







Strategic preparedness, readiness and response plan to end the global COVID-19 emergency in 2022

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# Contents

<b>Foreword from the Director-General</b>	<b>1</b>
<b>Part I. Overview and objectives</b>	<b>2</b>
Situation overview	2
Drivers of transmission and impact	4
Planning scenarios	5
Strategic objectives	6
<b>Part II. Ending the acute phase of the COVID-19 pandemic</b>	<b>7</b>
An integrated plan to end the pandemic	7
Surveillance, laboratories, and public health intelligence	8
Vaccination, public health interventions, and engaged communities	10
Safe and scalable clinical care, and resilient health systems	13
Research, development, and equitable access to countermeasures and essential supplies	17
COVID-19 pandemic preparedness and response coordination	20
<b>Part III. COVID-19 and the future of pandemic preparedness and response</b>	<b>22</b>



# Foreword from the Director-General



For more than two years WHO has been at the front and centre of an unprecedented global effort to deliver science, solutions and solidarity to end the acute phase of the COVID-19 pandemic, and there have been major successes. But for all of the progress we have made, the pandemic remains an acute global crisis in 2022.

The surge of new cases across the world caused by the spread of the Omicron Variant of Concern has combined with incomplete vaccination and the lifting of public health and social measures to put health systems and societies under renewed strain. Our collective failure to vaccinate the vulnerable globally has prolonged the pandemic, with the unacceptable loss of life, health, and global prosperity that entails.

We now stand at a pivotal and dangerous moment in the fight against COVID-19. Although it is impossible to predict precisely how the SARS-CoV-2 virus will evolve, we know that new variants will arise as transmission continues and, in many cases, intensifies. And yet we can look to the future with a sense of hope that we can end the COVID-19 pandemic as a global emergency through our actions.

We have the tools to plan for and respond to every eventuality. We have global systems to better understand the virus as it changes, and we have the vaccines, diagnostic tools, treatments and other public health and social measures to end the acute phase of the COVID-19 pandemic. Focus, vigilance and commitment now will end the emergency of the pandemic and lay the foundations for a more effective response to the future threats that will undoubtedly emerge. But the pandemic remains far from over.

We must guard against false narratives that COVID-19 is a mild disease that can be ignored. More than 6 million lives have been lost to COVID-19. In the first week of February alone, more than 75 000 people were reported to have died from COVID-19: a shocking number that we know is an underestimate. Many thousands more will be left battling a debilitating post-COVID-19 condition. COVID-19 remains a severe disease. However, through force of effort, diligence, flexibility and solidarity we can make COVID-19 a manageable disease.

In this document, we set out the strategic adjustments that every country needs to make to address the drivers of SARS-CoV-2 transmission, lessen the impact of COVID-19 disease, and end the global emergency of COVID-19.

Equity and solidarity must be our watchwords. The most equitable use of vital COVID-19 tools is the most effective use of COVID-19 tools.

At the same time, we must be vigilant for the evolution and spread of new SARS-CoV-2 variants, and redouble our efforts to guard against already stressed health systems and health workers being overwhelmed by new surges of COVID-19.

We must ensure that those health systems and services that have been devastated over the past two years are supported to recover quickly, and to build in resilience to future shocks. WHO will work with every partner, from international organizations to governments, industry and academia, to the most marginalized communities, to save lives, protect the most vulnerable, and end the COVID-19 pandemic.

We will also continue to work with all partners to ensure that the lessons of the past two years are harnessed to drive the works into a new era for pandemic preparedness, readiness and response. COVID-19 has shown that the status quo does not protect our communities, our societies, and our economies. As we address the fundamental challenges of COVID-19 we must continue to address the fundamental weaknesses in global pandemic preparedness, readiness and response, so that we can face the future together with hope, whatever that future might bring.

**Dr Tedros Adhanom Ghebreyesus**  
Director-General  
World Health Organization



# Part I. Overview and objectives

## Situation overview

More than two years since the first SARS-CoV-2 infections were reported, the COVID-19 pandemic remains an acute global emergency. The emergence and rapid spread of the Omicron Variant of Concern (VOC; see Box 1) towards the end of 2021 precipitated an acceleration of SARS-CoV-2 transmission worldwide, at an intensity the world had not yet seen. More than 143 million new cases were reported globally in the first two months of 2022 alone – one-third of the 433 million cases that had been reported up to 28 February since the onset of the pandemic. The pandemic is not over, although COVID-19 is now affecting countries in very different ways.

Almost six million deaths from COVID-19 had been reported to WHO up to the end of February 2022: an unacceptably high number that is almost certainly an underestimate. In the first week of February alone, more than 75 000 people were reported to have lost their lives to COVID-19, an unacceptably high number that we know is an underestimate. Many thousands more will be affected by long-lasting and debilitating sequelae. COVID-19 continues to have a profound impact on global health, causing death and severe disease on an unacceptable scale. Although there is heterogeneity between regions, overall transmission remains high, and increases the risk of new variants.

In September 2021, WHO outlined the risk factors that could prolong the COVID-19 pandemic, including the “possibility that new variants will emerge with greater transmissibility and lower susceptibility to current vaccines; the inconsistent application of public health and social measures; the continued politicization and mixed

messaging around proven and effective public health interventions; the global prevalence of misinformation about COVID-19 and COVID-19 tools such as vaccines; and crucially, inequitable access to and capacity to utilize COVID-19 tools such as vaccines”. To a large extent, our collective failure to adequately address these and other (figure 1) drivers of transmission and impact has resulted in the continuation and, in some cases, deterioration of the COVID-19 pandemic. The choices we all make now, both as individuals and collectively, will determine when the pandemic ends.

WHO’s first global Strategic Preparedness, Readiness and Response Plan (SPRP) was published on 4 February 2020, and outlined the essential steps needed at global, national and local levels to suppress transmission of COVID-19, reduce exposure, protect the vulnerable and save lives. The SPRP 2021 updated the strategy to take account of new knowledge and more effective tools developed over the preceding year. In this document for 2022, WHO sets out a number of key strategic adjustments that, if implemented rapidly and consistently at national, regional, and global levels, will enable the world to end the acute phase of the pandemic. While recovery and the strengthening of the global health emergency preparedness and response architecture are beyond the scope of this document, it should be noted nevertheless that the capacities and adjustments necessary to end the acute phase of the COVID-19 pandemic can and should lay the foundations for a future in which the world is prepared to prevent, detect and respond to pandemic threats.

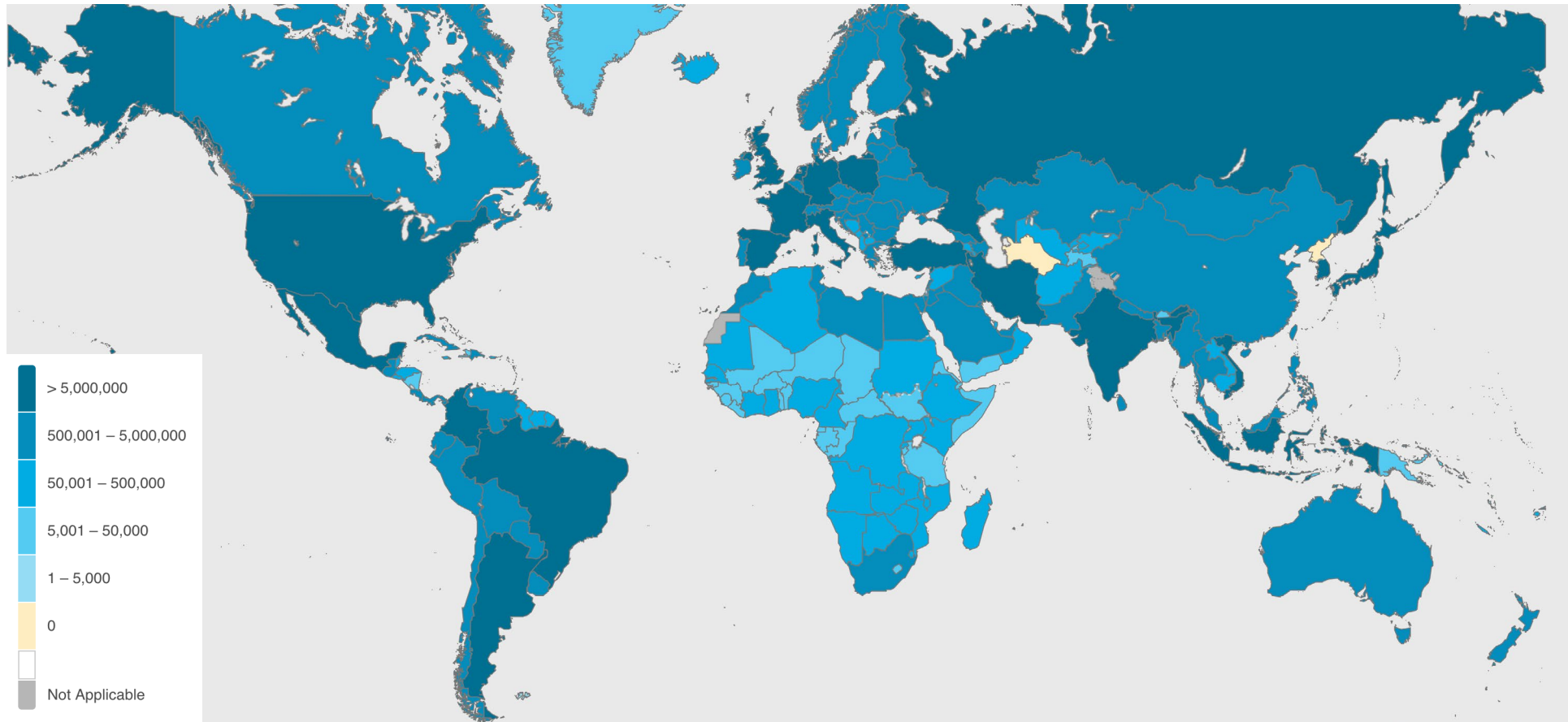
### **Box 1 | How has Omicron changed the pandemic?**

