

WHO's Monthly Operational Update on COVID-19



COVID-19 Epidemiology Focal Points from selected high-risk countries in Brazzaville (Republic of Congo). Credit: WHO/ AFRO

Reflecting on the implementation of genomic surveillance for COVID-19 and beyond in the African Region

Since its first case was reported on 14 February 2020, the African Region has experienced four distinct waves of COVID-19. Throughout each of these, WHO has continued to work with countries to **scale up pathogen genomic surveillance** to enable the effective detection and response to SARS-CoV-2 variants, **through sustainable investments in infrastructure and human resources**.

To reflect on and further this work, the WHO Regional Office for Africa (AFRO) convened a meeting of COVID-19 epidemiology focal points from ministries of health of selected high-risk countries in Brazzaville (Republic of the Congo) which took place between 10 to 13 August 2022. The aim was to **discuss ways to improve the quality and effectiveness of COVID-19 surveillance, including genomic surveillance**.

“Currently, 40 out of the 47 Member States (85%) in the African Region have in-country capabilities for genomic sequencing and 46 Member States (98%) are sharing their genetic sequence data through a publicly accessible database. The Region has established a coordinated mechanism to sustain and strengthen these gains and has set up three centres of excellence for genomic surveillance, developed standardized guidance documents, offered capacity building for Ministries of Health’s personnel and set up laboratory infrastructure for routine pathogen genomic surveillance, including wastewater surveillance.”

Dr Nicksy Gumede-Moeletsi
Regional Virologist, WHO/AFRO

Highlights from stories shared by countries in the meeting

Ethiopia

Genomic sequencing capabilities were established during the pandemic and the data generated continues to support public health decision-making for both COVID-19 and other disease priority areas, such as antimicrobial resistance using a One Health approach. Ethiopia however still needs to address various challenges to improve capacity for and quality of sequencing, among which: the small number of functioning laboratories, shortage of laboratory supplies, and the lack of sufficient bioinformatics capacities to analyze and interpret the sequencing data for timely action.

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WHO-led UN Crisis Management Team coordinating **23 UN entities** across nine areas of work



OpenWHO totaled **7.1 million enrolments** for online courses available in **65 national and local languages**, including 46 courses dedicated to the COVID-19 response



951 million tests delivered via ACT-A



239 GOARN deployments conducted to support COVID-19 pandemic response



12 613 484 608 vaccine doses have been administered as of 13 September 2022

4 908 532 010 persons fully vaccinated as of 13 September 2022

5 361 962 048 persons vaccinated with at least one dose as of 13 September 2022



35.5 million online data analysed between 15 August - 14 September 2022 by WHO as part of social listening and infodemic management support to Member States

* COVAX has shipped over 1.73 billion vaccines to 146 participants as of 16 September 2022

* See Gavi's [COVAX updates](#) for the latest COVAX vaccine roll-out data

For the latest data and information, including trends and current incidence, see the [WHO COVID-19 Dashboard](#) and [Situation Reports](#)

“Genomic surveillance has played an important role in informing the response to COVID-19 in Ethiopia. A five-year National Strategy to guide the coordination and implementation of surveillance activities for SARS-CoV-2 and other pathogens between 2022 and 2026 is being developed.”

Kebede Shitaye

Epidemiologist/Public Health Specialist, WHO Country Office for Ethiopia

Democratic Republic of Congo

Leveraging the genomic sequencing capacities built during the Ebola outbreak in 2018, the Democratic Republic of the Congo swiftly triggered sequencing for SARS-CoV-2 after the first case was reported. Since then, the country's Regional Reference Laboratory has also been sequencing SARS-CoV-2 samples from four countries (Chad, Cameroon, the Central African Republic and the Republic of the Congo), with support from WHO and other partners. This sequencing capacity is now being used for other national priority diseases such as monkeypox, polio, measles, malaria, cholera, and yersinia pestis.

“The Democratic Republic of Congo was one of the first countries in the world to share sequences for SARS-CoV-2 on the Global Initiative on Sharing Avian Influenza Data (GISAID). The first sequence was publicly published on 25 March 2020, two weeks after the first case was reported. We are committed to strengthening existing sequencing capabilities and introducing genomic environmental monitoring activities in the near future.”

