

Anna Koziel • Ha Thi Hong Nguyen • Alejandro Gonzalez-Aquines

A WAY FORWARD FOR BUILDING RESILIENT HEALTH SYSTEMS

Lessons learned from Eastern Europe
and the South Caucasus



© 2023 International Bank for
Reconstruction and Development /
The World Bank

1818 H Street NW,
Washington DC 20433
Telephone: 202-473-1000
Internet: www.worldbank.org

Rights and Permissions

The material in this work is subject to copyright. Because The World Bank encourages dissemination of its knowledge, this work may be reproduced, in whole or in part, for noncommercial purposes as long as full attribution to this work is given.

Any queries on rights and licenses, including subsidiary rights, should be addressed to World Bank Publications, The World Bank Group, 1818 H Street NW, Washington, DC 20433, USA; fax: 202-522-2625; e-mail: pubrights@worldbank.org.

This work is a product of the staff of the World Bank with external contributions. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of the World Bank, its Board of Executive Directors, or the governments they represent.

This publication was produced with financial support from the European Union. Its contents are the sole responsibility of World Bank staff and do not necessarily reflect the views of the European Union.

The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colors, denominations, and other information presented or shown on any map in this work do not imply any judgment on the part of The World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

Table of Contents

Acknowledgements	v
Abbreviations	vi
Introduction	1
About this report	1
Defining health system resilience	2
Health system resilience in the five countries	5
Health systems' baseline characteristics and preparedness for shocks	5
Lessons from the countries' responses to the COVID-19 pandemic	8
Going forward: key areas for building strong and resilient health systems	12
Conclusions	19
References	20
Annex: Summary of case studies	23
Armenia	23
Azerbaijan	25
Georgia	27
Moldova	29
Ukraine (pre-war)	30

List of Figures:

Figure 1: Resilience framework	2
Figure 2: Trend of new COVID-19 cases, deaths, and excess mortality	4
Figure 3: Universal Health Coverage Index in 2019	5
Figure 4: Change in nurses/midwives and doctors per capita between 2000 and 2020	6
Figure 5: Global Health Security Index in 2019	7
Figure 6: Cross-sectoral approach for the pandemic response in Azerbaijan	9
Figure 7: Change in proportion of women who completed 8 antenatal visits in Georgia	11
Figure 8: Action cycle of the Human Resources for Health (HRH) Action Framework	15
Figure 9: Digital technologies drive the health and care paradigm	18
Figure 10: Key public health indicators for Armenia	23
Figure 11: Key public health indicators for Azerbaijan	25
Figure 12: Key public health indicators for Georgia	27
Figure 13: Key public health indicators for Moldova	29
Figure 14: Key public health indicators for Ukraine	30

Acknowledgements

This report was prepared by Anna Koziel (Senior Health Specialist), Ha Thi Hong Nguyen (Senior Health Specialist) and Alejandro Gonzalez-Aquines (Consultant), supported by Jamele Rigolini (Lead Economist) leading the regional work on resilience for the Eastern Partnership countries, under the guidance of Tania Dmytraczenko (Practice Manager for Europe and Central Asia within Health, Nutrition and Population) and Fadia Saadah (Regional Director for Europe and Central Asia, across Human Development). Inputs to the country cases were provided with the support from the World Bank team: Olena Doroshenko, Elvira Anadolu, Parviz Ahmadov, Yoshini Naomi Rupasinghe, Adanna Deborah Ugochi Chukwuma, Volkan Cetinkaya, Christine Lao Pena, Nino Moroshkina, Ahmet Levent Yener and Caryn Bredenkamp. The team is grateful for the peer review and guidance provided by Mersedeh Tariverdi.

This work is a product of the staff of the World Bank with external contributions. The findings, interpretations, and conclusions expressed in this work do not necessarily reflect the views of the World Bank, its Board of Executive Directors, or the governments they represent.

The World Bank does not guarantee the accuracy of the data included in this work. The boundaries, colours, denominations, and other information presented or shown on any map in this work do not imply any judgment on the part of the World Bank concerning the legal status of any territory or the endorsement or acceptance of such boundaries.

The note was made possible by the funding from DG NEAR's Europe 2020 Trust Fund. Its contents are the sole responsibility of World Bank staff and do not necessarily reflect the views of the European Union.

Abbreviations

ECA	Europe and Central Asia
EU	European Union
GHWA	Global Health Workforce Alliance
HRH	Human Resources for Health
IHISA	Integrated Health Information System of Armenia
MIDAS	Medical Institution Data Analysis System
NHC	National Health Insurance Company
OECD	Organisation for Economic Co-operation and Development
OOP	Out-of-pocket
PHC	Primary health care
SAGE	Scientific Advisory Group for Emergencies
UHC	Universal Health Coverage
UNFPA	United Nations Population Fund
WHO	World Health Organization

Introduction

The COVID-19 pandemic brought unprecedented challenges to governments and health systems worldwide. After being identified in Wuhan, China, the SARS-COV-2 virus spread rapidly across borders and was declared a pandemic on March 11, 2020.¹ Governments began to act using the best available resources and evidence to reduce the spread of the virus and protect the population from severe illness due to COVID-19 infection. As the pandemic developed, governments were tested on building and maintaining good communication channels and trust with the public to ensure effective strategies to control the virus. At the same time, health systems were placed at the center of the response, in most cases leading multisectoral groups to coordinate actions to increase the system capacity and cope with the surging demand for health care.

Health systems implemented changes at all health care levels to meet public health needs, including governance functions and pathways of care. The virus' rapid mutation led to multiple waves of cases and deaths due to COVID-19. Health needs were constantly changing, not only because of the rise of people requiring specialized care, such as supplementary oxygen or ventilation support, but also due to disruption to essential and programmed health care. Therefore, some countries decided to modify their governance functions by decentralizing or (re) centralizing health functions (that is, surveillance and response coordination). Similarly, care pathways were also adapted to increase the efficiency of the system's resources. For instance, hotels were used as COVID-19 centers for non-severe cases, and health care staff (that is, physiotherapists and dentists) were trained to become involved in COVID-19-related care, such as vaccinations.²

Health system resilience continues to be tested as countries face new crises. The countries' efforts to handle the challenges brought about by the pandemic have placed resilience at the center of the health system agenda. Resilience is now being tested by new challenges, such as the direct and indirect consequences of the war in Ukraine, and will be tested in the future as further shocks emerge. As countries continue to build stronger and more resilient health systems, the COVID-19 pandemic brings

an opportunity to reflect on the countries' responses and identify lessons that can be learned to improve health systems. These lessons are useful not only for shocks of the magnitude of this pandemic, but also for local and regional shocks that require health systems to meet the population's health care needs in the midst of everyday challenges.

About this report

This report looks at resilience through national health system lenses, and provides lessons to strengthen health systems for future shocks. The findings are based on case studies from five countries in Eastern Europe and the South Caucasus (Armenia, Azerbaijan, Georgia, Moldova and Ukraine), as well as focus group discussions with the population and health care workers in Georgia, Armenia, and Moldova. The following section provides the definition and examples of health system resilience. This is followed by descriptions of the baseline characteristics of the five Eastern European and South Caucasus countries' health systems pre-pandemic performance, which determined most of their capacity and decisions to deal with the shock. The rest of this report reviews key baseline characteristics of the health systems in the countries, which are followed by lessons from the countries' responses to the pandemic (a summary of each country case study is provided in Annex A). The report concludes with recommendations for building the strong and resilient health systems needed to protect human capital through shocks and crises.

¹ WHO, 2020

² Sagan et al., 2021

Defining health system resilience

The definition of resilience in the health sector has evolved based on countries' experiences of dealing with shocks. The concept of resilience has been adopted from physical science, which defines resilience as capacity to adapt after a disturbance.³ Over the last two decades, the concept of resilience in health systems has been defined after economic and humanitarian crises, natural disasters and, more recently, disease outbreaks. The Ebola outbreak underscored the concept of resilience, resulting in it being considered an essential feature of health systems. Kruk et al. (2015) provided a definition of health system resilience that has since prevailed in the literature: "the capacity of health actors, institutions, and populations to prepare for and effectively respond to crises; maintain core functions when a crisis hits; and, informed by lessons learned during the crisis, reorganize if conditions require it."⁴ In other words, health system resilience can be achieved when the health system's functions of financing, information, delivery, and design and institutional arrangements – including health governance – are prepared to respond, adapt and build back better from a crisis (Figure 1).

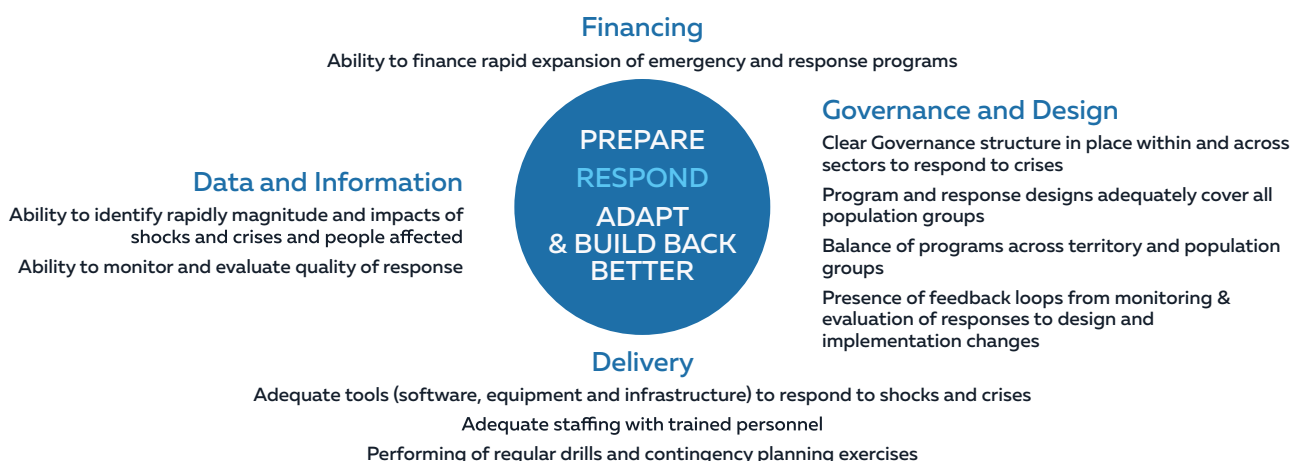
The COVID-19 pandemic put health systems resilience in the spotlight, providing countries with emerging evidence for better preparedness and response to shocks. Over half the literature on evaluating and building health system resilience has been produced since the onset of the pandemic.

The initial assessments were performed using a silos approach to health system building blocks. However, the rapid changes and persistent progress of the pandemic demanded a more dynamic and collaborative approach. Countries were obliged to learn from the emerging evidence to respond, adapt and build back better, to reduce the burden of the pandemic and protect lives and human capital (Box 1).

The pandemic also brought to the forefront the long-neglected importance of public health for ensuring health system resilience. Not surprisingly, the World Health Organization (WHO) outlined elements in health systems that play a fundamental role in building resilience, all of them strongly related to public health, such as investing in essential public health functions (Box 2), building a strong primary health care foundation, investing in institutionalized mechanisms for whole-of-society engagement, increasing domestic and global investment in health system foundations and all-hazards emergency risk management, addressing pre-existing inequities.⁵ Moreover, the WHO highlights the need to increase investments in public health functions to strengthen their performance during normal times and preparedness for shocks.

Learning from countries' responses to COVID-19 is pivotal to protecting human capital in the event of shocks and crises. The responses of the five Eastern European and South Caucasus countries (Arme-

Figure 1: Resilience framework



³ Norris et al., 2008

⁴ Kruk et al., 2015

⁵ WHO, 2021

Box 1. Health system resilience in the United Kingdom and Italy

Italy and the United Kingdom were two of the most affected countries in Western Europe, with death tolls of 2,657.7 and 2,521.03 per million population, respectively, higher than Germany (1,576.23) or the Netherlands (1,239.32). The main reasons for the disproportionate number of deaths compared to other Western European peers were the delay in implementing control measures, not suspending massive events, the high proportion of elderly persons in the population, and the lack of appropriate infrastructure and health care personnel. However, evidence generated from the initial response and the international experience of dealing with COVID-19 enabled improvements to control of the spread of the virus over the next waves. The measures included the following.

Effective political leadership and cross-party consensus. Leadership played a critical role in the response to the pandemic. Decisions such as implementing lockdowns or mobility restrictions were usually criticized and opposed by certain political parties. In the United Kingdom, the implementation of the All-Party Group on Coronavirus facilitated discussion and agreement on the pandemic's response.

Strengthening monitoring systems. Both countries have developed robust monitoring systems with weekly reports on the number of cases and deaths due to COVID-19. Moreover, the United Kingdom collected data on ethnicity and immigration status, enabling comprehensive analysis of the impact of the pandemic on minority groups.

Implementing scientific advisory groups to make evidence-based decisions. The United Kingdom used its already existing Scientific Advisory Group for Emergencies (SAGE) to evaluate the emerging evidence and transfer the information to policymakers and the public. On the other hand, Italy established a new expert advisory group during the COVID-19 pandemic.

Ensuring enough and stable funds. The Government of the United Kingdom mobilized funding from both unearmarked and earmarked resources to ensure adequate funding for the COVID-19 response. Another mechanism implemented by the governments of Italy and the United Kingdom was selling bonds.

Implementing flexible approaches to using the health workforce. Innovations in skill-mixing enabled the United Kingdom and Italy to increase their capacity to conduct public health interventions. For instance, dentists with sedation skills supported the National Health Service during COVID-19 surges in the United Kingdom, and members of the public were trained to administer vaccines or assist in vaccination programs. In Italy, volunteers were recruited to support the delivery of medication and food to vulnerable groups and those self-isolating.

