institutionalized capacities at all service delivery levels for preventing, preparing for, responding to, and recovering from emergencies; and the delivery of all aspects of public health, from promotive and preventive to rehabilitative and palliative services, as needed by populations served.
- **Equity.** Health equity is a fundamental human right that is achieved when everyone can reach their full potential for health and well-being and there is an absence of unfair, avoidable, and remediable differences in health status between groups of people *(21)*. By meeting the health needs of the entire population, including vulnerable and marginalized groups, building resilience helps to reduce or even prevent the effects of disruptive public health events. This in turn supports the attainment of universal health coverage, as that cannot be achieved while health systems are frequently overwhelmed in responding to shocks and stressors. Resilience and equity are therefore mutually beneficial and reinforcing.
- **Sustainability.** Resilience is a process built over time through continuous learning and sustained investments that produce sustained benefits. Actions to build resilience have a long-term focus on systematically addressing the foundational gaps in the health system. This requires ongoing consideration within plans and mechanisms of the promotion of efficiency and effectiveness in the use of available resources, and sustainability in resourcing in order to produce broader benefits for population health and well-being, as well as socioeconomic growth and development *(8)*.

3.2 Overview of roadmap

The process begins with the recognition of the need to make the health system more resilient and establishing a common understanding of health system resilience across all key stakeholders. With this shared understanding based on lesson learned, stakeholders can better identify what is available (the baseline), what is missing (gaps), and what is needed (additional resources and actions required) to make their health system more resilient. This supports the identification of clear, focused objectives towards the common goal, which inform actions in terms of strategizing, planning, and drawing internal and external resources that leverage existing strengths and mobilize what is needed to fill the identified gaps in line with identified objectives. This is further supported by deliberately institutionalizing the key inputs and processes needed to progress and sustain resilience at all levels. Monitoring and evaluating progress towards the set objectives is of utmost importance for continuous learning, improvement and accountability. While monitoring and evaluation actions are implemented later in the roadmap, appropriate evaluative measures and approaches should be considered throughout the process. Insight into how each component of this process can be operationalized using an integrated systems approach is presented below. The approach is underpinned by public health principles (Box 5) and can be used to strengthen the role of PHC through its operational framework.

The process can be categorized into five steps, as outlined in the subsections below.

Box 5. Principles of a public health approach to health

A public health approach to health is based on the promotion of population health and well-being through the prevention of disease, the protection and promotion of health, and health service design that is based on population health needs. It is a value-based approach with a focus on equity and community engagement towards the attainment of universal health coverage. A public health approach is multisectoral, with a strong focus on actions on the determinants of health.

Step 1: Prioritize resilience

The identification of resilience as a strategic priority provides the foundation for action and engagement with the relevant stakeholders required to build resilience in health systems. There are several ways in which resilience can be identified as a strategic priority. In order to be meaningful, this should include high-level commitment to resilience as a national priority articulated within national-level documents, such as national strategies or health sector strategic plans, policies, or political statements. This should be supported by the identification of an entity with responsibility for resilience, visible at all levels, with a clear mandate, authority and support that ensures that the entity can coordinate, guide, and draw on the necessary resources and stakeholders to support resilience-building efforts. A clearly defined and accountable coordinating role enables better participation and accountability across the various stakeholders involved in building resilience.

In addition, policy-makers, leaders, managers, and other decision-makers within health and allied sectors need to create a shared understanding of what resilience means and why it is important for their context, applying lessons learned from disruptive emergencies and routine challenges. Bringing these key decision-makers together with a shared understanding of what is required to build health system resilience can influence their priority-setting actions and generate a ripple effect throughout the entire health system, supporting reorientation and competency development that enables the vital roles of all stakeholders at an operational level. Examples of ways in which conceptual clarity and understanding can be developed include advocacy workshops, training courses, and developing and disseminating relevant technical resources on health system resilience *(12)*.

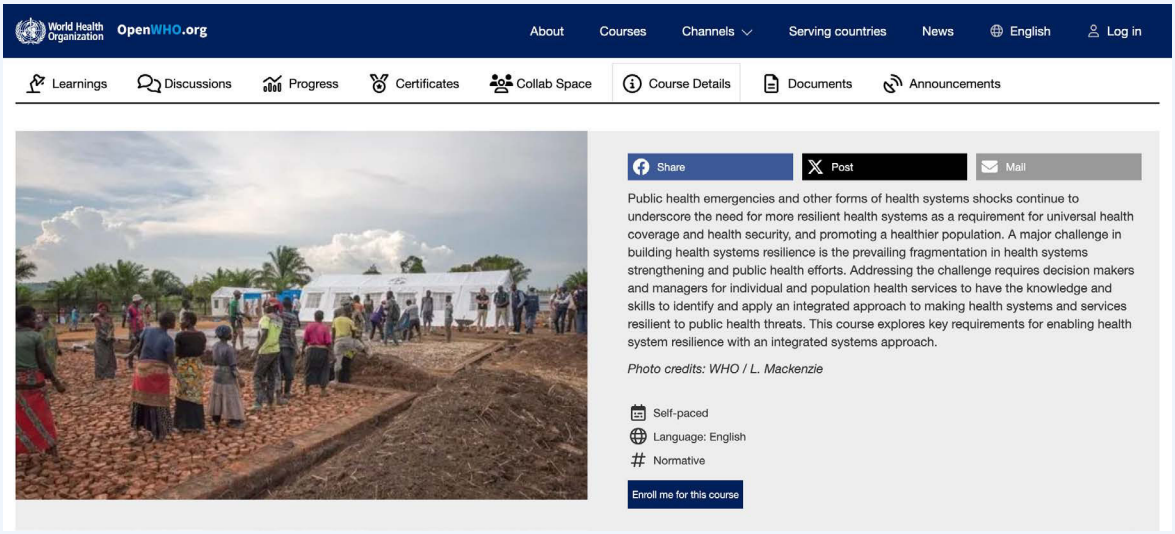
Further examples of actions to support prioritizing resilience and developing a shared understanding are outlined in Table 2, according to the health system building blocks. Box 6 provides an example of promoting a common understanding of resilience in Liberia.

Table 2. **Illustrative examples of actions and tools to support prioritizing resilience, including developing a shared understanding and commitment**

Health system building blocks	**Prioritize resilience: examples of actions** *Attributes: awareness, integration*
Leadership and governance	• Identify health system resilience as a priority in national health policies, strategies and plans • Establish and support institutional focal point or entity for health system resilience • Conduct advocacy and training to orient relevant stakeholders to health system resilience; multisectoral convening during major emergency can guide mapping of stakeholders • Establish and strengthen collaborations with global, regional and national entities with a demonstrated focus on health system resilience
Health financing	• Allocate and guide funding for development of initiatives and actions that prioritize and promote health system resilience, leveraging existing and new funding • Orient stakeholders responsible for health financing on health system resilience, define their roles, and identify longer-term dividends
Health workforce	• Review health workforce education to ensure that the workforce has the relevant skills and competencies for the public health practice that ensures health system resilience • Identify and include the public health roles of all occupational groups of health workers (including community-based health workers) when defining their responsibilities
Health information	• Support review and adaptation of indicators for health system resilience for integration in routine health information system • Create awareness among stakeholders responsible for health information management on their roles in building health system resilience
Medicines, other medical products, technologies, and infrastructure	• Provide orientation to stakeholders responsible for medical products, technologies and infrastructure on their roles in building resilience • Integrate resilience considerations in health facility development, for example, structural and environmental safety and resilience considering the risk profile of the setting
Service delivery	• Include considerations for resilience, including public health functions and services, in defining national package of essential health services • Ensure that national and subnational policies, strategies and plans on the role of services in building health system resilience are communicated at all service delivery levels and platforms, including national IHR *(2005)* focal point and other health emergency teams
Examples of technical and strategic resources and tools to support the above actions *(10)*	• Policy document, for example, policy briefs that promote prioritization of health system resilience • Training package on health system resilience targeting service provision, for example on routine health service continuity in emergency contexts • WHO health system resilience indicators, PHC monitoring framework and indicators, approach of WHO Regional Office for Africa to monitoring resilience, IHR *(2005)* Monitoring and Evaluation Framework • Case examples of service delivery models that comprehensively provide public health services, including those for emergency management

Box 6. Promoting a common understanding of resilience in Liberia

At the beginning of a multiyear project aimed at strengthening resilience in Liberia, the WHO training course *An integrated approach to building health systems resilience (12)* was used to orient leaders from the Ministry of Health and Social Welfare, national public health institutes, county health teams, health facilities, academia, professional bodies and others towards a common understanding of health system resilience *(22)*. The package aims to create greater understanding of health system resilience and its application. An online version of this course is available from OpenWHO and the package can be adapted for application within national contexts. In addition to the shared understanding that informs awareness, the adaptation and roll-out of this training package in Liberia supported resilience by building integration between health system, health security and other relevant stakeholders. The course has been incorporated into the pre-service training curricula for health workers (nurses, midwives and medical doctors) and has been used to define the scope of the national continuous professional development programme for in-service training of health workers. This demonstrates the added value of partnering with organizations and other entities that have supported conceptual and operational work on health system resilience as countries embark on understanding and applying the concept as appropriate to their context.