Dr Justus Nsio

Epidemiologist, Ministry of Health, Democratic Republic of the Congo

Nigeria

Nigeria's genomic sequencing capacities has been built across diverse public and private sectors institutions, including the National Public Health Institute and academic and research centres, to help inform the response to COVID-19. Since the beginning of the pandemic, Nigeria has shared over 7,000 sequences on the Global Initiative on Sharing Avian Influenza Data (GISAID).

“The sequencing capability built during the COVID-19 pandemic presents an opportunity for us to strengthen pathogen genomic surveillance for other priority pathogens in the country. We are committed to strengthening coordination, human capacities and infrastructure for genomic surveillance.”

Dr Abubakar Jafiya

Epidemiologist, Nigeria Centre for Disease Control, Nigeria

South Africa

South Africa has built world-class capacities for quality and timely genomic surveillance of SARS-CoV-2 and other pathogens with pandemic and epidemic potential, exemplified by the establishment in May 2020 of the [Network for Genomic Surveillance in South Africa](#), two months after the report of the first COVID-19 case. To sustain and strengthen the gains made, the country is committed to mobilize domestic resources, strengthen the workforce and improve access to tools for pathogen sequencing in South Africa and other African countries.

“Through a robust collaborative mechanism, South Africa has sequenced and shared more than 44 700 SARS-CoV-2 samples representative of all regions and ages on a publicly accessible database. We have built significant pathogen surveillance capacity for SARS-CoV-2 and other pathogens, and have integrated genomic surveillance into the broader public health surveillance system.”

Dr Patrick Devanand

National Professional Officer, Emergency Preparedness and Response, WHO Country Office for South Africa

Outputs from the meeting and reflections from countries on the role of genomic surveillance during the COVID-19 pandemic and other public health emergencies **will enable the Region to plan effectively and integrate pathogen surveillance into the broader public health architecture**. In line with the recently launched [Global Genomic Surveillance Strategy for Pathogens with Pandemic and Epidemic Potential 2022–2032](#), AFRO launched its [Transforming African Surveillance Systems](#) flagship project, which aims to enhance surveillance through strengthened pathogen genomic sequencing and will integrate conclusions and lessons learned from the August meeting.

Armenia enhances data-driven decision-making for better health care and efficient response to health emergencies, including COVID-19

Lessons from the COVID-19 pandemic have identified the need to reinforce health information systems (HIS) at global, regional, and national levels to ensure the provision of reliable and timely information on disease outbreaks. Investing in a robust and well-functioning HIS is therefore key for all countries, as it helps inform health authorities' risk management decisions and minimize the impact of emergencies (all hazards) on human populations.

It is against this backdrop that between 29 August and 2 September, **the WHO Regional Office for Europe rolled out a comprehensive assessment of the key components of Armenia's HIS**, in close cooperation with the Ministry of Health and the WHO Country Office for Armenia. Focusing on digital health as well as the digitalization of COVID-19 and routine vaccination recording and reporting, this assessment aimed to identify current gaps and needs and suggest ways forward to strengthen Armenia's overall HIS.

Throughout the planning and rolling-out of the assessment, WHO experts worked closely with key HIS stakeholders, among which the Armenian Ministry of Health, the Health Information Analytic Center of the National Institute of Health, the National Centre for Disease Control and Prevention, and ArMed – the national operating agency responsible for running the national digital system.

WHO experts also met with international partners, namely the US Agency on International Development (USAID) and the World Bank, and visited various institutions active in health care to learn more about their capacities on using health data for knowledge generation to support evidence-based decision making. This included the American University in Armenia, the Yerevan State Medical University, the Yerevan State University, the Russian-Armenian University as well as the Surb Grigor Lusavorich hospital and the Association on Digital Health.