The SARS-CoV-2 Omicron variant of concern (VOC) spreads significantly faster than any previous variant, and as of March 2022 has come to be the dominant virus circulating globally. The Omicron VOC now accounts for around 99% of all samples that are sequenced from around the world. There are several factors that account for Omicron’s transmission advantage over previous variants, but this advantage is primarily due to mutations that enable the virus to bind to human cells more easily, and increase its ability to evade the immunity that individuals acquire after an infection and/or vaccination.

Although the risk of severe disease from Omicron appears to be lower than from previous variants, the huge volume of cases caused by Omicron have led to significant spikes in patients requiring hospitalization around the world, which has put significant further pressure on healthcare systems and led to many indirect negative impacts on morbidity and mortality. Far too many people continue to become severely ill and need hospitalization, and many tens of thousands of people continue to die each week. It does not need to be this way.



## Total reported COVID-19 cases as of 29 March 2022



480 170 572 cumulative cases  
6 124 396 deaths

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## Drivers of transmission and impact

In order to end the COVID-19 global emergency we must address the primary factors that are driving transmission of the SARS-CoV-2 virus and driving the direct and indirect impacts of COVID-19 disease (Box 2). Some factors drive both transmission and impact, and many of the factors interact to multiply their effects.

Although it is not possible to eliminate SARS-CoV-2, by addressing the drivers of transmission and disease impact in every country we can end the global COVID-19 emergency in 2022.

At national level, the relative importance of each of the drivers of transmission and disease impact is largely dependent on country-specific and local contextual factors, including:

- Local epidemiology, and the ability to adapt public health measures dynamically in response to public health intelligence
- Demographics and prevalence of risk factors for disease severity
- Population immunity (vaccine-derived and infection-derived) and susceptibility
- Access to use of life-saving tools
- Leadership and communication
- Engagement of communities with the response
- The resilience and capacity of health systems to respond and surge



COVID-19 safety instruction signage inside the WHO Office in Vientiane, Lao People's Democratic Republic. WHO supported Lao People's Democratic Republic to expand the country's capacity to rapidly detect, test, contact trace and treat cases of COVID-19. WHO helped train staff at hospitals and clinics across the country on how to safely manage and treat COVID-19 patients. WHO also supported the Ministry of Health in stepping up risk communication and community engagement about COVID-19. © WHO / Blink Media - Bart Verweij

### Box 2 | Drivers of disease impact and transmission

#### Drivers of high transmission

- Viral evolution resulting in more transmissible variants
- Lack of immunity due to lack of access to vaccination, hesitancy, or incomplete vaccination, and/or waning protection against COVID-19 following infection or vaccination
- Inconsistent and/or inadequate use of proven Public Health and Social Measures
- Insufficient capacity to use and or adjust interventions on the basis of available public health intelligence and accrued knowledge
- Misinformation, disinformation and politicization undermining the effectiveness of proven public health and social measures, therapeutics, and vaccines

#### Drivers of high impact

- Low vaccination coverage, with complete schedule, in priority use populations globally
- Waning protection against severe disease or death following vaccination and/or infection
- Lack of access to life-saving tools such as oxygen and other therapeutics
- Lack of access to diagnosis, late diagnosis and delayed entry into clinical care pathway
- Viral evolution reducing the efficacy of life saving tools
- Poorly defined and/or resourced care pathways for post-COVID-19 Condition (Long COVID)
- Insufficient capacity to adjust recommended layered interventions on the basis of available public health data and analysis



## Planning scenarios

The complex interplay between all the above factors, and the dynamic changes in their relative importance in different contexts over time, means that an effective strategy to end the global COVID-19 emergency must be multilayered and agile. It must be flexible enough to account for changes in immunological and virological drivers of impact and transmission that are both largely outside our control and extremely hard to predict on the basis of current evidence and predictive tools.

For planning purposes, we can envisage three potential scenarios regarding viral evolution and human immunity over the next 12 months: a base case, a best case, and a worst case (figure 1).

The base case is our current working model, and is based on what we know about the duration of vaccine-derived and infection-derived immunity, the natural history of SARS-CoV-2 and its evolution over the past two years, and our knowledge of other respiratory viruses. It should be acknowledged, however, that there is a high degree of uncertainty attached to all scenarios, and we must therefore build in the flexibility to adapt to rapid and dynamic changes in viral transmission, disease severity, and their impact on individual and population-level immunity.

Another potential scenario to be kept in mind is the emergence of an essentially new SARS-CoV-2 virus. This could be through a new emergence from a pre-



In Trinidad and Tobago, a key strategy in preparing and training the healthcare workforce is the use of simulation exercises. Pictured here, emergency room nurses and doctors perform a routine process on Kelly Jeffrey, acting as a patient experiencing a severe anaphylactic reaction during the observation period after receiving a COVID-19 vaccine. © WHO / Blink Media - Kibwe Brathwaite

existing or newly established animal reservoir, or due to a recombination event in which a patient co-infected with two separate variants of SARS-CoV-2 produces new infectious viral particles that have genetic characteristics shared with both parent lineages. This scenario would effectively be a reset, with a completely susceptible

global population. This scenario is not explicitly included as a planning scenario, but should be considered a background threat, and all COVID-19 response and readiness capacities should be understood to yield a resilience dividend pertaining to that threat.

**Figure 1** | Base case, best case, and worst case planning scenarios

**Base case** | The virus continues to evolve. However, severity is significantly reduced over time due to sustained and sufficient immunity against severe disease and death, with a further decoupling between incidence of cases and severe disease leading to progressively less severe outbreaks. Periodic spikes in transmission may occur as a result of an increasing proportion of susceptible individuals over time if waning immunity is significant, which may require periodic boosting at least for high-priority populations; a seasonal pattern of peaks in transmission in temperate zones may emerge.

**Best case** | Future variants that emerge are significantly less severe, protection against severe disease is maintained without the need for periodic boosting or significant alterations to current vaccines.

**Worst case** | A more virulent and highly transmissible variant emerges against which vaccines are less effective, and/or immunity against severe disease and death wanes rapidly, especially in the most vulnerable groups. This would require significant alterations to current vaccines and full redeployment and/or broader boosting of all high-priority groups.



## Strategic objectives

Our collective goal is to end the global public health emergency of COVID-19 in 2022. To do that, we will need to achieve two strategic objectives (figure 2).

The first objective is to reduce and control the incidence of SARS-CoV-2 infections. This is essential to protect individuals, and especially vulnerable individuals at risk of severe disease or occupational exposures to the virus, from exposure, reduce the probability that future variants will arise, and reduce pressure on health systems.

The second objective is to prevent, diagnose and treat COVID-19 to reduce mortality, morbidity, and long-term sequelae.

To achieve these objectives, international and national strategies need to be calibrated and optimised, and operational readiness for emergence of new threats needs to be strengthened. Part II of this document outlines the core technical and operational components required to achieve these two objectives, and sets out the role of WHO and international and regional partners in providing support to countries, including through mechanisms such as the Access to COVID-19 Tools Accelerator (ACT-A), to achieve these objectives and ultimately to end the COVID-19 global public health emergency.

