COVID-19 AND HEALTH SYSTEMS RESILIENCE: LESSONS GOING FORWARDS

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Summary: From the early days of the pandemic policy analysts have been trying to understand what constitutes a resilient health systems response. This article takes stock of the national responses over the past ten months and distils strategies and general lessons for enhancing health systems resilience. Among health systems functions, effective governance, while not easy to pinpoint or secure, has been key to a resilient response, constituting a mortar binding everything else together. The pandemic has also highlighted the importance of solidarity, both within and between countries – bringing us to a realisation that we cannot be truly safe until everybody is safe. Over the course of the pandemic, the focus in studying resilience has broadened towards a more holistic recovery that extends beyond the health system.

Keywords: *Health Systems Resilience, Preparedness, COVID-19*

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Introduction

On 23 January, the Chinese government imposed a lockdown on the city of Wuhan and other cities in Hubei province in an unprecedented effort to halt the spread of COVID-19. By the time the World Health Organization (WHO) declared the novel coronavirus outbreak a pandemic on 11 March, Italy was already in a national lockdown and many more countries in Europe and beyond quickly followed suit, imposing wide ranging measures to break the transmission of infection. These have been termed non-pharmaceutical interventions (NPIs).

Six months later, the accumulating social, economic and health consequences of prolonged lockdowns have compelled governments to find ways in which they can release some of the restrictions without allowing infections to resume their initial exponential growth. And so, we have been learning to live with the virus as initial public health measures have been relaxed, and countries try to contain the virus with NPIs that are sustainable, watching the movements of the epidemic curve and implementing matching responses to tackle any outbreaks. At the same time, countries have been trying to restore health services for those with non-COVID-19 related conditions as

well as preventive services (including vaccinations) that, in many countries, have been severely affected.

While we wait for an effective vaccine (or cure) to become widely available, policy analysts have been trying to draw lessons from national responses so far, identifying those that appear to have been the most effective, and in what circumstances, at containing transmission and allowing socioeconomic activity to recover as much as possible.[1]

> governance is key to a resilient response

This article and the accompanying European Observatory on Health Systems and Policies' policy brief on COVID-19 and resilience contributes to these efforts by seeking to understand the characteristics of responses that can enhance resilience of health systems in the face of the coronavirus pandemic. In doing so, we draw heavily on our conceptual policy brief on resilience 'Strengthening health systems resilience: Key concepts and strategies'[2] and the evidence collected through the COVID-19 Health Systems Response Monitor (HSRM).

What do we mean by health systems *resilience*?

Resilience is commonly understood to be the capacity to recover quickly from a shock or, in reference to materials, the ability of an object to bounce back into shape (elasticity). This concept has been applied in many different fields and, especially over the past 20 years, in relation to major societal shocks, including those causing health emergencies.

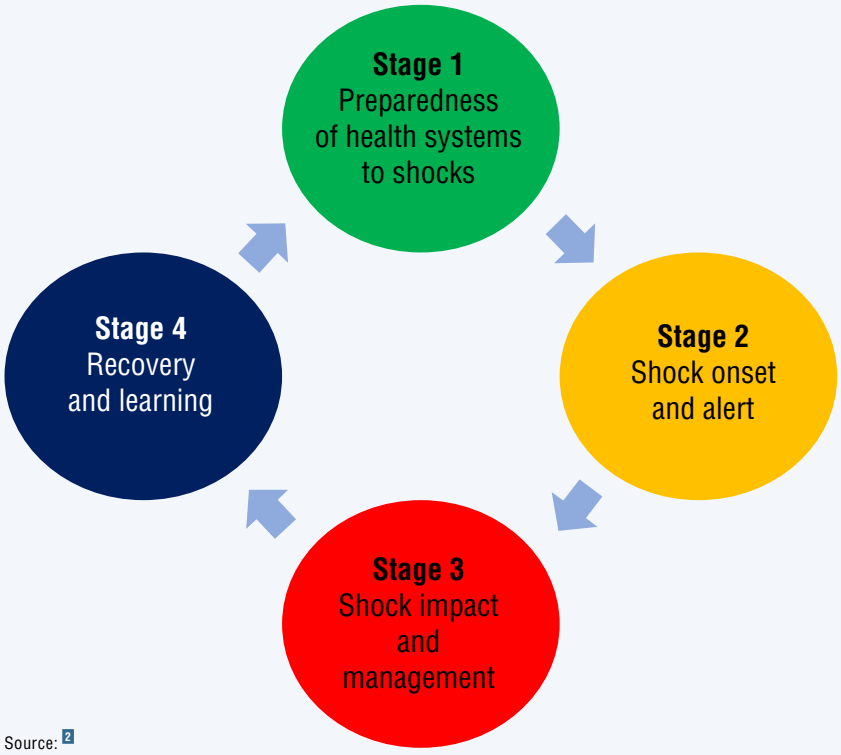
Most definitions of health systems resilience in the literature focus on health system preparedness and the ability to respond to a severe and acute shock. Efforts to understand resilience looked at how the system can absorb, adapt, and transform to cope with new circumstances. However, as the literature on health systems resilience has evolved, definitions have expanded to also consider how to minimise exposure to shocks (i.e. managing risks) and to identify measures that address more predictable and enduring system strains or stresses, such as population ageing.