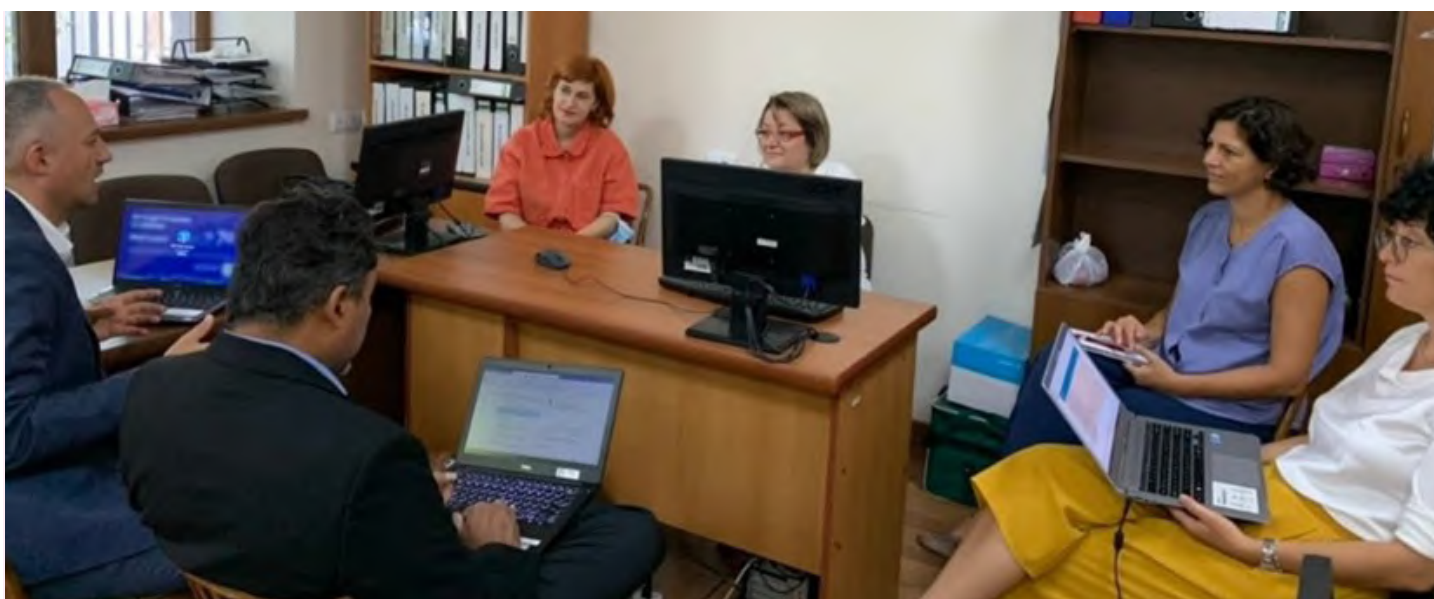
The assessment report is currently being drafted and will contain suggestions for concrete actions to strengthen HIS in Armenia, including on how to improve its data management and strengthen the electronic immunization information system. Over the long run, this will help Armenia improve its data-driven decision-making and enhance its overall response to health emergencies.

The assessment was conducted as part of a larger support package, implemented by WHO with financial support from the European Union (EU), under the [EU-WHO/Europe Action for deployment of COVID-19 vaccines and vaccination project](#). As part of this project, WHO is providing critical support and assistance to six Eastern Partnership countries, including Armenia, to ensure safe and effective vaccination against COVID-19.

“Digital health is one of the key flagship initiatives of WHO/Europe priorities for 2022 – 2025. With this assessment, we will have a clear picture of needs, through the mapping out of all the available resources, and of the planning of further steps to have a robust HIS in place. As with many reforms, WHO Europe stands ready to support the implementation of reforms aimed at improving digital health care systems, thus promoting better health care for all.”

Dr Jihane Tawilah

WHO Representative in Armenia



WHO/Europe's HIS/Digital health mission, meeting at the National Center for Diseases Control and Prevention, 30 August 2022. ©WHO Armenia Country Office

Revisiting national pandemic preparedness planning for influenza and respiratory pathogens in light of the response to COVID-19: Experience from the Islamic Republic of Iran

In early 2019, the Iranian Ministry of Health and Medical Education (MOH&ME) initiated the process of drafting its Influenza Pandemic Preparedness Plan (IPPP). Led by an expert recruited with WHO's support, the MOH&ME technical team adopted the three-phased approach to draft the national IPPP defined by [WHO's essential steps in developing or updating a national pandemic influenza preparedness plan](#). When the COVID-19 pandemic struck, the team decided to continue developing the IPPP and expand the planning process by analyzing the gaps and challenges faced during the pandemic response and develop in real-time a robust roadmap and implementation plan for the way forward. Ultimately, this would help secure endorsement of the plan by stakeholders and policy makers.