Developing efficient vaccination programs. By mid-2021, the European Union (EU) had already secured 4.65 billion doses to cover an EU population of 446 million people. Although the program's roll-out was slow, by the end of July 2021 over 70 percent of adults had already been vaccinated against COVID-19. In the UK, the vaccination roll-out started on December 8, 2020, and by August 2021, over 75 percent of adults had already had two COVID-19 vaccine doses administered.

Sources: GOV.UK, 2021; Sagan et al., 2021

Box 2. Public health functions critical for health system resilience

The role of public health has evolved from a narrow focus on communicable diseases at local level to comprehensive approaches to protecting nations from disease outbreaks and implementing policies that protect public health.

The WHO outlines ten Essential Public Health Operations to build more robust public health services and capacities; all of these have been shown to have played significant roles during the COVID-19 pandemic:

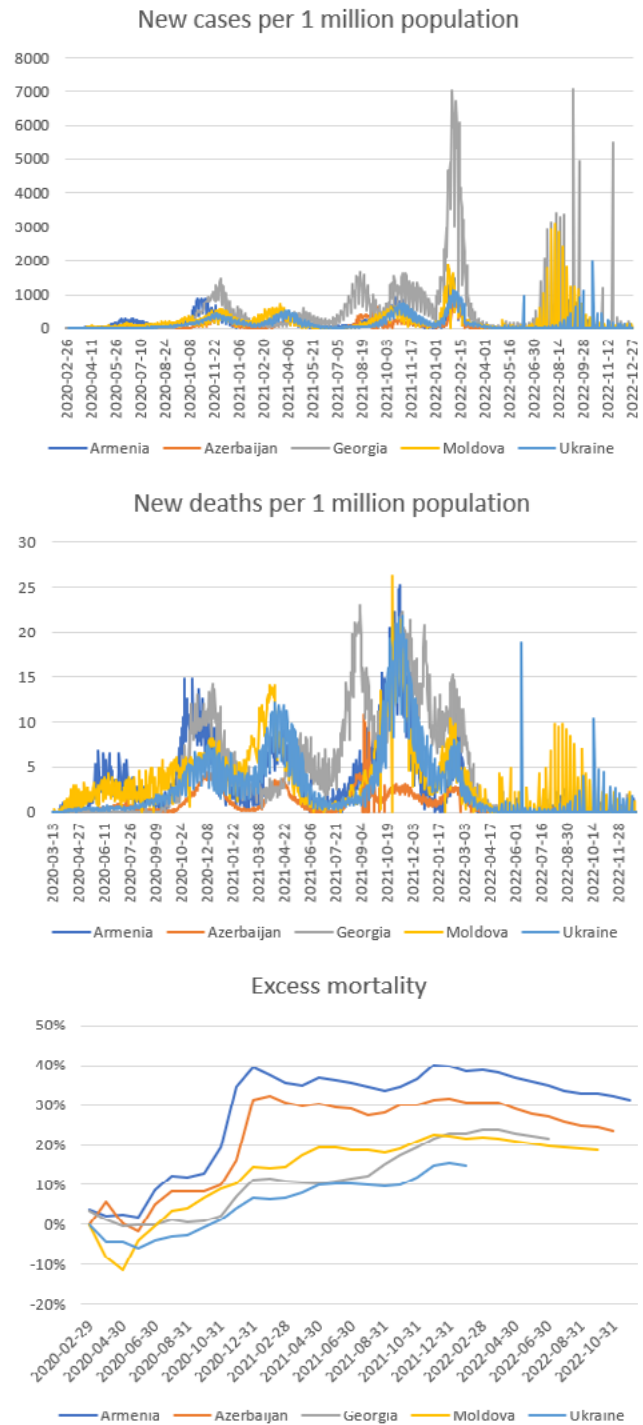
(1) Surveillance of population health and wellbeing; (2) Monitoring and response to health hazards and emergencies; (3) Health protection including environmental occupational, food safety and others; (4) Health promotion including action to address social determinants and health inequity; (5) Disease prevention, including early detection of illness; (6) Assuring governance for health and wellbeing; (7) Assuring a sufficient and competent public health workforce; (8) Assuring sustainable organizational structures and financing; (9) Advocacy communication and social mobilization for health; and (10) Advancing public health research to inform policy practice.

Source: World Health Organization, no date.

nia, Azerbaijan, Georgia, Moldova, and Ukraine) to COVID-19 provide important lessons for building health system resilience. These countries maintained low COVID-19 cases and deaths during the first pandemic wave, but not in subsequent waves (Figure 2). By the time of writing this report, the evolution of the pandemic in these countries has followed four waves linked to different COVID-19 variants and control measures implemented at national and local levels. Since the first cases were reported in these countries, the governments have made significant efforts to protect the population from COVID-19, and the health systems are operating efficiently.

Vaccines have been the most effective public health measure to control the spread of the virus and reduce deaths. The COVID-19 pandemic led to a scientific breakthrough in the production of vaccines at an unprecedented time. The rapid organization of governments and the pharmaceutical industry led to the saving of almost half a million lives of people aged 60 and over in the WHO European Region population within a year of the vaccine roll-out.⁶ Although vaccines were still in their initial steps of procurement, distribution, and application at the time of the data collection for this report, there are important lessons (described below) from Eastern Europe and the South Caucasus countries related to ensuring enough supply and vaccination acceptance among the population.

Figure 2: Trend of new COVID-19 cases, deaths, and excess mortality



Source: Johns Hopkins University CSSE COVID-19 Data

⁶ Meslé et al., 2021

Health system resilience in the five countries

Health systems' baseline characteristics and preparedness for shocks

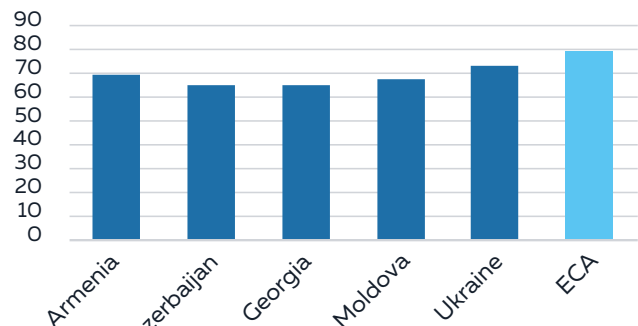
The five countries share common characteristics of health systems inherited from the Soviet Union. Since 1991, these countries have experienced a series of reforms to adapt their health systems to the population's needs, as explained below. Although the countries have made important efforts to improve their health system performance, low public investment in health, high out-of-pocket (OOP) payments, and staff shortages were their main health system weaknesses before the COVID-19 pandemic hit.

Health expenditure and key inputs vary significantly among the five countries, as shown in Table 1. All the countries increased their health expenditure as a share of GDP between 2000 and 2019, apart from Georgia, where health expenditure was 7.19 percent in 2000 and 6.6 percent in 2019. Although in 2019 Armenia's health expenditure was above the EU13 and Europe and Central Asia (ECA) average, it also had the highest OOP payments (84.28 percent). In all the countries, OOP health expenditure was more than double the 17.62 percent average for ECA in 2019, and almost double the EU13 average (23.26 percent). All the countries, apart from Moldova (2.6), had more doctors per 1,000 population than the EU13 average (2.83), while the number of nurses per 1,000 population was greater than the EU13 (6.12) only in Azerbaijan (6.43), and Ukraine (6.67). Lastly, only Armenia (4.2 per 1,000 population) and Geor-

gia (2.9) had fewer hospital beds than the ECA average (4.71), demonstrating potential excess hospital capacity in Eastern Partnership countries.

Performance in the Universal Health Coverage (UHC) Index was below the ECA regional average. All the countries are committed to implementing UHC and have made substantial efforts to achieve this goal, ensuring that individuals and communities are protected from impoverishment from health care expenditure and can access essential, quality health services across the life course. However, according to the last measurement of the UHC Index⁷ in 2019, there are still gaps in ensuring UHC compared to the regional average of 79.22 (Figure 3). The under-performance on the UHC Index reflected the lack of comprehensive health coverage, creating barriers to access to quality care throughout the COVID-19 pandemic.

Figure 3: Universal Health Coverage Index in 2019



Note: ECA: Europe and Central Asia average. Source: World Bank Data, 2019. Data for the EU average is not available.

Table 1: Key health financing and input indicators from the five studied countries

Country	Health expenditure as % of GDP	OOP as % of health expenditure	Doctors per 1,000 population	Nurses per 1,000 population	Hospital beds per 1,000 population
Armenia	10.0	84.3	2.9	4.4	4.2
Azerbaijan	3.5	72.5	3.5	6.4	4.8
Georgia	7.1	47.7	7.1	5.2	2.9
Moldova	6.6	40.1	2.6	3.9	5.7
Ukraine	7.1	51.1	3.0	6.7	7.5
EU13	6.3	23.3	2.8	6.1	6.4
ECA	9.4	17.6	4.3	7.8	4.7

EU13 includes Cyprus, Czechia, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, and Slovenia. ECA: Europe and Central Asia. Source: World Bank (2020 or latest available) and Health for All Database (2019 or latest available). GDP: gross domestic product, OOP: out-of-pocket payments.

⁷ The UHC Index is computed as the geometric means of 14 tracer indicators classified in four categories: 1) reproductive, maternal, new-born, and child health; 2) infectious diseases; 3) noncommunicable diseases; and 4) service capacity and access.

Countries have undergone several reforms in the organization of public health and the financing of health care services since the collapse of the Soviet Union. One of the first functions that was decentralized was surveillance of infectious diseases. Georgia was the first country to implement this change in 1995, followed by Moldova in 2009. In 2007, Georgia introduced a Law on Public Health that defined the role of funding sources (central and local) in the annual budget. In Armenia, after 2013, the National Centre for Disease Control and Prevention absorbed most public health functions. To finance health care services, Moldova established the National Health Insurance Company in 2001 as a state non-profit entity with financial autonomy. The National Health Insurance Company is responsible for the Mandatory Health Insurance, monitoring and managing the volume, quality, and costs of contracted health services. Azerbaijan transferred financing responsibility to the State Agency for Mandatory Health Insurance, while the organization and management of public health services providers were assigned to the Administration of the Regional Medical Divisions. In 2016, Ukraine experienced several structural reforms, including the creation of a Center for Public Health with decentralized centers at regional (oblast) levels, co-financed by local administrations. Additionally, the ownership of most laboratories was transferred to regional administrations; this was later changed during the pandemic (see section on Lessons from the response below).

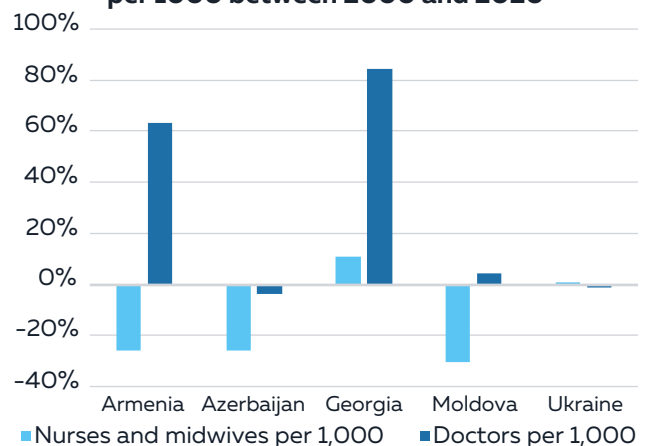
The health systems in the five countries were centered on hospital care. The five countries have witnessed a significant reduction in the number of hospital beds over the last two decades; nonetheless, excess hospital capacity remained a feature of countries like Ukraine and Moldova. However, surplus infrastructure for inpatient care did not always translate into adequate capacity to deliver effective care. For example, though Ukraine has one of the highest numbers of hospital beds per 100,000 population, the facilities designated for treating COVID-19 patients were not able to meet public health needs during the first wave due to a lack of essential equipment (such as therapeutic oxygen). Moreover, hospital beds are usually concentrated in urban areas, particularly the capital cities. Unequal distribution of hospital beds and limited hospital resources to provide care for patients with COVID-19 hindered some countries' capacity to increase their hospital capacity efficiently.

Coverage of primary health care (PHC) services, particularly drug coverage, was low and depended highly on OOP payments. In Armenia, despite 97 percent of the population having access to PHC

facilities within 3 kilometers, almost a quarter (24 percent) reported traveling over 10 kilometers to access the closest pharmacy. Likewise, in Georgia, the UHC program introduced in 2013 was skewed toward hospital care and provided limited outpatient drug coverage. As a result, in 2018, 96 percent of pharmaceutical expenditure came from households' budgets.⁸ PHC capacity was to be further improved during the pandemic to enhance the countries' response and reduce the burden in hospitals.

The health workforce was limited, with the number of nurses significantly reduced in the last two decades. Although the countries had similar levels of doctors per 1,000 population to the EU13 average, the number of nurses was below the EU13 average for most of the countries. Only Azerbaijan and Ukraine reported higher levels than the 6.1 nurses per 1,000 population in the EU13. Additionally, most of the countries saw falling numbers of nurses between 2000 and 2020 (or the latest available year), while the number of doctors per 1,000 increased in Armenia and Georgia (Figure 4).

Figure 4: Change in nurses/midwives and doctors per 1000 between 2000 and 2020



Note: 2020 or latest year available. Source: World Bank Data, 2020.