Step 2: Identify the baseline and needs

Building resilience requires a clear understanding of where the system is now – the current baseline. This includes the current resources and capacities of the health system, including gaps, based on an understanding of what it takes to build health system resilience. The current baseline reflects capacities (including human, financial, material, technical and political resources), performance, and gaps across the health system building blocks and other relevant sectors. It will include, for example, the current policies, plans, structures and initiatives that support an integrated approach to health system resilience, and the quantity, skills mix, occupational grouping, distribution, and competencies of the health workforce in relation to population health needs.

The required information can be obtained from a broad range of existing data sources, including routine health information systems and reports from periodic and ad hoc reviews, such as health service or facility assessments. These may include the Harmonized Health Facility Assessment, service coverage, State Party Self-assessment Annual Reporting (SPAR), Joint External Evaluation, multisectoral review during and after COVID-19, and post-disaster needs assessment. Missing information may need to be collected, depending on the data required to provide a comprehensive, coherent picture of what is currently available and what is needed to improve the resilience of the health system. Up-to-date data on ongoing (burden of diseases, risks and vulnerability) and potential population health needs should also be included in

these analyses to ensure that the resulting objectives and targets are ultimately aligned with those needs while reducing the risks of ongoing and future shocks to the health system. Lessons from health system shocks, including intra-action, after-action and other multisectoral reviews, can also provide a good indication of the real-life performance of the health system in the face of crises.

A comprehensive assessment of the baseline should present a clear picture of health system strengths and weaknesses in relation to resilience. A clear baseline also forms the basis for evidence-informed objectives, grounded in the contextual realities of a country. These should inform the collaborative identification of priorities for building health system resilience that should be refined into objectives, including both short- and longer-term targets to be achieved by stakeholders at all levels within a specific period. Consideration of appropriate measures and mechanisms to monitor and evaluate progress is essential at this stage to ensure that progress towards identified targets can be measured in a meaningful way.

Further examples of actions to support clarifying baseline capacities and setting common objectives are outlined in Table 3, according to the health system building blocks, while Box 7 presents an example of using recovery to bridge current health sector policies and planning in South Sudan.

Table 3. **Illustrative examples of actions and tools to support clarifying baseline capacities and setting common objectives**

Health system building blocks	**Identify the baseline and needs: examples of actions** *Attributes: awareness, integration*
Leadership and governance	• Coordinate with all responsible stakeholders to collect and consolidate baseline data. This includes mapping required resources and capacities across all health system components and allied sectors, reflecting population health needs and context-specific risk profiles • Utilize baseline data to inform development of national and subnational priorities and SMART (specific, measurable, achievable, relevant, and time bound) targets to guide planning, actions and collaboration for building resilience reflecting areas for improvement and strengths to maintain • Maintain up-to-date, comprehensive documentation of public health risks (for example, risk register) and population health needs at national, subnational and service delivery levels based on regular risk and population health needs assessments
Health financing	• Define current funding available within health sectors as well as those identified for wider public health within allied sectors • Map and streamline available funding to align with building resilience
Health workforce	• Map and measure the occupational groups that contribute to the delivery of essential public health services • Identify gaps in national workforce capacity to deliver the EPHFs and services
Health information	• Develop and apply an integrated framework and mechanisms for collecting and monitoring baseline data on capacities and resources in the health system to identify resource gaps and requirements • Review existing monitoring tools and platforms for their adequacy to measure health system resilience, identifying indicators to be integrated in the health information system
Medicines, other medical products, technologies, and infrastructure	• Review and identify the current state of intersectoral coordination and capacity, and gaps in medical products and supplies, technologies, and infrastructure, and set priorities to build resilience • Report the status of medicines, other medical products, technologies and infrastructure to relevant authorities
Service delivery	• Identify and communicate with stakeholders, including those at community levels, on public health risks, and state of and priorities for ensuring service continuity in routine and emergency contexts • Document and report to relevant authorities the data needed to understand the current state of service delivery in terms of availability, quality, accessibility, affordability and utilization in routine and emergency contexts
Examples of technical and strategic resources and tools to support the above actions *(10)*	• Tools for assessing population health needs • Health system resource mapping tools, for example, Health Resources and Services Availability Monitoring System (HeRAMS) *(23)* • Tools for conducting risk assessments and profiling, for example, Strategic Tool for Assessing Risks (STAR) *(24)* • Tools for assessing health system and sector performance, for example, adaptation of health system resilience indicators *(13)*, Health Systems in Transition reviews *(25)*, Service Availability and Readiness Assessment (SARA), Harmonised Health Facility Assessment *(26)* • Guidance to map and measure national workforce capacity for delivering essential public health functions *(1)*

Box 7. Using recovery to bridge current health sector policies and planning in South Sudan

Following independence, South Sudan embarked upon an ambitious plan to achieve universal health coverage and the SDGs through the implementation of the National Health Sector Strategic Plan (NHSSP) *(2017–2022)*. This plan was disrupted by a resurgence of conflict in 2016, which affected health policy processes and delayed development investments. In 2019, a Health Systems Stabilization and Recovery Plan was drafted to revitalize health development and efforts to achieve universal health coverage. The process was informed by a review of all major national health strategy documents and engagement and discussions with major stakeholders on the scope, content, focus and underpinning principles of a recovery plan. The WHO health system building blocks were used as the framework to assess health system challenges and identify strategic interventions to support the attainment of national goals. For each building block, the following questions were applied:

- What are the current capacities and critical gaps (i.e., baseline)?
- What are the key results the country wants to attain?
- What are the current bottlenecks hindering their attainment?
- What would an effective stabilization and recovery intervention entail?
- What are three to five critical interventions that will facilitate attainment of results for each intervention area?

The identified intervention areas were linked with the NHSSP 2017–2022 and humanitarian assistance in health. Note was also taken of ongoing efforts in such areas as immunization and health security; HIV, tuberculosis, malaria and other communicable diseases; and reproductive, maternal, neonatal, child and adolescent health in order to gain the maximal benefit from health system investments and health service outcomes. This kind of integrated planning, if supported by the required resources for implementation, builds resilience through strengthening integration of the needed capacities within the health system and between other relevant sectors.

Source: South Sudan Health Systems Stabilization and Recovery Plan *(27)*.

Step 3: Adopt integrated planning and resourcing

Well-integrated and effective planning is essential for achieving meaningful progress in building resilience. It entails enhancing synergy between health priorities and relevant stakeholders to avoid fragmentation and promote efficient use of limited resources. When common objectives and targets are identified, these should be used to inform strategy, planning and resource mobilization to promote a focus on resilience. Such planning facilitates the mainstreaming of considerations and requirements for resilience in the health system throughout implementation and associated resource utilization and mobilization. This can be achieved either by developing a distinct plan or strategy for health system resilience or by incorporating health system resilience as a priority within overall health sector plans, investment plans, recovery plans and humanitarian response plans. Regardless of the method, the approach and context should be consistent with the shared understanding of health system resilience achieved in step 1; should identify and build on the clear understanding of the baseline identified in step 2; and should identify opportunities to align with existing priorities and resources that could be leveraged towards the identified objectives. Box 8 provides an example of an integrated approach to policy development from Iran (Islamic Republic of).

Box 8. An integrated approach to pandemic policy development in Iran (Islamic Republic of)

In June 2022, multisectoral stakeholders were invited to participate in developing an integrated pandemic influenza and COVID-19 preparedness, response, and recovery plan for Iran (Islamic Republic of). The plan incorporated lessons from experience with the COVID-19 pandemic, as well as integrating acute respiratory infections with epidemic potential. Three multidisciplinary workshops were attended by 175 stakeholders from all relevant departments within the Ministry of Health and Medical Education and other relevant government ministries and organizations. Strategic actions were categorized according to four phases (interpandemic, alert, pandemic, and recovery). Following extensive multidisciplinary and multisectoral engagement, respective activities for each action were included, with timelines, responsible agencies, partners and budgets. In addition to promoting an integrated approach in planning for long-term resilience, the process strengthened health and emergency and disaster risk management by creating a platform to tackle multihazards.

Source: Gouya, Seif-Farahi and Hemmati *(28)*.

