The transition from the acute phase of COVID-19

Working towards a paradigm shift for pandemic preparedness and response in the WHO European Region
ABSTRACT
The lifting of the Public Health Emergency of International Concern status by WHO on 5 May 2023, signaled the start of a new phase of the global pandemic’s response and recovery – during which the WHO Regional Office for Europe will shift towards a longer-term programmatic approach to COVID-19. While the first steps towards recovery from the pandemic have been reported in the European Region multiple challenges remain. This regional transition plan outlines a comprehensive roadmap for transitioning from the acute phase of the COVID-19 pandemic towards a sustained response and recovery in order to strategically and sustainably invest in resilient health systems able to respond to emergencies and maintain essential services at all times. It is the moment to invest and sustain the gains made during the pandemic response and apply the lessons learned of this pandemic and other recent health emergencies, to increase the resilience of our health systems against future epidemics, pandemics and other shocks.

Keywords
CORONAVIRUS DISEASE 2019; COVID-19 PANDEMIC; EMERGENCY PREPAREDNESS AND RESPONSE; HEALTH EMERGENCY PREPAREDNESS AND RESPONSE; LESSONS LEARNED; SARS-COV-2; TRANSITION.
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Regional Director’s Foreword

The COVID-19 pandemic has shaken the world. In Europe and Central Asia, well over 2 million people have died from the disease since January 2020. And with the pandemic now in its fourth year, it is clear that the SARS-CoV-2 virus is likely to stay with us for many more years to come, if not forever. While the emergency may have ended, the pandemic certainly has not, and as our region recovers, it is also faced with new threats and our health systems face severe challenges related to the health and care workforce.

Since 2020 I have referred to the need for a dual-track response to COVID-19. Now is the time to strategically and sustainably invest in health security, to detect and respond to future shocks to our health systems, including a resurgence of COVID-19, while ensuring the continuation and resilience of essential health services.

We must better understand and respond to the huge “shadow pandemic” of the post COVID-19 condition, commonly known as long COVID. With one in 10 COVID-19 infections leading to long COVID, the number of people affected continues to increase, yet we still have so few answers as to why the condition occurs or how it can be best treated. Investment in more research and developing effective and widely available rehabilitation programmes is desperately needed.

We can take consolation that our populations now have high immunity to the SARS-CoV-2 virus from infection, vaccination or both. We should also celebrate the fact that successful vaccination programmes have significantly reduced the numbers of people becoming seriously ill from the virus and that at least a million deaths in our region have been averted because of them. We are also in a good place, in that the current emerging variants do not appear – at least so far – to be associated with increased disease severity.

But as the COVID-19 pandemic and other recent emergencies have taught us, we cannot afford to be complacent. We need to learn from these experiences to respond better when the next health crisis strikes.

In concluding, I would like to pass on my condolences to all those who have lost loved ones to COVID-19, express my empathy for those living with the debilitating symptoms of long COVID and give thanks to the dedication of health workers across our region.

Dr Hans Henri P. Kluge
WHO Regional Director for Europe
Foreword from the Regional Emergency Director and the COVID-19 incident manager

The impact of COVID-19 on our health, our economies and our social fabric is still unfolding. Whilst the acute mortality due to COVID-19 has declined thanks to increased immunity at the population level, widespread circulation of SARS-CoV-2 still leads to thousands of vulnerable people dying from COVID-19 each week. Efforts to control infections have eased but the longer-term health consequences of SARS-CoV-2 infection at the individual and population levels remain poorly understood. And whilst there remains much to do to respond to the ongoing public health threat caused by COVID-19, the political and social will to address it as a priority has waned as new threats to society have taken prominence.

So as the Public Health Emergency of International Concern status has been lifted, our region still faces an immense challenge if we are to emerge stronger from the pandemic. The hardest part of an emergency is the last part; collectively disassembling parts of the COVID-19 infrastructure while preserving and integrating what worked well into routine day to day public health operations is difficult when resources for the emergency are mostly depleted.

We entered the pandemic with systems and tools designed for the twentieth century. Communities, governments and the international community had to rapidly adapt ill-fitting plans to contemporary settings and societal structures. This highlighted vast gaps but also led to positive change that may have otherwise taken decades to achieve – new laboratory networks, wastewater surveillance systems, the rapid deployment of digital tools across all parts of the response and massive community testing and vaccination.

Whilst we are all – ourselves included – tired of COVID-19, the end of the global emergency is not an occasion to pack up and move on to the next big thing, but a call to action to use this time wisely, to help create a better prepared and resilient European Region. What is needed now is a paradigm-shift to integrate these innovations and advances into a fit for purpose health architecture for the twenty-first century, with consolidated efforts to develop “Preparedness 2.0” for a resilient pan-European Region.

This document takes stock of the pandemic so far, its ongoing challenges and the opportunities it has created to strengthen preparedness and response for health emergencies in the European Region. With it, we seek to guide the endgame of the COVID-19 emergency and inform the decisions countries and communities take as they return to normal and integrate COVID-19 into routine operations.

We cannot return to what we had in place before. Having lived through and led the emergency response to COVID-19 in the European Region, it is our shared belief that we must not let this crisis go to waste, and that from it, we can – and must – learn from the good, the bad and the ugly parts of our response to build a better, more human and more equitable set of tools for the future.

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Acknowledgements

The WHO Regional Office for Europe would like to thank all those whose work is reflected here. Namely, the frontline health workers, public health experts and policy-makers across the WHO European Region and the WHO staff and consultants without whom the COVID-19 Incident Management Support Team for the WHO European Region would not have been able to sustain a strong and agile response over the course of the 1190 days between 30 January 2020 and 5 May 2023 during which COVID-19 constituted a Public Health Emergency of International Concern.

WHO would also like to dedicate this publication to those who have lost their lives or their loved ones to COVID-19, and to those who have had their lives changed by long COVID.
Abbreviations

CSO    civil society organization
HEPR   health emergency preparedness, response and resilience
HERA   Health Emergency Preparedness and Response
IHR    International Health Regulations (2005)
IPC    infection prevention and control
PCC    post COVID-19 condition
PCR    polymerase chain reaction
PHEOC  Public Health Emergency Operation Centre
PHEIC  Public Health Emergency of International Concern
PHSM   public health and social measures
RCCE-IM risk communication and community engagement and infodemic management
Executive Summary

The world has been living under the shadow of the COVID-19 pandemic for three and a half years.

The first COVID-19 cases in the WHO European Region were confirmed on 24 January 2020. Within three months a million cases had been reported. Within two years 100 million people in the European Region had had COVID-19, and by the end of the third year there had been more 270 million cases.

Targeted public health and social measures, widespread testing combined with rapid access to care and treatment, and the vaccination roll-out have all helped to reduce the morbidity and mortality associated with COVID-19. The WHO Regional Office for Europe has estimated that over a million lives have been saved through the COVID-19 vaccination roll-out alone.

Despite the progress made, the pandemic has continued to have a profound impact on health.

In terms of lives lost, as of early May 2023 COVID-19 infections have claimed over 2.2 million lives across Europe and Central Asia, with close to half a million deaths occurring during 2022 – the pandemic’s third year.

Post COVID-19 condition (PCC), commonly known as long COVID, can affect anyone exposed to SARS-CoV-2, regardless of age or severity of original symptoms. In the European Region alone, it is estimated that at least 17 million people experienced long COVID in the first two years of the pandemic and that number has potentially doubled to over 34 million during 2022. Most health systems have limited, or no service delivery designed specifically for patients suffering from PCC.

While the first steps towards recovery from the pandemic have been reported, the European Region faces a massive health workforce crisis, only made worse by the pandemic. Despite historically high numbers of health and care workers across the European Region, nations are struggling to keep up with the rising demand for health care, exacerbated by service backlogs caused by COVID-19, rising expectations from patients and the health risks posed by climate change and other concurrent emergencies. The need to support and strengthen the health and care workforce will be imperative if Europe’s health systems are to recover successfully.