During focus group discussions, health care workers highlighted the problem of staff shortages. Nurses from Armenia stressed that there were periods during the pandemic when two nurses had to care for 42 patients. In Georgia, nurses attending focus groups mentioned doing the work of three persons in one without receiving financial compensation. Similarly, doctors in Armenia highlighted staff shortages as one of the main problems when dealing with COVID-19 and its effects on hospital staff: "We only have one doctor left and the Head Physician. We have a staff of two to cover a vast territory, and it is very difficult to work. There is great need for family doctors because people are stressed and want to see their doctors for any problem." Although

⁸ Curatio International Foundation, 2021

staff shortages were a well-known issue before COVID-19, the pandemic exacerbated the need for a strong health workforce, which has been critical for responding to COVID-19.

The countries had aging health workforces concentrated mainly in cities. The health workforce in most countries is aging, which in the context of the COVID-19 pandemic has meant an increased risk of infection that limited their availability to be part of the response. In Moldova, over half the healthcare workforce is over 50 years old or already retired; however, the number of doctors has remained relatively stable, with a less than 5 percent increase between 2000 and 2019, as shown in Figure 4. The lack of young health professionals was also emphasized during interviews with healthcare staff. For instance, a doctor from a rural hospital in Moldova stated: “At my age, I had some thoughts of retiring at first [when the pandemic started], but I understood no one would be left to work in my place.” On the other hand, health care staff are concentrated mainly in big cities, leaving rural and remote areas with low numbers of nurses and doctors. The changes in the health workforce observed in recent years and their unequal distribution emphasize the need for comprehensive strategic planning for human resources for health, particularly for nurses involved in key functions in response to COVID-19, including testing suspected cases and vaccinating against the virus.

Various efforts have been made to develop health information systems, although full digitalization

remains a major challenge. Since 2010, Armenia has introduced, piloted, and scaled up an e-health system, the Integrated Health Information System of Armenia (IHISA), which replaced the former Medical Institution Data Analysis System (MIDAS) electronic system that utilized offline data exchange. The system is required at all licensed health facilities; however, some of the main challenges to increasing the use of the IHISA include integration with other systems (specifically procurement and financial management) and the lack of incentive to use the system outside results-based financing. Similarly, Georgia introduced an electronic information system integrating human and animal health surveillance and bringing the “One Health” concept into cross-sectoral disease surveillance as early as 2015. The country also introduced several registries for routine statistics, including cancer, perinatal, and hepatitis C. Ukraine made important progress before the pandemic to digitalize health. As the pandemic developed, the country took significant extra steps to put in place efficient data systems for decision-making.

The COVID-19 pandemic tested the countries’ health systems’ resilience. The key indicators in Table 1 highlight the low investment in health as a share of the countries’ GDP and significant reliance on OOP expenditure, putting the populations at risk of impoverishment due to health costs. Similarly, the countries’ preparedness for pandemics in 2019 was lower than the regional average (Box 3). Consequently, the pandemic became a major test

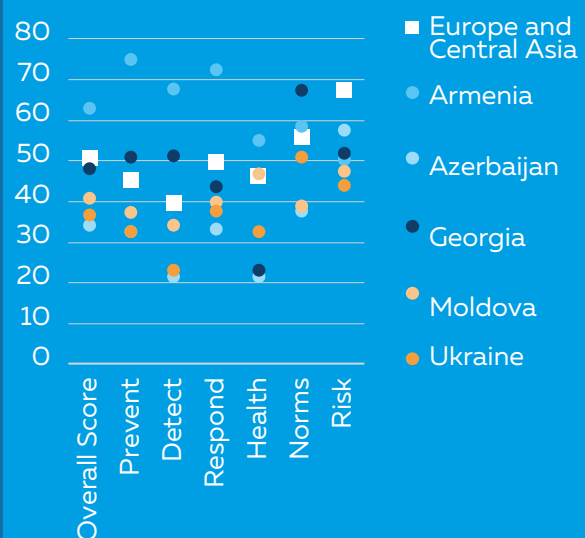
Box 3. Public health preparedness for pandemics from the perspective of health security

The Global Health Security (GHS) Index comprises six categories and is calculated based on sub-indicators involving health, political, security, and socioeconomic factors. The six categories are (1) prevention of the emergence or release of pathogens, (2) early detection and reporting for epidemics of potential international concern, (3) rapid response to and mitigation of the spread of an epidemic, (4) sufficient and robust health sector to treat the sick and protect health workers, (5) commitments to improving national capacity, financing, and adherence to norms, and (6) overall risk environment and country vulnerability to biological threats.

According to the GHS index calculated for 2019 (Figure 6), only Armenia had a better overall score (63.2) than its peers and the ECA average (50.7). All the countries scored lower than the ECA average on the overall risk environment and vulnerability to biological threats, which takes into account the political and security risk, infrastructure adequacy, and public health vulnerabilities, which are critical factors for handling the COVID-19 pandemic.

Source: Bell et al. 2021

Figure 5: Global Health Security Index in 2019



Source: GHS Index

of resilience for the countries' health systems. The following section draws upon the lessons learned from the response to the pandemic based on case studies and interviews conducted in the five Eastern European and South Caucasus countries.

Lessons from the countries' responses to the COVID-19 pandemic

The countries implemented a variety of strategies to reduce the impact of COVID-19. Measures included strategies to reduce viral transmission, increase health systems' capacity, digitalize health and information, and governance interventions to delegate power and resources. While these measures were critical in the pandemic response, factors such as trust and communication proved to be equally important to ensure an effective pandemic response. Based on the case studies developed from the five selected countries, and interviews with frontline actors in the COVID-19 response, this report draws upon eight lessons to inform recommendations on preparing health systems for future shocks.

Aiming for long-term sustainability while implementing short-term measures. Health financing was one of the first and most important short-term measures in response to the crisis. For instance, Armenia increased health care workers' salaries during the COVID-19 pandemic. However, in some instances it is unknown how long and far the budget will continue to provide financial support, particularly when the support is allocated from donor funding. Rapid funding allocation to the health care sector also enabled countries to reprofile existing facilities and build infrastructure when needed. As mentioned previously, Ukraine reprofiled select hospitals to exclusively deliver COVID-19 care. Moldova designated referral facilities for COVID-19 care, accompanied by a review of intensive care unit capabilities and infrastructure in support of international partners.

Although most of these measures have alleviated the impact during the crisis, a systematic strategy is vital for ensuring long-term sustainability, particularly to ensure that there is enough funding to prepare for and respond to crises, and to develop health workforces to ensure that local production of medical consumables meets international standards. Georgia provides an example of implementing actions for long-term sustainability as, during the pandemic, the country safeguarded long-term oxygen supply by importing power generators that produce oxygen as a by-product. Likewise, Azerbaijan and Georgia increased local production of med-

ical equipment to reduce external dependency on essential equipment

Designing tailored communications strategies targeting the different population sectors. Communication channels are crucial for informing the public and health workers about governments' strategies to reduce the burden of a health crisis. Although official government channels were available to provide updates about the pandemic, misinformation was prevalent among social media users. Doctors from Moldova agreed on the need to implement effective communication campaigns about COVID-19 to increase the level of protection against the virus among the public. Similarly, medical staff from hospitals in Armenia reported that patients arrived late to receive health care because of a lack of trust in hospitals and information about COVID-19; interviews with patients further emphasized this problem, as seen in the quote.

"Well, we see the figures, we read the information, but you cannot say, not everything you see and know is true. [...] The COVID figures are exaggerated as always, I do not believe that there are such great figures."

Yerevan, female patient, unvaccinated, registered employee

Vaccine hesitancy was an additional barrier to the implementation of effective communication strategies. In Armenia, a poll conducted in March 2021 found that only a third of respondents were willing to get vaccinated.⁹ Consequently, in collaboration with the WHO, the government developed a communications strategy that involved training media representatives to present information on COVID-19 to the public. Medical staff were also trained to provide general information about COVID-19 and protocol compliance. These interventions contributed to a ten-percentage-point increase in the proportion of Armenians willing to get a COVID-19 vaccine,¹⁰ highlighting the need to develop tailored strategies that take into account the diverse perspectives in society and involve key actors in disseminating information to increase adherence to evidence-based recommendations.

Investing in long-term trust building for a fast and consistent response. Trust is a crucial element during times of uncertainty, and the pandemic showed how lack of trust can deter effectiveness in response to a crisis. In Ukraine, for example, one of the elements interfering with political trust was the political turbulence experienced during the pandemic that led to multiple changes in the Ministry of Health leadership. In the focus groups in Armenia, patients expressed lack of trust in the reported

⁹ CIVILNET, 2021

¹⁰ Ghalechian, 2021

figures “Well, we see the figures, we read the information, but you cannot say, not everything you see and know is true. [...] The COVID figures are exaggerated as always, I do not believe that there are such great figures.” Similarly, patients’ hesitancy to be vaccinated arose from lack of trust, referring to doubts about the effectiveness of the vaccines and beliefs that people would die or develop other diseases after getting vaccinated.

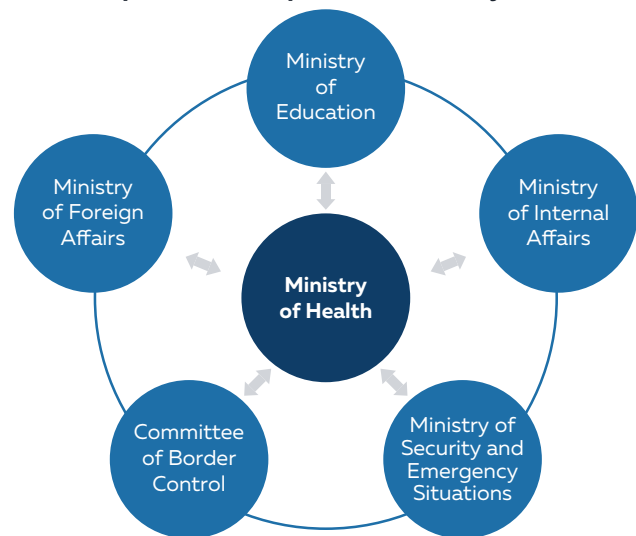
Although trust from societies in health systems and governments may be weak due to previous experiences, the COVID-19 pandemic showed that trust could also be built when public communication is clear, coherent, and supported by evidence from behavioral science. For instance, in Azerbaijan, the Ministry of Health collaborated with the WHO and UNICEF to conduct behavioral insights research to assess public perceptions, behaviors, trust, and knowledge about COVID-19. Following the assessment, the WHO Country Office developed and supported two communications campaigns for the general public, including campaigns targeted at children and translated into local languages.¹¹

Implementing multisectoral cooperation for an effective response. The COVID-19 pandemic affected the health and other sectors, such as education and finance. Consequently, governments adopted whole-of-government approaches for responding to the shock comprehensively. For instance, in Georgia and Armenia, the creation of the Interagency Coordination Council and the Commandant Office facilitated coordination in response to the pandemic. In Moldova, the government introduced the National Extraordinary Commission for Public Health, with representatives from all ministries and departments to ensure an integrated approach, multisectoral mobilization, and coordination of the response to the crisis.

In Azerbaijan, collaboration among various sectors enabled the implementation of a “one-stop” digital

platform that provided access to essential health services during the pandemic and information about e-services from other sectors, such as commerce, education, food, and entertainment. Moreover, the Ministry of Health worked with other sectors to ensure cross-sectoral coordination (Figure 6). For instance, the health sector worked with the education sector to design infection control measures in schools and universities, and with the Ministry of Internal Affairs to ensure that the public followed social mobility measures, which received support from the Ministry of Emergency Situations and the Ministry of Defense. The Committee of Border Control ensured the enforcement of prevention measures at entry ports. Lastly, the Ministry of Foreign Affairs had a crucial role in the vaccine roll-out as it collaborated with international partners to secure enough COVID-19 vaccines, emphasizing the relevance of cooperation for guaranteeing an effective response. The benefits of this collaborative approach to the pandemic contributed to building inter-agency trust and coordination (Box 4).

Figure 6: Cross-sectoral approach for the pandemic response in Azerbaijan



Source: Based on country note.

Box 4. Multisectoral preparedness and response committees to improve health governance, trust, and policy coherence

Countries created coordinating committees with representatives from various sectors to strengthen intersectoral governance and coordination during the COVID-19 pandemic. For instance, Finland, Lithuania, and North Macedonia utilized special government emergency committees. Serbia created the Operational Intersectoral Headquarter, and Estonia the interagency working group. These committees ensured a whole-of-government approach to the pandemic, enabling multiple agencies (and political parties) to agree on the decisions to reduce the burden of the pandemic and improve communication across sectors. Furthermore, intersectoral approaches to public health challenges – including those related to wider social determinants of health – enable joint funding activities to stimulate multisectoral projects and partnerships.

Sources: Sagan et al. 2021; WHO Regional Office for Europe, 2018

¹¹ WHO Country Office in Azerbaijan, 2020

Taking advantage of the opportunity presented by shocks to push through difficult reform measures.

Reforms stalled or delayed can benefit from shocks as they underline the need for change. The COVID-19 pandemic highlighted the need for a coordinated system with strong primary health care: consequently, in Azerbaijan, mandatory health insurance was expanded from covering only three pilot areas representing over 65 percent of the population in March 2020 to covering the whole population by April 2021, resulting in mandatory health insurance that now covers a comprehensive list of 2,550 medical services that include emergency and tertiary care. Similarly, Georgia expanded the benefits package of primary health care services, strengthened the capacities of PHC teams, and improved the coordination and use of diagnostic and specialized services. These changes to PHC services are intended to increase access by the remote and rural population through digital services, ensuring universal access to health care.