While good planning is essential, it must be translated into tangible actions to contribute towards health system resilience. This requires effective resource mobilization with an emphasis on maximizing the available resources and leveraging existing opportunities, while seeking increased investment to address gaps. Integrated planning supports efficient use of resources by identifying opportunities to align investments across all areas to contribute to the broader goal of strengthening the health system, achieving more lasting results within the same investment.

Further examples of actions to ensure integrated planning and resource mobilization and utilization are outlined in Table 4, according to the health system building blocks. Box 9 considers opportunities to leverage resources to maximize their use for resilience.

Table 4. **Illustrative example of actions and tools to support integrated planning and resource mobilization and utilization**

Health system building blocks	**Adopt integrated planning and resourcing: examples of actions** *Attributes: integration, mobilization, self-mitigation, diversity*
Leadership and governance	• Apply an integrated approach to health sector planning and budgeting by considering diverse and interrelated population health needs, including health security, specific diseases, life course, antimicrobial resistance, climate change • Promote integrated planning through joint working between stakeholders within and beyond the health sector, promoting alignment, efficiency and integration of resources • Identify and utilize multisectoral, whole-of-government and community platforms to coordinate and mobilize support to comprehensively strengthen public health capacities (beyond emergency response) • Define and plan an essential package of services that reflect population health needs and risk profile resources, including innovations at all levels
Health financing	• Identify and fund budget lines for specific input and actions that catalyse health system resilience, leveraging existing funding streams to address health system gaps • Promote investments in resilience by highlighting the long-term economic benefits • Ensure integrated approach to financing, leveraging available resources, for example from response to emergencies or crises towards broader health system strengthening, avoiding duplication of efforts and closing gaps

Table 4 (continued). **Illustrative example of actions and tools to support integrated planning and resource mobilization and utilization**

Health system building blocks	**Adopt integrated planning and resourcing: examples of actions** *Attributes: integration, mobilization, self-mitigation, diversity*
Health workforce	• Plan for the needed workforce requirements and development with clear budget lines to address existing and anticipated gaps • Maintain regular roster of multidisciplinary workforce shared between different catchment areas for surge capacity • Allocate resources to support and enable the workforce to provide the full range of public health services
Health information	• Identify necessary resources (within health and allied sectors) to develop capacity for measuring resilience as part of the routine health information system • Analyse available relevant routinely monitored indicators to monitor and evaluate resilience, for example, outpatient and other health service utilization in emergency contexts • Adapt and institutionalize additional indicators from existing resources, as needed
Medicines, other medical products, technologies, and infrastructure	• Develop list of essential medicines and medical products reflective of the risk profile and health needs of the population served • Leverage and fast-track innovation for long-term health system strengthening • Ensure flexibility to pull resources from various sectors, including the private sector, to address emergency health needs
Service delivery	• Participate in developing plans for routine health service continuity in emergency contexts, integrated with emergency management planning • Work with collaborative interdisciplinary teams to provide comprehensive and holistic services, as needed by the individuals and population served • Establish and utilize two-way referral systems that ensure that primary care facilities (as the first point of contact for most people) can refer seamlessly to other service delivery platforms
Examples of technical and strategic resources and tools to support the above actions *(10)*	• Tools on integrated planning, including budgeting and monitoring and evaluation aspects • Guidance on identifying and sustainably engaging relevant multisectoral stakeholders • Integrated health sector plans, investment case

Box 9. Maximizing resource use for resilience: opportunities to leverage available resources

It is important to note that while increased investments are likely to be necessary for building resilience, success is more dependent on making smarter use of the available resources, whether they are from domestic or external sources. Resources are inherently limited; therefore, their allocation should aim to produce the greatest benefit by addressing foundational gaps, sharing of infrastructure (for example, laboratory systems, supply chain, interoperable data sharing), and strengthening the system to serve the multiple health needs of the population, with a focus on efficiency, cost–effectiveness and sustainability in addition to health outcomes. Opportunities for mobilizing support for resilience by leveraging existing resources include the following.

- **Adapting existing investments in health security, disease-specific and population-specific programmes.** In most settings, health sector investments are focused on only a few of the range of public health challenges facing the health system, such as specific diseases or acute emergencies. More could be achieved in terms of lasting impacts with the same resources if investments were harnessed to coherently contribute to broader health system strengthening and resilience alongside their specific objectives. This requires integrated planning based on clear resource mapping to identify and fill the gaps in health system resources for short-term objectives as well as the longer-term goals of strengthening the system. In countries dependent on external support, this integrated approach can contribute to greater self-reliance, developing the ability to tackle future public health challenges.
- **Leveraging ongoing humanitarian response efforts.** Around 25% of the world's population are living in settings that are fragile, conflict affected and vulnerable, and the protracted nature of many of these crises requires prolonged support from multiple donors, sectors and partners at global and country levels. The humanitarian–development–peace nexus provides an approach to transition these response-focused efforts towards recovery, stabilization and health system strengthening. Coordinating and integrating humanitarian, development and peacebuilding efforts to address foundational health system gaps make the affected health systems incrementally more resilient over time. For example, application of the humanitarian–development–peace nexus is currently being promoted as a means of leveraging scarce resources to drive the rebuilding of health systems and tackle the underlying drivers of crises in the context of fragility, conflict and vulnerability in Africa *(29)*.
- **Harnessing existing health sector and multisectoral platforms.** The various multisectoral platforms in countries, including One Health platforms, disaster risk management forums, health clusters, and health sector working groups, represent key resources that can be leveraged to mobilize the support and resources needed to ensure better resilience in health systems. The presence of a wide range of stakeholders from health and other sectors provides an excellent opportunity to promote and coordinate resilience efforts, positioning health as central to national agendas for socioeconomic development, with the participation of all sectors *(30)*. Local resilience forums in the United Kingdom provide a multiagency platform tasked with providing a systematic, planned and coordinated approach to emergency preparedness and response, from the development of risk profiles to emergency and contingency planning *(31)*. These platforms help to institutionalize resilience at local levels while driving integrated policy and planning.
- **Leveraging existing political momentum for recovery and resilience building.** Large-scale shocks and other health sector challenges can set the stage for effective recovery and building back more resilient health systems by leveraging the substantial investments in health, heightened political impetus at national and global levels, and stronger collaborations between actors within and beyond the health sector seen during public health events. Socioeconomic recovery agendas following health crises can also provide an important platform to improve health system and public health capacities beyond the pre crisis baseline, using a multisectoral approach. For example, lessons from the COVID 19 pandemic are informing health sector reviews using the EPHFs with the aim of better positioning of public health in health sector policy, infrastructure and services to enable more effective action against ongoing and future public health challenges.

Step 4: Institutionalize resilience building

The aim of investing in health system resilience includes but goes beyond meeting short-term targets. Ensuring sustained focus on the longer term is achieved by institutionalizing the actions and capacities that support resilience into all components of the health system and allied public health sectors. This can be achieved by intentionally orienting health systems and other relevant organizational structures using resilience as a key consideration to inform their structure, roles and responsibilities, and introducing ways of working that encourage prioritization and integration of efforts contributing to resilience as part of routine ways of working. This is further supported by defining the roles, responsibilities and required resourcing of all stakeholders within and outside the health system, ensuring that all health system components are adequately resourced to support resilience in coordination with other components and relevant sectors.

As articulated within the WHO Operational Framework for Primary Health Care *(32)*, a strong PHC orientation of health systems can promote resilience by enabling the delivery of essential public health functions and services at primary and other levels of care with whole-of-society engagement and greater involvement of communities in health policy- and decision-making. Health promotion, risk communication, disease prevention and surveillance, contact tracing, screening and testing, vaccination, community engagement, and other population-focused services are most effective when anchored at primary care level, including within community-based platforms *(33, 34)*.

Further examples of actions to support institutionalizing priority actions that build resilience are outlined in Table 5, according to the health system building blocks. Box 10 presents examples of applying a systems approach to strengthening collaboration between health systems and health security in Liberia and Ethiopia, while Box 11 provides information on the WHO Health Systems Resilience Toolkit.