**Figure 2** | Strategic objectives to end the global COVID-19 health emergency





# Part II. Ending the acute phase of the COVID-19 pandemic

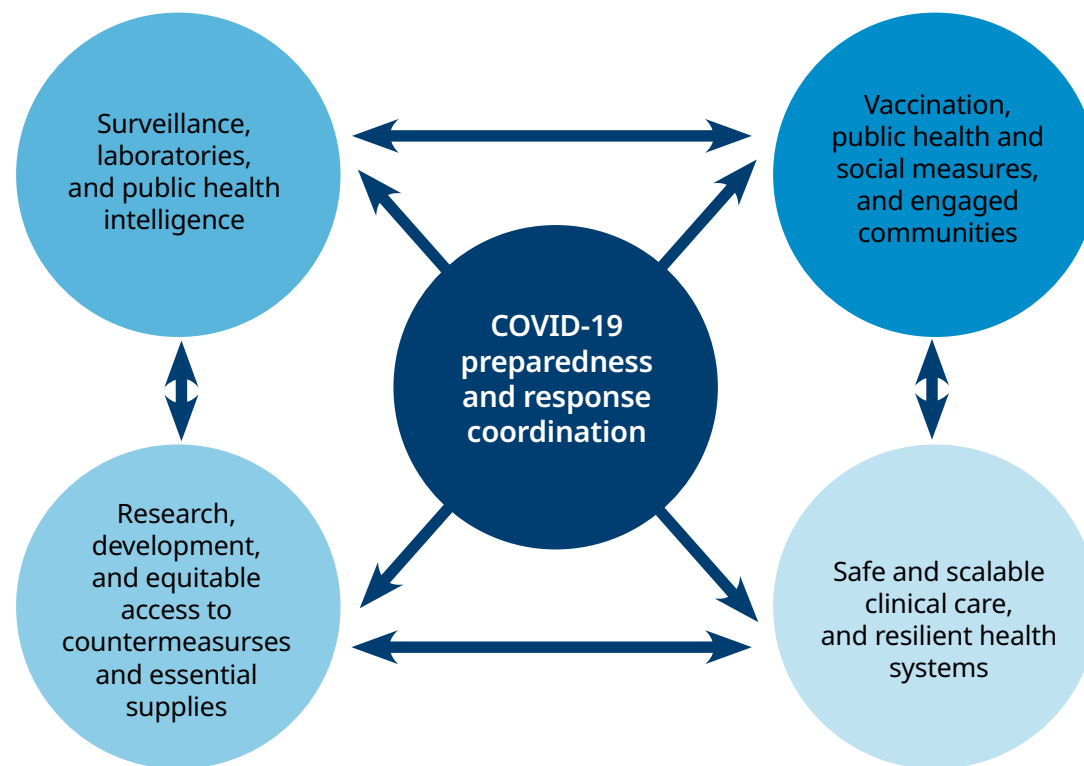
## An integrated plan to end the pandemic

Reducing SARS-CoV-2 transmission and reducing the impact of COVID-19 disease are objectives that can only be achieved with the engagement and empowerment of all of society and every arm of government through community-centered solutions. The implementation of an effective response at national level encompasses sectors that range from finance and social protection to environmental health. However, the scope of this document is limited to the health-centred activities required to end the global health emergency of COVID-19.

Conceptually, these activities can be grouped into five interacting subsystems of preparedness, readiness, and response (figure 3). These subsystems must be integrated with each other horizontally at local, national, and regional/global levels, and also vertically between each geographical level of organization. All five subsystems and the connections between them are essential to an effective COVID-19 response, and all must be underpinned by the principles of equity and inclusiveness, with communities at the centre.

Part II of this document sets out the key roles and strategic adjustments required within each of these subsystems at national and global level, and outlines what WHO and its international partners will do to support communities and countries implement these adjustments to end the COVID-19 global emergency.

**Figure 3** | Five core components of COVID-19 preparedness, readiness and response





## Surveillance, laboratories, and public health intelligence

### Surveillance

Public health decision-making at local, national, regional and global levels must be based on real-time, accurate data and analysis. For COVID-19 this means, at a minimum, data from disease surveillance and data on and health system utilization and capacity. Put simply, effective prevention and response to COVID-19 is dependent on dynamic knowledge of what to respond to, where and at what scale, with what available capacity, and who is most vulnerable.

The COVID-19 pandemic continues to expose marked weaknesses in multiple aspects of public health intelligence in nearly all countries, with many countries now beginning to scale down SARS-CoV-2 testing programmes.

Maintaining and strengthening SARS-CoV-2 surveillance in every country is vital to track the spread and evolution of SARS-CoV-2, rapidly detect and characterize new variants of interest and concern, and calibrate public health and social measures, as well as medical interventions. However, at this stage in the pandemic, as vaccine-derived and infection-derived immunity increases worldwide, there is a need to reallocate resources to enable a more strategic and sustainable approach for SARS-CoV-2 surveillance.

Countries may adjust surveillance systems to focus more on tracking morbidity and impact over transmission alone by strengthening the surveillance of hospitalization and intensive care admission, health system capacity, and mortality. But the degree to which adjustments are made must be dictated by the epidemiological context. There remain, for example, locations where SARS-CoV-2 has still had little circulation and where vaccination rates have not reached optimal levels, especially in vulnerable populations. In these settings, it may be necessary



A contract tracing team takes part in a morning meeting in Guatemala. COVID-19 public health response teams use Go.Data for data management and analysis. Go.Data is an outbreak investigation tool for field data collection during public health emergencies. The tool includes functionality for case investigation, contact follow-up, visualization of chains of transmission including secure data exchange and is designed for flexibility in the field, to adapt to the wide range of outbreak scenarios. Go.Data is the initiative of a group of public health partners and is managed by the Global Outbreak Alert and Response Network coordinated by WHO. © WHO / Noor Images / Mariceu Erthal

to maintain more intensive surveillance to minimize transmission and morbidity, while aggressively advancing vaccine coverage, particularly amongst the most vulnerable. In all settings, it remains important to:

- Maintain and strengthen surveillance for transmission trends, including monitoring cases, deaths, and COVID-19 hospital admissions;
- Maintain and enhance early warning capacities through event-based surveillance and, where feasible, environmental surveillance;
- Continue strategic testing linked to genomic sequencing with better geographic representation worldwide, to be able to monitor for the emergence and spread of variants.

Efficiencies can be made by integrating the surveillance of

SARS-CoV-2 with systems for the surveillance of influenza and other respiratory pathogens, and this will pave the way for a sustainable system of integrated respiratory disease surveillance beyond the end of the acute emergency.

Improved detection of the Post-COVID-19 Condition (Long COVID) will be necessary to reduce long-term morbidity even after the pandemic has ended.

In addition, Member States should prioritize capturing high quality patient-level data that link epidemiological and clinical characteristics with immunity status and genomic and phenotypic characterization, to be able to rapidly characterize potential new variants of concern.

WHO will continue to support Member States to strengthen SARS-CoV-2 virus and COVID-19 disease



surveillance and improve its sustainability, including through integration with other disease surveillance systems. WHO will continue to lead on collaborative public health intelligence for COVID-19, and provide a globally trusted platform for the collation, analysis and dissemination of COVID-19 epidemiological data and information, with a focus on the burden and impact of COVID-19. One of the key lessons of the pandemic to date is that public health intelligence must extend beyond the surveillance of pathogens and disease, and include the routine collection and rapid analysis of data from health systems in order to guide policy and calibrate response measures.

### Laboratories and diagnostics

Timely and accurate diagnostic testing for SARS-CoV-2 continues to be an essential part of the comprehensive COVID-19 response strategy. Diagnostic testing for SARS-CoV-2 supports both individual-level case finding and access to the clinical care pathway, and community-level actions to inform the overall public health response.

As the pandemic continues and the virus evolves, national and subnational policies on SARS-CoV-2 testing approaches and services, including the use of professionally-administered tests and COVID-19 self-testing, will need to be adjusted.

National policies should be evidence-based, agile, and take into account the latest epidemiology, available resources, and the needs of priority populations. As policies evolve and new therapeutics and care pathways become available, clear and up-to-date messaging will be needed for health workers, individuals and communities so that people understand the meaning of their test results and what actions to take.

In response to the need to increase access to testing, countries have worked to decentralize testing, implementing testing at central and sub-national levels, and deploying antigen rapid diagnostic tests (RDTs). It is critical to maintain and expand molecular testing capacities, and to continue to strengthen laboratory networks and systems, including for the identification of SARS-CoV-2 variants.

Positive diagnostic tests should be followed by genomic characterization of the virus. Both representative and targeted sequencing are important to enable countries to monitor virus evolution and to detect variants that may pose a threat to public health. Representative testing provides a good overview of viruses circulating in the population being surveyed. The main goals of targeted testing include increasing geographical representation, the characterisation of viral evolution in high-risk populations (e.g. individuals with chronic infections), and genomic surveillance in specific animal populations. The detection of new variants of interest should rapidly be followed by efforts to assess the impact of mutations on the structure and behaviour of the virus – a process known as phenotypic characterisation. With the increasing availability of antivirals (monoclonal antibodies, protease and polymerase inhibitors), genomic surveillance and phenotypic characterization should also include the monitoring of antiviral resistance.

### Zoonotic disease surveillance

Several animal species are known to be susceptible to SARS-CoV-2. The establishment of animal reservoirs, in which the virus circulates and genetically evolves, has been observed on several occasions in wild or farmed species, such as mink, hamsters, and white-tailed deer,



The National Public Health Laboratory (NPHL) was set up in March 2009 as part of the Communicable Disease Division with the Ministry of Health, Singapore. NPHL provides specialised laboratory tests to track changes in existing organisms, detect new and re-emerging diseases and respond to outbreaks. The lab is part of the WHO COVID-19 Reference Laboratory Network providing confirmatory testing for COVID-19. © WHO / Blink Media - Juliana Tan

with reverse transmission to humans. WHO is working closely with other international organizations and partners involved in animal health to promote increased surveillance in animal populations known to be at risk, including wild populations, and monitor the evolution of SARS-CoV-2 virus associated with these jumps between species. This essential, yet currently underutilized, component of surveillance requires urgent investment and wider implementation. At present very little is known about potential SARS-CoV-2 reservoirs in many parts of the world. Over the longer term, a One Health approach to disease surveillance must be incorporated into routine pandemic preparedness, readiness and response.