Phase 1 – Preparation and situation analysis

The MOH&ME technical team started in 2019 by reviewing available national guidelines and emergency preparedness plans to undertake a landscape analysis. A thorough revision of national capacities related to the pandemic response was conducted, including thorough face-to-face interviews with 39 key stakeholders and provincial counterparts of 15 ministries identified through a meticulous stakeholder mapping, to which international partner organizations would later be added. International guidelines were reviewed, including those related to the International Health Regulations (2005), the Joint External Evaluation, and WHO's pandemic preparedness

plans and tools. COVID-19 pandemic response experiences from other countries were also reviewed, and lessons learnt were continuously documented.

The team then **selected ten pillars** to act as building blocks for the plan, namely: National Laws and regulations; Planning, Coordination, Budget, and Support; Surveillance, Rapid Response and Risk Assessment; Clinical Management System; Health System Response; Points of Entry; Risk Communication and Community Engagement; Maintenance of Essential Services; Supply of medical countermeasures i.e., instruments, equipment, medicines and biologic materials needed to control the epidemic; and Monitoring and Evaluation of the Control Measures. **By the end of phase 1, the first draft of the plan was created.**



1st consultative workshop, Tabriz, Islamic Republic of Iran 26 June 2022.
Credit: WHO/Iran



2nd consultative workshop, Tabriz, Islamic Republic of Iran 27 June 2022. Credit: WHO/Iran



2nd consultative workshop, Tabriz, Islamic Republic of Iran 28 June 2022. Credit: WHO/Iran

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Phase 2 – Developing the plan

Phase two was conducted in two steps. First, **three consultative workshops** were conducted between 25 and 30 June 2022 for identified stakeholders and key organizations, under each pillar. During these two-day workshops, participants – who held both executive and technical positions in their respective organizations – discussed and articulated strategic actions for each pandemic phase (interpandemic, alert, pandemic, and recovery phases). They also listed respective tangible activities with timelines, responsible agency and budget.

The second step, which is currently ongoing, involves **consolidating the planned activities and outputs** identified in the June workshops through a series of consultative meetings with strategic ministries and agencies, including the Ministry of Interior. The team then intends to **share the consolidated plan to the national steering committee for COVID-19** and influential policy makers along with a policy brief, to ensure their support in its implementation in the coming months.

Phase 3 – Evaluating, finalizing, and disseminating the plan

In the third phase, to be conducted in the near future, the plan will be **tested through a national simulation exercise** using a tabletop activity, during which participants will propose tangible recommendations that will help revise and edit the plan. Finally, the plan will be **endorsed by high-level policy makers**, then **disseminated** to all stakeholders and sectors that contributed to the process.

Overall, the Islamic Republic of Iran's comprehensive, multi-sectorial and multidisciplinary approach towards drafting and updating its IPPP provides an example of how a national plan can be devised, backed by a well-coordinated and structured mechanism focusing on multi-level capacity strengthening. To ensure effective preparedness for future respiratory disease pandemics, the plan comprehensively considers lessons learnt from the pandemic, which were integrated in real-time, and accounts for the integration of other respiratory viruses with pandemic potential for a more holistic approach.



Scheme: Process for drafting and updating Iran's IPPP. Credit: WHO/Iran

The Plurinational State of Bolivia enhances its COVID-19 epidemiological surveillance through the inauguration of COVID-19 situation rooms

In July, the Pan American Health Organization (PAHO)/WHO, the United Nations Development Programme (UNDP) and Plan International provided complete equipment for the installation of four COVID-19 situation rooms in the Plurinational State of Bolivia – an essential component to enhance epidemiological surveillance of COVID-19 in the Cordillera province of Santa Cruz.

Situated in the municipality of Cabezas, the indigenous autonomous communities of Kereiba and Charagua Iyambae, as well as in the Cordillera Health Network in Camiri, these technical rooms will serve to **analyze epidemiological information on COVID-19 on a daily basis and transmit clear and systematized information to health personnel and authorities to inform and strengthen decision-making as part of the pandemic response.** A fifth room will be installed in coming weeks for the exclusive use of the Camiri municipal hospital.

Each municipal hospital received a set of equipment consisting of a desktop computer, a projector, a 55-inch television, a printer, and loudspeakers which will serve to systematize the analysis and sharing of data, moving away from the manual process which initially prevailed. To enhance health facilities' surveillance capacities, PAHO/WHO, UNDP and Plan International also trained statistical technicians from each municipal health facility who will be responsible for managing, controlling and systematizing the information gathered in the situation rooms.

“We thank PAHO for the opportunity they are giving us to manage this situation room on a daily, weekly and monthly basis so that the media can visualize the epidemiological data of COVID-19.”