Ukraine had a different experience of organization of critical roles in responding to the pandemic. The government re-centralized some of the public functions (epidemiological surveillance, disease control, and emergency response) to increase the efficiency of the response to the pandemic. The reforms and reorganization of health system functions in these countries during the COVID-19 pandemic enabled the implementation of substantial changes during times of hardship. Moreover, these actions followed

a patient-centered perspective by ensuring access to essential healthcare services regardless of location and protecting the general public from the virus. For example, at the established Task Force for immunization, the inter-sectoral team systematically reviewed feedback from patient surveys, inquiries to the COVID-19 hotline, and third-party monitoring activities of COVID-19 vaccination and adopting respective measures to address identified challenges.

Minimizing unavoidable trade-offs while responding to shocks.

The pre-existing excess hospital capacity became a positive factor during the COVID-19 pandemic as it enabled a swift increase in the availability of beds for patients. However, this comes at the expense of absorbing a significant percentage of available resources during “normal” times. In Armenia, despite a reduction of over 60 percent in hospital beds between 1990 and 2019, inpatient care still absorbs 42.3 percent of the health budget.¹² Another trade-off experienced by the five countries was between life and livelihoods. For instance, reducing social mobility by closing non-essential services to control the spread of the virus negatively affected the countries’ and households’ finances. Although these trade-offs are inevitable after a shock like COVID-19, countries can still better prepare by augmenting health system capacity through innovative delivery care modes and implementing adaptive financing mechanisms to make use of resources more efficient (Box 5).

Box 5. Innovating the delivery of care and financing mechanisms during COVID-19

Measures to reduce the spread of COVID-19 served as an opportunity for health systems to innovate health care delivery. In the United Kingdom, the Derbyshire Community Health Services placed technology at the center of delivering various services. For example, community nursing teams adopted virtual handovers by MS Teams, while speech-language therapy was provided by telephone or video calls. Similarly, the immunization team developed an online e-booking system and introduced drive-through sessions to reduce crowding and the risk of infection. Innovation in care delivery was also observed for the management of wounds through the introduction of the Silhouette® 3D wound imaging and information system, a system comprising a camera that captures the wound image, software that creates a 3D model of the wound, and an online database that stores the information obtained. The introduction of these models of care improved collaboration between health care professionals by exchanging and maximizing the use of information for better decision-making.

Changes in the use and mode of health care delivery during the pandemic required modifications in how the services were financed. In Bulgaria, the lower use of outpatient services led to a financial loss for providers. Therefore, the country replaced activity-based payments with budgets. Similarly, hospitals received a budget of at least 85 percent of the last year’s turnover regardless of activity level while introducing fee-for-service payments for providing health care for patients with COVID-19. In Germany, hospitals were compensated by introducing per diem payments for unoccupied beds based on the previous year’s activity. The payments differed by the complexity of patients treated, ranging from EUR 190 to EUR 760. By November 2020, the per diem payments were restricted to non-psychiatric acute hospitals with intensive care.

Sources: Care Quality Commission, 2021; Waitzberg et al., 2021

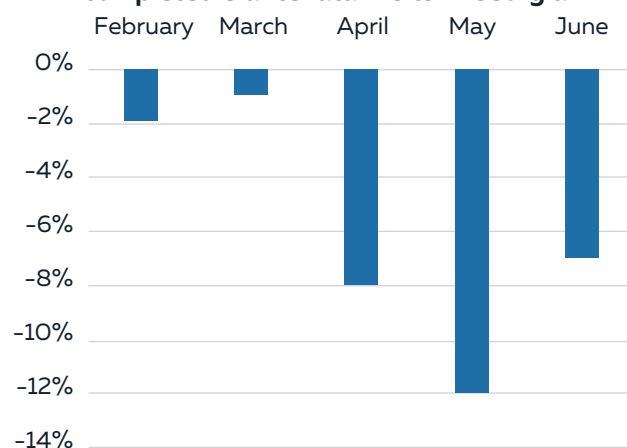
¹² Lavado et al., 2018

Ensuring the continuity of essential services while responding to the emergency.

Continuous monitoring of essential health services during shocks is vital for addressing the adverse ripple effects of the actions imposed to deal with the shocks. While virtually every country has experienced forgone care for essential services during the pandemic, there is a large variation in its magnitude, suggesting that forgone care can be partially avoidable with appropriate measures. A survey of people aged 50 and above in European and selected countries indicated that the unweighted proportions of unmet health care needs ranged from 4.2 percent in Spain to 22.9 percent in Israel (for forgoing medical treatment), from 1.5 percent in Bulgaria to 50.4 percent in Luxembourg (for postponed scheduled medical appointments) and from 0.7 percent in Bulgaria to 11.1 percent in Lithuania (for denied medical appointments).¹³ During the COVID-19 pandemic, health systems provided and expanded health care for patients at the expense of discharging non-COVID patients or restricting elective care. For example, in Georgia, the government defined three stages for standby readiness according to the number of cases in the country: 1,050 beds in the first stage, 2,000 beds in the second stage, and 4,000 beds in the third stage. When the threshold of cases was met, hospitals were notified and required to discharge patients and empty beds within 48–96 hours and accept COVID-19 patients. Also, publicly funded elective procedures were postponed from November 2020 until March 2021.

Although the actions implemented by governments to reduce the spread of COVID-19 resulted in forgone care, the general public's fear of getting infected also contributed to a reduction in essential health care delivery. In Moldova, for instance, information from the National Health Insurance Company (NHIC) showed a decrease in outpatient visits of almost 60 percent in certain groups of patients (Table 2). The impact on forgone care was

Figure 7: Change in proportion of women who completed 8 antenatal visits in Georgia



Note: Change between February and June 2019 and 2020. Source: Staff calculations based on administrative data.

also evident in antenatal visits in Georgia, where the number of women completing eight antenatal visits declined in 2020 compared to 2019 (Figure 7). To increase the rate of antenatal visits, Georgia used the Perinatal Registry, developed in 2015, which was an instrumental backbone for such services to reach out to all pregnant women (if they were detected promptly) and provided educational as well as individual and group consultative services using the Zoom® platform. These examples show how information systems with up-to-date data are crucial for closely monitoring health services and providing policymakers with quality information to implement actions that reduce the burden of forgone care and establish innovative delivery models of care.

Digitalizing data for agile decision-making. Though most countries had information systems before the pandemic, these systems were boosted during the response to the shock. In Armenia, the already-existing e-health system (ArMed) was complemented with analytical functions to contribute to pandemic management and monitor vaccination activities. In Moldova, the authorities worked with the United

Table 2. Forgone care in Moldova: number of patients with chronic diseases who accessed care services

Condition	2019	2020	2019 to 2020 difference (%)
Cancer	22,119	18,586	-15.97%
Diabetes	9,062	4,995	-44.88%
Hepatitis chronic	725	420	-42.07%
Hepatitis viral chronic	3,142	1,269	-59.61%
Cataracts	4,367	3,294	-24.57%
Sprain/strains	237	173	-27.00%
Heart attack (chronic or over four weeks)	410	224	-45.37%

Note: Change between February and June 2019 and 2020. Source: Staff calculations based on administrative data.

Nations Population Fund (UNFPA) to develop a dashboard that presented real-time data on a set of key indicators (such as the number of infections and deaths) disaggregated by age, sex, geographical location, and date. Despite the availability of this real-time data platform, Moldova lacked a single health information system, posing risks to data quality and accuracy. In Azerbaijan, the Ministry of Health and the Administration of the Regional Medical Divisions (TABIB) developed and used a single database for COVID-19 surveillance. These data systems were found to be crucial for agile decision-making. They emphasized the need to move from paper-based to digital data to ensure the rapid availability of information, not only for hospital care but also for monitoring supply of medical equipment, human resources for health, and forgone care (as shown above).

Going forward: key areas for building strong and resilient health systems

The lessons above reveal three critical areas for building strong and resilient health systems: core functions, human resources, and health care technologies and information systems. These areas are crucial for ensuring efficient health system perfor-

mance in normal times, as well as for enhancing preparedness for and response to future shocks – including national and localized health emergencies. The rest of this section presents recommendations for improving these three key areas.

Key area 1. Core health system functions

Preparing for and responding to shocks requires investing in health systems. Although system functions are broad and investments could be made at different levels, depending on the country's need, three functions stood out during the pandemic and are crucial as countries bounce back from and prepare for future shocks: crisis-sensitive service delivery, primary health care, and health care financing.

Develop crisis-sensitive delivery of care while reducing health care backlog. Ensuring the continuity of essential services, such as cancer screening and antenatal care, is needed in times of crisis to minimize the threat of forgone care to the human capital of current and future generations. Fear of infection and restrictions imposed to control the spread of the virus hindered patients from seeking health care, irrespective of the severity of symptoms. As shown above, care provision fell during the pandemic, even for conditions like cancer and

Table 3: Measures implemented to reduce the backlog of elective services due to the COVID-19 pandemic

Strategy area	2019
Outsourcing / private partnerships	<ul style="list-style-type: none"> • Purchasing private capacity to help work through waiting lists.
Extending hours of care / insourcing	<ul style="list-style-type: none"> • Extending hours of care to nights and weekends and paying staff overtime. • Increased flexibility for hospitals to negotiate working hours for staff and remove limits on overtime.
Payment design and incentives	<ul style="list-style-type: none"> • Extending activity-based funding to incentivize an increase in volume and/or complexity. • Uplifts to physician overtime rates to incentivize the catch-up of services.
Upgrading infrastructure and adding bed capacity	<ul style="list-style-type: none"> • Expanding diagnostic capacity by upgrading equipment and facilities in hospitals and establishing community diagnostic centers. • Adding overflow / 'on-demand' beds to flexibly scale staffing and bed capacity up or down according to demand.
System coordination	<ul style="list-style-type: none"> • Centralized waiting list coordination to better use resources across the system and redirect resources/patients. • Hospital or regional collaboration to share capacity/reallocate patients.
Waiting-list management	<ul style="list-style-type: none"> • Clinical validation and quality assurance of waiting lists. • Pre-triage clinics for long-waiters – identifying other forms of support and removing people who can be seen elsewhere from waiting lists.
Waiting-time targets/ guarantees	<ul style="list-style-type: none"> • Extending the patient choice policy, which allows patients to go to a private hospital or receive care in other regions if care guarantees cannot be met locally. • Implementing new care guarantees or waiting-time targets.
Demand/capacity management and flow	<ul style="list-style-type: none"> • A range of initiatives aimed at reducing demand for elective care (for example, referral optimization, improved self-management and surgical hubs). • Shifting more services to day-case procedures and implementing 'early recovery from surgery' programs/rehabilitation and step-down care.

Source: Based on Reed, Schlepper, and Edwards, 2022.

heart disease. As countries bounce back from the pandemic, interventions should be linked to building a system that provides crisis-sensitive delivery of care, meaning that people can still access health care despite the conditions imposed by the shock. Examples of how this can be possible have been present throughout the pandemic and the use of technology was a central pillar: for instance, the provision of remote care using telemedicine or collection and analysis of real-time data were both crucial for ensuring continuity of care and decision-making. Other crisis-sensitive strategies included expanding or revising the hospital capacity for health care delivery and recruiting additional health workers.

A resilient health system enables consistent recovery of its functions. Though all health systems are suffering backlogs due to the COVID-19 pandemic, the response to recover the forgone care is a determining factor of the resilience capacity of the system. Countries have adapted lessons from the pandemic to reduce forgone care and recover the level of activity seen before COVID-19. For instance, in Austria and Ireland waiting lists are being updated through pre-triage clinics for long-waiters to identify alternative forms of support when appropriate. In the Netherlands, a centralized data hub with real-time data has been introduced to evaluate demand for inpatient care and redistribute capacity accordingly. Additional strategies are shown in Table 3. In addition to these measures, modeling will continue playing a crucial role. For instance, in the United

Kingdom, mathematical models helped not only to define the need to implement lockdowns but also to determine the priority groups for vaccination, which contributed to reducing the impact of COVID-19 in the country.¹⁴

Countries should also develop national and sub-national health emergency plans to maintain health care delivery during the crisis. The plans will serve not only to prepare better and respond but also to ensure essential health services are not disrupted to the extent witnessed during the COVID-19 pandemic: this disruption is currently creating substantial pressures in health systems worldwide. Hospitals and primary health care clinics should develop business continuity plans to minimize health care delivery disruption while meeting the surge in capacity needs during crises. Lastly, countries should identify operational targets and crisis standards of care for health care delivery (Box 6).

Invest in primary health care. The primary level of care played a significant role during the COVID-19 pandemic, as it was responsible for treating less severe cases and served as a gatekeeper for accessing COVID tests and vaccines. Moreover, primary care played a prominent role in the immediate response to the crisis by functioning as pre-hospital triage, helping to determine which patients could receive health care at home or in facilities for non-severe cases, and reducing the pressure at higher care facilities. Primary health care also served as a connector

Box 6. Hospitals' crisis standards of care

Crisis standards of care refer to the health care delivered when a pervasive or catastrophic disaster makes it impossible to meet the usual health care standards. Hick et al. provide examples of these standards, which should be adapted to the countries and hospitals' context and include the following:

Element	Standard of care
Command	<ul style="list-style-type: none"> Incident command plan for integrating subject matter experts Mechanism for requesting outside resources
Coordination	<ul style="list-style-type: none"> Information shared between hospitals and key stakeholders Coordination of best practices with other hospitals
Clinical	<ul style="list-style-type: none"> Resource allocation that includes whom to consult if triage decisions outside normal practices are required Resource allocation for drug and blood shortages
Staff	<ul style="list-style-type: none"> Redeployment of staff Sequential use of staff to use the next best-qualified staff
Space	<ul style="list-style-type: none"> Planning to expand and adapt spaces
Supplies	<ul style="list-style-type: none"> Standard approach to medication and other shortages
Services	<ul style="list-style-type: none"> Tiered approach to medication and other shortages Preserved resources for core services (such as burns and trauma care)
Special	<ul style="list-style-type: none"> Plan to group infectious patients during a large-scale event

Source: Hick et al., 2022

¹⁴ Pagel and Yates, 2022

between local, regional, and national authorities by providing the data used to identify outbreaks and impose tighter measures to prevent the spread of COVID-19. Despite the substantial role of primary health care during the pandemic, its potential for improving the health system's performance has been underestimated due to the concentration of resources on in-hospital care. Primary health care is fundamental for achieving better health outcomes and reducing inequalities in access to care¹⁵ and is considered the cornerstone for achieving universal health coverage.¹⁶ However, many resources are still allocated to hospital care, resulting in weak primary care networks.