Table 5. **Illustrative examples of actions and tools to support institutionalizing resilience building**

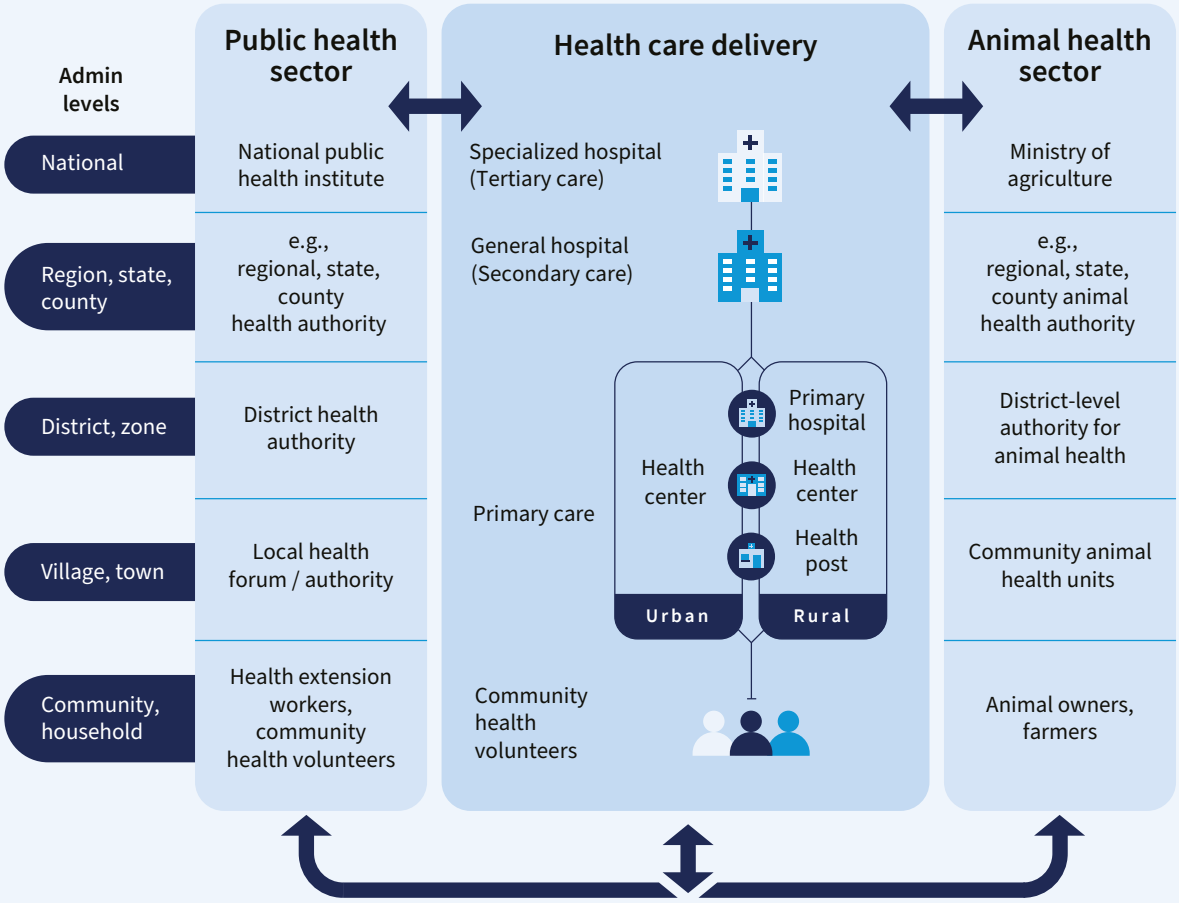
Health system building blocks	**Institutionalize resilience building: examples of actions** *Attributes: integration, self-mitigation, diversity, transformation*
Leadership and governance	• Use and sustain resilience considerations in deciding the organization, roles and responsibilities of institutions such as ministries of health, public health institutes and health facilities • Establish and sustain mechanisms and structures for coordinating multidisciplinary and multisectoral inputs in building health system resilience • Institutionalize joint planning, monitoring and evaluation, coordination, and information-sharing mechanisms between health and other relevant sectors at all administrative and service delivery levels • Establish mutual aid arrangements to share resources between health facilities and subnational and national authorities for emergency management and routine service continuity when needed • Establish mechanisms to recognize and prioritize the contribution of communities and civil society organizations not only during crises but also in addressing routine health system challenges • Ensure that packages of essential health services and health sector, health security and disease-specific strategies, plans and initiatives reflect the vital roles of public, private and community-based service providers in identifying and managing public health risks, at all levels of care
Health financing	• Proportionately allocate available funds to public health capacities of health systems, including contingency funding for service continuity during emergency contexts, and sustain levels of funding • Maintain locally accessible contingency funding • Routinely test and improve the financing systems to withstand shocks to the health system

Table 5 (continued). **Illustrative example of actions and tools to support institutionalizing resilience building**

Health system building blocks	**Institutionalize resilience: examples of actions** *Attributes: integration, self-mitigation, diversity, transformation*
Health workforce	• Ensure that national health workforce planning, recruitment and retention includes the necessary skills mix and availability for health system resilience • Integrate competencies for practice activities to deliver the essential public health functions in pre- and in-service training of all occupational groups of health workers • Institutionalize mechanisms to ensure occupational health and safety and the well-being of health workers in all contexts
Health information	• Conduct routine monitoring and evaluation of resilience for evidence-driven decision-making and actions • Establish and institutionalize mechanisms for monitoring the impact of health system resilience efforts on population health and socioeconomic outcomes • Establish interoperability of data sources and data-sharing arrangements between and across health and allied sectors, authorities, and service delivery levels • Routinely test and improve the information system to withstand shocks to the health system
Medicines, other medical products, technologies and infrastructure	• Preposition medical products with capacity for a responsive supply chain based on population risk profile and health needs • Establish mechanisms for routinely identifying and troubleshooting issues related to procurement and supply chain management, including standard operating procedures and regular testing through simulation exercises • Establish regulatory mechanisms to ensure the implementation of policies, guidelines and standards on medicines and health infrastructure
Service delivery	• Integrate the EPHFs in the delivery of health services at all levels according to an essential package of health services, applying innovative and appropriate health technologies that can facilitate a holistic approach to quality service delivery • Ensure functional referral connections, including with the national IHR focal point, between community-based health services, primary care facilities and hospital care, with capacity for managing public health threats • Institute mechanisms to enable individuals, families and communities to provide feedback on quality health services (for example, patient complaint forms), and utilize the feedback in improvement efforts
Examples of technical and strategic resources and tools to support the above actions *(10)*	• Case examples on institutionalization of health system resilience-focused actions • Up-to-date repository of lessons identified from experience with public health challenges • Guidelines and tools for integrating health system resilience considerations in planning and financing

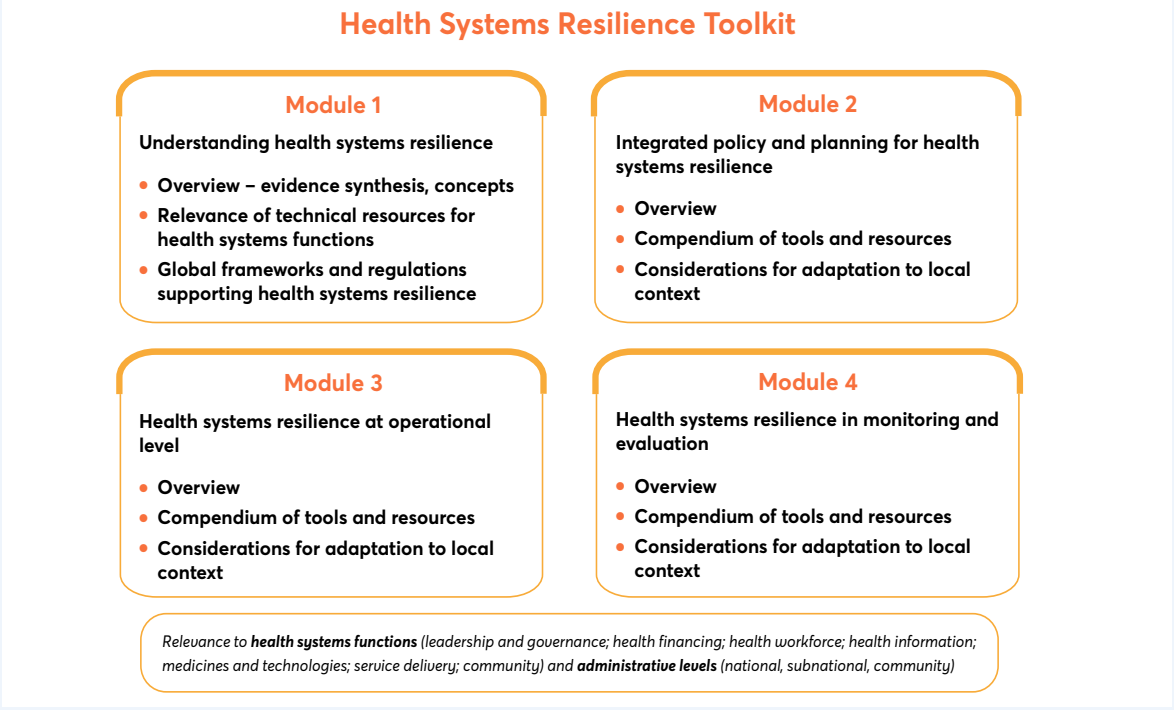
Box 10. Applying a systems approach to strengthening collaboration between health systems and health security in Liberia and Ethiopia

The figure below illustrates a model that is being taken forward in countries through a health system resilience project to improve horizontal and vertical synergies between health service delivery, public health entities and the animal sector. A systems approach was applied to the national referral system, examining the entire referral system from remote primary care centres and their affiliated community health workers to tertiary centres. In addition, the delivery architecture for public health and the veterinary sector at all levels was mapped. This supported the development of alignment and collaboration within and across these structures. This approach can be adapted and further expanded to include other relevant sectors based on contextual considerations, with clear and supporting policies and guidance for its operationalization.