Sandra Herrera

Cordillera Health Network interim manager

“We know that the information generated by the health posts is very important and we want it to reach the population and the authorities through these situation rooms so that they can take the necessary measures and respond appropriately to protect the population with the knowledge generated.”

Ely Linares

PAHO consultant, coordinator of the ECHO-funded Chaco Project

These activities were undertaken as part of the Chaco project funded by the European Civil Protection and Humanitarian Aid Operations (ECHO) and jointly implemented by PAHO/WHO, UNDP and Plan International, which seeks to benefit over 60,000 inhabitants of the most vulnerable regions of the Chaco region of Santa Cruz.

For more information, click [here](#).



Cordillera COVID-19 situation room. Photo credit: WHO



Cordillera COVID-19 situation room. Photo credit: WHO

WHO supports Mental Health and Psychosocial Support (MHPSS) activities in Mali to address the needs of vulnerable populations affected by COVID-19 and gender-based violence

Facing a protracted humanitarian emergency for nearly a decade, Mali has experienced mass displacement, disruption to health services and the overall health system as well as an overall heavy human toll. Like many complex emergencies, children, women and internally displaced persons (IDPs) are particularly at risk of increased violence and gender-based violence (GBV). Combined with the effects of COVID-19, the ongoing emergency has had a severe psychological impact for the population at large.

To respond to the increasing psychological needs in the country and support vulnerable persons, including those affected by COVID-19, victims of GBV as well as IDPs, **the WHO Country Office for Mali recruited and deployed 10 psychologists across the country.** The psychologists' work aims to **alleviate patients' sufferings, improve their wellbeing and mental health conditions, and contribute to their social reintegration.**

Both GBV and COVID-19 are stigmatized in Mali and many patients do not communicate their SARS-CoV-2 infection to their families and friends. Psychologists have reported cases of patients avoiding seeking care at health facilities due to stigma until symptoms are too heavy, leading to respiratory distress and further complications. Hospitalized patients then often suffer from a **dual psychological burden of having to undergo medical isolation without being able to see their families, and of being socially excluded or stigmatized at work and in their social lives upon recovery.**

Cases of colleagues refusing to work in the same office as a recovered patient, families refusing to eat at the same table and community members refusing to use the same prayer rug have been reported. As a result, psychologists encountered many cases of post-traumatic stress, work-related stress, sleep disorders and cases of suicidal tendencies.

To respond to these psychosocial needs, WHO psychologists have been working both at individual and community level, with activities including:

- organizing **individual diagnostic interviews** during which relaxation techniques were discussed, as well as **focus groups discussions and recreational activities**, such as cultural visits to museums, participation to cultural fairs and board games;
- holding **group discussions with health care workers, religious leaders and local associations on COVID-19 prevention and management**, as well as **sessions dedicated to the management of work-related stress**;
- setting up **case referrals** to appropriate health care infrastructures and/or local associative centers, especially for GBV cases; and
- organizing **community dialogues sessions** in eight districts of the Ségou region, in collaboration with the Ministry of Health and Social Development, to promote community engagement in favour of COVID-19 vaccination and enhance compliance with preventative measures. Participants included religious leaders, local officials, women and youth associations, teachers, transport unions, the network of traditional communicators, local influencers, and the media. One of the key takeaways was the decision to enhance the use of traditional methods of communication – such as community communicators, griots, and town criers – to raise awareness and positively influence behaviors in favour of vaccination.



Photo of the "Research center for the safeguarding and promotion of the Senoufo culture" which was visited as part of activities led by Moussa Kone, WHO psychologist, with young girl and boy victims of violence. Credit: WHO

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Board game session in Sikasso lead by Moussa Kone, WHO psychologist, with young girl and boy victims of violence. Patients have been left out of the photo, in order to respect their privacy. Credit: WHO.

“Although I was first denying the disease, I soon realized that I should protect my family because I was suffering too much, and I decided to go to the hospital to seek help. The WHO psychologist was the first one I ever met, and I didn’t really understand its role. However, I soon realized that he was only there to speak to me to handle my angriness.”