The lifting of the Public Health Emergency of International Concern status by WHO on 5 May 2023, signaled the start of a new phase of the global pandemic’s response and recovery.

Now is the time to strategically and sustainably invest in resilient health systems that are able to respond to emergencies and maintain essential services at all times. It is the moment to a longer-term programmatic approach to COVID-19. This regional transition plan outlines a comprehensive roadmap for transitioning from the acute phase of the COVID-19 pandemic towards a sustained response and recovery.

During this next phase the Regional Office for Europe will shift towards
invest and sustain the gains made during the pandemic response and apply the lessons of this pandemic and other recent health emergencies to increase the resilience of our health systems against future epidemics, pandemics and other shocks. We need to close the gaps identified during pandemic and strengthen core areas of Member States’ Health Emergency Preparedness, Response, and Resilience (HEPR) systems.

Through this transition plan, the Regional Office for Europe plans to implement 13 strategic shifts in supporting countries and communities, with the overarching goal of the Region emerging stronger from the COVID-19 emergency.

These shifts align with the seven temporary recommendations issued by the WHO Director-General on lifting the global emergency, as well as the Global COVID-19 Strategic Preparedness and Response Plan, and have been designed through the lens of the five core subsystems of the HEPR framework, as follows:

**Collaborative surveillance**

i. From comprehensive COVID-19 surveillance to integrated respiratory virus surveillance and laboratory networks that meet key public health objectives.

ii. From laboratory capacities built for COVID-19 to sustained laboratory capacity for high threat pathogen detection and genomic surveillance.

iii. From innovative use of digital tools used to collect, analyse and use COVID-19 data to the systematic use of data analytics and visualizations in epidemic intelligence.

**Community protection**

iv. From engaging communities into public health and social measures (PHSM) to prevent, detect and respond to COVID-19 to building trusted community preparedness for all hazards.

v. From wide fluctuations of PHSM towards a holistic consideration of potential benefits and harms of social measures.

**Clinical care**

vi. From training frontline workers on case management and infection prevention and control (IPC) to strengthening the foundations for safe, scalable, and high-quality clinical care and IPC at all levels.

vii. From a dual-track COVID-19 and essential health service response to sustained investments into essential health services and emergency care systems, that include surge plans for emergencies.

viii. From recognizing Long-COVID to accelerating the establishment of pluri-disciplinary services that take a patient-centered approach.

**Countermeasures**

ix. From uncoordinated planning for the deployment of medical countermeasures to sustained regional platforms that share new COVID-19 and other high threat pathogen knowledge, therapeutics, diagnostics and other countermeasures equitably across the Region.

x. From facilitating the rapid distribution of vaccines including through bilateral donations, to learning from and sustaining the COVID-19 vaccination roll-out as part of wider immunization programme efforts.

**Coordination**

xi. From hazard-specific COVID-19 and influenza pandemic response plans to integrated respiratory virus pandemic planning.

xii. From a focus on frontline health workers to coordinated initiatives to build the full health emergency workforce needed for the future.

xiii. From fragmented networks, research and engagements with science-based organizations to a Pan-European Network for Disease Control to generate and share knowledge throughout the Region.

These 13 strategic shifts emphasize the importance of not only addressing the immediate impacts of the pandemic but also focusing on COVID-19’s continued impact, including mental health and PCC. They also seek to facilitate the integration of COVID-19 innovations into daily public health operations.
The Regional Office for Europe will measure its success in three ways: i) whether the control of COVID-19 has been integrated into broader prevention and control for respiratory viruses, ii) whether the gains of the pandemic response have been sustained into day-to-day public health operations or health services, and iii) whether the lessons of the pandemic and other recent health emergencies have been deliberately applied to increase the resilience of health systems against future shocks.

To sustain what we have learnt for the next pandemic, the lessons and experiences of COVID-19 and other recent emergencies need to inform future strategies for preparedness and response.

The transition plan will provide a framework to leverage innovations and lessons from COVID-19 into the development of the next regional five-year Action plan to strengthen health emergency preparedness, response, and resilience in the WHO European Region, 2024–2029 ("Preparedness 2.0").

“Preparedness 2.0” will aim for a European Region with the required capabilities and pan-European networks to rapidly detect, verify and notify new and evolving health threats, and to effectively respond to emergencies caused by any hazard, grounded in the principles of solidarity, transparency and accountability. These priorities need to remain central to the European Programme of Work, 2020–2025 – “United Action for Better Health in Europe” and build on existing flagship initiatives.

Together, as a Region and through effective partnerships, we can implement a comprehensive approach that integrates COVID-19 control into broader prevention and control programmes, sustains gains and innovations, enhances resilience and supports countries to prepare for and respond to emergencies.
COVID-19 in Europe from 2020–2022: A Situation Overview

On 31 December 2019 the WHO Representative Office in the People’s Republic of China picked up a public bulletin issued by the Wuhan Municipal Health Commission on cases of pneumonia of unknown etiology (unknown cause) detected in Wuhan City, Hubei Province, the People’s Republic of China. On 5 January 2020, WHO shared detailed information about a cluster of cases of pneumonia of unknown cause through the International Health Regulations (2005) (IHR) Event Information System, which is accessible to all Member States. On 9 January WHO reported that Chinese authorities had determined that the outbreak was caused by a novel coronavirus.

Health impacts in the European Region
The first cases of the novel coronavirus in the WHO European Region were confirmed in France on 24 January 2020.

Repurposing the extensive regional influenza surveillance and laboratory network infrastructure built up over decades, country and regional networks across the WHO European Region were activated to ensure the rapid detection, confirmation and assessment of the first cases and their close contacts in Europe, to understand the clinical presentation of this novel virus and its epidemiological characteristics, in particular its transmissibility, risk factors for severe disease and infection severity, to inform optimal prevention and control strategies.

From the first COVID-19 reported laboratory confirmed cases in the WHO European Region, the pandemic reached 1 million reported cases within 3 months, 100 million cases

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Fig. 1. | COVID-19 case and death notifications by week in the European Region (2020–2023)
within 2 years, and over 270 million cases in the European Region by the end of 2022 (Fig. 1). As of May 2023 COVID-19 infections have claimed over 2.2 million lives across Europe and Central Asia, with 467,921 lives lost to COVID-19 in 2022. Overall, the European Region has accounted for 36% of the cumulative global COVID-19 cases and 32% of deaths. All of these numbers represent a vast underestimate and WHO currently estimates the true death toll of COVID-19 in the European Region to be closer to 3.2 million deaths during the first two years of the pandemic alone (2).

The pandemic continues to have a profound impact on health, with acute COVID-19 disease disproportionately affecting older age groups across the European Region. In early 2020 people 50 years and older accounted for about 70% of confirmed infections and close to 100% of deaths. Over the course of the pandemic, as testing expanded, vaccination was rolled out and transmission dynamics changed, these demographics shifted. By April 2023, 85.6% of confirmed infections were under 65 years, while those over 50 continued to account for close to 95% of all reported deaths in the Region – highlighting the groups at higher risk of severe disease (3).

Following early calls from COVID-19 “long haulers”, we now know that post COVID-19 condition (PCC), commonly known as long COVID, can affect anyone exposed to the SARS-CoV-2 virus regardless of age or severity of original symptoms. Common symptoms associated with PCC include fatigue and cognitive dysfunction (for example, confusion, forgetfulness or a lack of mental focus or clarity). In the European Region alone, the Institute for Health Metrics and Evaluation estimated that at least 17 million people in the WHO European Region (4) experienced PCC in the first two years of the pandemic, and that number has potentially doubled to over 34 million during 2022.
Despite continued high estimates of the population prevalence of PCC – with up to 1:6 cases of COVID-19 going on to develop the condition – countries have insufficient capacity to cater for persons suffering with it. There are few to no consensus guidelines on case management and limited to no access to services for patients.