Box 11. WHO Health Systems Resilience Toolkit

The WHO Health Systems Resilience Toolkit is a consolidated reference package containing technical tools to support countries in strengthening resilience at national and subnational levels, from policy and planning, through operational and service delivery, to monitoring and evaluation. When objectives and actions to promote resilience are identified, specific technical tools that support the integrated approach outlined in this document can be found within the toolkit



Step 5: Monitor and evaluate progress

Resilience needs to be proactively monitored and evaluated. This can be done to some degree by leveraging existing health system performance monitoring frameworks and national health information systems. However, many are too siloed in their scope and focus to adequately measure resilience. This may be due to limitations in health information systems or availability and quality of data, or lack of clear indicators that are identified and regularly tracked with the aim of monitoring and evaluating resilience in the system and proactively addressing any gaps identified. Examples of resources developed with a focus on resilience include the health system resilience indicators package *(13)*, the WHO PHC monitoring and evaluation framework *(35)*, and the WHO Regional Office for Africa's tool for assessing inherent health system resilience[3] *(20)*. The recent IHR *(2005)* Joint External Evaluation and SPAR reviews have further developed health system resilience-related indicators, building on the previous SPAR capacity 9 on health service provision.

As for other areas of work in building resilience, these and other measurement efforts need to be systematic and coherent, and appropriate for each context while avoiding creation of parallel systems. The choice of appropriate indicators therefore needs to be informed by consideration of some key features, including representation across all health system building blocks; proactive application before, during and after shock events; measurement of requirements for health system resilience attributes; inclusion of input, process, output, outcome and impact indicators; applicability at national, subnational and health facility levels; and inclusion of public and private entities at all levels of care, including primary care.

Further examples of actions to ensure monitoring and evaluating progress towards objectives are outlined in Table 6, according to the health system building blocks.

3 Inherent health system resilience is a new term used to describe the ability of the health system to respond to day-to-day stressors and challenges.

Table 6. **Illustrative example of actions and tools to support monitoring and evaluating progress towards objectives**

Health system building blocks	**Monitor and evaluate progress: examples of actions** *Attributes: integration, transformation*
Leadership and governance	• Mandate accountability for health system resilience, for example, monitoring of health service continuity and utilization in routine and emergency contexts • Establish mechanisms to collect feedback from service delivery levels and communities as partners in health – routinely and during emergencies – including integrated after-action reviews and routinely testing the resilience of the health system through simulation exercises at all levels • Document and systematically utilize data and lessons identified from shocks and simulation exercises to inform policies and planning, resource mobilization and allocation in recovery and building back a more resilient health system
Health financing	• Finance integrated and interoperable information management systems that inform actions for resilience • Monitor the allocation and use of intersectoral funds towards shared objectives and ensure accessibility of the information for decision-making and actions
Health workforce	• Monitor indicators[4] identified for workforce planning and development and ensure accessibility of the information for decision-making and actions • Monitor the well-being of health workers and their families during and after emergency deployment and ensure accessibility of the information for decision-making and actions
Health information	• Regularly monitor the functionality of the health information system to capture requirements for health system resilience comprehensively, including EPHFs, community trust, and service access, quality, and utilization • Monitor indicators of resilience in the health system, including impact on health system functionality and population health, for example, maintenance and utilization of health services in emergency contexts • Monitor the utilization of health information in policy, planning and actions
Medicines, other medical products, technologies and infrastructure	• Monitor medical products, technologies and infrastructure development, availability and use, considering their impacts on resilience • Monitor the availability and functionality of regulatory mechanisms for medical products, technologies and infrastructure for supporting resilience
Service delivery	• Document and report on relevant indicators for health system resilience in a complete, accurate and timely manner • Conduct and participate in regular simulation exercises and after-action reviews to test and review implementation of health service continuity plans in emergency contexts and utilize the findings to improve as needed
Examples of technical and strategic resources and tools to support the above actions *(10)*	• Integrated monitoring and evaluation tools and indicators for measuring health system resilience • Simulation exercise package for testing health system resilience • Guidance for conducting intra- and after-action reviews using an integrated approach

4 National Health Workforce Accounts has a set of indicators that can be adapted in countries using a systems approach.

3.3 Consolidated matrix of actions and decision-making flowchart to support application of the roadmap

The matrix presented in Table 7 presents high-level actions summarizing and combining the more detailed examples in Tables 2–6. It includes the examples of types of strategic and technical resources that countries would need to support application of the roadmap (as presented in Tables 2–6). Many of the listed resources or related materials can be found in the WHO Health Systems Resilience Toolkit.

Table 7. **Summary of examples of actions to build resilience across the five steps of the roadmap and health system building blocks**

Health system building blocks	Prioritize resilience	Identify the baseline and needs	Adopt integrated planning and resourcing	Institutionalize resilience building	Monitor and evaluate progress
Leadership and governance	• Adapt health sector policies based on shared understanding of and commitment to building health system resilience • Designate a focal point for multisectoral coordination based on adapted policy	• Convene multisectoral scoping of the baseline for prevailing health system capacities, gaps, and cross-sectoral bottlenecks	• Coordinate between responsible stakeholders to undertake integrated planning with a focus on long-term health system resilience building	• Embed and sustain focus on resilience in institutions and operations within and beyond the health sector	• Utilize available data and identified lessons to inform decision-making
Health financing	• Leverage existing and new funding to support activities for system resilience	• Identify intersectoral funding available to support the shared objectives	• Align and mobilize intersectoral funding to avoid duplication and gaps	• Sustain optimum funding for health sector (including contingency funding for service continuity) with proportionate focus on public health capacities	• Monitor the allocation and use of intersectoral funds towards shared objectives

Table 7 (continued). **Summary of examples of actions to build resilience across the five steps of the roadmap and health system building blocks**

Health system building blocks	Prioritize resilience	Identify the baseline and needs	Adopt integrated planning and resourcing	Institutionalize resilience building	Monitor and evaluate progress
Health workforce	• Include appropriate skills mix and competencies for health system resilience in workforce development	• Identify the workforce within health and allied sectors that deliver essential public health functions and services	• Plan for workforce requirements and development with clear budget lines to address existing and anticipated gaps	• Ensure current and future needs assessments, strategies and institutions on health workforce maintain a focus on health system resilience	• Monitor indicators[5] identified for workforce planning and development
Health information	• Support integration of resilience measurement as part of routine health information system	• Review existing monitoring tools and platforms for their adequacy to measure health system resilience • Select appropriate health system resilience indicators for integration in health information system	• Identify necessary resources (within health and allied sectors) to develop capacity for measuring resilience as part of routine health information system	• Embed a focus on resilience in routine monitoring of health system functions and services • Establish data-sharing arrangements between and across health and allied sectors	• Monitor indicators of resilience in health system, including impact on health system functionality and population health in all contexts
Medicines, other medical products, technologies, and infrastructure	• Orient responsible stakeholders and processes on their role in health system resilience based on lessons learned from disruptive events	• Review and define current state of intersectoral coordination and capacity, and gaps in medical products and supplies, technologies and infrastructure, and set priorities to build resilience	• Pull resources from various sectors to address critical ongoing and emergency needs, with shared accountability for mutual aid	• Define standard operating procedures between responsible stakeholders to ensure routine interdependence, interoperability, mutual aid provision and surge capacity in supplies and logistics and infrastructure	• Monitor medical products, technologies and infrastructure development and use, considering their impacts on resilience