For this work, we have adopted a narrower definition, defining health system resilience as **the health system's ability to prepare, manage (absorb, adapt and transform) and learn from shocks**, whereby we understand **shocks to be sudden and extreme disturbances**, such as epidemics, natural and other disasters, and financial crises. We think of a shock in a dynamic way – a cycle that consists of four stages (**see Box 1**), with interlinkages between the recovery from a shock and preparedness for the *next* shock cycle, as we go through the loop again. Following

Box 1: Understanding the four stages of the shock cycle

The response to a shock can be seen as a cycle consisting of the following four stages:

- **Stage 1 Preparedness** is related to how vulnerable a system is to various disturbances (limiting exposure) and how ready it is for when a shock hits (e.g. by having practiced and resourced systems of response).
- In **Stage 2 Shock onset and alert**, the focus is on timely identification of the onset and type of the shock.
- During **Stage 3 Shock impact and management** the system absorbs the shock and, where necessary, adapts and transforms to ensure that health system goals are still achieved.
- Finally, in **Stage 4 Recovery and learning** there is a return to some kind of normality but there may still be changes as a legacy of the shock. In this stage, it is important to recognise what these legacy components are and how they will continue to impact on the system and on its performance.



Source:[2]

this definition, and from the perspective of health system performance, resilience goes beyond how a system bounces back to what it was before, but also addresses its ability to transform and evolve – ideally into something better, i.e. how it improves its performance. It has to be noted here that an experience of a shock is not a necessary precondition for a health system to be judged as resilient: a resilient health system may be one that is *prepared* for the occurrence of a shock, but this shock may not necessarily happen.

Identifying key strategies for enhancing resilience: what have we learned from responses to the pandemic so far?

Based on country experiences so far, we have distilled a list of responses to the pandemic that enhance health system resilience. These strategies and the associated examples of best practice will be described in detail in the forthcoming policy brief. **Table 1** gives a first look at the key strategies and their elements, grouping them according to the relevant health system function: governance, financing, resources and service delivery. However, we recognise that such distinctions are not clear-cut and there are inevitable overlaps.

General lessons emerging from the national responses to the pandemic

Governance is key to a resilient response, but it is not something that is easy to achieve

The key aspects of resilient responses to COVID-19 are (simplistically) twofold: 1) having appropriate and effective governance and 2) having technical capacity to respond. Of the two, governance dominates and is the *necessary* condition for any effective response. Given the complexity of the COVID-19 shock and the complexity of the response it necessitates, we mean here governance in the broader sense, i.e. going beyond the governance of the health system alone. While undeniably important, technical capacity has proven not to be enough, which became apparent from the poor performance of countries that topped the global health security index*. Countries with much less technical capacity, but with leaders who listened to the science and acted fast, have been much more successful in containing the virus and saving lives. Governance has also been identified as 'the mortar that binds all other components together', rather than a standalone function. It creates *trust* in the system. As such, it enables the other functions to work properly and contributes to the strengthening of the system as a whole.[6]

Some of the worst hit countries were those that had populist leaders, where there was a difficult political environment, where there was state-sponsored disinformation or where there was secrecy and censorship such as silencing of scientific and medical professionals.[7] Going forward, there will be no easy or quick fixes to these problems and there may be no way, at least in the short term, to avoid poor leadership. Given the risk that will be posed to others by countries that fail to combat the pandemic, there is likely to be a debate about the role of the international community, perhaps drawing on existing principles of humanitarian intervention or the Responsibility to Protect. This has led to calls to rethink the role of WHO, including its organisation and financing.[8] But there are things that we can do more easily to strengthen governance now. For example, within the health system, coordination channels could be put in place and plans drawn (and kept up to date) to ensure an effective response. Beyond the health systems, meaningful relationships between communities and providers should be nurtured to ensure sustainable and inclusive participation.[9]