Strengthening primary health care requires a comprehensive approach. Optimizing primary health care is not only about increasing financial investments; further measures involve adopting a multidisciplinary team-based approach, improving the health workforce,¹⁷ and investing in human resources and information technology tools supporting care integration. Additional funding is needed to optimize the existing PHC infrastructure and enable access to essential services, such as ensuring PHC facilities have basic services and the necessary medical equipment. Furthermore, the increasing burden of noncommunicable diseases, such as diabetes and hypertension, means that health systems must be able to address long-term patient care needs during normal times of crises. Services delivered and drugs prescribed at the primary level of care should be covered by mandatory health insurance, leading to increased use of PHC services and improved health outcomes. Multidisciplinary teams involving social care and community members can help better manage patients' conditions by developing tailored strategies to improve individuals' health (Box 7). Lastly, improving health workforces aligns with the strategic planning mentioned below (see Human Resources) and further emphasizes the need for financial and non-financial incentives to

enhance working conditions for health care workers.

Implement agile payment models to guarantee the continuous delivery of health care. Though allocating the necessary funding to health systems is vital for better responses to crises, flexible payment models are also needed to guarantee the rapid provision of the financial resources required to respond to the shock, for instance, to cover the additional expenses of hospital providers due to reconfiguration of facilities to respond to the crisis.

In the first year of the COVID-19 pandemic, various approaches were taken to overcome the unexpected additional expenditure and revenue shortfalls of health care providers. For example, in Germany, designated facilities for patients with COVID-19 experienced losses due to new beds being needed for elective care; consequently, the payment model was changed to per diem payments adjusted for case mix and type of hospital. In addition, payment systems should take into account the introduction of new forms of health care delivery (such as consultations by telemedicine) to maintain the sustainability of this service. In Belgium, Czechia, Denmark, Estonia, Italy, Lithuania, Romania, and Slovenia, the rise of telemedicine motivated the introduction of fee-for-service payments to reimburse and promote remote health care.¹⁸

The best payment model will depend on already-existing payment mechanisms and the changes imposed by the shock, and there is a need for flexibility and adaptability to change, inherent characteristics of resilience. Good governance in payments may also support the cash flow of the health facilities, supporting daily management. In Poland, monthly payments from the National Insurance Fund to the health facilities were modified to two monthly payments to increase cash flows, enabling facilities to motivate health workers and purchase necessary health equipment.

Box 7. Multidisciplinary primary health care practices in deprived areas (France)

The Avenir Santé Villejean Beauregard association manages the Multiprofessional Health Center (MSP) Rennes North/West, a team of primary health care professionals working together to facilitate and improve care coordination, promote disease prevention and health education, and strengthen the links between medical and social actors.

The primary health care team works with the community to organize weekly newsletters distributed among neighborhood members with information about the COVID-19 pandemic and the reorganization of primary health care services. These newsletters also include information on self-management of chronic conditions and materials for mental health support. The information is translated into several languages appropriate for the community's demographics.

Source: OECD, 2021

¹⁵ Starfield, Shi and Macinko, 2005

¹⁶ Binagwaho and Ghebreyesus, 2019

¹⁷ Barış et al., 2021

¹⁸ Waitzberg et al., 2021

Key Area 2. Human resources

Health care workers are at the forefront of health systems. Irrespective of the severity of the shock and the infrastructure available, human resources are expected to adapt to the crisis, maintain their activity levels, and deliver care to those in need. At the same time, the continuous pressure and changes in the delivery of care caused by a shock increase stress among health workers, leading to burnout, unsatisfied health personnel, and, eventually, increasing turnover.

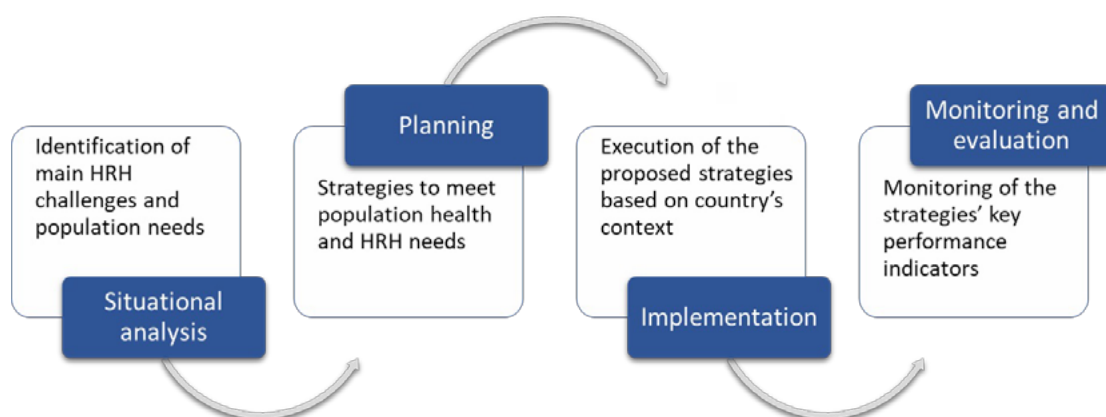
Develop strategic planning of human resources for health. Strategic planning for the health workforce will ensure the right number and distribution of health care workers, increasing access to and quality of care. Although staff shortages have been a prevailing problem in health systems, the COVID-19 pandemic revealed that inadequate planning of human resources for health can have devastating consequences as the population's health needs are unable to be met. Immediate actions to cope with the increased demand caused by the pandemic involved recruiting retired personnel or hiring senior medical students. While these actions alleviated the health care burden, they are just temporary measures that give countries time to develop sustainable approaches to improve the recruitment, retention, and distribution of health care workers that will translate into better access to care. Additionally, strategic planning involves providing the health workforce with the skills they need to meet the population's health demands and guarantee care following the best available evidence and medical technologies.

Designing strategies to improve the health care workforce is not possible without the availability of up-to-date and quality data on this sector. Infor-

mation on human resources for health will help to identify currently underserved areas and allocate enough health care personnel to cover the population's health needs. Moreover, strengthened data systems enable forecasting of the health workforce required, due to shifts in the population structure and demands arising from the development of medical technologies. The Human Resources for Health Action Framework (Figure 8), developed by the Global Health Workforce Alliance (GHWA), provides a pathway for developing strategic planning for the health workforce.¹⁹ The pandemic has already exposed the weaknesses in this sector, such as the unequal distribution and aging of health care workers presented in the lessons above. Countries should now develop effective strategies and monitoring systems centered on building resilience among health care workers, such as ensuring adequate distribution, providing training to address communities' health needs, and involving them in the decision-making process of human resources for health planning and management.²⁰

Build the capacity of health care workers concerning health technologies. During the COVID-19 pandemic, countries witnessed a surge in health care technologies, such as telemedicine and smartphone applications, to maintain service delivery due to social-mobility restrictions. The employment of health technologies in health systems requires a health workforce trained to operate these new tools for service delivery and management efficiently. Pushback against new technologies is common among health professionals due to negative perceptions and mistrust of the technologies' effectiveness.²¹ Therefore, countries must ensure that the health care workforce has skills and trust in the implemented health technologies by developing capacity-building programs across all levels of care.

Figure 8: Action cycle of the Human Resources for Health (HRH) Action Framework



Source: Based on Global Health Workforce Alliance 2022.

¹⁹ Global Health Workforce Alliance, 2022

²⁰ Pacqué-Margolis, Ng and Kauffman, 2011

²¹ Socha-Dietrich, 2021

Box 8. Competency development program to facilitate digital health care systems (Denmark)

A program of five one-day modules (Leading in Digitalization) was conducted among the secondary health care workforce in Central Region Denmark. The modules included: (1) an introductory module; (2) citizens and digitalization; (3) culture and communication; (4) implementation; and (5) a concluding module.

Participants gain experience through activities involving participation, communication, implementation, and digital imagination. In a follow-up questionnaire participants' self-scores improved in navigating the digital transformation of health systems, critical thinking on the processes in which digital solutions are implemented, and understanding how to manage digitalization.

Source: Villumsen et al., 2021

Technologies should boost health care performance; otherwise, they will create additional barriers to care delivery. The characteristics of the utilized health technologies are crucial for ensuring they increase service delivery performance. For instance, health professionals perceive technologies improving feedback, speed, and workflow as efficient. Moreover, health workers have also emphasized the need for training and familiarity with health technologies to reduce the initial anxiety in employing them.²² Capacity-building programs are emerging on health technologies and have proven effective in increasing the health workforce's digital skills and cultivating a "digital mindset," enabling them to navigate, understand, and manage the digitalization of the health system (Box 8).²³

Improve working conditions and protect health care staff's mental health. The pandemic revealed the need to improve the number of health care professionals and the conditions in which they develop their practices. Primary health care clinics and hospitals were unprepared to protect their staff with sufficient personal protective equipment or essential drugs like therapeutic oxygen. The impact of COVID-19 on health care workers' mental health was unprecedented, leading to high rates of burnout. For example, in Italy, around half (49 percent) of health workers reported symptoms related to post-traumatic stress disorder; in Spain, the number reached 57 percent.

Along with burnout, physical working conditions and reduced job satisfaction are the main reasons for leaving the profession.²⁴ Although countries introduced measures to improve working conditions, such as increased salaries and one-off bonuses, investments in the health workforce should comprise elements beyond financial incentives and address the main concerns, which vary between countries and types of workers.²⁵ In the United Kingdom, for example, one in nine nurses left the profession from July 2021 to June 2022, with lack of a work-life balance being the second reason for

leaving, just behind retirement.²⁶ Failing to improve working conditions and protect the human workforce will weaken health systems and decrease its capacity to respond to future shocks.

Improving working conditions should start at the primary level of care. As countries make efforts to reach universal health care, clinics at the primary level of care play a significant role. As described above, primary health care is the cornerstone for achieving universal health care and should be adequately equipped to ensure personnel at this level of care have the resources to efficiently work as the population's first contact with the health care system. Additional strategies to improve working conditions include improving non-financial conditions that directly affect job satisfaction and staff retention, including free parking, training opportunities, vouchers, full-time and permanent posts, and child care on-site to improve the attractiveness of employment.²⁷ Lastly, improving working conditions involves coordinating health care between the primary, secondary, and tertiary levels of care. The need for better care coordination was further heightened during the pandemic, and it is crucial to leverage technology in the health sector to achieve this goal.

Key area 3. Health care technologies and information systems

Digitalization of health is essential to improve data quality and care delivery. The COVID-19 pandemic increased demand for real-time, quality data for decision-making on public health measures, such as updating social restrictions and reallocating resources based on hospital activity levels to improve care delivery. Moreover, countries experienced the digitalization of services to enable better coordination among providers and levels of care. Investing in the digitalization of health will improve performance and increase resilience in health systems.

²² Odendaal et al., 2020

²³ Villumsen et al., 2021

²⁴ Parisi et al., 2021

²⁵ Palmer and Rolewicz, 2022a

²⁶ Parfmet and Rolewicz, 2022b

²⁷ Reed, Schleppe and Edwards, 2022

Integrate information systems and enable information exchange across providers. Countries relied on information systems to make informed decisions throughout the pandemic. However, when a unique central system was lacking, countries saw the development of multiple information systems, risking the quality and usefulness of the information. Information systems should be capable of sharing data across providers and levels of care to facilitate data exchange and the making of informed decisions for patients and the population. In addition, integrating information systems requires a person-centered lens, ensuring that patients and end-users, including medical and managerial staff, have capabilities and trust in the systems. Guaranteeing information exchange across providers and care levels will translate into better coordination and delivery of care.

Standardization of data collection is essential for integrating information systems. The case studies from the studied countries revealed that health information systems in these countries are at different levels of development, and thus the process of integrating data should be customized. The WHO's Best Practices and Challenges for Health Information Systems report provides alternatives for ensuring good practice in managing and integrating information. One strategy, for instance, involves linking information between existing registers (such as cancer and mortality registers) by using identifiers or national geocoding or creating a central database compiling all the information. An alternative to these options is to rebuild the national health information system entirely, strengthening the system and improving monitoring, planning, management, and research. Regardless of the chosen path toward

integrating information systems, data must be standardized to avoid inaccuracy and increase the analysis and use of the information.²⁸

Improve monitoring and evaluation of health care delivery to ensure continuity of services. Efficient monitoring systems enable fast and informed decision-making, which is critical for protecting the population's health amid shocks and crises. Health systems need to closely monitor and evaluate health care delivery during the preparedness activities for, response to, and recovery from a shock. As witnessed during the COVID-19 pandemic, countries with systems to monitor key health indicators, such as hospital bed availability, could increase hospital capacity or impose additional social distancing measures to reduce the risk of infection. The information from monitoring systems was also used to reorganize routine health services after observation of a decline in the health-seeking behavior of certain groups during the pandemic, such as the number of pregnant women receiving antenatal care. While data availability is crucial, it is equally essential to ensure that reporting mechanisms are in place and information is provided to decision-makers to make decisions driven by real-time data.