5 National Health Workforce Accounts has a set of indicators that can be adapted in countries using a systems approach.

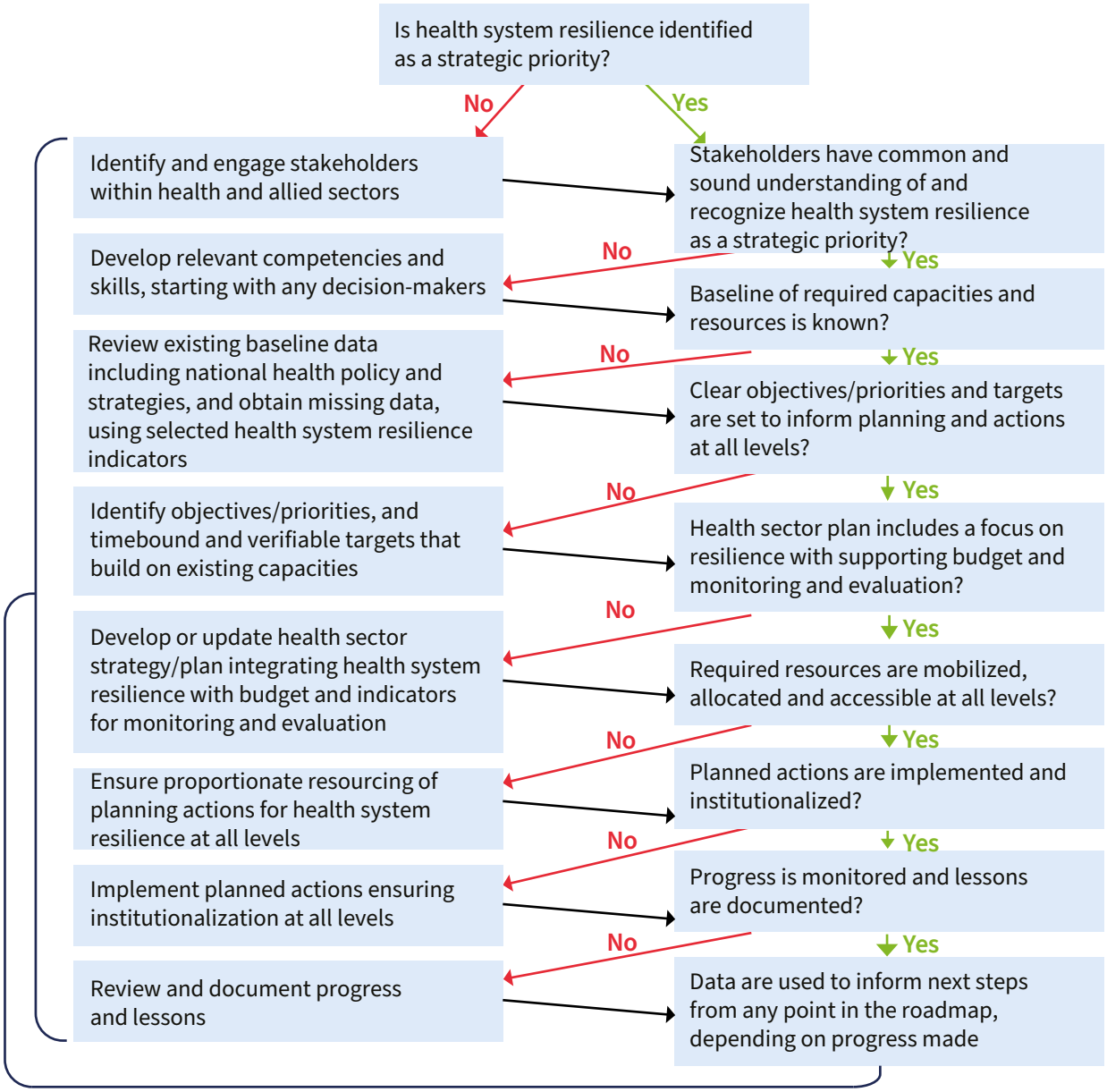
Table 7 (continued). **Summary of examples of actions to build resilience across the five steps of the roadmap and health system building blocks**

Health system building blocks	Prioritize resilience	Identify the baseline and needs	Adopt integrated planning and resourcing	Institutionalize resilience building	Monitor and evaluate progress
Service delivery	• Include considerations for resilience, including public health functions and services, in defining national package of essential health services	• Identify public health risks and state of and priorities for service continuity in routine and emergency contexts	• Plan for routine health service continuity in emergency contexts, integrated with emergency management planning • Identify collaborative mechanisms needed to deliver comprehensive and integrated health services as needed by the individuals and population served	• Embed public health functions and services in the day-to-day delivery of health services at all levels, including primary care • Mainstream health service continuity planning in health sector policy and planning, including in emergency preparedness and response	• Report on indicators of health system resilience relevant to health service delivery levels
Examples of technical and strategic resources and tools to support the above actions	• Policy documents, for example policy briefs that promote prioritization of health system resilience • Training package on health system resilience targeting service provision, for example on routine health service continuity in emergency contexts • WHO health system resilience indicators, PHC monitoring framework and indicators, approach of WHO Regional Office for Africa to monitoring resilience, IHR monitoring and evaluation	• Tools for assessing population health needs • Health system resource mapping tools, for example, HeRAMS *(23)* • Tools for conducting risk assessments and profiling, for example, STAR *(24)* • Tools for assessing health system and sector performance, for example, adaptation of health system resilience indicators *(13)*, Health Systems in Transition reviews *(25)*, Service Availability and Readiness Assessment (SARA), Harmonised Health Facility Assessment *(26)*	• Tools on integrated planning, including budgeting and monitoring and evaluation aspects • Tools for identifying and engaging relevant multisectoral stakeholders in planning and resource mobilization • Integrated health sector plans and investment case	• Case examples on institutionalization of health system resilience-focused actions • Up-to-date repository of lessons identified from experience with public health challenges • Guidelines and tools for integrating health system resilience considerations in planning and financing	• Integrated monitoring and evaluation tools and indicators for measuring health system resilience • Simulation exercise package for testing health system resilience • Guidance for conducting intra- and after-action reviews using an integrated approach

In identifying requirements for health system resilience, stakeholders should be mindful of the interconnectivity and interdependence of the building blocks. None of the activities can be successfully implemented by acting on just one component of the health system; collective, coordinated support from all relevant building blocks is essential. People and their communities must also remain at the centre of all actions across the health system and roadmap. The above examples of actions can be adapted and expanded to address the situation and needs in various contexts. For example, they can be used to define the package of support that internal and external stakeholders can work together to deliver. They can also serve as a reference to define the technical resources needed to support health system resilience in a country and in identifying which and how stakeholders can contribute to developing and implementing the required tools.

Figure 2 presents a simplified flowchart to further support stakeholders in making decisions on application of the roadmap for building resilience in their health systems. Depending on the response to each stage, decision-makers can identify the next steps to focus on while referring to Table 7 above for examples of required actions for that step. Box 12 provides an example scenario of country-level actions based on the steps in the roadmap.

Figure 2. **Flowchart to support stakeholders in making decisions on application of the roadmap for building health system resilience**



Box 12. Example scenario of country application of the roadmap to build health system resilience

Below is an example scenario of country-level actions based on the steps in the roadmap. In this scenario the country's response to the first question ("Is health system resilience identified as a strategic priority?") in the decision-making flowchart in Figure 2 is "No". The country therefore progressively applies each step of the roadmap, with each step building on the previous step.

Roadmap steps	**Examples of actions** The country:
Step 1: Prioritize resilience	starts with reviewing the existing national health strategy, policy or plan from a resilience perspective through intersectoral coordination and sound understanding of the concept.
Step 2: Identify the baseline and needs	identifies critical capacities and gaps in health and allied sectors applying relevant health system resilience-focused indicators, informed by (for example) multisectoral health sector review during or after the COVID-19 pandemic, health facility assessment, post-disaster needs assessment, IHR *(2005)* Monitoring and Evaluation Framework.
Step 3: Adopt integrated planning and resourcing	uses the data from steps 1 and 2 to update existing or develop new health sector strategy, policy or plan that synergizes investments in universal health coverage, health security and other priorities, with health system resilience as a cross-cutting priority.
Step 4: Institutionalize resilience building	establishes functional intersectoral accountability with funding to implement adopted plan at all levels. This could involve an empowered role for the ministry of health, the national public health institute, One Health coordination platform and other coordinating entities.
Step 5: Monitor and evaluate progress	conducts a periodic functional review of intersectoral coordination and implementation of the plan and impact of resilience measures on health outcomes, and uses the results to inform decisions regarding the next roadmap steps to implement.

3.4 Key stakeholders and their roles

Building health system resilience requires the joint efforts of all stakeholders at all levels, each with their own indispensable, unique roles that must be harmonized towards their shared objectives.

Examples of stakeholder roles for each level, to facilitate the intentional orientation of systems towards resilience, are summarized in Table 8. These cut across the entire process of building resilience and the relevant actions presented in the above subsections on the roadmap and indicative actions.