## Vaccination, public health interventions, and engaged communities

### COVID-19 vaccination

The [Strategy to Achieve Global Covid-19 Vaccination](#) lays out the different goals of the Covid-19 vaccination programme with a priority to i) minimize deaths, severe disease and overall disease burden, and the impact on health systems, followed by ii) resume full socio-economic activity; and iii) reduce future risks, including the risk of new variants.

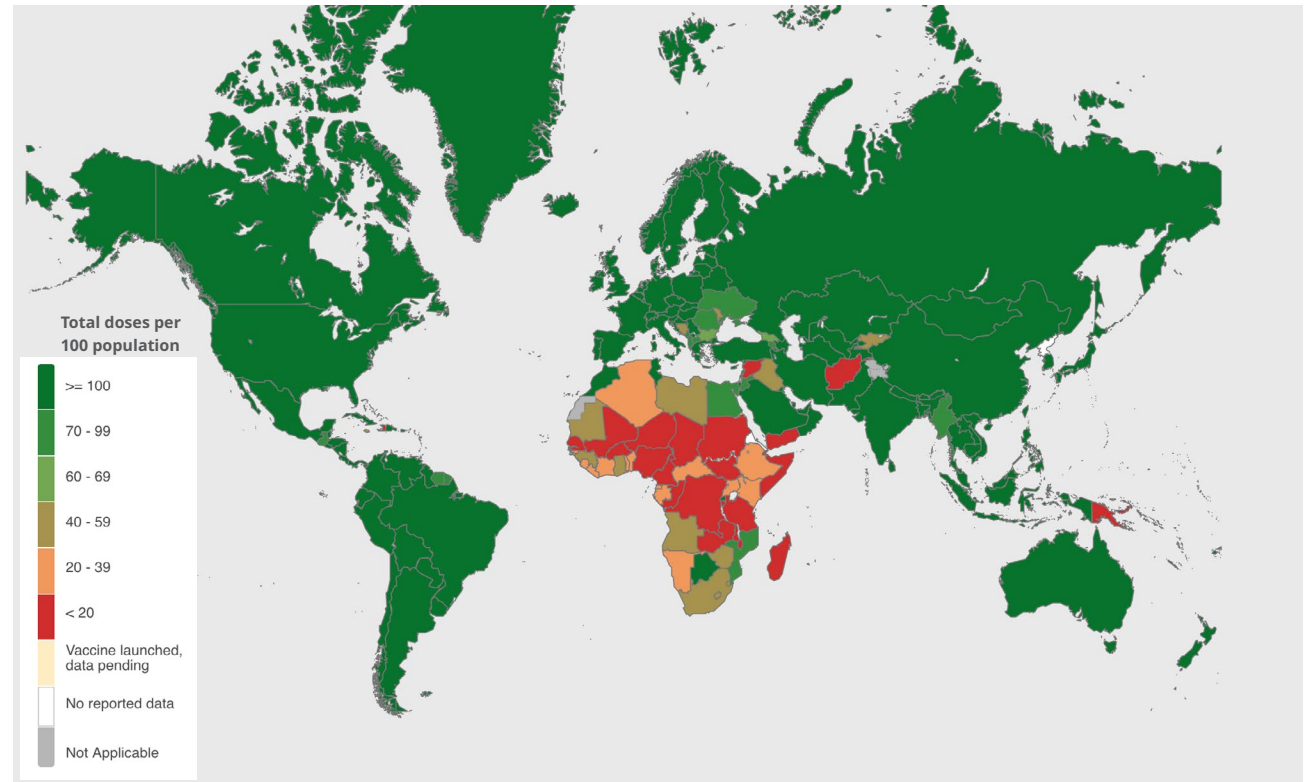
To these ends, at the G7 and G20 in 2021, WHO Director General Tedros Adhanom Ghebreyesus challenged leaders to ensure that countries had vaccinated 70% of their populations by the middle of 2022, adjusted for local demographics.

In pursuit of the 70% goal, national efforts must be focused primarily on fully vaccinating the most clinically vulnerable in society in accordance with WHO's Prioritization Roadmap, and using an optimal schedule of vaccines, including boosters. Achieving 100% vaccination coverage in the most clinically vulnerable groups will optimize public health impact on the road towards 70% of the population being vaccinated.

Despite the continued evolution of SARS-CoV-2 variants, all vaccines approved through WHO's Emergency Use Listing (EUL) process show high effectiveness at preventing severe disease and death after a primary series. Booster vaccination is required to sustain a high level of effectiveness.

Vaccines are, however, proving less effective than hoped at reducing infection and transmission. Depending on age, schedule, and derivation of immunity, vaccines do have a modest impact on infection against the current dominant variant, Omicron. Despite this, and despite the high proportion of the global populations with infection-induced immunity, the 70% vaccination target remains relevant especially when national programmes are designed to

Total reported COVID-19 vaccinations as of 29 March 2022



11 054 362 790 vaccine doses administered  
5 033 637 141 vaccinated with at least one dose

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## Part II. Ending the COVID-19 pandemic

achieve that target through high vaccine coverage in high-priority groups first.

Adjustments to the Strategy to Achieve Global Covid-19 Vaccination are under consideration to account for new available evidence and the evolving context. WHO will continue to support countries and work with partners at every step of the global value chain to ensure the stark global inequity in access to vaccines is addressed. As of the end of March 2022 over 11 billion doses of COVID-19 vaccines had been administered globally, but, approximately 36% of the global population has not received a first dose of COVID-19 vaccine, with significant disparities between regions. Of WHO's 194 Member States, 21 have vaccinated less than 10% of their population, and 75 have vaccinated less than 40%. The disparity in the administration of booster doses is even more pronounced.

Measures to be taken to increase access to and demand for vaccines by Member States, WHO and international partners are outlined below under the heading "Research, Development, and Equitable Access to Countermeasures and Essential Supplies".

### Public Health and Social Measures (PSHM)

Until the acute emergency of COVID-19 is ended, it will remain necessary to maintain basic PSHM, even in periods of low circulation of SARS-CoV-2. Countries should be ready to scale up PSHM as the burden of COVID-19 increases to avoid preventable morbidity and mortality, and reduce the risk of spread of the virus and therefore the emergence of new variants. Recognizing that some PSHM, such as contact tracing and quarantine, are resource-intensive and disruptive, authorities may need to prioritize their use where they are most critical, such as amongst the most vulnerable, and should use a risk-based

approach that takes into consideration the benefits and risks of adjusting contact tracing and quarantine policies.

WHO will continue to track the implementation of PSHM across the globe, guide Member States on the most effective combination of PSHM to use and when and how to adjust them, and promote a community-centred approach to effectively and fairly implement PSHM.

Using robust social science data is crucial to understand how economics, politics, religion, and other social factors affect the ability of communities to follow PSHM requirements and recommendations.

The extent to which individuals are able to adhere to PSHM requirements is affected by multiple social and economic factors, and many policies do not account for the very real social and economic impacts and trade-offs that need to be made at household level. For example, policies that impact the free movement of people have a profound impact on household incomes, particularly for those working in informal economies. Understanding and addressing these realities will enable Member States to implement strategies to support adherence, such as social protection measures to mitigate economic impact. As the COVID-19 response continues, and in the event that PSHM need to be intensified, strategies and communication initiatives must be tailored and nuanced to reach all social groups.

### Infodemic management

The first goal of infodemic management for COVID-19 is to understand the nature of the public conversation about the disease and the measures designed to protect against it. For this, robust social listening systems are needed that can accommodate diverse datasets that facilitate rapid integrated analysis to produce insights that can



© WHO / Victor Sanchez

be rapidly acted on to improve the emergency response and immunization programme strategies. Infodemic interventions can include helping people discern between accurate vaccine information and misinformation, promoting peer-to-peer approaches to address questions and concerns, building resilience in the public by quickly pre-emptively debunking and refuting misinformation before it is amplified, leveraging networks of trusted messengers such as health care workers and community leaders, and partnering with factchecking and civil society organizations.

WHO is working with partners to create a global network of networks and communities of practice in order to reach more vulnerable and marginalized populations to translate WHO guidance and evolving COVID-19 knowledge into meaningful actions that strengthen public health. In 2022 WHO will continue to work through the WHO Information Network for Epidemics (EPI-WIN) with international and local partners to establish priority





actions with faith and religious leaders, youth networks, the labour force, fact-checking organizations and infodemic managers to foster trust and understanding about how the pandemic is affecting lives and what can be done to support each community in their own unique contexts to respond effectively.

### Risk communication and community engagement

To address the varied and dynamic COVID-19 situations at sub-national levels, alongside competing public health priorities, Member States must ensure operational readiness for any COVID-19 scenario in the context of inevitable concurrent events. Localized responses must be co-designed with communities to ensure relevance, acceptability, sustainability and effectiveness.

For the next phase of the COVID-19 response, WHO will expand Risk Communication and Community Engagement (RCCE) efforts to refocus attention on the information and engagement needs of marginalized communities and vulnerable populations, including those who are under-vaccinated and unvaccinated. RCCE initiatives will enable broader community response functions, including community-based surveillance, contact tracing, testing and home-based care.