Countries should leverage the efforts and investments to monitor and evaluate health services during the pandemic and expand these systems to routine health care delivery. The Roadmap to Monitoring Health Services Delivery by the WHO European Region outlines critical steps to be covered while implementing monitoring systems (Table 4).²⁹ It is important for countries to develop detailed frameworks and determine a set of indicators to

Table 4: Steps for development and implementation of monitoring systems for health services

Step	2019
Defining the framework	<ul style="list-style-type: none"> • Define the purpose and objectives of a monitoring framework • Define the scope of the monitoring framework (such as primary health care, tracer conditions)
Reviewing indicators	<ul style="list-style-type: none"> • Agree on the maximum number of indicators • Consider a core list and an additional list of indicators • Scan the availability of data • Agree on the criteria for including indicators • Agree on the proportions of indicators covering each of the framework's areas • Convene a consultation on the proposed indicators
Preparing for data collection	<ul style="list-style-type: none"> • Prepare a final list of indicators • Disseminate the indicators to providers • Develop an electronic tool for data collection • Develop an electronic data repository
Collecting data	<ul style="list-style-type: none"> • Collect data for the identified indicators • Validate findings
Analyzing and reporting back	<ul style="list-style-type: none"> • Consult stakeholders / steering committees on the findings • Disseminate the data through an online platform

Source: Based on WHO Regional Office for Europe, 2017 Source: Based on WHO Regional Office for Europe, 2017

²⁸Michelsen et al., 2015

²⁹WHO Regional Office for Europe, 2017

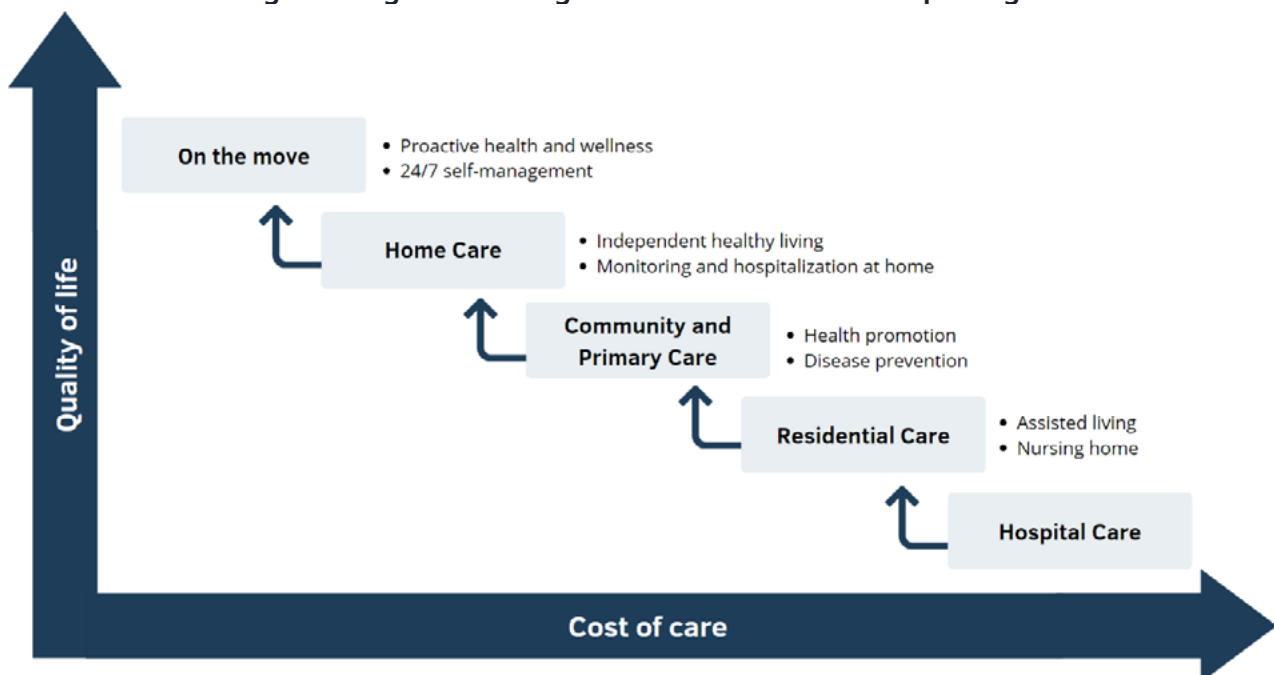
measure the performance of essential services, for example, those related to patients with chronic conditions. As witnessed during the pandemic, electronic methods of collecting data are crucial for improving data availability and rapid exchange of information among decision-makers. The health system's resilience capacity mainly depends on performance during normal times. Implementing efficient monitoring and evaluating health services during normal times will provide countries with information to improve their performance and prepare for future shocks.

Invest in digitalizing information and health care, placing people at the center to reduce the digital divide. During the pandemic, innovation in service delivery revolved around using technology to ensure that people could access health care. As countries move away from COVID-19, it is expected that services like telemedicine will continue to be used as alternative modes of delivering care. While using these delivery modes will alleviate the pressure on health services, it could unintentionally increase inequalities in access to digital services (the digital divide) because of difficulties in internet access and digital literacy, particularly among vulnerable groups such as the elderly and minority groups.³⁰ Following a person-centered approach in digitalizing information and health care will ensure that inequalities in digital access are not further widened.

Investments in digitalization of health should follow a national digital strategy to avoid siloed

approaches and low returns on investment. As health systems move towards digitalization, health care will be transferred to patients and the population, who will increase the control of their health with the support of digital technologies that provide access to accurate information to self-manage their conditions and make informed decisions alongside health care providers.³¹ This transition will accelerate the move towards reducing the cost of care while improving quality of life by delivering efficient care outside hospitals (Figure 9). Though financial investments are critical, these should come along with modernizing existing governance structures to ensure the effective digitalization of health systems. Therefore, a national digital health strategy should be developed to guide efforts for the digitalization of health. The strategy should follow a person-centered approach to ensure people are familiar with the technologies implemented in the health sector and increase digital access, literacy, and assimilation, preparing them to access health care during normal times and in times of crisis.

Figure 9: Digital technologies drive the health and care paradigm



Source: Based on EHTEL (2021)

³⁰ Litchfield, Shukla and Greenfield, 2021

³¹ EHTEL, 2021

Conclusions

COVID-19 has critically affected health systems and other sectors, allowing countries to implement changes at an unprecedented pace. Although the pandemic is not over, as new waves of cases continue to test health systems around the globe, there have been important achievements that seemed distant prospects before the pandemic. For instance, countries expanded their health coverage, reorganized health system functions, and increased local production of medical equipment and pharmaceuticals during a crisis. At the same time, the pandemic exposed areas that need urgent attention, such as improving health workforce planning and strengthening the primary health care sector.

The time to prepare for the next crisis is now. As countries overcome the acute impact of COVID-19, they will be faced with the long-term effects of the measures to control the spread of the virus during the last couple of years, including the forgone care of patients with chronic conditions and the impact on mental health, mainly among the health workforce. Although it is impossible to determine when the next crisis will occur, and its source, (re)emerging microorganisms and climate change are two leading public health issues that require special attention. The significant improvements made in recent years present a unique opportunity for countries to leverage these efforts to prepare for future crises.

References

- Arush Lal, et al., Fragmented health systems in COVID-19: rectifying the misalignment between global health security and universal health coverage, *The Lancet*, Volume 397, Issue 10268, 2021, Pages 61-67, ISSN 0140-6736, [https://doi.org/10.1016/S0140-6736\(20\)32228-5](https://doi.org/10.1016/S0140-6736(20)32228-5). (<https://www.sciencedirect.com/science/article/pii/S0140673620322285>)
- Barış, E. et al. (2021) Reimagining Primary Health-care After COVID-19. Washington DC.
- Bell, J. A. et al. (2021) Global Health Security Index: Advancing Collective Action and Accountability Amid Global Crisis. Available at: www.GHSIndex.org.
- Binagwaho, A. and Adhanom Ghebreyesus, T. (2019) 'Primary healthcare is cornerstone of universal health coverage', *BMJ (Clinical research ed.)*. England, p. l2391. doi: 10.1136/bmj.l2391.
- Care Quality Commission (2021) Innovation and inspiration: examples of how providers are responding to coronavirus (COVID-19). Available at: <https://www.cqc.org.uk/publications/innovation-inspiration-examples-how-providers-are-responding-coronavirus-covid-19#hide10> (Accessed: 3 May 2022).
- CIVILNET (2021). Հայաստանցիների կեսը չի վստահում պատվաստանյութերին և չի պատրաստվում պատվաստվել. հարցման արդյունքներ . Available from: <https://www.civilnet.am/news/599996/> (Accessed: 28 February 2023)
- CURATIO (2021). Georgian Healthcare Barometer XIV Wave The analysis of financial stability and risks in healthcare. Available at: <http://curatiofoundation.org/georgian-healthcare-barometer-xiv-wave-analysis-financial-stability-risks-healthcare/> (Accessed: 10 February 2023)
- EHTEL (2021) Imagining 2029. Available at: <https://www.ehtel.eu/activities/imagining-2029.html>.
- European Commission (2022) State of Health in the EU: Companion Report 2021. Luxembourg. doi: 10.2875/835293.
- European Health Information Gateway (2022) Bed occupancy rate and Total inpatient expenditure as % of total health expenditure. Available at: <https://gateway.euro.who.int/en/datasets/> (Accessed: 8 March 2022).
- Ghalechian N. (2021). Health Minister Sees Falling Vaccine Hesitancy In Armenia . Available from: <https://www.azatutyun.am/a/31440654.html> (Accessed: 28 February 2023)
- Global Health Workforce Alliance (2022) HRH Action Framework. Available at: <https://www.capacityproject.org/framework/action-cycle/#situational-analysis> (Accessed: 9 March 2022).
- GOV.UK (2021) 3 in 4 UK adults receive both doses of a COVID-19 vaccine. Available at: <https://www.gov.uk/government/news/3-in-4-uk-adults-receive-both-doses-of-a-covid-19-vaccine> (Accessed: 11 April 2022).
- Henry E. Sigerist (2017) 'The Essence of the Soviet Health System', *American Journal of Public Health*. American Public Health Association, 107(11), pp. 1736-1738. doi: 10.2105/AJPH.2017.107111736.
- Hick, John L., Dan H., and Matthew W. (2022) "Hospital Planning for Contingency and Crisis Conditions: Crisis Standards of Care Lessons from COVID-19." *Joint Commission journal on quality and patient safety* 48(6): 354.
- Kruk, M. E. et al. (2015) 'What is a resilient health system? Lessons from Ebola.', *Lancet* (London, England). England, 385(9980), pp. 1910-1912. doi: 10.1016/S0140-6736(15)60755-3.
- Lavado R., Hayrapetyan S., and Kharazyan S. (2018) Expansion of the benefits package: the experience of Armenia. World Bank.

- Litchfield, I., Shukla, D. and Greenfield, S. (2021) 'Impact of COVID-19 on the digital divide: a rapid review', *BMJ open*, 11(10), p. e053440. doi: 10.1136/bmjopen-2021-053440.
- Meslé, M. M. I. et al. (2021) 'Estimated number of deaths directly averted in people 60 years and older as a result of COVID-19 vaccination in the WHO European Region, December 2020 to November 2021', *Eurosurveillance*. European Centre for Disease Prevention and Control, 26(47), p. 2101021.
- Michelsen, K. et al. (2015) *Promoting Better Integration of Health Information Systems: Best Practices and Challenges*. Copenhagen.
- National Center for Disease Control and Public Health (2021). One Year with COVID-19: 5th update. www.ncdc.gov
- Norris, F. H. et al. (2008) 'Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness', *American journal of community psychology*. England, 41(1-2), pp. 127-150. doi: 10.1007/s10464-007-9156-6.
- Odendaal, W.A. et al. (2020) 'Health workers' perceptions and experiences of using mHealth technologies to deliver primary healthcare services: a qualitative evidence synthesis', *The Cochrane database of systematic reviews*, 3(3), p. CD011942. doi:10.1002/14651858.CD011942.pub2.
- OECD (2021) *Strengthening the frontline: How primary healthcare helps health systems adapt during the COVID-19 pandemic*. Available at: https://read.oecd-ilibrary.org/view/?ref=1060_1060243-snyxeld1ii&title=Strengthening-the-frontline-How-primary-healthcare-helps-health-systems-adapt-during-the-COVID-19-pandemic.
- Pacqué-Margolis, S., Ng, C. and Kauffman, S. (2011) *Human resources for health (HRH) indicator compendium*. New York. Available at: <https://www.capacityplus.org/hrhic/>.
- Pagel, C., & Yates, C. A. (2022). Role of mathematical modelling in future pandemic response policy. *BMJ*, 378.
- Palmer, B. and Rolewicz, L. (2022a) The long goodbye? Exploring rates of staff leaving the NHS and social care. Available at: <https://www.nuffieldtrust.org.uk/resource/the-long-goodbye-exploring-rates-of-staff-leaving-the-nhs-and-social-care> (Accessed: 3 May 2022).
- Palmer, B. and Rolewicz, L. (2022b) Peak leaving? A spotlight on nurse leaver rates in the UK. Available at: <https://www.nuffieldtrust.org.uk/resource/peak-leaving-a-spotlight-on-nurse-leaver-rates-in-the-uk> (Accessed: 10 February 2023)
- Parisi, R. et al. (2021) 'Rates of turnover among general practitioners: a retrospective study of all English general practices between 2007 and 2019', *BMJ open*, 11(8), p. e049827. doi: 10.1136/bmjopen-2021-049827.
- Reed, S., Schlepper, L. and Edwards, N. (2022) *Health system recovery from Covid-19: International lessons for the NHS*. Available at: <https://www.nuffieldtrust.org.uk/research/health-system-recovery-from-covid-19-international-lessons-for-the-nhs>.
- Sagan, A. et al. (2021) Health systems resilience during COVID-19: lessons for building back better. Available at: <https://apps.who.int/iris/handle/10665/348493>.
- Socha-Dietrich, K. (2021) Empowering the health workforce to make the most of the digital revolution. Paris. doi: <https://doi.org/10.1787/37f-f0eaa-en>.
- Starfield, B., Shi, L. and Macinko, J. (2005) 'Contribution of primary care to health systems and health', *The Milbank quarterly*, 83(3), pp. 457-502. doi: 10.1111/j.1468-0009.2005.00409.x.
- Thomas, S. et al. (2020) *Strengthening health systems resilience: key concepts and strategies*. Copenhagen (Denmark).
- Villumsen, S. et al. (2021) 'Capacity Building in Preparing the Health Workforce to Deliver the Digital Future', *Studies in health technology and informatics*. Netherlands, 286, pp. 43-47. doi: 10.3233/SHTI210634.
- Waitzberg, R. et al. (2021) 'Balancing financial incentives during COVID-19: A comparison of provider payment adjustments across 20 countries', *Health policy (Amsterdam, Netherlands)*. doi: 10.1016/j.healthpol.2021.09.015.
- Wei, EK., et al. (2021). Nine Lessons Learned From the COVID-19 Pandemic for Improving Hospital Care and Healthcare Delivery. *JAMA Internal Medicine*. Doi: 10.1001/jamainternmed.2021.4237