While evidence is still not conclusive, the psychiatric and neurological complications of COVID-19 are under investigation. Other research into long-term outcomes have found an increased risk of diabetes and cardiovascular diseases, and overall higher risk of death among those infected with SARS-CoV-2 (Fig. 2). Therefore, while the acute mortality has declined thanks to increased immunity at the population level, its human cost remains high and is still unfolding.

**WHO European Region Member State responses**

Within the first three months of the pandemic, all countries within the WHO European Region had some public health and social measures (PHSM) in place with stringent travel measures applied in 39 of the 53 Member States, banning entry from all other countries or areas. Furthermore, 36 countries or areas in the Region were under stay-at-home orders, 50 were limiting gatherings to under 100 people, and 51 had closed some or all levels of in-person education.

Countries were slower to adopt mask measures but by the end of April 2020, more than half were implementing mask mandates in some or all settings. Mask mandates for all public places were applied in the majority of countries through May 2021, after which most countries limited the settings requiring mask use.

After the stringent measures implemented during the first year of the pandemic, countries in the Region eased measures, reimplementing them in response to resurgences of COVID-19. Stay-at-home orders became less common, with countries instead applying curfews or restrictions on moving throughout the country – the last expiring on 17 December 2021. Most countries reopened schools at the beginning of the 2020–21 school year, closing them again intermittently in response to the COVID-19 situation, with closures becoming less frequent in the subsequent school years. Almost all countries in the Region maintained some limitations on gatherings until the beginning of 2022, when countries began rapidly lifting all remaining measures (Fig. 3).
Once vaccination became available, countries adapted PHSM to require proof of vaccination, recovery or a negative test for access to some settings. By mid-January 2021 blanket international travel entry bans transitioned into bans on specific countries based on their epidemiological situation, while proof of vaccination, recovery or a negative test were introduced to facilitate travel. By the end of February 2022 most countries in the Region had lifted most, if not all, travel related measures.

Risk communication and community engagement has never been so vital and never so high on government agendas as during the COVID-19 pandemic. Current public risk perceptions of the COVID-19 pandemic vary widely, and a growing level of fatigue among the general population with risk communications has been evident over the past 18 months. Community based interventions now focus on specific populations (e.g. people vulnerable to severe disease, or communities with low vaccination uptake). Engagement efforts are also being used to address broader public health risks, such as seasonal influenza.

As of 1 May 2023 most remaining socially applied measures in place are adaptations to schools and businesses, and the recommendation, in some countries, to wear masks in higher risk settings such as in health facilities or long-term care settings.

Current trends

Following the roll-out of vaccines to priority groups from early 2021, many countries, particularly in the western part of the Region, began seeing signs of stabilization marked by reduced mortality and hospitalization rates.

Currently approved COVID-19 vaccines, including those based on the index virus, continue to provide substantial protection against severe disease and death, which is the primary objective for COVID-19 vaccination. Uptake across the Region increased rapidly and, as of 2023, over 64.5% of the total population in Europe had received a complete vaccination series – though there remain inequities, with a much lower uptake in the lower income Member States of the Region. As of April 2023, 1.7 billion COVID-19 vaccine doses have been administered within the Region. According to research undertaken by the Regional Office for Europe, COVID-19 vaccination directly saved 469,186 lives from December 2020 to November 2021 (5). Preliminary updates to this estimate indicate over one million lives across the Region have been saved up to April 2023 (6).

Epidemiologic trends in the Region continue to be impacted by the successive emergence of SARS-CoV-2 variants of concern with elevated transmissibility, leading to waves of infection and disease spreading across the entire Region. The Omicron variant of concern, first detected in Europe at the end of November 2021, has since become the dominant variant within the Region with a continued pattern of replacement as new sub-lineages emerge and spread. As of April 2023, the Omicron sub-lineage XBB.1.5 dominates transmission in the Region.

Countries have now moved away from comprehensive SARS-CoV-2 testing strategies, and investments into SARS-CoV-2 detection and sequencing have been withdrawn leading to declining reliability and representativeness in genomic surveillance. National laboratory networks that were established or strengthened during the pandemic are being scaled down. Following the roll out of cheaper antigen-detecting rapid tests for SARS-CoV-2 the use of polymerase chain reaction (PCR) testing for mild cases has dropped significantly.
The importance of mink farms as an animal reservoir was demonstrated early in the pandemic – with evidence of both spill-back and spill-over in several countries. Human-to-animal transmission and the circulation of the virus with subsequent genetic evolution amongst several animal species has since been documented for wild and farmed species.

Three years into the pandemic, the fourth round of the national pulse survey (7) on the continuity of essential health services during the COVID-19 pandemic indicated that 87% of countries in the WHO European Region reported disruptions in at least one essential health service. These disruptions have resulted in excessive deaths and adverse health effects, particularly affecting vulnerable populations. In the European Region about one fifth of countries are still reporting disruptions across most health-care settings and delivery platforms.

While the first signs of recovery have been reported globally, the European Region is also facing the prospect of a massive health workforce crisis, only made worse by the pandemic. Despite historically high numbers of health and care workers across the Region, national health systems are struggling to keep up with rising demand for health care, exacerbated by service backlogs caused by the COVID-19 pandemic, rising expectations from patients and multiple concurrent emergencies (8). The need to support the health and care workforce with skills and capacities on psychological first aid while at the same time providing support to prevent their own burnout will be imperative if the Region’s frontline health workforce is to recover successfully. During 2022 and into 2023 the Region saw mounting number of strikes among health-care workers citing challenging working conditions and insufficient resources.
Shifting to a sustained response and recovery: a transition plan for 2023–2024

The response to the COVID-19 pandemic will not be judged only on the response to the most devastating and deadly phases of the first three years, but also against the continued impact of the disease, our response to the debilitating impact of PCC and on the extent to which public health institutions, governments and communities emerge stronger.

In the fourth year of the pandemic, countries are faced with concurrent emergencies (a “permacrisis”) and the need to address competing public health threats and needs. As the health, social and economic burden of the pandemic have eased, the need to dedicate extensive resources to COVID-19 has reduced, and the investments made by governments harder to justify (7).

Most countries have allocated additional funding towards longer term recovery, resilience and preparedness. Of the 10 countries that reported having responded to a health emergency in addition to COVID-19, since the COVID-19 pandemic, all reported that they had leveraged, or institutionalized capacities strengthened in the COVID-19 context in their response (Fig. 4) (7).
Following the WHO Director-General’s declaration on 5 May 2023, that COVID-19 no longer constitutes a PHEIC, the acute response phase of the pandemic comes to an end. As such, the Regional Office for Europe will transition to a longer-term programmatic approach to COVID-19, moving from the emergency operations of the past three years (Fig. 5), to support the recovery of stronger more resilient national response systems.

### Fig. 5 | The WHO Regional Office for Europe’s key figures highlighting operational support provided to countries during the COVID-19 PHEIC (2020–2022)

#### Missions and deployments
- Number of missions: 476
- Member States/territories with missions: 33

#### Emergency supplies delivery
- Shipments to Member States in kg: 1.8M
- Shipments to Member States in USD: 104.0M

#### Technical support to Member States
- Participants in webinars, trainings, workshops: 47.2K
- Webinars, trainings, workshops: 928
Defining the next phase of the pandemic response and recovery

Using the momentum built since 2020, now is the time to invest and sustain the gains made during the pandemic response and apply the lessons of this pandemic and other recent health emergencies, to increase the resilience of our health systems against future pandemics, epidemics and other shocks.