Anonymous
COVID-19 patient

In addition, WHO continues to work with its partners to try to find innovative solutions to the many challenges concretely impeding this psychosocial work, such as: limited access to conflict-affected zones, logistical issues such as the absence of a secured listening room for individual interviews in IDP sessions; and misunderstandings around the work of psychologists and supportive services. Another reported challenge is the fact that some patients are reluctant to organize joint consultations between themselves, their families and the psychologists to discuss the mental health issues they had faced, as a result of the social stigma this continues to carry.

Nonetheless, results have so far been positive and **5314 individuals have received mental health and psychosocial support, among which 227 for GBV cases, since May 2022.** WHO is now mobilizing additional financial resources to continue to enable this work and address increasing requests, such as creating a free support hotline for victims, developing safe spaces, or increasing board games, art and music therapy and theatrical activities.

“Mental health and psychosocial support activities are strengthening Mali’s response to COVID-19, but also the overall health system. Despite challenges from conflict affected areas, WHO stands on the side of the millions of people in Mali who need urgent humanitarian health assistance and increasing psychosocial support. It is our role to lead mental health activities in Mali to ensure no one is left behind and receive the correct support to handle their emotions and find healthy alternatives to move forward.”

Dr Christian Itama
Acting WHO Representative to Mali

Mon héroïne, c'est toi

Comment combattre le
COVID-19 quand on est
un enfant



IASC
Inter-Agency Standing Committee

Screenshot of the “My Hero is You, Storybook for Children on COVID-19”, developed by the Inter-Agency Standing Committee Reference Group on Mental Health and Psychosocial Support in Emergency.
Credit: IASC

Parliamentarians confirm resilient health systems and preparedness for future emergencies are critical to health security in Asia and the Pacific



Parliamentarians from 15 Asian and Pacific nations at the Asia-Pacific Parliamentary Forum on Global Health in Seoul, Republic of Korea. Credit: WHO

On 24 and 25 August, the National Assembly of the Republic of Korea with support from WHO hosted the sixth meeting of [Asia-Pacific Parliamentary Forum on Global Health](#) – the platform for parliamentarians to exchange ideas, build political will, strengthen capacity and foster collaboration towards sustainable action for health. The theme of the meeting was “**Strengthening health security and building resilience: learning and improving from the COVID-19 pandemic.**”

Members of Parliament from 15 Asian and Pacific nations discussed lessons learned from the pandemic and delivered a clear message: **strengthening pandemic preparedness and health system resilience for the future is critical to keeping populations safe and supporting social and economic development in the region.** Speakers highlighted the urgency of preparing for increasingly frequent and complex public health emergencies:

“The COVID-19 pandemic has affected everyone in every country in our region (...) making the need for regional cooperation ever more important. As we continue to respond to the pandemic, we must use our influence to contribute to regional solidarity and work together to prepare for future health emergencies using what we have learned from COVID-19.”

Honourable KIM Minseok
President of the Forum

As part of the meeting, the Korean Government showcased institutions and innovations supporting the country’s pandemic response and participants visited the Korea Disease Control and Prevention Agency, the Osong Medical Innovation Foundation, the Seoul National University Bundang Hospital and the Korea Social Security Information Service. They also followed presentations from four digital health start-ups.

The meeting included speakers of Parliament, ministers or parliamentarians from Cambodia, Fiji, Japan, Kiribati, Republic of Korea, Lao People’s Democratic Republic, Malaysia, Mongolia, Palau, Philippines, Samoa, Solomon Islands, Tonga, Tuvalu and Viet Nam.

“When health is at risk, everything is at risk. Under COVID-19, people have been more aware of the importance of health. We should grab this opportunity and start taking action to change our health system to become fit for the future that can address other health issues, such as hypertension and diabetes, ageing, climate change and drug resistance. The more healthy people, the more sustainable development. Therefore, health is not a cost, but a smart investment that can accelerate social and economic growth for decades to come.”

Dr Kidong PARK
Director of the Division of Data, Strategy and Innovation,
WHO

For more information, click [here](#).

WHO and the US Centers for Disease Control and Prevention (CDC) jointly expand multi-country work on public health emergency management in the WHO European Region

Public health emergencies and disasters continue to threaten populations across Europe, Central Asia, and globally. To support Member States strengthen their resilience, preparedness and response efforts, WHO/Europe in partnership with the US Centers for Disease Control and Prevention (CDC), **delivered a sub-regional workshop on public health emergency management** for multi-sectoral teams from nine countries: Armenia, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Tajikistan, Turkmenistan, Ukraine, Uzbekistan.