A chain is as strong as its weakest link, i.e. leave no one and no country behind

The pandemic has exposed national differences in vulnerability to COVID-19, with the most disadvantaged groups bearing the greatest health, social, and economic burden. Vulnerable population groups, such as workers without access to paid sick leave or in facilities with poor working conditions (e.g. slaughterhouses and meat-packing plants (now seen as essential workers), garment factories, agricultural workers, etc.), homeless people, people in institutions (e.g. in care homes or prisons, migrants in reception centres, etc.), were at higher risk of infection.[10] Population groups with higher prevalence of non-communicable diseases (NCDs) (which are socioeconomically patterned) have had higher hospitalisation and death rates.[11] Countries with strong social safety nets, such as in Scandinavia, have generally fared better. The pandemic has shown that we are not safe until *everybody* is safe.

Although the pandemic has shown that some degree of self-sufficiency is desirable, e.g. having national stocks of medical supplies and production capacity, ultimately, countries need to cooperate to ensure resilience in the face of global shocks such as COVID-19. European Union (EU) Member States have benefited from common surveillance systems, joint procurement initiatives, and targeted funding, among others. We can all benefit from better global surveillance and notification systems; more cooperation in procurement; stronger cooperation in medical research (for example vaccine development and treatment, including ensuring that as many patients as possible are entered into clinical trials coordinated across Europe); sharing best practice (with European professional societies and the WHO having a role); and better global governance. A resilient response thus means 'leaving no country behind' and ensuring that vulnerable and worst hit countries get the support they need. No country is safe until all countries are safe.

Conclusions

From the onset of the pandemic, policy analysts have been trying to understand how a country develops resilience.[12] The focus of these efforts has evolved over time from how to best manage the pandemic in the short to medium term to what constitutes a resilient response in the longer term, in line with the notion of 'building back better' so that we emerge from the pandemic stronger and better prepared in future.[13] The notion of a resilient recovery underpins many national and international recovery plans

* The global health security index (https://www.ghsindex.org/) gives a sense of countries' technical capacity to fight health threats such as pandemics.

Table 1: Resilient strategies in response to the COVID-19 pandemic and relevant elements

Strategy	Elements
Governance	
(1) Adequate and effective leadership	Having a clear vision; Reliance on best available evidence but adopting the precautionary principle where evidence is uncertain; Culture of learning; Ability to act fast; Effective and transparent communication (esp. about uncertainty); Community participation; Participation in the international community (e.g. joint procurement, clinical networks, etc.)
(2) Effective coordination	Presence of a clear and widely understood strategy; Coordination within government (horizontal and vertical); Coordination between the government and key stakeholders including civil society; Measures taken at the appropriate organisational tier, balancing local knowledge with economies of scale; Coordination with international partners and supranational bodies
(3) Effective communication systems and flows	Having (or establishing) well-functioning communication channels linked to lines of accountability, incl. hard and soft infrastructure
(4) Surveillance enabling timely detection of shocks and their impact	Having effective and well-integrated surveillance systems (see under 'Resources' below); Surveillance systems that follow a 'one health' approach and generate timely and accurate data
Financing	
(5) Ensuring sufficient monetary resources in the system and flexibility to reallocate and inject extra funds into the system	Ability to increase and deploy monetary resources quickly and where needed, subject to safeguards to prevent fraud and corruption
(6) Purchasing flexibility and reallocation of funding within the system to meet changing needs	Ability to quickly adapt procurement and payment systems while maintaining transparency, timeliness, and quality, including measures to prevent corruption[3]
(7) Comprehensive health coverage with effective access	Having a comprehensive and evidence-based package of services that is properly resourced, organised and distributed; Monitoring changes in access to services and eliminating financial and other (e.g. technological, physical) barriers to access; Identifying vulnerable population groups (ensuring that appropriate data are collected)[4] and ensuring adequate access to services
Resources	
(8) Appropriate level and distribution of human and physical resources	Having strong (or strengthening) public health capacity (with a system to Find, Test, Trace, Isolate, and Support[5]); Having strong (or strengthening) primary health care (key role in maintaining non-COVID essential services to populations); Ensuring adequate hospital capacity, including intensive care units and step down facilities (and contingency plans to increase them); Ensuring sufficient supply of personal protective equipment
(9) Motivated and well-supported workforce	Ensuring mental health (e.g. psychological counselling), family (e.g. childcare), physical (e.g. respite breaks) and financial support for health care workers
(10) Ability to quickly increase capacity to cope with a sudden surge in demand	Ability to increase physical capacity if needed (e.g. via repurposing of wards, reallocating patients to lower levels of care (as appropriate), developing new wards or hospitals, using all available capacity irrespective of ownership, etc.); Ability to mobilise additional human resources including via training of existing workforce or adapting their roles, recruiting and training volunteers (e.g. to take samples)
Service delivery	
(11) Alternative and flexible approaches to deliver care	Flexibility to implement new care pathways across the health systems and within facilities; Using digital technologies to deliver health services safely; Ensuring support systems for vulnerable people especially those in isolation
(12) Ability to deliver services safely	Mechanisms in place to ensure effective implementation of infection prevention and control in health care settings
(13) Ability to share best practice	Two-way sharing of best practice: from policymakers to clinicians and from clinicians to policymakers