This next phase calls for WHO, partners and Member States to transition to a longer-term programmatic approach to COVID-19. The Regional Office will implement a set of 13 strategic shifts in its approach to managing COVID-19 across the five core subsystems of WHO’s work in emergencies. These shifts are aligned with WHO’s proposed global health architecture for Health Emergency Preparedness, Response and Resilience (HEPR) and are listed here, summarized in Fig. 6 and expanded on below.

Collaborative surveillance

i. From comprehensive COVID-19 surveillance to integrated respiratory virus surveillance and laboratory networks that meet key public health objectives.

ii. From laboratory capacities built for COVID-19 to sustained laboratory capacity for high threat pathogen detection and genomic surveillance.

iii. From innovative use of digital tools used to collect, analyse and use COVID-19 data to the systematic use of data analytics and visualizations in early warning and epidemic intelligence.

Enhance access to Counter Measures:

ix. Sustain and expand platforms to share new COVID-19 knowledge, therapeutics, diagnostics and other countermeasures equitably across the Region

x. Learn from and sustain COVID-19 vaccination roll-out

Strengthen Effective Emergency coordination:

xi. Integrated lessons from COVID-19 into planning for the next pandemic

xii. Strengthen national and regional health emergency workforce and emergency management systems to respond to health emergencies.

xiii. Generate and share knowledge through the Pan-European Network for Disease Control

Ensure Safe & Scalable care:

vi. Strengthen foundations for safe, scalable and high-quality clinical care and IPC at all health system levels

vii. A resilient and integrated health system that maintains the capacity to surge into a dual-track response when needed

viii. Accelerate the establishment of pluri-disciplinary services that take a patient-centered approach to PCC

Fig. 6. | The Regional Office for Europe’s transition plan sets out 13 strategic shifts, aligned with the global HEPR framework

Build collaborative surveillance systems:

i. Transition regional COVID-19 surveillance systems to integrated respiratory virus surveillance

ii. Sustain the increased laboratory capacity for pathogen detection and genomic surveillance

iii. Systematically use of data analytics for early warning and epidemic intelligence

Enhance Community protection:

iv. Invest in sustained risk communication, community engagement, and infodemic management across the emergency cycle

v. Instilling a more comprehensive approach to PHSM
Community protection
iv. From engaging communities into PHSM to prevent, detect, respond to COVID-19 to building trusted community preparedness for all hazards.
v. From wide fluctuations of PHSM towards a holistic consideration of potential benefits and harms of social measures.

Clinical care
vi. From training frontline workers on case management and infection prevention and control (IPC) to strengthening the foundations for safe, scalable, and high-quality clinical care and IPC at all levels.
vii. From a dual-track COVID-19 and essential health services response to sustained investments into essential health services and emergency care systems, that include surge plans for emergencies.
viii. From recognizing Long-COVID to accelerating the establishment of pluri-disciplinary services that take a patient-centered approach.

Countermeasures
ix. From uncoordinated planning for the deployment of medical countermeasures to sustained regional platforms that share new COVID-19 and other high threat pathogen knowledge, therapeutics, diagnostics, and other countermeasures equitably across the Region.
x. From facilitating the rapid distribution of vaccines including through bilateral donations to learning from and sustaining the COVID-19 vaccination roll-out as part of wider immunization programme efforts.

Coordination
xi. From uncoordinated planning for the deployment of medical countermeasures to sustained regional platforms that share new COVID-19 and other high threat pathogen knowledge, therapeutics, diagnostics, and other countermeasures equitably across the Region.

xii. From a focus on frontline health workers to coordinated initiatives to build the full health emergency workforce needed for the future.

xiii. From fragmented networks, research and engagements with science-based organizations to a Pan-European Network for Disease Control to generate and share knowledge throughout the Region.
Build collaborative surveillance systems

Well-designed, representative sentinel surveillance systems at both primary and secondary/tertiary levels with integrated microbiological testing for SARS-CoV-2, influenza and potentially other respiratory viruses will be needed for the future. To further assess severity, systems need to provide accurate national and regional level estimates of hospitalizations, admissions to intensive care units and mortality. At the same time, these systems need to be sensitive enough to detect and monitor circulating virus variants, accurately follow virus-specific disease incidence by level of severity/age/place, and potentially assess vaccine effectiveness.

i. Transition regional COVID-19 surveillance systems to integrated respiratory virus surveillance

New surveillance capabilities have emerged during the pandemic, including:

• conducting special studies to understand new, emerging respiratory pathogens;
• utilizing digital health information for real-time decision-making, contact tracing through mobile applications and electronic health records;
• employing real-time data and nowcasting to monitor and model virus spread, as well as assess the impact of intervention strategies like vaccination;
• emphasizing harmonization and interoperability of surveillance systems across countries;
• implementing innovative surveillance methods such as wastewater monitoring and participatory surveillance;
• expanding genomic surveillance to detect and track new variants;
• implementing one-health approaches that integrate human and animal health sectors; and
• utilizing national statistics services to conduct representative and longitudinal surveys on COVID-19 and PCC incidence.

The Regional Office for Europe will strengthen a regional integrated high threat pathogen surveillance network based on high quality national respiratory surveillance systems across the WHO European Region. This will be done by guiding countries in investing their more limited resources to continue to meet key surveillance objectives – including the early detection of the emergence of new variants of concern – through:

• epidemic and pandemic surveillance systems to rapidly assess first cases and clusters of infections including SARS-CoV-2 variants;
• developing and sharing of readily available research protocols and studies relating to emerging diseases and their surveillance, and their use in a regional network to rapidly assess early cases of emerging infectious hazards together with their close contacts and other key objectives;
• increasing the coverage and quality of sentinel sites at primary care level for acute respiratory infections and secondary care level for severe acute respiratory infections, which integrate data on circulating respiratory pathogens;
• improving local respiratory data collection and reporting into regional surveillance platforms;
• using complementary surveillance systems including wastewater monitoring as an early signal of changes in transmission or viral characteristics;
• improving health information and assessments related to outbreak burden of disease through a more comprehensive use and harmonization of indicators of disease severity, including all-cause excess mortality monitoring and reporting;
• integrating the genomic surveillance of respiratory viruses from sentinel and non-sentinel sources;
• sustaining the monitoring of SARS-CoV-2 and other high threat pathogens at the animal-human interface;
• monitoring the effectiveness of SARS-CoV2 and other high-threat pathogen vaccines; and
• impact and cost-effectiveness modelling of PHSM.
ii. Sustain the increased laboratory capacity for pathogen detection and genomic surveillance

During the pandemic, countries took various measures to expand their laboratory capacity, namely through:

- increasing the number of laboratories and trained staff;
- investing in new equipment and technology, especially for genomic surveillance;
- involving private and academic sectors in scaling up laboratory capacity, facilitating rapid testing and sequencing expansion;
- facilitating knowledge and technology transfer between countries, which played a crucial role in the early phase of the pandemic;
- deploying mobile laboratories in remote areas to enhance testing capacity and strengthen laboratory capabilities, as seen in countries like Germany, the Netherlands, Tajikistan and the Russian Federation;
- implementing pooled testing strategies to improve testing capacity and efficiency during times of high demand; however
- the optimal utilization of PCR and antigen testing in a complementary manner is yet to be clearly defined.