Held in Tbilisi, Georgia from 29 to 31 August, this in-person workshop **aimed at improving national multi-sectoral coordination and collaboration for public health emergency management**. By reflecting together on **experiences and lessons learned from the COVID-19 pandemic**, countries will be able to **better reinforce and improve national emergency management capacities**.

Sessions included keynote speeches, interactive group sessions, panel discussions, expert sessions on key technical areas, as well as a tabletop simulation exercise on emergency management. Participants were encouraged to discuss and reflect upon the following areas:

- **national legislation and mandates** for public health emergency preparedness and response;
- **national multi-sectoral coordination systems and/or strategies for public health emergency management**, concentrating on the functioning and operations of Emergency Operation Centers;
- **information collection and data sharing** within the context of emergency preparedness and response;
- **the role of Public Health Emergency Operation Centers** in supporting national emergency management systems; and
- **integrating COVID-19 lessons learnt** for future emergency management.

During of the workshop, participants visited the [Georgian National Center for Disease Control and Public Health](#) and its Public Health Emergency Operation Center and participated in a tabletop simulation exercise to discuss and determine their countries' emergency management response to a fictitious outbreak scenario. As part of the latter, participants focused on: **preparedness activities** that might be undertaken to strengthen core capacities for response; **policies and legislation frameworks** that enables their respective public health emergency management systems and supports inter-sectorial coordination, collaboration, and information sharing; and **practical operational arrangements** which could be made nationally, to support and enhance evidence-based decision making for better response to public health emergencies.

Overall, this sub-regional workshop **equipped participants with concrete tools and skills to enhance their national and multi-sectoral public health emergency management systems**. The workshop also provided a good forum for countries to **share their COVID-19 lessons learned and comparatively understand how these could be concretely applied into the future**.

The three-day workshop was supported with funding from Canada's Health Systems Connector.



WHO/Europe and US-CDC workshop on Public Health Emergency Management held in Tbilisi, Georgia. © CRDF Global

WHO/PAHO supports Panama with cold chain equipment to take vaccines to the farthest corners of the region

To maintain full efficacy and avoid the risk of vaccine-preventable diseases, vaccines need to be stored at a recommended temperate through appropriate cold chain equipment, making their transportation to remote locations particularly challenging.

When the COVID-19 vaccination campaigns started in Panama in 2021, the cold chain equipment was insufficient to bring and store vaccines in remote locations, such as villages nestled in the mountains or tucked away on beaches inaccessible by road. This is the case of villages of the central Veraguas province and the indigenous territory of Ngäbe Buglé, located hundreds of miles away from the urban settlements of Panama, where electricity is often out. More generally, this is also the case of communities along the Pacific and Caribbean coasts which until recently had to rely on vaccine refrigerators powered by gas.

Since the launch of the COVID-19 vaccination campaign, health workers from the Río Luis health center in the Caribbean basin, which serve such remote populations were missing sufficient numbers of cold boxes able to keep vaccines refrigerated up to six days while they transported them in the forests of Panama through dirt roads and across rivers and seas.

To answer those pressing needs and enable the COVID-19 vaccination campaign to be properly rolled out, **the Government of Panama and the Pan American Health Organization (PAHO/WHO) joined hands, with support from the Government of Canada to provide health workers and remote communities with the necessary cold chain equipment.**

As part of this collaboration, remote communities within the jurisdiction of the Río Luis health center received cold boxes and smaller vaccine carriers ensuring safe transportation, as well as solar-powered refrigerators and temperature

monitoring devices able to keep vaccines safe in areas where electricity supply is intermittent. This enabled health workers across Veraguas to continue to provide COVID-19 vaccines and other vital routine immunization doses to remote communities.

The Panamanian Ministry of Health will further receive 80 cold boxes, 200 portable carriers, 22 solar refrigerators, and 20 refrigerators and freezers to increase access to COVID-19 vaccines for populations in rural areas, including indigenous communities or migrants crossing the Darien Gap, in the border with Colombia.

This initiative is part of a **larger effort led by PAHO/WHO, in collaboration with health authorities, local governments and communities to improve equitable access to COVID-19 vaccines across the Americas, with support from the Governments of Canada, the United States of America and other key partners.**

“This is a great achievement. Without this equipment, we could not reach this population and it would be hard for them to go to the health center. This has greatly helped our work and will aid us in completing the [vaccination] series of all persons in our communities.”