- WHO (2021). WHO's 7 policy recommendations on building resilient health systems. Available at <https://www.who.int/news/item/19-10-2021-who-s-7-policy-recommendations-on-building-resilient-health-systems> (Accessed 20 March 2023)
- WHO (2020). WHO Director-General's opening remarks at the media briefing on COVID-19 - 11 March 2020. Available at: <https://www.who.int/director-general/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19---11-march-2020> (Accessed: 10 February 2023)
- WHO Country Office in Azerbaijan (2020). WHO Country Office in Azerbaijan supports the country in its COVID-19 response. Available from: <https://www.who.int/about/accountability/results/who-results-report-2020-mtr/country-story/2020/who-country-office-in-azerbaijan-supports-the-country-in-its-covid-19-response> (Accessed: 28 February 2023)
- WHO Regional Office for Europe (2017) Roadmap to monitoring health services delivery in the WHO European Region. Denmark.
- WHO Regional Office for Europe (2018). Multi-sectoral and intersectoral action for improved health and well-being for all: mapping of the WHO European Region. Denmark.
- World Bank. Governance Global Practice. Europe and Central Asia Region. (2021). South Caucasus: GovTech for Armenia. A Whole of Government Approach as a Key Foundation for the Digital Economy in Armenia. Available at <https://openknowledge.worldbank.org/bitstream/handle/10986/35852/South-Caucasus-GovTech-for-Armenia-A-Whole-of-Government-Approach-as-a-Key-Foundation-for-the-Digital-Economy-in-Armenia.pdf?sequence=1&isAllowed=y>
- World Bank Data (2022) Physicians and Nurses and Midwives per 1,000. Available at: <https://data.worldbank.org/indicator/SH.MED.PHYS.ZS?locations=EU> (Accessed: 8 March 2022).
- World Health Organization (no date) The 10 Essential Public Health Operations. Available at: https://www.euro.who.int/_data/assets/pdf_file/0007/172762/Strengthening-public-health-services-and-capacity-an-action-plan-for-Europe-Eng.pdf (Accessed: 20 March 2023).
- Zhao F, et al. Assessment of appropriateness of hospitalisations in Ukraine: analytical framework, method and findings. *BMJ open*. 2019 Dec 1;9(12):e030081.

Annex: Summary of case studies



Armenia

Baseline characteristics and preparedness for shocks

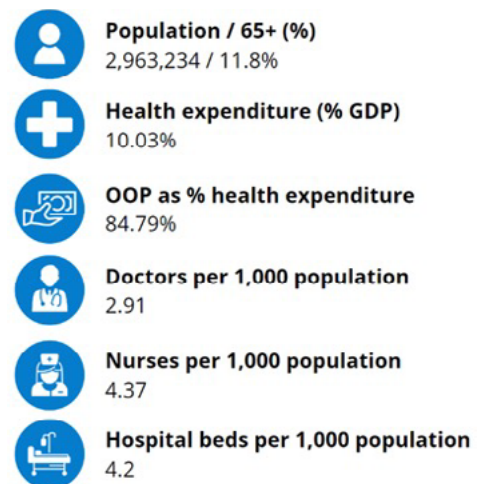
Substantial structural reforms were introduced following the collapse of the Soviet Union in 1991. The reorganization towards a market economy led to economic growth, increasing gross domestic product (GDP) per capita in current USD from USD 623 in 2000 to USD 4,623 in 2019.

A snapshot of key population health indicators is presented in Figure 10. Health expenditure as a share of GDP has more than doubled between 2000 (4.2 percent) and 2018 (10.03 percent); however, out-of-pocket (OOP) payments increased more than 20 percentage points in the same period to 84.79 percent of total health expenditure in 2019. The number of doctors has remained relatively constant over the past two decades (2.7 to 2.9 per 1,000 from 2000 to 2015), yet the number of nurses per 1,000 population decreased from 5.91 in 2000 to 4.85 in 2017. The number of hospital beds decreased by over 60 percent between 1990 and 2019. Inpatient care expenditure also fell in recent years, from 44 percent of government health expenditure in 2011 to 38 percent in 2019.

Response to the shock

Actions to reduce the spread of the virus included a nationwide lockdown, increased testing capacity, and the availability of dedicated health facilities or hotels to quarantine non-severe COVID-19 cases. Hospital capacity was enhanced by expanding the number of beds and providing care for non-severe COVID-19 cases in 16 hotels with 400 beds. All persons confirmed to have cases of COVID-19 were eligible for hospital care free of charge. The health care workforce was increased by training local volunteers in health care professions and receiving medical doctors and nurses from other countries. Armenia established a Commandant Office with members from multiple sectors (including the Prime Minister; the ministers of health, economy and finance; and the Head of Police, among others), ensuring a whole-of-government approach to the pandemic. Moreover, collaboration with international partners (such as WHO and

Figure 10: Key public health indicators for Armenia



Source: World Bank 2020 or latest

the World Bank) facilitated the expansion of available resources and medical equipment. Lastly, Armenia successfully introduced platforms for training and webinars, information exchange between doctors and patients, precise laboratory results, contact tracing, tracking mobile data, as well as video-observed treatment for tuberculosis patients. This demonstrated good use of the digitalization of both routine and COVID-19 related health care services.

Lessons learned and way forward

Optimizing health system capacity and health workforce. As a post-Soviet country, Armenia does not lack health facilities and beds; however, the country still needs to build additional bed capacity to respond adequately to the COVID-19 pandemic. Therefore, preparedness for future shocks must include hospitals having detailed disaster plans that include the following: which areas of the hospital to expand to and in what order (for example, recovery room first, ambulatory areas second), how to increase ability to care for incoming patients (such as canceling routine surgery and appointments), and how to gain immediate access to additional staff (such as reassignment of staff with appropriate training to affected areas).³² This approach would benefit Armenia and prevent the need for urgent and speedy measures to cope with the increasing demand for health care.

³²Wei et al., 2021.

Improving skills in pandemic preparedness and response. In contrast to other sectors, simulation exercises to prepare for emergencies are not common in Armenia's health care system at the ministry/government, hospital, or community levels. In all developed health care systems, institutions such as departments of public health, hospitals, and emergency medical systems, routinely practice their responses to emergencies and have well-defined bodies coordinating such drills. The experience of combating this pandemic can and should serve as an essential foundation for developing long-term and institutionalized crisis management mechanisms. Collaboration with international partners (such as WHO and the World Bank) will provide the technical expertise and resources needed to achieve better pandemic preparedness and response.

Ensuring a multisectoral approach. Timely identification of the first imported case was critical for further mobilizing the national players. Armenia was quite successful in its quick response to the outbreak in mobilizing resources and undertaking measures to prevent its spread, such as the declaration of a State of Emergency, national lockdown, quarantine, contact tracing, regulatory changes, and risk communication. However, the delegation of the response to the Ministry of Health later in the pandemic highlights the need to implement coordinated national strategies rather than ad hoc decisions to respond to shocks and ensure a sustainable response to the crisis.

Digitalizing health care and information services. Armenia has a long track record of digital government transformation, including developing an e-government portal, implementing a digital signature, smart ID, an interoperability platform, a G-cloud prototype, and cybersecurity.³³ The COVID-19 pandemic has made GovTech even more urgent, accelerating the impetus to promote more effective, efficient, transparent, and accountable public services for citizens. Nevertheless, these activities need to be supported by legislation, and skills should be built for their use.

³³World Bank, 2021

Azerbaijan

Baseline characteristics and preparedness for shocks

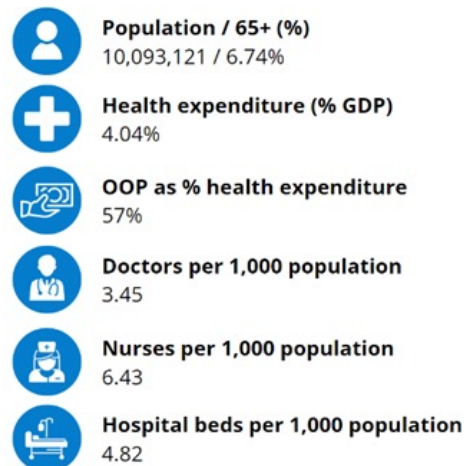
The Republic of Azerbaijan (Azerbaijan) is an upper-middle-income country with a relatively young population (over 70 percent are under 65 years). Azerbaijan retained the centrally planned, governed, and financed health system inherited from the Soviet Union. However, in 2016, the country experienced structural and financial reforms toward mandatory health insurance and universal access to essential healthcare.

A snapshot of key population health indicators is presented in Figure 11. As a share of GDP, health expenditure is lower (4.04 percent) than neighboring countries. Public spending on health has increased in the country after the reforms, almost doubling to 1.9 percent of GDP in 2020. Despite increased public spending, OOP payments remain high, making up over 57 percent of health expenditure. Although the number of doctors per 1,000 population has remained relatively stable since 2000, the number of nurses per 1,000 population has fallen from 8.66 in 2000 to 6.43 in 2014. Hospital beds per 1,000 people fell from 8.69 in 2000 to 4.82 in 2014. In addition, hospital beds remain unevenly distributed, creating a barrier to access to inpatient care for those living in remote and rural areas.

Response to the shock

Azerbaijan implemented strict measures to control the spread of the virus. In March 2020, a nationwide lockdown was imposed, and businesses, airports, and transportation hubs were closed. While these measures were relaxed in May 2020, mobility restrictions were tightened in selected regions reporting outbreaks. Hospital capacity was gradually expanded by increasing the number of hospital beds in existing and recently built hospitals and temporary modular hospitals. Two sports arenas were also reconfigured to treat COVID-19 patients. At the same time, health care facilities providing COVID-19 care received financial compensation to cover the losses, and health care workers received three- to fivefold increases in their salaries. Governance was improved by establishing the National Operational Headquarters (OH), a dedicated task force to handle the pandemic. The OH ensured horizontal and vertical national response coordination by integrating international organizations (the United Nations, the World Bank, and WHO) with national, regional, and local-level organizations. Lastly, the Government of Azerbaijan expanded the population and services covered through mandatory health insurance.

Figure 11: Key public health indicators for Azerbaijan



Source: World Bank 2020 or latest

Lessons learned and way forward

Optimizing the health infrastructure. The high number of acute care hospital beds helped to swiftly mobilize the required surge capacity and avert a major health system crisis. However, this should not dissuade Azerbaijan's policymakers from gradually optimizing the health service delivery system and reorientating it towards primary health care and adjusting it to the changing public health needs post-pandemic. Further optimization requires definition of a new health facility masterplan with an "optimal" capacity, enabling efficient addressing of the population's health needs through a better-integrated network of primary, secondary, and tertiary care facilities and, at the same time, being able to rapidly unfold surge capacity in case of pandemics and other public health emergencies.

Developing a resilient health workforce. Health care workers proved to be the most critical element of the global and national pandemic response. The significant salary supplements and social support provided to the health care workforce caring for COVID-19 patients in Azerbaijan have most likely played an essential role in the sustained health system response efforts thus far. However, it is not clear how long and to what scale these incentives can be retained in the post-pandemic period. A longer-term vision for human resource development and retention must be in place to answer this critical question for Azerbaijan's health system resilience and preparedness for future pandemics.

Enhancing universal health coverage. The COVID-19 pandemic once again demonstrated the need for and importance of UHC. Countries with universal or near-universal health coverage, particularly those with aligned pre-pandemic investments in UHC

and health security,³⁴ revealed more health system resilience. Azerbaijan's experience of the nationwide scale-up of the Mandatory Health Insurance system also shows that UHC is an essential tool for ensuring the continuation of essential health services and a critical precondition for rebuilding more resilient health systems and societies less vulnerable to future pandemic shocks.