In countries where laboratory and genomic sequencing capacities have been advanced during the pandemic, it is important to sustain and strengthen this capacity for broader disease prevention and control. Key efforts to sustain laboratory and genomic sequencing capacities include:

- investing in scalable laboratory and genomic sequencing capacities;
- promoting continued knowledge transfer through regional networks;
- strengthening national diagnostic capacities for COVID-19 by mentoring COVID-19 laboratories and extending support to other laboratories through national External Quality Assurance trainings;
- enhancing national genomic surveillance through regional integrated networks for genomic and antigenic surveillance of respiratory viruses, allowing centralized access to genetic and antigenic characterization services;
- providing support to national working groups to finalize national genomic surveillance strategies;
- building stronger national capacities in sequencing and bioinformatics;
- strengthening national capacities for genetic and antigenic characterization; and
- encouraging international collaboration in deploying rapid response mobile laboratories among countries in the European Region.
CENTRAL ASIA

Case Study

Across central Asia the WHO Regional Office for Europe has supported well-functioning, sustainable laboratory services, operating according to international principles of quality and safety, which are essential for strong health systems and crucial for improving public health (12,13). WHO has also supported these laboratory networks to track variants of concern using Single Nucleotide Polymorphism assays through training and the procurement of reagents and supplies, and supported the shipment of representative samples to WHO Collaborating Centres to perform whole genome sequencing and the uploading of sequencing results to the Global Initiative on Sharing Avian Influenza Data database.
In Türkiye, WHO works closely with the Ministry of Health and the National Virology Reference Laboratory on a project funded by the European Union (14), which aims to build capacity and strengthen genomic surveillance for SARS-CoV-2 and other pathogens. As part of this project, a comprehensive and sustainable five-year national genomic surveillance strategy is being developed, which will integrate all areas of infectious disease genomic surveillance.
iii. Systematically use data analytics for early warning and epidemic intelligence

During the COVID-19 pandemic many digital health tools moved from being viewed as a potential opportunity, to becoming an immediate necessity, and their use increased substantially. New digital data sources and indicators were developed by WHO to improve disease surveillance and early warning, including digital data-scraping techniques from official health authority sources at national and subnational levels, the combined use of real-time epidemic intelligence (e.g. the Regional Office’s use of Epidemic Intelligence from Open Sources) and new data visualization to monitor signals of interest at different levels of the health-care system, or during mass gathering events.

If emergency response systems for public health events are to retain added value from the greater use of digital health tools, active strategies are needed now to build on the current momentum around their use. This momentum can be leveraged to strengthen early warning, alert and response capacities to detect, risk assess and respond to all-hazard public health threats within WHO and across countries in the WHO European Region through:

- continued and strengthened implementation of IHR in all aspects of public health event management (15);
- strengthening WHO’s event based surveillance by developing a strategy for all hazards/priority diseases and a One Health approach, including for SARS-CoV-2 and other respiratory pathogens;
- implementing a systems approach to Early Warning, Alert and Response (EWAR) functions by supporting countries to assess the linkages between threat detection, alert and response capacities against global standards;
- WHO systems to systematically monitor and record information from authoritative sources or multi-country notification systems into ready-to-use databases with robust data quality mechanisms and analytical capabilities; and
- enhancing the use of Geographic Information Systems by establishing a regional Information Management/Geographic Information System Hub and Strategy, including through the development of packaged solutions which can be rapidly deployed during emergencies.
The Union of European Football Association’s Euro 2020 football tournament vividly captured the attention of millions from 11 June to 11 July 2021. WHO created a taskforce, active from 28 May – 25 July 2021 (16) to conduct continuous risk monitoring and share real-time data on COVID-19 incidence; mobility; information on stadium restrictions and PHSM; as well as signals of public health concern and news stories related to the tournament. This data was available to authorities, organizers and the general public to allow a better understanding of the COVID-19 situation in host cities, and the assessment of related risks at a public health and individual level.
Enhance community protection

iv. Invest in sustained risk communication, community engagement, and infodemic management (RCCE-IM) across the emergency cycle

COVID-19 demonstrated that communities are at the heart of an emergency response and that RCCE-IM is a core public health intervention required across the emergency cycle, as crucial to a successful response as pharmaceutical measures.

The WHO European Region learned the hard way that delivering health services and interventions is not enough. People’s behaviours are central to emergency response and in accelerating recovery. Services and interventions – from testing and PHSM to treatment and vaccines - need to be accepted and accessed. By building trusting relationships between authorities and communities, RCCE-IM bridges service delivery and access.

The investments that European Region countries and territories made in RCCE-IM in the years before and during the pandemic have paid dividends. Accurate health information and advice have been timely deployed through digital platforms and trusted influencers, community-led initiatives have addressed issues such as vaccine uptake and false information, and social listening findings have been increasingly used to design culturally sensitive interventions. However, the capacities in place during the COVID-19 pandemic were often not specialized and based on temporary funding.

Transitioning RCCE-IM from the acute phase of COVID-19 means embedding RCCE-IM systems in emergency decision-making with an evidence-led approach, and building, advancing and sustaining RCCE-IM capacity at every step of the emergency cycle. It also means that whole-of-society action should heal the divisions caused by the pandemic and re-establish or maintain a trusted social contract between health authorities and individuals, including through:

- normalizing protection from COVID-19 and sustaining protective measures that will help reduce the spread of both COVID-19 and other diseases (e.g. hand hygiene, respiratory etiquette, ventilation and physical distancing);
- sustaining the risk perception of at-risk groups through targeted RCCE-IM campaigns, emphasizing COVID-19 complications and preventive measures including vaccination, as well as PCC and its potential impact;
- establishing effective social listening systems for COVID-19 to inform response actions, communicate individual risks, identify community concerns and manage mis- and dis-information; and
- increasing literacy on COVID-19 and other health risks the European Region is prone to, to build community resilience for future emergencies.
v. Instilling a more comprehensive approach to PHSM

PHSM played a vital role in COVID-19 (17), relieving pressure on health-care systems and enabling essential health services to continue. During the first months of the response, when there was no vaccine and little in the way of treatment available, widespread social measures were the only available way for authorities to protect at-risk and affected communities, and RCCE-IM the only measure to persuade them to accept and uptake the PHSM.

PHSM should be informed by evidence, but also implemented alongside social protection policies, and adjusted based on ongoing situations and community perceptions, needs and trust. Lessons emphasize the need to assess risks systematically and consider the social context of gatherings, and the importance of protecting communities through better infrastructure design and engineering rather than only placing demands on individuals.

Opportunities for a stronger and more comprehensive PHSM approach include the need to review the models used and collect best practices on the design, targeting and scaling of PHSM for the next emergency.

A new global initiative launched to measure the effectiveness and social, health and economic impact of PHSMs during health emergencies will be applied in the European Region through:

- supporting the acceleration of PHSM research to strengthen evidence-informed and context-specific PHSM policies and implementation;
- supporting the development of guidance and standards for PHSM implementation and systematic reporting procedures during health emergencies, including adaptation tools for PHSM decision-making, taking a risk-based approach (PHSM calibration tool);
- engaging in multisectoral advocacy efforts to pursue better air quality in public spaces;
- engaging community actors through a bottom-up approach and continue social listening to design and apply PHSM based on public perceptions and needs to increase the likelihood of their acceptance and uptake;
- strengthening mass gathering preparedness – applying a risk-based approach to the implementation of preventive measures, including through providing support to mass gathering risk assessment and preparedness for such events; and
- continuing to support decision-making on COVID-19 international travel related health measures.
Ensure safe and scalable clinical care

vi. Strengthen foundations for safe, scalable, and high-quality clinical care and IPC at all health system levels

The pandemic showed that infectious diseases can rapidly spread within healthcare and long-term care settings, as well as in communities. Despite progress made in recent years, 26% of countries in the European Region still have limited or non-existent national-level IPC programmes, according to the latest Tripartite AMR Country Self-Assessment Survey (TrACCS) results (19).

The pandemic also highlighted gaps in clinical governance, adherence to care standards and the presence of IPC programmes, irrespective of available resources or national income levels. In terms of clinical care, the absence of quality control measures, standardized guidelines and care pathways across disciplines creates inequalities, disparities and impacts outcomes, including morbidity and mortality. Timely operational and clinical research can provide crucial evidence for decision-making, including the ability to provide timely information on pathogenicity and the effectiveness of established standards of care, but IPC networks require further strengthening and expansion and should be maintained as a valuable resource for the future.