Source: Authors drawing on the COVID-19 resilience policy brief (forthcoming) to be published at:
https://www.euro.who.int/en/about-us/partners/observatory/publications/policy-briefs-and-summaries

and instruments (e.g. the Recovery and Resilience Facility, REACT-EU and other EU instruments),[14] and is being investigated through undertakings such as the Lancet COVID-19 Commission [15] and the Pan-European Commission on Health and Sustainable Development initiated by WHO Regional Office for Europe.[16] These efforts take a holistic approach, going beyond strengthening health systems and incorporating social, economic, green and other dimensions as well as ongoing major trends, some of which have been accelerated by the pandemic, such as digitalisation. This holistic approach is important as the world is a collection of complex interconnected systems, of which the health system is just one. Strategies to enhance health systems resilience therefore need to be part of such broader, multi-sectorial approaches.

We have long known about the risk of epidemics from zoonotic viruses, yet we were ill prepared for a pandemic like COVID-19. Now, retrospectively, we are trying to learn from what has happened to prepare for the next pandemic. There are other risks that we know (the 'known knowns' in the words of Donald Rumsfeld), such as antimicrobial resistance, but we seem to wait for them to come to fruition before we act.[17] This is clearly not enough. To be truly resilient, beyond looking back for lessons learned we also need to look forwards, with foresight, and do more to address the known risks.

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Strengthening health systems resilience: Key concepts and strategies

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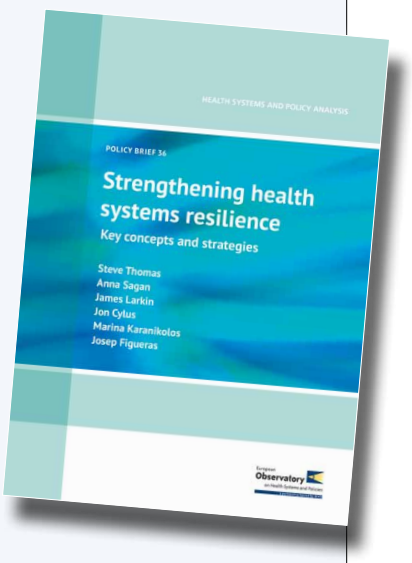
Why have some health systems coped better than others during the COVID-19 pandemic? Some answers might become clear if we could assess how resilient health systems are in response to crises or shocks, such as the current pandemic and other emergencies, including financial ones, or how well health systems were prepared for such events in the first place. This new policy brief includes a framework to help policymakers understand health system resilience and how to strengthen it. It highlights the key features of resilience and provides examples of strategies which have been applied in different countries.

While policymakers are often consumed by the urgent day-to-day stresses of running a health system, the COVID-19 pandemic has reminded everyone of the importance of longer-term planning and preparedness. With this awareness comes the need to better understand health systems' strengths and vulnerabilities and how to respond resiliently to the outbreak.



The authors reviewed the literature on strategies for strengthening health system resilience and for responding to system shocks, as well as emerging evidence from national responses to the COVID-19 pandemic. They mapped those strategies to the key health system functions: governance, financing, resources and service delivery. They also indicated in which stages of a shock cycle these resilience-enhancing strategies are likely to be the most effective. Which strategies should be pursued depends on the type of shock (e.g. financial crash, pandemic, climate event), its severity, the stage in the shock cycle, and the specific country context.