To ensure a more context-appropriate localized response, data and evidence related to social dynamics (e.g. public perceptions) must be combined with other kinds of data, such as social listening and epidemiologic data, to inform effective interventions. These interventions should be designed and delivered in partnership with civil society, community-based and faith-based organizations. WHO is supporting activities to build community-focused public health emergency response systems.

Training and capacity building for civil society organizations, faith-based organizations, and other community-focused entities must be a priority to ensure long-term competency at the local level. WHO's Community Readiness and Resilience team is in the process of developing competency frameworks to nurture the next generation of community leaders and create a strong foundation for leadership and ownership of emergency response processes.

The Risk Communication and Community Engagement Collective Service (CS) is a collaborative partnership between WHO, IRFC, UNICEF and GOARN to support global response efforts. The CS is designed to develop structures and mechanisms for a community-centred approach to RCCE engagement across public health, humanitarian and development response efforts.

A key component of CS activities involves strengthening efforts to generate social and behavioral data on local, regional and global levels, and to use those insights to inform RCCE activities. The [CS Data Portal](#) includes interactive data visualization tools and monitoring of social behavioral insights, community feedback, social listening, infodemics, and other RCCE activities. In 2022 the CS aims to strengthen coordination support at country level.

### International travel and mass gatherings

WHO will continue to support national authorities in their decision-making process on how to implement, calibrate or lift risk mitigation measures in the context of international travel in the context of COVID-19, including those at points of entry (airports, ports and ground crossings), informed by regular risk assessments and updated reviews on the effectiveness of these measures. WHO will also continue to support countries and event organizers to evaluate, mitigate and communicate the



On 20 May 2021 a health worker administers COVID-19 vaccine at a vaccination centre in Paz Flor mall in Luanda, Angola. Paz Flor was one of 21 major vaccination hubs spread across Angola's 18 provinces, bringing crucial COVID-19 vaccination services together under one roof. As of early July 2021, Angola had administered around 1.5 million COVID-19 vaccine doses, with over 1.3 million vaccines received through the COVAX facility. © WHO / Booming - Carlos Cesar

risks of SARS-CoV-2 transmission associated with mass gatherings, with the aim of facilitating the adoption of evidence-based decision making with regards to holding, postponing or adapting sports, religious, entertainment and other events. This will be done through the collection, analysis and dissemination of information on mass gatherings (e.g. through literature reviews, case-studies, focused group discussions/webinars, etc.); the development and update of technical guidance, risk-assessment tools and information products targeted to different audiences; the establishment and management of round-tables of academic institutions, sports/leisure/religious/other relevant associations and federations, as well as through the provision of direct technical advice and support.



## Safe and scalable clinical care, and resilient health systems

### Integrated clinical care pathways

Ensuring safe and effective care for people with COVID-19 and its sequelae (including post-COVID-19 condition and other complications) requires dynamic translation of available evidence into guidance, and a strategic approach to assessment and management across the continuum of primary, emergency, critical, and rehabilitative care. Effective management of COVID-19 requires mechanisms for early recognition, triage and safe patient flow, and access to reliable diagnostics and timely resuscitation and treatment. Many patients with acute signs and symptoms of COVID-19 will need life-saving care even prior to having a definitive diagnosis, and clinical presentations evolve with changing variants. Health care systems must be ready to respond to the varying needs of people with mild, moderate, severe and critical disease, and to identify those suffering delayed consequences of SARS-CoV-2 infection, including those who may not have been diagnosed at the time of acute infection.

To facilitate rapid action and the dissemination of new treatments at country level, together with ACT-A partners, WHO has created the COVID-19 clinical care readiness (C3R) framework. An associated planning tool is under development and will allow countries to identify specific barriers to timely and effective COVID-19 care and to plan and cost priority actions to mitigate system gaps. WHO has also initiated work on a linked training readiness tool, which will support countries to design integrated training strategies across three domains: simple digital mechanisms for the dissemination of clinical guidance that can rapidly incorporate new modules as new treatments are released; facilities, processes and personnel for face-to-face trainings; and networks for supportive supervision and peer-to-peer clinical decision support.



A member of a COVID-19 rapid response unit in Pakistan collects a sample for testing. © WHO / Blink Media - Saiyna Bashir

WHO will continue to dynamically update the Living guidelines on COVID-19 [clinical management](#) and [therapeutics](#), synthesizing emerging evidence to inform real-time clinical practice. These guidelines will be transformed into products for global dissemination, including the [COVID-19 Clinical care pathway](#), global/regional webinars, the [Clinical management for COVID-19 training course](#) on the [openwho.org](#) massive on-line training course, the [SARI Toolkit](#), and other operational guidance. Finally, WHO will continue to advance the research agenda pertaining to clinical characterization and management of COVID-19 to keep up to date in our evolving understanding of variants of concerns, disease severity of disease and post COVID-19 condition.

Simultaneously, the availability and safe use of medical oxygen remains critical to meeting the health needs of people with COVID-19 and a wide range of other conditions. To ensure operationalization of the large investments made during the previous two years, in addition to the clinical efforts, WHO and its partners will continue to develop standard operating procedures to strengthen the local work force capacity to properly operate and maintain newly installed or repaired oxygen systems and properly use medical devices (i.e. respiratory support devices, pulse oximeter, and monitors) as part of clinical care continuum described above. The development and implementation of global key performance indicators will be used to monitor progress



## Part II. Ending the COVID-19 pandemic

from procurement, to operations and patient impact. Completion of the [O2COV2 observational cohort study](#) will serve as a key source of information about the real-world use and availability of oxygen in resource-limited settings, and guide support to member states to set up future national roadmaps for scaling up access and appropriate use of oxygen for all of its medical indications, beyond COVID-19.

### Infection prevention and control

COVID-19 has confirmed the central role that infection prevention and control (IPC) plays in the prevention and containment of outbreaks in health care facilities and in the community.

Data from WHO and Organization for Economic Co-operation and Development show that immediate access to sufficient personal protective equipment (PPE) and IPC training roll out in the first few months of the pandemic would have prevented many infections among health workers globally, saved lives, and averted huge costs.

Countries have achieved tremendous improvements in IPC during the COVID-19 response to date, but more is needed to improve IPC worldwide. IPC budgets have been mainly dedicated to the procurement of PPE, hand hygiene and cleaning supplies, rather than investing in the implementation of interventions to change practices. WASH built environment interventions in health care facilities were also often limited to short-term adaptations to COVID-19, such as temporary measures to provide handwashing stations in isolation wards, rather than providing longer term improvements such as more sustainable WASH access for handwashing and cleaning in other priority wards.

Repeated WHO [pulse surveys](#) during the COVID-19 pandemic reported insufficient PPE for all staff in many

low-income and middle-income countries, and identified health workforce challenges, lack of IPC PPE, supplies and best practices as a major reason for essential health services disruption. The increased use of PPE aggravated the pre-existing problem of health care waste, with two thirds of health care facilities in the least developed countries lacking means for segregating or [safely treating waste](#).

There is an urgent need to bridge the gaps identified above, maintain IPC operational readiness, and ensure surge capacity and the sustainability of IPC programmes in the long term. WHO and partners have identified three major priorities.

First, the gaps identified in some countries by local assessments or global surveys such as the pulse surveys, must be urgently addressed in accordance with WHO's [IPC Minimum Requirements](#). It is essential that key improvements achieved during the pandemic be maintained

Second, it is essential to strengthen and maintaining IPC operational readiness for a resurgence of cases. If a resurgence is detected or anticipated, key immediate actions at national and health care facility level are required, as set out in the [Framework and toolkit for infection prevention and control in outbreak preparedness, readiness and response at the national level](#).

Immediate steps at health facility level should include the reactivation of an incident command group for the coordination of IPC stakeholder networks and resource mobilization, ensuring safe flow of patients and staff, ensuring safe care environment, ensuring PPE availability and optimal use, vaccinating health workers as per latest protocols, increasing infrastructural capacity as required (e.g., triage and isolation capacity) and [refresher IPC training](#). These actions will need to be contextualized for



Luis Carlos Parada Mivabal, a member of a COVID-19 vaccination team, cleans a resting bed where people can be monitored after receiving the vaccine in the indigenous community of Concordia, Colombia on 16 March 2021. © WHO / Blink Media - Nadège Mazars

fragile, conflict or vulnerable settings.

Finally, after more than two years of focus on COVID-19, countries should take stock of lessons learned, make an in-depth situational analysis regarding IPC using [standardized tools](#), and make plans to address further IPC priorities. It is essential to make health care facilities safer and more compassionate places through stronger IPC implementation, where family and visitors can be close to their loved ones during care. WHO will work with partners to elucidate a global strategy for IPC to provide strategic direction, establish agreed targets, and set mechanisms for accountability, including the elements of a legal framework to enforce IPC within the health system in synergy with other programmes such as those dedicated to AMR, quality of care, patient safety and occupational health.