Opportunities for WHO Action in strengthening the foundations for safe, scalable, and high-quality clinical care and IPC at all health system levels include:

- supporting the ongoing continuous training of the national health workforce to enable an effective and timely response to emerging infectious health threats at the local and subnational level;
- enhancing regional clinical networks, through advocacy and the convening power of WHO;
- supporting the strengthening or revision of guidelines, standard operational procedures, clinical pathways and bundles of care, this includes improved triage and updated guidance on respiratory mechanical support and can include support to establish or strengthen national guidance committees;
- establishing or strengthening capacity for operational and clinical research in emergencies through advocacy;
- apply evidence about the mental health impacts of COVID-19, including neurological conditions, and strengthen the inclusion of mental health and psychosocial support across emergency preparedness and response operations;
- ensuring optimal IPC measures are in place to reduce risk of onward transmission of respiratory viruses and other high-threat pathogens;
- supporting implementation of the core components of IPC programmes at national and facility levels;
- supporting the operationalization of the WHO IPC framework in outbreak preparedness, readiness and response at national and facility levels;
- developing tools to support implementation of WHO IPC guidelines and manuals; and
- strengthening collaboration and cooperation with key IPC players including WHO Collaborating Centres, the European Centre for Disease Prevention and Control, and European Societies and Associations.
During 2021 the WHO Regional Office for Europe piloted a new bottom-up approach, engaging with 11 civil society organizations (CSOs) through community engagement platforms. In one example of this work, WHO convened CSOs and the Ministry of Health and Social Welfare of the Republika Srpska (18) – one of the two federal entities of Bosnia and Herzegovina – to define the system and skills needed to engage vulnerable groups on barriers and solutions for these population to access and use COVID-19 tools. CSO leaders were also able to share insights on the barriers communities have faced during the pandemic, such as lack of access to vaccination for rural communities and persons living with disabilities; the need for information in an understandable format; and misinformation about vaccination. Following the Regional Office’s autumn and winter 2022/23 campaign, insight-gathering efforts consisted of an assessment shared with CSOs and distributed to partners across the Region, and a CSO working group was established for those representing communities with co-morbidities and older people.
GEORGIA

Case Study

In Georgia, IPC experts visited ambulance services in both urban and rural settings, with the assessment focusing on surveillance, cleaning and disinfection, training, and implementation of current IPC guidance (20). The project carried out within the ambulance services will help to improve IPC through the introduction of structured IPC programmes, policies and training, which will utilize multimodal strategies to create long-lasting IPC improvements. Overall, the assessment will help to inform the creation of national IPC guidelines and standard operating procedures for ambulance services throughout Georgia.
KAZAKHSTAN

Case Study

In October 2022 WHO and Kazakhstan jointly completed two three-day severe acute respiratory infection trainings for 46 health-care professionals (13), focusing on the multidisciplinary care of critically ill patients with COVID-19. These trainings were the third and fourth severe acute respiratory infection simulation courses delivered in Kazakhstan, which aimed at strengthening the pool of national trainers built up throughout the pandemic, who were supervised by seven national instructors who had previously completed the WHO Training of Trainers programme in 2021–22. As a result of this supervision, the instructors reached the status of independent course provider, which will help them expand the course’s outreach and enable them to deliver the training further across Kazakhstan.
vii. Shift to a resilient and integrated health system that maintains the capacity to surge into a dual-track response when needed.

The emergency phase of the COVID-19 pandemic required countries to deploy a dual track response, comprising the COVID-19 emergency track and the maintenance of all essential services at primary, secondary and tertiary levels. As countries recover from the pandemic, they must re-integrate the COVID-19 response into a resilient set of public health services that maintain the capability to surge into a dual-track system if and when needed (Fig. 7). COVID-19 has shown that universal health coverage and a prepared and ready health system is key for preparedness to future crises, and should include:

- real time health information, including on service utilization, for early decision-making, planning and evaluation of strategies to mitigate emergencies;
- a people centered approach to rapidly adjust to changing needs;
- virtual health care as an integrated part of health systems;
- the rethinking of health workforce surge capacities;
- the need to identify shifts in existing Health Policy Plans and Strategies to strengthen PHC for health security, including maintaining and strengthening adaptions made in service delivery during the emergency response; and
- the need for increased and accessible funding throughout the emergency management cycle.

WHO will support countries in the transition between response and recovery, with the objective to restore and maintain essential health service delivery, continue to minimize the impact of the COVID-19 outbreak on health systems and initiate a Build Back Better approach to recovery. The most common areas of investment are in health workforce capacity strengthening, digital health technologies, access to medicines and supplies, health information systems and facility infrastructure. Prioritizing investments to improve preparedness, reduce risk and address weaknesses in service delivery capacities, are needed as part of preparations for long-term recovery and resilience. These investments include:

- supporting development of country action plans for restoring, maintaining and strengthening essential health service delivery through essential public health and health system functions;
• building resilient routine immunization systems and reducing backsliding on routine immunization performance; and
• advocating for Member States to implement the European digital health action plan, including to provide technical support, expert advice and normative guidance, on request, to enable digital transformation in the health sector in the European Region.

viii. Accelerate the establishment of pluri-disciplinary services that take a patient-centered approach to PCC

In 2021 research began into better understanding PCC and finding possible treatments for the millions of people affected by the long-term sequela of COVID-19. Despite increased evidence of the large burden of disease caused by PCC, investment and attention to long-COVID did not gain the same attention as for the acute phase of the disease: this requires renewed advocacy at political level with countries. Lack of evidence-based options for PCC treatment raises the need for continued research and investment into the condition.

With over 34 million people believed to have experienced PCC in the first three years of the pandemic alone, the WHO Regional Office for Europe remains committed to learning more about the medium- and long-term outcomes for people with the condition, and accelerating the work needed to ensure patients are not left behind. Actions will include:

• the establishment of a surveillance system to determine the burden of PCC in the WHO European Region;
• the formulation of a PCC rehabilitation researcher network;
• supporting the development of global PCC related clinical management guidance, as well as related norms and standards – available evidence should be assessed at regular intervals and considered under Grading of Recommendations, Assessment, Development and Evaluations principles (21);
• developing and sharing across the Region a summary report describing the illustrative country models for PCC service delivery based on country case studies – drawing out conclusions and recommendations for the implementation of the described strategies; and
• developing PCC management plans for selected countries looking to adopt their own approach, led by national experts.
Enhance access to countermeasures
The pandemic has taught us that, when the highest level of commitment is present, it is possible to transform scientific discoveries into accessible public health goods that are affordable to all in a short period of time. Regulatory policies need to be readied for the emergency assessment and listing of new products. Existing research platforms can be very effectively repurposed for emergencies if the partnerships, protocols and ethical clearances are already in place. The most impactful innovations may come from already existing and marketed countermeasures (e.g. dexamethasone, oxygen scale up, etc.).

A short timeline of COVID-19 countermeasures since 2020
Early 2020: Rapid innovation and knowledge sharing occurred, but competition and the need for stronger technology transfer protocols arose. There were conflicts over access to critical supplies, alongside global collaboration and major disruptions in supply chains.

Late 2020: International cooperation yielded significant results, including clinical trial recommendations, sequencing of virus variants and expanded testing strategies.

Early 2021: Introduction of vaccines and start of COVAX.

2022: Advancements in countermeasures, including new vaccines for omicron variants and oral antivirals. Efficacy of some therapeutics declined as the omicron variant became dominant, evading natural and vaccine-induced immunity.