Table 8. **Key stakeholders in building health system resilience**

Stakeholders	Examples of roles in health system resilience
Global stakeholders (for example, international donors, United Nations agencies, professional bodies, international humanitarian organizations)	• Guiding global health agenda towards health system strengthening and emergency preparedness and response for resilience • Defining norms and standards • Funding, technical support • In low-resource or humanitarian settings, providing and maintaining essential health services
National and subnational (regional, county, state, zonal, district, local) stakeholders (public and private), for example, national and subnational health and public health authorities, health facilities, academic institutions, allied non-health authorities (such as agriculture, transport, security, water, environment, education), businesses, religious organizations, nongovernmental organizations Local stakeholders (public and private), community leaders, religious groups and leaders, primary care facilities, community-based health workers, civil societies, businesses, schools, local authorities in non-health sectors (such as agriculture, transport, security, water, environment, education), nongovernmental organizations	• Political commitment for prioritizing health system resilience in policies, strategies, plans, interventions • Essential individual and population health service delivery in all contexts • Designating health system resilience functions within health system strengthening and health security structures • Engagement and coordination with all stakeholders and joint resource mapping and mobilization towards health system resilience (whole of society, whole of government) • Allocation of required resources for emergency preparedness and response and building resilience • Capacity-building for health system resilience, emergency preparedness and response towards resilience • Data sharing to inform health system response to public health emergencies and resilience building • Documenting and sharing experience for joint learning and improvement

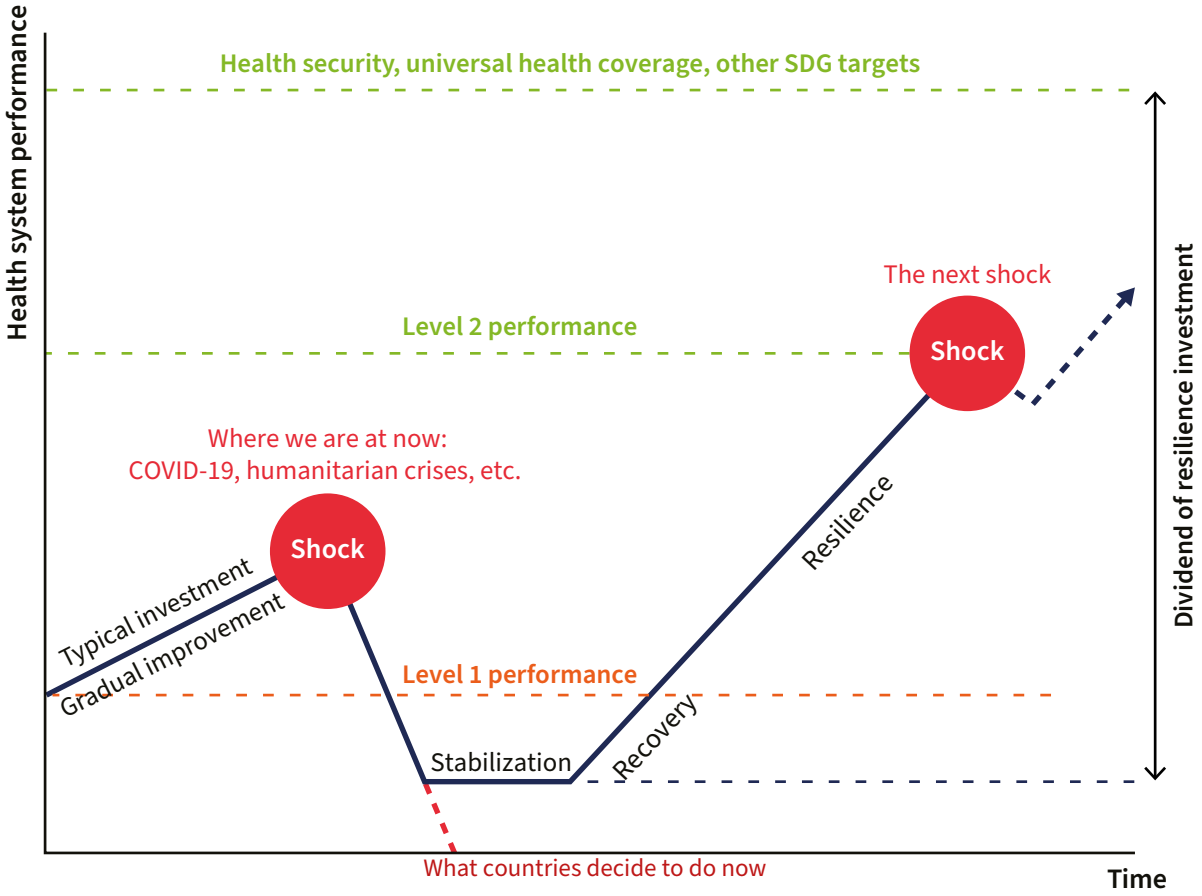
3.5 Signs of progress in building health system resilience

Building health system resilience is a continuous process with incremental changes and benefits (Figure 3) that lead to overall improvements in population health through advancement of universal health coverage and health security in tandem. Based on the definition and attributes of health system resilience, changes that can be expected when operationalizing resilience in health system include timely, effective and efficient demonstration of the following.

- Public health risks (including associated hazards and vulnerabilities) and the available resources and capability to tackle them are known by stakeholders at all levels (awareness), with up-to-date information available and utilized for decision-making. This means more proactive anticipation and management of context-relevant risks with involvement of all stakeholders at national to subnational, community and service delivery levels, including primary levels of care.

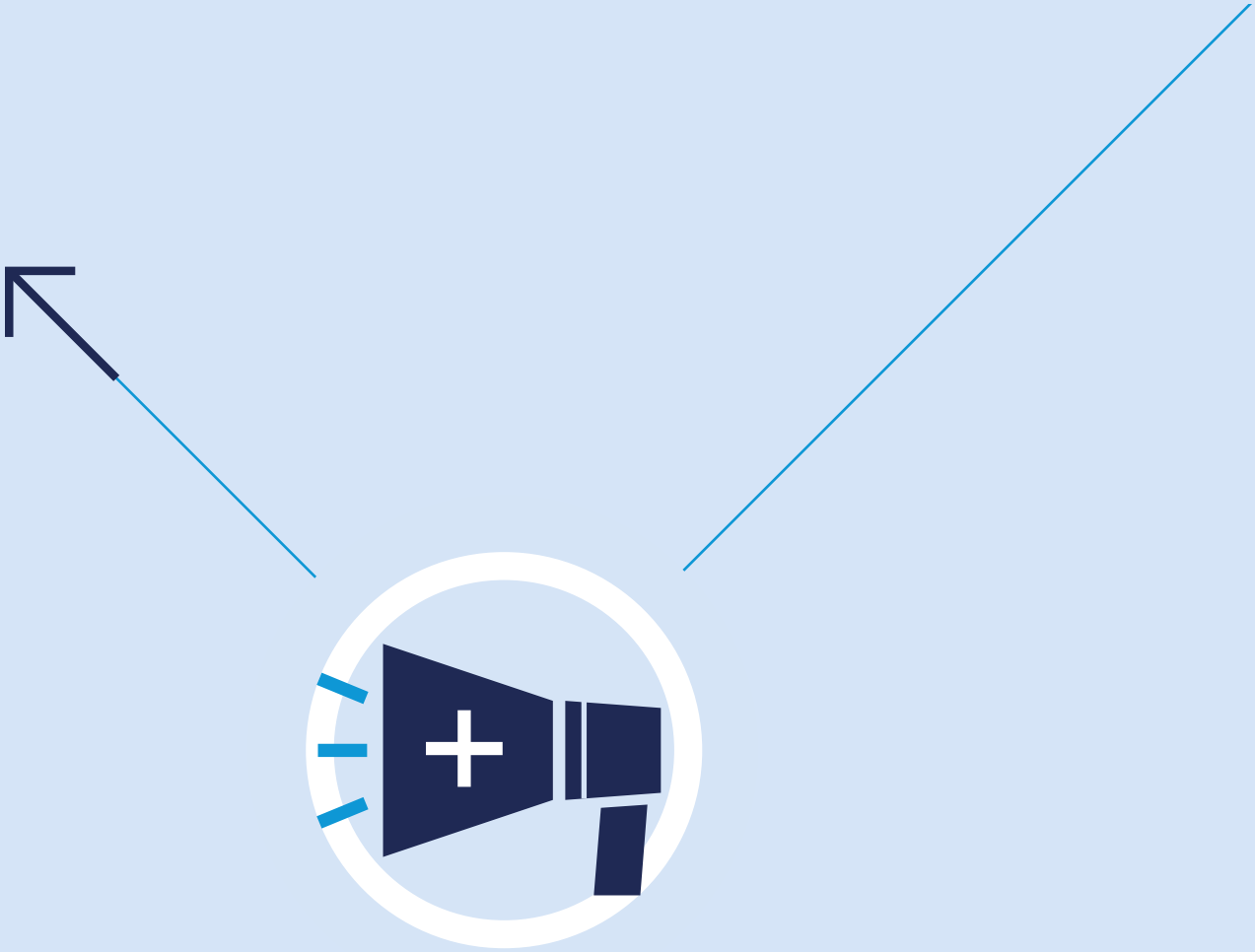
- EPHFs are integral to the routine functions, services and improvement efforts of the health system at all levels, in coordination with relevant sectors (including those outside the ministry of health) and communities (integration). This means a shift from organizing, developing and investing in health systems based on siloed programmes to systemwide strengthening for comprehensively addressing population health needs and determinants.
- Quality and accessible routine individual and public health services (promotion to palliation) are delivered, trusted by the populations served, and utilized prior to, maintained during, and improved following health system shocks (diversity). This includes prioritization of routine health service continuity in tandem with emergency management during and between shocks.
- Routine health system operations and services are adapted and scaled up as necessary to provide emergency-specific services for the public health response to shock events, and to meet evolving needs from broader population health threats (self-regulation and mobilization). This ensures more active and appropriate participation of primary care levels in emergency management with functional referral linkages to other levels of care.
- Lessons are systematically identified from experience within and outside specific settings and used to inform decisions and actions, resulting in continuous improvements in resilience at all levels (transformation). This means that health system recovery from any shock and building back better is prioritized with required investments, moving away from the commonly seen "panic and neglect" cycle.