## Protecting, supporting and enabling the health workforce

The COVID-19 pandemic continues to have a profound impact on health and care workers, in terms of increased workload, risk of infection and death (approximately 115 000 health workers died from COVID-19 between January 2020 and May 2021), quarantine, work stoppages related to deteriorating working conditions, stigma and violence, mental health issues, alongside increasing demands for services and for health workers to take on new roles and tasks in national response plans. These impacts exacerbated existing inequalities, including gender inequalities, among health workers.

Three consecutive rounds of the [WHO pulse survey on continuity of essential health services](#) during the COVID-19 pandemic, published in August 2020, April 2021, and February 2022 respectively, indicated that health workforce availability was both the most common cause of service disruptions and the most important bottleneck in scaling up access to essential COVID-19 tools.

An integrated set of policy actions are therefore required both to 1) accelerate the equitable provision of essential COVID-19 tools (vaccines, diagnostics, treatment) and 2) to sustain the capacity of health systems to continue providing other essential health services.

Policy, management and investment decisions to respond to the pandemic should include measures to protect and safeguard health and care workers, including: decent working conditions, including occupational health and safety; a manageable workload; the effective implementation of appropriate infection prevention and control measures, including provision of adequate personal protective equipment and vaccination of health workers; and mental health and psychosocial support.

In parallel, a scale up of the health workforce may be required, depending on the scenario and local epidemiological patterns, to respond to temporary or sustained spikes in the demand for services and deliver vaccines, diagnostics and therapeutics. Relevant actions include: strengthening the capacity and optimal management of health workforce teams; mobilizing additional health workers through new hires; rationalizing deployment and distribution; and strengthening the public health workforce.

Factoring in these needs in short-term and medium-term workforce projections and budget allocation decisions is essential for a sustainable response to the pandemic, while avoiding an over-reliance on re-deployment and minimizing disruptions to the provision of essential health services.

## Mental health and psychosocial support

The COVID-19 pandemic has had a profound direct and indirect impact on global mental health. According to recently published [WHO research](#), the first year of the COVID-19 pandemic saw a 25% increase in the global prevalence of anxiety and depression. WHO has also found that the pandemic has disproportionately affected the mental health of young people, who are also at disproportionately high risk of suicidal and self-harming behaviours. Women have been more severely impacted than men, and people with pre-existing physical health conditions, such as asthma, cancer and heart disease, were more likely to develop symptoms of mental disorders.

This increase in the prevalence of mental health problems has coincided with severe disruptions to mental health services. For much of the pandemic, services for mental, neurological and substance use conditions were the most disrupted among all essential health services reported

by WHO Member States. Many countries also reported major disruptions in life-saving services for mental health, including for suicide prevention.

WHO will continue to work with partners to develop and disseminate resources in multiple languages and formats to help different groups cope with and respond to the mental health impacts of COVID-19. At the same time, the Organization will continue to work with partners, including other United Nations agencies, international non-governmental organizations and the Red Cross and Red Crescent Societies, to lead an interagency mental health and psychosocial response to COVID-19. Throughout the pandemic, WHO has also promoted the integration of mental health and psychosocial support across and within all aspects of the global response.

Member States have recognized the impact of COVID-19 on mental health. WHO's most recent pulse survey on continuity of essential health services indicated that 90% of countries are working to provide mental health and psychosocial support to COVID-19 patients and responders alike. At last year's World Health Assembly, countries emphasized the need to develop and strengthen mental health and psychosocial support services as part of strengthening preparedness, response and resilience to COVID-19 and future public health emergencies. The updated Comprehensive Mental Health Action Plan 2013-2030, which includes an indicator on preparedness for mental health and psychosocial support in public health emergencies, was adopted by the Assembly.

These commitments now need to be matched with resources. Although the pandemic has generated interest in mental health, historical under-investment means that countries must act urgently to ensure that mental health services are available to all.



## Maintaining essential health services

Countries continue to balance and address the demands of responding directly to COVID-19 with the need to maintain the safe delivery of other essential health services and public health functions.

As countries optimize their capacities to address the drivers of SARS-CoV-2 transmission and COVID-19 impact, some adaptations in service delivery may no longer be required, others may need to continue for a limited period, and others that are found to be effective, safe and beneficial can be incorporated into routine post-pandemic practice, contributing to longer term health system resilience and progress toward universal health coverage.

Decision-makers at national and subnational levels should anticipate the need to be agile and periodically reintroduce health system adaptations as SARS-CoV-2 transmission increases and/or new variants emerge. Regular monitoring of service availability, access barriers and use of health services and health outcomes at all levels of care should guide programming decisions and priorities. Decisions should be aligned with relevant national and subnational policies and should be re-evaluated at regular intervals.

Effective prioritization and implementation will continue to depend on a health system's baseline capacity, the burden of disease, the socio-economic conditions of communities and the prevailing importance of different drivers of SARS-CoV-2 transmission and COVID-19 impact. High-priority categories for continuity of care should continue to include preventing and treating communicable diseases; averting maternal and child morbidity and mortality; preventing acute exacerbations of chronic conditions, including mental health conditions, by maintaining established treatment regimens; continuity of critical



WHO worked with the national health authorities and health partners in Madagascar to coordinate the COVID-19 response, including delivering essential medical supplies and medicines, and deploying experts in the regions affected by Cyclone Batsirai. © WHO / Henitsoa Rafalia

inpatient therapies; and managing emergency conditions requiring time-sensitive intervention.

Where pathways to ensure the safe delivery of health services have become well established, it remains crucial to address access barriers and decreased care-seeking through effective community engagement.

In many contexts, the COVID-19 response has required a substantial surge or redeployment of health workers. Countries should ensure that, while COVID-19 services, including scaling up of COVID immunization programmes, may continue to require additional staff resources, sufficient resources should be allocated to scale up the provision of essential health services.



## Research, development, and equitable access to countermeasures and essential supplies

### Tackling vaccine inequity

#### Partnerships for delivery

WHO and partners created the Access to COVID-19 Tools (ACT) Accelerator in April 2020 to accelerate access to tests, treatments, and vaccines. So far the vaccine pillar, COVAX, has shipped more than 1.35 billion doses to 144 participating economies, and directly enabled 40 participating economies to start their immunization programmes in 2021. The speed of global COVID-19 vaccine introduction has been the fastest in history, with every COVAX participant having introduced at least one COVID-19 vaccine since the first vaccines were approved by WHO for emergency use.

WHO plays a lead role in COVAX, from setting the target product profile for new vaccines, to the authorization of vaccines for emergency use, global vaccine safety monitoring, development of global and regional vaccine and immunization policies, allocation of vaccine supplies, to supporting countries plan and roll out of complex vaccination programmes, and the monitoring the performance and impact of vaccines on health outcomes. But WHO and our partners in ACT will go further and faster in 2022.

WHO is committed to accelerating access to vaccines and removing health system bottle necks, working with our ACT partners, including through ACT's Health System Response Connector (HSRC), and through the COVID-19 Vaccine Delivery Partnership to support governments and respond to the needs of communities.

To enhance the efficiency of international support, from technical assistance to delivery financing, WHO, UNICEF and Gavi have established the COVID-19 Vaccine Delivery Partnership with other key partners including World Bank and Africa CDC. The partnership is focused on intensifying



A vaccination team goes door-to-door in Puerto Inirida, Colombia, to offer COVID-19 vaccinations on 17 March 2021. In Colombia, vulnerable communities in the Amazon region were among the priority groups for COVID-19 vaccination. © WHO / Blink Media - Nadège Mazars

engagement and support initially in 34 prioritized countries with less than 10% coverage in mid-January and that were off track to reach 70% immunization target by June 2022.

The Partnership works through advocacy and political engagement; delivery funding; and technical assistance and surge support to address the bottlenecks to vaccinations. A One Country Team, led by the national government, is at the centre of all planning and analysis efforts and owns the development of the plan and budget to accelerate vaccination. The One Country Team comprises the highest-level government entity in charge of Covid-19 vaccination, with for example all government

bodies responsible for health, financial and operational planning, the UN country team, led by WHO with key stakeholders from public, private and community sectors supporting the government-led effort. The One Support Team, as part of the Delivery Partnership, comprises partners from regional and global levels (e.g. Africa CDC, WHO, UNICEF, Gavi, WFP, World Bank, humanitarian agencies, non-governmental organizations and others as needed) willing to provide assistance in a coordinated manner, driven by country needs and demand. Regular country calls and missions, under the leadership of the WHO Regional offices, help monitor progress and identify and address the bottlenecks.



Through the Delivery Partnership and the HSRC, WHO will step up in 2022 to help communities drive the response by boosting bottom-up microplanning supported by data, with strong community engagement. At the same time, WHO will continue to intensify its support for countries to formulate and implement evidence-based vaccine and immunization strategies and policies based on the latest science. The strategy and policy work in 2022 will build from the evidence-driven Global Vaccination Strategy released in 2021, and vaccine optimization laid out in the Vaccine Prioritization Roadmap updated in January 2022.

The strategy will be kept under review to account for scientific advances on vaccine performance, contextual and viral changes.