³⁴Arush Lal, et al, 2021

Georgia

Baseline characteristics and preparedness for shocks

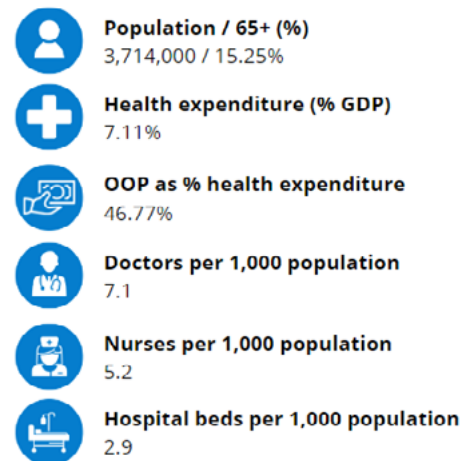
Since 1995, Georgia has experienced two major health system reforms. The first introduced a social insurance scheme with an arranged purchaser-provider split. In 2012 this was changed to a tax-funded health care system. The introduction of the Universal Health Coverage Program in 2012 expanded coverage, which reached 82 percent of the population in 2017. At the same time, private investments upgraded existing health care establishments, which led to the privatization of almost 85 percent of providers.

Figure 12 presents a snapshot of key public health indicators. As a percentage of GDP, health expenditure fell from 9.84 percent in 2009 to 7.11 percent in 2018. OOP payments declined by 21.24 percentage points in the same period to 46.77 percent of total health expenditure in 2019. Although Georgia has a higher proportion of doctors (7.1 per 1,000 population) than its peers, the proportion of nurses (5.2 per 1,000) is the lowest. Thus, Georgia has one of the lowest nurse-per-doctor ratios (0.62) in the WHO European Region. The number of hospital beds per 1,000 population is also among the lowest in the region; however, bed occupancy remains below 50 percent.

Response to the shock

Transmission of the virus was reduced by measures to restrict social mobility, such as introducing a lockdown, closing air connections with other countries, maintaining quarantine for travelers, and closing non-essential public places. However, restrictions were loosened in the second half of 2020, increasing cases. Hotel rooms and “fever clinics” were available as quarantine facilities for contacts and suspected cases. Health care system capacity was increased by postponing all elective hospital admissions paid from public funds, discharging eligible patients within 48–96 hours, and treating non-severe COVID-19 cases at home. Although financial incentives were provided to hospitals treating COVID-19 patients, focus group discussions revealed that this did not always translate into bonuses for health care workers. Governance was improved by implementing a whole-of-government approach and establishing the Interagency Coordination Council and the Operational Headquarters on the Management of the State of Emergency. Lastly, Georgia enhanced its already existing health information system for surveillance of COVID-19 cases.³⁵ Specifically, the COVID-19 Lab diagnostic electronic

Figure 12: Key public health indicators for Georgia



Source: World Bank 2020 or latest

module enabled all public and private providers to report into one system, increasing data availability about tested and uncovered cases.

Lessons learned and way forward

Optimizing healthcare infrastructure. Spare surge capacity within the health sector was a determining factor in Georgia's health system's resilience during the shockwave. The country is one of the top five countries in the WHO European Region by the number of acute (short stay) hospital beds and doctors per 100,000 population, which helped to meet the demand for medical care during the response to the pandemic. However, maintaining this spare capacity during normal times and spending on sustaining surplus hospital beds and physicians are also root causes of Georgia's health sector inefficiencies, and should not be considered a plausible solution for resilience.

Ensuring multisectoral collaboration. The Government of Georgia demonstrated effective stewardship, coordination, and implementation abilities by taking the “right actions at the right time while prioritizing the right to health” in its decisions during the first wave of the pandemic. However, the parliamentary elections held in October and November 2020 redirected the government's priorities, bringing a surge in COVID-19 cases and deaths. Nonetheless, with adequate governance arrangements, the health system withstood the shock and recovered in response to the second wave, which emerged in mid-March 2021. As expressed by a senior health policymaker during one of the focus group interviews, the “coordination during COVID-19 response was unprecedentedly good. This is an outstanding lesson of how effective the government can be because of the joint and synchronous

³⁵ National Center for Disease Control and Public Health, 2021

action and how many tangible results the government could achieve."

Developing efficient information systems. Health information systems played a critical role in the response to the COVID-19 pandemic. These systems, especially those related to disease surveillance and capable of capturing data from both public and private players, proved their value in rendering real-time information for evidence-informed decision-making. Preparedness for future shocks should involve the development of and improvements to information systems for facilitating evidence-based decision-making.



Moldova

Baseline characteristics and preparedness for shocks

The health system of the Republic of Moldova is based on the principle of universal access to essential health services and is financed through mandatory health insurance.

Figure 13 presents a snapshot of key public health indicators. Health expenditure has almost halved as a percentage of GDP in the last decade, from 11.4 percent in 2009 to 6.6 percent in 2018. While mandatory health insurance exists, pharmaceutical expenses still rely on OOP payments. At the same time, informal payments remain prevalent. Human resources are scarce in the country, and over half of the health care workforce is over 50 years old or retired. Hospitals are unevenly distributed, as around 50 percent are in the capital city, where less than 25 percent of the population lives.

Response to the shock

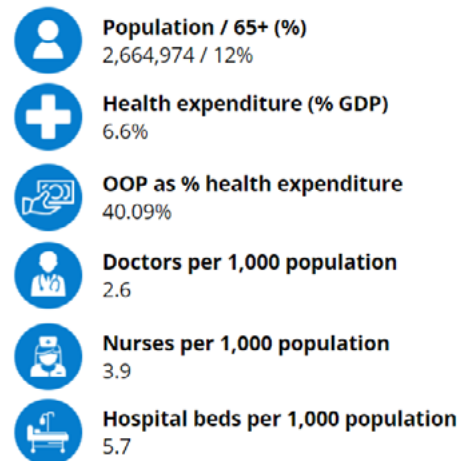
Measures were first introduced to control the spread of COVID-19 in March 2020, when educational institutions and public venues were closed, and air and rail traffic suspended. Testing sampling was expanded through mobile teams visiting suspected cases' homes. Health capacity was increased by referring mild COVID-19 cases to primary health care workers, who provided care through telemedicine or home visits. Similarly, real-time National Agency for Public Health (NAPH) data were used to readjust hospital bed capacity. Intersectoral groups were established at the national and local levels to ensure an adequate public health response. Moreover, Moldova collaborated with international partners (WHO, the World Bank, USAID, and the EU) to assess medical institutions, acquire critical medical equipment, and increase capacity to treat patients with COVID-19.

Lessons learned and way forward

Implementing actions guided by scientific evidence. The surveillance system developed in Moldova has been adjusted to comply with WHO recommendations and to provide the information needed to monitor the epidemiological situation in the country and ensure the comparability of data at the regional and international level, as well as to substantiate decisions taken. At the same time, laboratory testing capabilities for COVID-19 have been expanded to meet the growing demand.

Ensuring multisectoral collaboration. Moldova has taken advantage of a large pool of stakeholders

Figure 13: Key public health indicators for Moldova



Source: World Bank 2020 or latest

and decision-makers who have worked together and committed to supporting the health system to sustain itself and adequately respond to COVID-19. The Commission for Exceptional Situations of the Republic of Moldova and the Extraordinary National Commission for Public Health have played an essential role in coordinating and planning intersectoral measures to respond to the pandemic at the national level. Both commissions also played regulatory roles during the pandemic period. Despite complex political transformations and structural reorganizations in the Ministry of Health and subordinated agencies, including the NAPH, these institutions – in collaboration with development partners and civil society – have made tremendous efforts not just to alleviate the increasing pandemic challenges avoiding imminent risks to the public health system collapse, but also to adapt to unfolding pandemic urgencies, build additional capacities, and improve capacity to respond to COVID-19. Maintaining a whole-of-government approach will be critical for ongoing pandemic preparedness.

Improving health care coverage. State policies must focus on improving access to medicines for outpatient treatment. The coverage (compensation) policy can be strengthened by: expanding the number of essential medicines compensated for by the NHIC in outpatient treatment and, at the same time introducing exemptions from co-payments for specific categories of the population, introducing an income-based ceiling for all co-payments; the gradual exclusion of percentage co-payments that expose people to inefficiencies arising from improper prescription and release, high or fluctuating prices; and addressing inefficiencies in purchasing, pricing and delivering medicines for outpatient treatment, including increasing the use of generic alternatives.

Ukraine (pre-war)

Baseline characteristics and preparedness for shocks

Ukraine was one of the last post-Soviet countries to introduce health system reforms. In 2015, the government began its reform of the public health system by focusing on managing non-communicable diseases and decentralizing public health functions to regional public health centers under the umbrella of the Center of Public Health, also transferring some of the sanitary control responsibilities to the Food Safety and Consumer Protection Service. Between 2015 and 2020, major fiscal and structural reforms took place, including creation of a single-purchaser and an explicit benefit package.

Figure 14 presents a snapshot of key public health indicators. Health expenditure as a proportion of GDP has considerably increased from 5.5 percent in 2008 to 7.72 percent in 2018. However, OOP payments as a proportion of health expenditure increased from 37.79 percent in 2008 to 49.35 percent in 2018. Despite recent reforms, care delivery remains fragmented and heavily hospital-oriented, evidenced by an average stay of three days longer than the European Union-27 average.³⁶ Human resources remained constant from 2000 to 2008. In 2009, doctors and nurses increased by 0.4 and 0.9 per 1,000 population, respectively. However, the numbers declined after the 2013-2014 crisis, with doctors per 1,000 falling from 3.49 in 2009 to 2.99 in 2014 and nurses per 1,000 from 7.54 in 2009 to 6.66 in 2014.

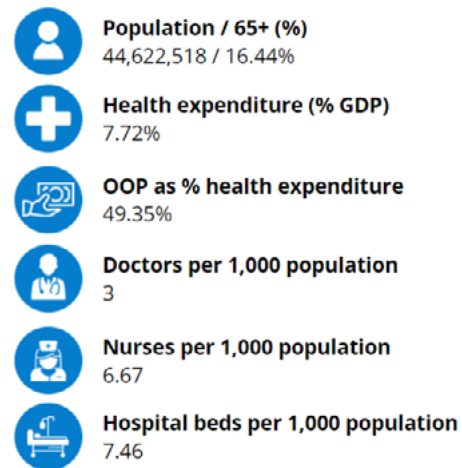
Response to the shock

Ukraine introduced school closures to control the spread of the virus. Although the first case was detected on March 3, 2020, only in April were measures tightened by banning access to public parks and making facemask-wearing compulsory in public spaces. Hospital capacity was increased at the expense of restricting elective care. In addition, over 500 designated facilities were used to treat COVID-19 patients. The main limitation was lack of oxygen supply. Lastly, the government set up the operational headquarters of the Ministry of Health of Ukraine to coordinate the COVID-19 response.³⁷ Changes in the Ministry of Health leadership were frequent, diminishing public trust in the government's actions to deal with the pandemic.

Lessons learned and way forward

Ensuring a fast and coordinated response. Weak capacity for whole-of-government coordination

Figure 14: Key public health indicators for Ukraine



Source: World Bank 2020 or latest

reduced the speed and effectiveness of the government's pandemic response. No single multi-sector coordinating structure was instituted to oversee responses across the health, social and economic fields, and the COVID-19 emergency committee focused strongly on limiting transmission. There was also no transparent whole-of-government response plan to the pandemic (beyond surveillance, control, and treatment). The government did not clearly communicate alternative response scenarios and the trade-offs it considered in making response choices. This weakness was compounded by political turbulence, including frequent leadership changes in the Ministry of Health in the critical first months of the epidemic. Ukraine should invest in developing solid and clear leadership throughout future pandemic responses to prevent public mistrust of government and ensure coordination across the different sectors.

Reorganizing health system functions. The COVID-19 crisis has highlighted design weaknesses in Ukraine's intended model for public health reform that require considerable change. Decentralizing surveillance capacities, which was in progress in early 2020, was a barrier to systemic contact-tracing efforts that required a capable and accountable regional agency to implement tracking and control. The rapid response actions related to the Chief Sanitary Doctor's office's reinstatement helped to introduce some control measures. However, designing and building new public health architecture with vertically accountable regional Centers for Disease Control and Prevention linked to the newly developed contract tracing system took much longer. These changes indicate that an optimal public health organization would balance vertical accountability with creating strong regional stakeholders for disease surveillance and control.

³⁶ Zhao F et al., 2019

³⁷ See <https://zakon.rada.gov.ua/rada/show/v1319282-19#n14>

Implementing reforms towards primary health care and digitalization of care. Ukraine's young health financing reform, the launch of which mostly coincided with the onset of the epidemic, became both an asset and a challenge for the crisis response. The PHC reform, already established by 2020, has enabled a fast roll-out of COVID-related services (such as on-site COVID-19 testing using COVID-19 antigen tests) and rapid financial compensation adjustments through increased capitation payments to PHC providers through the National Health Service of Ukraine (NHSU). The e-Health system has been an important platform that has enabled surveillance and, later, vaccination campaigns.

Implementing new purchasing models. The new strategic health care purchasing approach made it easier to allocate and adjust the financing of providers quickly. In particular, data collected by the NHSU on specialized service provision, combined with the new flexible purchasing arrangements, helped to strengthen the rules for appointing and financing COVID-19 hospitals in mid-2021, contracting fewer facilities with a higher number of adequately equipped beds. However, challenges remain as hospitals are financially challenged during the transition to new purchasing models; thus, a sustainable longer-term transition plan is needed, including a likely future period of fiscal consolidation. Most of the financial support for the transition went into salary increases, which was unsustainable in the medium term and conflicted with the reform's intention (a shift to output-based contracting of services).



THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP



Funded by
the European Union

© 2023 International Bank for Reconstruction and
Development / The World Bank

1818 H Street NW, Washington DC 20433

Telephone: 202-473-1000

Internet: www.worldbank.org