Figure 3. **Dividends of investing in health system resilience in terms of enhanced recovery, performance and resilience following each shock event**



4

Conclusion



The COVID-19 pandemic has demonstrated a global lack of health system resilience, spanning low- to well-resourced countries and systems. This has added impetus to the need to move beyond conceptual understanding to operationalization of health system resilience, as demonstrated by recent experience with public health emergencies. As countries move towards recovery, there is a need for focused investment that recognizes current and future fiscal constraints and the need for efficient and effective use of all available resources. Resilience-focused health system strengthening represents this smarter approach to resource use – one that aligns programme and platform planning and investment to ensure wider benefits from focused and targeted spending; one that identifies and leverages all available resources, both within and beyond the health system, to maximize their efficient use for more effective outcomes; and one that engages all stakeholders towards the common goal of promoting the highest attainment of health possible for all within available resources.

It is clear that the application of resilience within health systems is progressive and highly contextual. It is also clear that resilience is not an inevitable by-product of health system investment and strengthening but must be deliberately developed and nurtured across health system components. In addition, resilience efforts must be contextualized, taking account of population needs, country priorities and resources, and political realities. The guidance contained within this product will help countries to develop a roadmap for building health system resilience. The development and maintenance of health system resilience is a process, and while it can take time to demonstrate the benefits of investing in resilience in the context of public health emergencies or large-scale shocks, the daily dividend of investing in and prioritizing health system resilience is apparent in the health system's ever-increasing ability to respond to the day-to-day challenges with which it is presented. Given the evolving and expanding landscape of public health challenges – climate change, ageing populations, rising rates of antimicrobial resistance, political instability, and mass displacements – the building of health system resilience represents a worthwhile investment in healthier and safer populations as the foundation for stable and sustainable economic systems.

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Annex. Template to guide application of the resilience roadmap

Below is a suggested template for applying the resilience roadmap. This template can be adapted to suit national contexts, including the setting, stage of development and other contextual considerations. The template is intended to serve as a comprehensive hands-on guide and record for the progression through the roadmap towards building resilience. It can be used to facilitate stakeholders' discussions, inform planning as appropriate, guide and inform actions, and help focus on and review progress in building resilience, reflecting the various interlinked requirements across all stages of the roadmap.

The template can be used by authorities, groups, focal points, units, and institutions responsible for leading and coordinating health system resilience-focused efforts at national and subnational levels. It is important that it represents the collective efforts and situation from a whole system perspective rather than looking separately at different areas of work, disciplines, or units. Text in italics explains the suggested contents within each section, including some examples. Proposed indicators are included for each section. An editable copy of the template can be downloaded here: https://cdn.who.int/media/docs/default-source/health-systems-resilience/template-to-guide-application-of-the-resilience-roadmap.docx.

[Title]

[Date]

Step 1: Prioritize resilience

A. Prioritizing health system resilience

This involves the identification of health system resilience as a strategic priority, for example, in a relevant government statement, strategy, policy or equivalent.

Document or statement identifying resilience as a priority:

Health system resilience focal point, team, or equivalent:

B. Creating a shared understanding

This involves engaging and ensuring participation and support of relevant stakeholders in developing a common understanding of and commitment to health system resilience, including amongst leaders across all health system components and all levels of service delivery management, and representatives from relevant government ministries and institutions, nongovernmental organizations, and communities, as applicable.

Stakeholders identified through stakeholder mapping:

Key stakeholders trained or oriented:

Sectors represented and benefiting from training, orientation, and other competency-building activities:

Service delivery levels and areas represented and benefiting from training, orientation, and other competency-building activities:

Examples of suggested indicators: Evidence of health system resilience as a priority in national strategy, policy or equivalent; % of subnational health authorities' operational plans with health system resilience identified as a priority; number of stakeholders trained; % of health facilities with management staff who have undergone training on health system resilience; % of relevant partners with evidence of consideration of long-term health system resilience in their programming.

Indicator	Baseline	Target	Progress

Step 2: Identify the baseline and needs

A. Establish baseline capacities and priorities

This includes establishing the baseline human, financial, material, technical and political resources available and needed to support health system resilience. This should be informed by population health needs, priority health system risks and challenges, and resource and asset mapping.

The required information can be obtained from existing data sources. Critical information gaps can be addressed through ad hoc data collection where the data are deemed essential to provide a comprehensive picture of resources and needs.

Key priorities, needs, risks and challenges can be compared with identified strengths, critical capacities, and opportunities to inform the current baseline, and what is required to build resilience.

Health system component	What is required for resilience – reflecting national and subnational priorities	Status – showing current strengths and gaps
Workforce, including community-based		
Financing		
Service delivery – individual and population health		
Health information systems		
Medicines, other medical products, products, technologies, and infrastructure		
Governance and leadership, including political support and multisectoral engagement		
Communities, people		

Example indicators for this activity include resource mapping conducted; vulnerability and risk mapping conducted; % of facilities with risk profiles; package of essential health services reflects population health needs and services; % of facilities providing services according to local needs or package of essential health services. More specific indicators should be chosen and developed based on identified gaps.

Indicator	Baseline	Target	Progress

B. Agree objectives and identify targets

Identify objectives aligned with population and health system needs that address the gaps or weaknesses in health system resilience identified above. These objectives should be SMART (specific, measurable, achievable, relevant, and time bound) and directly address the gaps identified above.

Objective	Target	Timeline

Step 3: Adopt integrated planning and resourcing

This involves ensuring the realization of the common objectives identified above through integrating the objectives and targets into relevant strategies, plans and resource mobilization processes. This requires the review of existing plans and strategies and can be supported by the development of joint working, workplans and budgeting. Examples of questions to consider are outlined in the table below.

Objective	How will this objective be addressed through existing plans or programmes?	Who needs to be engaged?	What resources can be identified and allocated to support this objective?

Example indicators for this activity include the following: health sector plan includes emergency activities; health emergency management planning include a focus on routine health service continuity planning in emergency contexts; and multisectoral plans for recovery from shock events include a focus on health sector recovery and resilience building. Specific indicators chosen or developed should reflect identified objectives.

Step 4: Institutionalize resilience building

This involves integrating the roadmap activities with the key inputs and processes required to institutionalize building health system resilience.

Examples of roadmap activities	
How are activities embedded within planning and resourcing processes?	
How are activities embedded within institutional structures?	
What processes or mechanisms are in place to ensure ongoing integration?	
Are activities drawing appropriate resourcing (for example dedicated budget line)?	
Are roles and responsibilities for resilience defined across all relevant levels in relevant strategies, plans and initiatives (essential health services package, health sector, health security, and disease-specific plans and strategies)?	
Is there a focal point or institution identified with accountability for resilience, with appropriate accountability mechanisms and reporting structures?	
Is the delivery of quality services prioritized and supported in all contexts, including in relation to service delivery and health facility and service design (e.g., infection prevention and control, occupational health)?	

Example indicators for this activity include: % of gross domestic product spent on health, public health, and resilience; designated authority for coordinating health system resilience efforts; multisectoral structure for emergency management with health system resilience as a function; health sector policy defines the roles of primary care in delivering EPHFs; and % of facilities as part of collaborative networks. Specific indicators chosen or developed should reflect identified objectives..

Indicator	Baseline	Target	Progress

Step 5: Monitor and evaluate progress

This includes the proactive monitoring and evaluation of progress towards building resilience. This can be done by leveraging and adapting existing data and at a minimum should represent all health system building blocks, reflect resilience attributes, include a mix of input, process, output, outcome, and impact indicators, and be measurable before, during, and after shock events.

Indicator	Health system area	Baseline	Target	Progress

Indicators should be reviewed, revised, and adapted at regular intervals to ensure that they continually align with targets and that they are reflective of and inform the process of building resilience through addressing identified gaps.

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