### Driving demand

Many countries are struggling to achieve high uptake of COVID-19 vaccines, despite adequate supply. To increase vaccination coverage, as a first step, it is vital to know why uptake is low or stagnating. Studies to date have shown lower coverage among people living in poverty, those who have lower levels of education and health literacy, and those who have less access to health services. Likewise, vaccination uptake is low in areas with high levels of instability, conflict or violence.

These findings are important, and demonstrate the need to understand the full range of behavioural and social drivers (BeSD) of vaccination. Systematic tracking of BeSD data will enable programmes to design, target and evaluate interventions with greater efficiency and impact, and to understand trends over time. WHO has recently launched globally-validated tools and guidance on BeSD, and is rolling out trainings and a range of other activities to support their standardized use.

Four broad intervention areas are considered foundational to achieving high uptake of COVID-19 vaccination – and for any immunization programme:

- Community engagement
- Communication and education
- Service quality enhancements (e.g. health worker recommendation, reminder/recall, inclusive services, reducing out-of-pocket costs)
- Supportive policies (e.g. requirements, incentives, onsite vaccination)

It is critical for local stakeholders and community representatives to be closely engaged in the design and evaluation of these interventions. Furthermore, the role of communities in campaigns will be critical to inform or educate about vaccination (including to assess and address misinformation), in dialogue-based interventions to overcome hesitancy, and in championing vaccination.

Finally, it is no longer enough for vaccination services to be simply available, particularly in the current context. Services should be of sufficient quality to respond to the needs of the communities they serve, to offer positive experiences of vaccination, and to build relationships of trust to generate resilient and equitable demand – for COVID-19 vaccination and for immunization more broadly. WHO is working closely with colleagues and partners to promote evidence-based guidance and support the implementation of the above range of strategies.

### Future proofing

Vaccines and vaccination are not only the key to ending the acute phase of the COVID-19 pandemic, but will also be a key part of the response to any potential pandemic in the future. That is why WHO is working with partners

so that when the next generation of COVID-19 vaccines become available they, along with those for any future “disease X,” they are produced rapidly and equitably. WHO will continue to invest in vaccine manufacturing hubs, work with all manufacturers who are willing to share expertise, technology and licenses, and work with and support the countries that have already provided a blueprint for rapid mass production of vaccines and other health tools in an emergency. WHO’s mRNA technology transfer hubs are already moving ahead in developing an mRNA vaccine. As we look to the future, these are the types of capacities that will form a central part of a future global pandemic preparedness and response capability.

### Research and development priorities

The R&D Blueprint for Epidemics will continue to be the global strategy to expedite research before and during epidemics. Its aim is to fast-track the availability of effective tests, vaccines, medicines, and social science that can be used to save lives.

Future global COVID-19 research priorities were updated on 24-25 February 2022 during the third [COVID-19 Global Research and Innovation Forum](#) hosted by the R&D Blueprint. The main priorities are set out below.

### Putting research at the centre of pandemic response

Only by embedding research at the centre of the pandemic response can we end the COVID-19 pandemic and protect the world from the pandemics of the future. Research and innovation efforts and their coordination need to be at the core of pandemic preparedness and response. The collaborating network built for COVID-19 can provide the foundations for a future pandemic



## Part II. Ending the COVID-19 pandemic

preparedness and response architecture with research and innovation at its heart.

### Better data means better decisions and better outcomes

Many forms of data and evidence have been vital for understanding and countering the COVID-19 pandemic. In future we need more high quality data, shared and analysed more rapidly, and leveraged to drive policy making and adjustment in real time.

At present there are parts of the world which are surveillance blind spots. Strengthening and networking national surveillance capacities can shine a light on potential dangers before they become a major problem. Beyond boosting surveillance capacities at national level, we must also transform our ability to utilise non-epidemiological data, integrate outbreak analytics, and explore more innovative and collaborative ways of working to detect outbreaks early and understand risks and vulnerabilities more fully.

In the near term the world needs better data on virus natural history and transmission, strengthened capacities for genomic sequencing, and more information about the animal reservoirs of SARS-CoV-2 and risk at the human-animal interface.

### Building trust in global science

Trust is fundamental to the success of research and science. Building that trust among publics, communities, policymakers, and scientists must be integral to how we develop our research. Research priorities in this area should include:

- Public health and social measures and their impact;

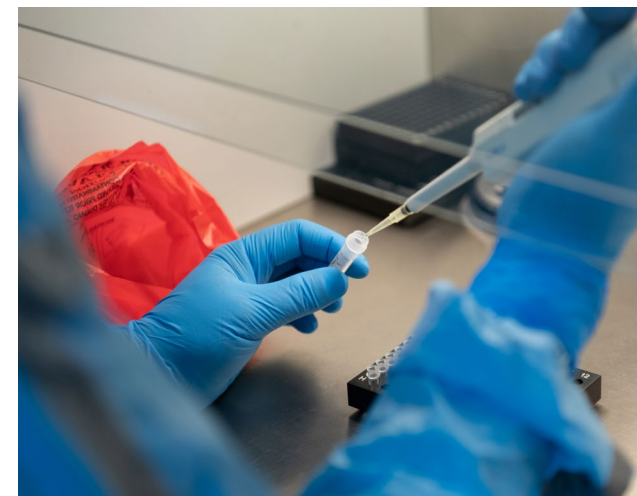
- Methods for the effective management of infodemics
- Placing communities at the centre of health emergency readiness and response
- IPC research
- Research ethics during epidemics and pandemics

### Research should be centered in equitable access

The pandemic response has been a transformational moment for science, but the benefits of that science have not been available to everyone. Equity – and access for those at highest risk – must be central in the next research phase. Equity will be particularly crucial as we look forward to the development of the next generation of COVID-19 vaccines, new treatments, and as we seek to harmonize regulatory approaches to the assessment and approval to new tools and countermeasures. To that end, WHO will build on the first WHO International Standard and International Reference Panel for anti-SARS-CoV-2 immunoglobulin, published in December 2020, to create further “international units” that can facilitate international comparisons of trial results.

### Pandemic research must be a long-term investment

Effective and equitable research into pandemic preparedness and response measures means strengthening the global research and development infrastructure in key areas. Foremost is the need to resource regional research and development infrastructure in lower middle-income countries. Priority should be given to empowering existing research institutions and researchers in low-income and middle-income countries and building research capacity where it is lower than in higher-income countries. There is a vital need for sustainable and well-distributed global



Sayed Ahmad Zia is in the 'master mix' phase - the second of three steps - of the COVID-19 testing process at the Herat Regional Reference Laboratory where all COVID-19 tests for the western Afghan provinces of Herat, Badghis and Ghor are conducted. © WHO / Andrew Quilty

research capacity to ensure that all Member States are empowered to contribute to the global research effort. This strengthening of research and development capacity should be accompanied by increasing investment in regional manufacturing capacity in LMICs. This will ensure that those at highest risk have greater access to life-saving treatments and vaccines now and in the future.

COVID-19 has shown the importance of effective campaigns to inform the public about actions they can take in a pandemic to protect themselves and others. Moving forward these campaigns should be grounded in a strong communications and behavioural science evidence base that takes into account local cultural contexts and





## COVID-19 pandemic preparedness, readiness and response coordination

audiences.

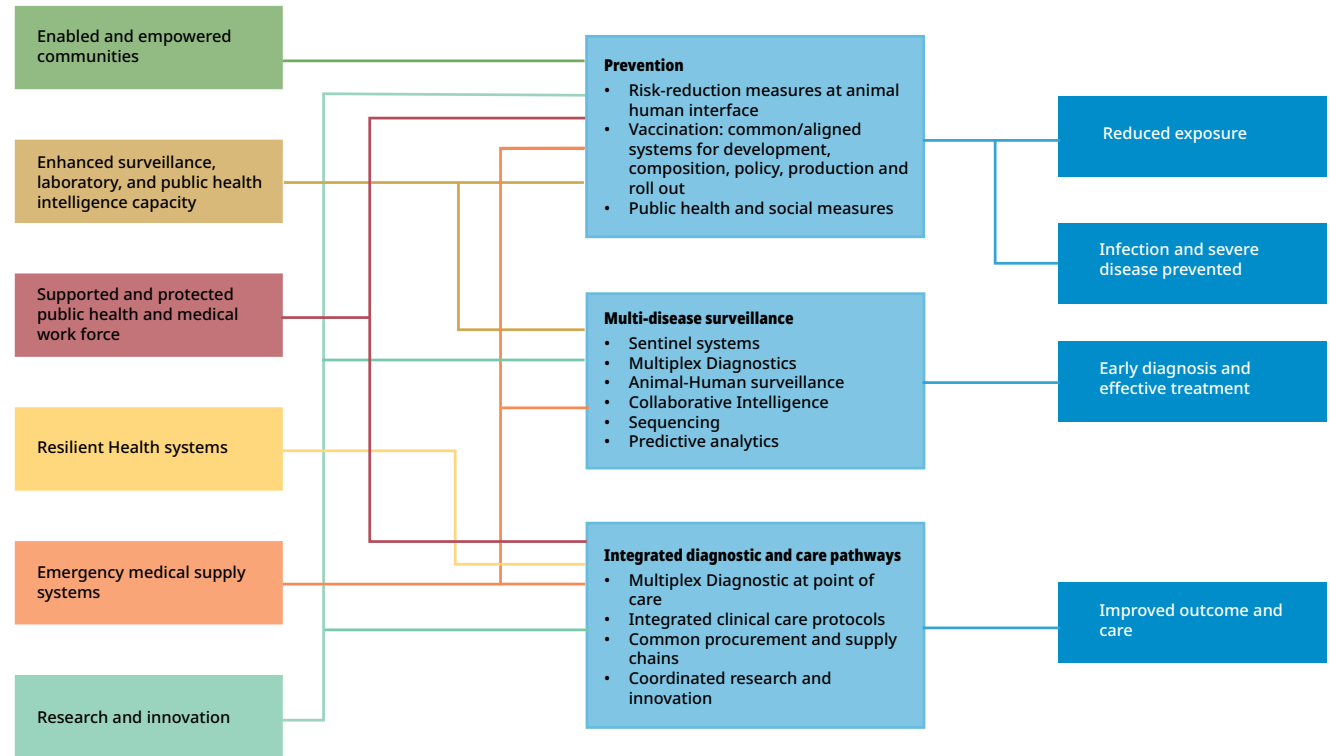
As countries optimize their COVID-19 strategy it is likely that the coordination of the COVID-19 response in many countries will transition from an emergency operations posture towards increasing integration of the COVID-19 response with integrated respiratory disease surveillance and health services management.