2023: continue updates to COVID-19 vaccine composition and possible progress towards combined COVID-19, influenza and respiratory syncytial virus vaccines.
The scientific discoveries of the pandemic (including diagnostics, therapeutics and vaccines (Fig. 8) have led to millions of lives saved (5, 22, 23). However, their availability, cost and uptake among targeted populations is mixed, with vast inequities still present across the European Region. Uptake of COVID-19 vaccination remains a challenge with seven countries in the Region reaching a plateau at less than 40% coverage for the primary series as of the end of April 2023 (24). The future of vaccination schedules for COVID-19 remain under discussion, with the global and regional advisory committees recommending the inclusion of annual boosters for priority groups to be administered at the same time as seasonal influenza vaccination campaigns.

The widespread use of WHO-recommended COVID-19 antivirals in population groups at risk of severe disease has also had mixed uptake, due to the cost of the countermeasure but also difficulties in integrating their use into early detection at the primary care level in some countries. The success of antiviral therapy is also dependent on their early use, and with the relinquishment of widespread community testing, PCR confirmation of COVID-19 often occurs upon hospitalization and outside the early phase of the disease.

ix. Sustain and expand platforms to share new COVID-19 knowledge, therapeutics, diagnostics and other countermeasures equitably across the Region

Opportunities for WHO action, together with regional actors such as the European Commission’s Health Emergency Preparedness and Response (HERA) department, include initiatives to sustain and expand platforms to share knowledge and technologies for therapeutics, diagnostics and other countermeasures equitably across the Region. These initiatives need to be linked to the ongoing work to reform and recover health systems across the Region and include:

• creating resilient supply chains – including through new regional or subregional institutions such as HERA – equitable and affordable availability and access to countermeasures through intelligent supply chains, strengthened regional strategic stockpiles, and transparent allocation frameworks that can ensure national access to a necessary minimum quantity of critical supplies; and

• strengthening the regulatory and policy frameworks for the rapid deployment of new medical countermeasures and therapeutics.
WHOLE-OF-SYRIA

Case Study

Under the whole-of-Syria approach, WHO and its health partners provide cross-border health services to populations in northern Syria from Gaziantep, Türkiye, under the framework of the United Nations Security Council Resolution 2393 and its extensions. As part of this, WHO directly supports intensive care units and COVID-19 hospitals with essential medicines and supplies for the delivery of quality care. In March 2022 a high-capacity mobile oxygen generator was shipped into northwest Syria to serve a network of 17 hospitals in northern and western Aleppo with a catchment population of 1.7 million people (20).
x. Learn from and sustain COVID-19 vaccination roll-out

In sustaining COVID-19 vaccination efforts across the European Region, WHO plans to transition from ad-hoc recommendations on COVID-19 vaccination to an evidence-based integrated respiratory vaccine strategy and programme implementation to protect groups at higher risk of severe disease. Considerations to be able to learn from and sustain the COVID-19 vaccination roll-out include:

- expanding the use of insight, demand and acceptance tools to frame community interventions to improve COVID-19 vaccination uptake;
- the development of operational guidance Member States to integrate COVID-19 vaccination in routine health delivery strategy in line with the recommendations from the European Immunization Technical Advisory Group;
- ensuring national plans are in place to scale up COVID-19 vaccination in vulnerable population groups in priority countries, should a new immune-escape variant with increased severity emerge;
- using evidence-informed decision-making in the use of booster vaccine doses (and the use of vaccine products) and age-group stratification;
- sustaining the monitoring of COVID-19 vaccination uptake in vulnerable populations;
- documenting various programmatic aspects of COVID-19 vaccine implementation in countries in the WHO European Region with an emphasis on strengthening the life-course vaccination platform;
- monitoring and causality assessing vaccine safety; and providing technical support to Member States in the monitoring of vaccine-safety events linked to COVID-19 vaccination with specific emphasis on detection, investigation and reporting of safety events to the WHO Global Database.
AZERBAIJAN

Case Study

An essential part of deploying any vaccine is ensuring vaccine vials can be kept at the necessary temperatures while stored at and transported between healthcare facilities and national and local storage. To ensure this and to strengthen Azerbaijan’s national vaccine cold chain system, WHO has facilitated the procurement of cold chain equipment and worked to increase Azerbaijan’s own cold chain capacity (25). The procurement of critical cold chain equipment and related training have been undertaken as part of a European Union funded project.
Strengthen effective emergency coordination

xi. Integrate lessons from COVID-19 into planning for the next pandemic

While most countries have plans for service continuity in the COVID-19 context, fewer than half have plans for future health service resilience and pandemic preparedness (7).

COVID-19 underscored the importance of having functional response systems in place prior to emergencies and integrating them into daily public health operations while no emergencies are ongoing. Pre-COVID-19 pandemic planning focused mainly on influenza, was not reflective of modern societal and cultural practices, and had not been adequately exercised. Plans were primarily developed within the public health sector, with limited budget and long-term investments. These lessons highlight the need to reevaluate and expand pandemic preparedness planning for the 21st century.

A global Call to Action (26) to accelerate preparedness for pandemics and emerging threats globally was issued by WHO in April 2023 planning, through update preparedness plans that affirm priority actions, increased connectivity among stakeholders in pandemic preparedness planning through systematic coordination and cooperation; dedicated sustained investments and financing; and the monitoring of pandemic preparedness.

The Preparedness and Resilience for Emerging Threats initiative (27) is being implemented in the WHO European Region through subregional workshops and bilateral country support, to:

- enhance pandemic preparedness planning and capacity building by addressing gaps and challenges identified during the COVID-19 pandemic; and
- assist countries in regularly reviewing and updating their pandemic preparedness plans, incorporating lessons learned from COVID-19, seasonal outbreaks, risk assessments and simulation exercises.
xii. Strengthen national and regional health emergency workforce and emergency management systems to respond to health emergencies.

National emergency workforce

The COVID-19 pandemic exposed vast gaps in the Region’s emergency workforce, with shortages of frontline care staff, epidemiologists and laboratory workers. COVID-19 has accelerated the need for workforce strategies that are human-centric, and that allow organizations to move quickly to support evolving employee and patient needs. All countries in the WHO European Region are currently facing significant challenges regarding their health and care workforce. Health workforce strategies need to be rethought in order to avoid shortages and exhaustion of staff, including:

• dynamic and adaptable workforce planning so that the workforce can face surges in case of emergencies;
• a focus on the ability to flexibly reallocate resources;
• workforce teaming – creating high-performing and productive teams which enable an effective response during crises, attracts people and remains competitive;
• enabling remote work of nonessential workers; and
• increasing the capacity of the health workforce through safety nets and buffers.

A regional health emergency corps

Regional and international deployment mechanisms, such as the Global Outbreak Alert and Response Network, were effective during the early phases of the COVID-19 pandemic, in particular in the deployment of Rapid Response Mobile Laboratories to areas where laboratory capacity was lacking. The European Region has 50% of the global emergency medical team capacity, with 15 WHO-classified teams and more than 30 others under mentorship.

Our health and care workforce were already challenged before COVID-19 by personnel shortages, insufficient recruitment and retention, migration of qualified workers, unattractive working conditions and a lack of professional development opportunities. The pandemic only made things worse. If not addressed urgently, this could spell disaster. We absolutely need an optimal health and care workforce in place on all fronts.

Dr Hans Henri P. Kluge
WHO Regional Director for Europe

The health workforce crisis in Europe is no longer a looming threat – it is here and now

The Bucharest Declaration charts a way forward (28), identifying the need to:

• improve the recruitment and retention of health and care workers
• improve health workforce supply mechanisms
• optimize the performance of the health and care workforce
• better plan the health and care workforce and
• increase public investment in workforce education, development, and protection.

The Declaration recognizes the links between these priorities and the need for collaboration with all stakeholders, including health and care workforce representatives, their employers, national ministries of finance and education, and international non-profit organizations, trusts and foundations.
ARMENIA

Case Study

After COVID-19 cases in Armenia rose dramatically in October 2020, five UK-Med health and humanitarian experts were deployed to help strengthen the country’s health services as part of the United Kingdom’s Emergency Medical Team classified by WHO. The Team worked with and provided training and on the job-supervision to national health staff in hospitals, ensuring that health care was both technically sound and of high quality. The team supported the Ministry of Health to strengthen the capacity of health services to respond to the COVID-19 pandemic and beyond.
WHO’s ability to mobilize and coordinate a range of partners, response teams and regional capabilities brought lifesaving expertise, knowledge and capabilities to countries at their time of need, and this will be further strengthened through:

- connecting existing regional health emergency surge mechanisms and networks and enhancing their interoperability through common standards and coordination protocols;
- establishing and supporting a regional network of national health emergency leaders to coordinate predictable, swift and uniform regional and global responses; and
- coordinating the deployment of national surge teams and experts beyond their borders through existing mechanisms and networks.

Stronger emergency management and coordination systems

The COVID-19 pandemic demonstrated fragmented policy-making and financing, siloed organizational structures and insufficient coordination and collaboration across sectors, stakeholders and countries. During the response, countries developed or strengthened their response coordination and information sharing capacity, sometimes by establishing a PHEOC and investing in their emergency response information management systems. During this new phase of the pandemic, several countries are looking to institutionalize these gains and define the mandate and role for these systems beyond COVID-19.
It will be critical for countries to strengthen and enhance their emergency management and coordination capacity and systems ahead of the next big emergency. WHO will enhance the capabilities of existing systems by:

- bringing together regional and Member State PHEOCs in a network to enhance collaboration and information sharing, facilitate operational research, build relationships, deliver common training, define regional standards and enhance the capabilities of existing systems;
- disseminating resources to Member States related to the development of governance structures, policies and mandates for preparing for and managing emergency responses;
- providing guidance, tools and experts to develop and strengthen national public health emergency operations centres;
- providing guidance, tools and experts to strengthen emergency response information management systems; and
- supporting the strengthening of health emergency leaders, incident managers, planners and PHEOC functions through the delivery of training, hosting and coordination of knowledge sharing, networking and operational research.

xiii. Generate and share knowledge through the Pan-European Network for Disease Control

The COVID-19 pandemic highlighted the importance of collaboration between public health institutions and academic or scientific institutions in analysing data, conducting research and sharing knowledge. However, as the pandemic response wanes, resources for science-based institutions may decrease, risking the loss of the collaborative approaches developed during the crisis.

Public health networks play a crucial role in facilitating collaboration among stakeholders to promote and protect population health. The Pan-European Network for Disease Control, building on existing coordination capacities and technical capabilities, aims to leverage the experience of Pan-European collaboration to enhance surveillance and coordination for public health emergencies. It will serve as a network of networks, connecting ministries of health, national public health institutions, subregional networks, academic networks and science-based organizations to collaborate on defined work streams and driving peer-to-peer learning and development.
NORTH MACEDONIA

Case Study

In August 2020, at the height of the COVID-19 pandemic, North Macedonia’s Ministry of Health and Institute of Public Health inaugurated a new PHEOC in Skopje to ensure essential functions in emergency management, including providing centralized, real-time information to monitor, report and advise on the response to COVID-19 and all health emergencies. WHO, together with the Ministry of Health and the Institute of Public Health, developed a strategy for strengthening PHEOC functions and creating a network with the regional Centres for Public Health. The PHEOC handbook, and in particular the standard operating procedures for activation and de-activation were tested with WHO support in a simulation exercise held between 6–7 December 2022 (13).
Next steps: spearheading the new Global Regional architecture through the European Programme of Work 2020–2025 – “United Action for Better Health in Europe” (EPW)

At the 76th World Health Assembly, the WHO Director General updated ten proposals to enhance the global architecture for HEPR (31). The resulting document highlights the need for a strengthened and adaptable approach to health emergencies, emphasizing evidence-based investments in national capacities to save lives, promote sustainable development, ensure global economic stability and foster long-term growth.

Recognizing the setback to the health-related Sustainable Development Goals caused by the pandemic, the proposals outline a path towards recovery and renewal by prioritizing health promotion, primary health care and health security. The proposals advocate for a revamped global architecture for HEPR, rooted in robust national health systems that are connected and accountable to communities.

Within the European Region, the current five-year Action plan to improve public health preparedness and response in the WHO European Region (2018–2023) (32) approaches its end. The WHO Regional Office for Europe has initiated a Member State led consultation process to design a new strategy and action plan – “Preparedness 2.0” – which aims to strengthen health emergency preparedness, response and resilience in the WHO European Region, 2024–2029 (Fig. 9). Preparedness 2.0 aims for a European Region with the required capabilities and pan-European networks to rapidly detect, verify and notify new and evolving health threats, and to effectively respond to emergencies caused by any hazard, grounded in principles of solidarity, transparency and accountability.

Fig. 9. Transition process from an acute response phase to long-term sustained plan for emergency preparedness, response and resilience in the WHO European Region.
The process to develop a new regional strategy and action plan builds on the efforts of many of lessons identified within our Region, including on the work of the Monti Commission – The Pan-European Commission on Health and Sustainable Development, chaired by Professor Mario Monti and convened by WHO Regional Director for Europe. This commission explored the links between health and sustainable development in the European Region. Their final report, “Time to Act: A Call for Sustainable Health and Wellbeing in Europe,” was published in 2021 (8) and reinforces the need for a holistic and coordinated approach to promoting health and sustainable development in the European Region.

The strategic priorities of Preparedness 2.0 will be aligned with the EPW (33) and build on existing flagship initiatives. The WHO Regional Office for Europe aims to present a regional health security preparedness, response and resilience plan, building on this COVID-19 transition and integrating lessons from other ongoing emergencies in the Region, to European Region Member States in autumn 2024.
Collectively we are moving beyond the emergency phase of the COVID-19 pandemic, and the WHO Regional Office for Europe acknowledges the tremendous suffering that the SARS-CoV-2 virus has caused as it has spread, as well as the collective efforts of all the teams of people across WHO, Member States, partners and communities, that made a difference.

The challenges are not over, and uncertainties remain. Now is the time to strategically and sustainably invest in resilient health systems able to respond to health emergency events and to maintain essential services during emergencies. We need to close the gaps identified in health systems and emerge from COVID-19 more resilient to future shocks. We need to invest in and integrate the innovations of the past three years into the daily public health operations of our health systems. We need to set down the tracks and procedures for knowledge generation and technology transfer before the next emergency strikes. We need to support our frontline responders to recover from the extreme demands placed upon them and develop into a well-resourced and supported emergency workforce. Throughout all aspects of our planning, preparedness, response and recovery, we need to place communities and people at its centre, as without their engagement and support, our efforts will be in vain.

The strategic shifts outlined in this plan need to succeed if the Region is to emerge stronger from the COVID-19 emergency. We will measure this success three ways, namely:

i. whether the control of COVID-19 has been integrated into broader prevention and control for respiratory viruses such as influenza and respiratory syncytial virus;

ii. whether the gains of the pandemic response have been sustained in day-to-day public health operations and health services; and

iii. whether the lessons of the pandemic and other recent health emergencies have been deliberately applied to increase the resilience of health systems against future shocks.

Together, as a Region and through effective partnerships, we can transition to a comprehensive approach that integrates COVID-19 control into broader prevention and control programmes, sustains gains and innovations, enhances resilience, and supports countries to prepare for and respond to emergencies of the future.
References


WHO Regional Office for Europe
The World Health Organization (WHO) is a specialized agency of the United Nations created in 1948 with the primary responsibility for international health matters and public health. The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health conditions of the countries it serves.

Member States

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