During this transition it is absolutely vital to ensure that not only are the capacities built for COVID-19 maintained and assimilated into strengthened and resilient health systems, but that they are coordinated to deliver a new model of integrated respiratory disease prevention, surveillance, and care (figure 4) that will reduce morbidity and mortality from all respiratory pathogens at the same time as strengthening readiness for future SARS-CoV-2 variants and “disease X” respiratory pathogens.

In 2022, WHO’s global Incident Management Support Team (IMST) will continue to serve as the technical and operational platform to drive forward COVID-19 evidence-based preparedness, readiness, and response activities across the three levels of the UN system. Inter-agency and inter-partner coordination remain the cornerstone of the IMST and our collective ability to support a comprehensive and effective response at national level.

Through WHO leadership and the expertise and leadership of partners, the IMST structure will continue to include the ten key pillars of response, and will evolve to align with the five core components described in figure 3. Multi-partner mechanisms, including the ACT-A Health System and Response Coordinator and COVAX Country Readiness and Delivery, will continue to be embedded within the global IMST to ensure activities across

**Figure 4** | A new model for integrated respiratory pathogen prevention, detection, and response.



partners and agencies are synchronized and leverage the comparative advantages of all actors.

The IMST will also continue to ensure gains made during early COVID-19 response are leveraged and built upon.

The regular review of national capacities, including through the application of intra-action reviews (IARs) and post implementation evaluations, will continue to form a



### Integration of COVID-19 response into humanitarian operations in fragile, conflict-affected and vulnerable contexts

According to the [Global Humanitarian Overview for 2022](#) (GHO 2022), the number of people in need of humanitarian assistance globally has increased to 274 million people this year, breaking the record high set in 2021 of 235 million people. The COVID-19 pandemic has already been linked to the deterioration of humanitarian emergencies and the reversal of decades of development, including health development, disproportionately affecting vulnerable populations already living in poverty, instability and conflicts.

In most countries affected by humanitarian emergencies, less than 10% of the population has been fully vaccinated, while richer nations are meeting their 70% coverage target. Vaccination coverage is even lower at the subnational areas with the greatest humanitarian needs. There is no vaccination coverage in the northern part of Yemen, for example, whilst in Afghanistan, vaccination of the millions of returnees forcibly repatriated from Iran is proceeding very slowly. In South Sudan, logistical challenges continue to prevent vaccination outside of the capital Juba.

With the deterioration of humanitarian situations in many countries since the start of the pandemic and the addition of new humanitarian emergencies, our collective capacities to respond to the COVID-19 pandemic and other health emergencies will be further impaired unless drastic changes are made in the way we address poverty, inequity, under-development and the root causes of conflict.

In humanitarian settings, it has been challenging to obtain information on COVID-19 transmission and disease severity because surveillance capacities remain limited despite scale-up efforts. Furthermore, many other



On 24 March, 2021, Fazila, a nurse working at Shaidayee Hospital in Herat, Afghanistan, treats a patient. COVID-19 vaccines have been supplied to Afghanistan via COVAX. COVAX, the vaccines pillar of the Access to COVID-19 Tools (ACT) Accelerator, is co-led by the Coalition for Epidemic Preparedness Innovations (CEPI), Gavi, the Vaccine Alliance and WHO, working in partnership with vaccine manufacturers, UNICEF, the World Bank, and others. It is the only global initiative that is working with governments and manufacturers to ensure COVID-19 vaccines are available worldwide to both higher-income and lower-income countries. © WHO / Andrew Quilty

health problems exist in these settings that cause a higher burden of morbidity and mortality than COVID-19. Resources are required to strengthen the entire health sector to respond to all health needs equitably. WHO will support countries and partners to integrate COVID-19 response activities and capacities within local and national landscapes of public health risks. This will foster a better acceptance and implementation of public health and social measures by communities, which is vital in order to bring the global COVID-19 emergency to an end.

The global target of 70% vaccination coverage in all countries and equitable access to all essential COVID-19 tools are vital if we are to end COVID-19 as a global emergency this year. However, in countries with

humanitarian emergencies, these targets are unlikely to be achieved at current rates. People in fragile, vulnerable, and conflict-affected settings are particularly hard to reach, and are often displaced internally within countries or seeking asylum outside of their home countries.

Despite the scarcity of resources, people living in humanitarian settings have demonstrated high resilience and coping capacities. Local innovations and adaptations of public health and social measures for COVID-19 in humanitarian settings need to be better captured for collective learning. Such a bottom-up learning process should guide future technical and operational guidance on the response to COVID-19 and other health threats in fragile, conflict-affected and vulnerable settings.



# Part III. COVID-19 and the future of pandemic preparedness and response

Maintaining, enhancing and adapting the global COVID-19 response is vital to end the acute phase of the pandemic. We must work to optimise and maintain the gains of the past two years so that the world can face the future ready for any health threat. Pathogens will continue emerge and re-emerge with the potential to cause epidemics and pandemics of disease, death, and disruption of a magnitude equal to or greater than SARS-CoV-2.

Outbreaks of infectious pathogens have been a defining feature of human history, and any analysis of prevailing trends strongly suggests that outbreaks of pathogens of pandemic potential are set to continue to increase in frequency for the foreseeable future. COVID-19 was disease X, and the next disease X is out there.

SARS-CoV-2 will continue to circulate for the foreseeable future. The gains made since 2020 in surveillance and public health response capacity for COVID-19, including new technological advancements in diagnostics and genomic surveillance and the strengthening of established networks and partnerships, must not be lost as authorities reallocate public health resources to other pressing needs. We must retain the agility and the public health intelligence necessary to rapidly scale up and relax response efforts in response to dynamic changes in the nature of the pandemic threat.

Each country has a unique risk profile – enhanced preparedness for future health emergencies requires national operational plans that are tailored and responsive, and that incorporate the lessons learned from COVID-19. In addition to national plans, WHO must support Member States to negotiate, develop and implement global mechanisms and systems for

pandemic preparedness. In 2009, following the H1N1 influenza pandemic, Member States adopted the PIP Framework, which continues to support equitable access to countermeasures and predictable financing for preparedness. Similar multilateral mechanisms to ensure equity, international collaboration and solidarity are needed. To prevent future pandemics, a coordinated and comprehensive One Health approach at national and international level will be vital to tackle more effectively zoonotic diseases with pandemic potential.

The unprecedented acceleration of research and development seen during the COVID-19 pandemic must be sustained not only for more effective medical countermeasures for COVID-19, but also to address the social determinants of health during high-impact public health events. More research on public health and social measures will improve our ability to maximize their positive impact and minimize harm in future pandemics.

Investments in research and development should be mirrored by investments in the health sector. Infectious disease outbreaks continuously underscore the vital role the health workforce. Efforts to protect the safety, health and well-being of health workers, many of whom have suffered occupational exposures, discrimination and burn-out during COVID-19 must be accelerated.

Rebuilding trust in institutions, leadership and science is a fundamental objective underscoring all work undertaken by Member States, WHO and partners. The COVID-19 pandemic has resulted in what many have referred to as a “trust crisis” that impacts all facets of the pandemic response. This is made more complex by the current and evolving information ecosystem that fails

to prioritize and ensure access to accurate, trustworthy, actionable information. Such infodemics are of significant concern, and require tools and approaches to manage them, including listening to communities and networks; supporting trusted voices and leaders; and promoting and making accessible, actionable evidence-based guidance.

While the global health community reflects of the lessons learned from COVID-19, a boldness is needed to look towards the future. Preparedness for future pandemics starts now, and in fact has already begun. Without swift and coordinated action to strengthen the global architecture for pandemic preparedness and response, backed by the necessary financing, the costs of the next pandemic are likely to exceed those of COVID-19. As Dr Tedros has stated many times, if not now, when?

**" COVID-19 was disease X,  
and the next disease X is  
out there."**



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