Danixa Morales

Nurse working in southern Veraguas as part of the team traveling five times a year to vaccinate residents in remote coastal and island communities.

For more information, click [here](#).



A helicopter take vaccines to the community of Coronte, in the indigenous territory of Ngäbe Buglé in Panama, in October 2021. Photo credit: Gerardo Cárdenas/PAHO



Distribution of COVID-19 vaccines in the Caribbean coast of the indigenous territory of Ngäbe Buglé in Panama, in October 2021. Photo credit: Gerardo Cárdenas/PAHO

India's Uttar Pradesh State administers over 1.6 million COVID-19 vaccine booster doses in a single day

The COVID-19 vaccination campaign in India started on 16 January 2021 and was progressively expanded with the aim of meeting the milestone of 2 billion vaccine doses delivered by 17 July 2022.

On 10 January 2022, the Government of Uttar Pradesh – the largest state in India, with a population of over 200 million – began administering booster doses of COVID-19 vaccines, also called “precaution doses”. To celebrate 75 years of India's Independence, the Government then launched on 15 July a state-wide 75-days campaign, aimed at administering free precaution doses to all persons aged 18 years and above in public vaccination centers. As part of it, a massive vaccination event was planned to take place on the first Sunday of August.

Ahead of this massive vaccination event, district immunization officers and immunization partners in all 75 districts of Uttar Pradesh attended a virtual meeting on 5 August to receive orientation. Various information, education and communication materials were also designed and distributed to inform the population about the vaccination campaign.

As planned, on Sunday 7 August immunization officers started vaccinating people throughout 11 992 vaccination sites situated in district hospitals, community health centres, primary health centres and selected health and wellness centres across Uttar Pradesh. Within a single day, health workers managed to **administer over 1.6 million booster doses to eligible beneficiaries, namely those aged 18 years and above. First and second doses were also administered to people who had not previously received them.**

This vaccination exercise was supervised and monitored by surveillance medical officers, sub-regional team leads and field monitors from the WHO-National Public Health Support Programme who were present in 568 vaccination sites.

For more information, click [here](#).



WHO field teams monitoring the Free Precaution Dose Campaign at Primary Health Centre Bakhira in Sant Kabir Nagar district in eastern Uttar Pradesh. Photo credit: WHO India / Sarvesh Kumar



Mr Paltu Ram, Member of Legislative Assembly from Balrampur, receiving a COVID-19 precaution dose at Primary Health Centre Jokhiya in Balrampur district, Uttar Pradesh. Photo credit: WHO India / Anupam Ohja

WHO and the World Bank formally establish the Financial Intermediary Fund (FIF) for Pandemic Prevention, Preparedness, and Response

The devastating human, economic, and social cost of COVID-19 has highlighted the urgent need for coordinated action to build stronger health systems and mobilize additional resources for pandemic prevention, preparedness, and response (PPR).

It is against this backdrop that the [Financial Intermediary Fund \(FIF\) for Pandemic Prevention, Preparedness, and Response](#) was set up, which will be hosted by the World Bank with technical leadership from WHO. As part of the [global architecture for health emergency preparedness and response](#), the FIF will finance critical investments to strengthen pandemic prevention, preparedness and response capacities at national, regional, and global levels, with a focus on [low- and middle-income countries](#). It will complement the financing and technical support provided by the World Bank, leverage the strong technical expertise of WHO, enhance coordination among partners, and serve as a platform for advocacy. The Fund will also incentivize increased country investments, and help focus and sustain much-needed, high-level attention on strengthening health systems and health security capacities.

The first calls for proposals for investments to be funded by the FIF will open in November 2022. In the long term, **financing from the FIF for PPR could help significantly strengthen and sustain PPR capacity** in areas such as zoonotic disease surveillance; laboratories; emergency communication, coordination and management; critical health workforce capacities; and community engagement. The FIF will also support peer-to-peer learning, provide targeted technical assistance, improve access to medical countermeasures and help with the systematic monitoring of PPR capacities.

[Approved by the World Bank's Board of Directors on 30 June 2022](#), the FIF was [officially established by its Governing Board at its inaugural meeting on 8 and 9 September 2022](#).

The Fund's overall functioning will be overseen by this same Governing Board, composed of sovereign donors, potential implementing country governments (co-investors) as well as representatives from foundations and civil society organizations. The Board will also set the overall work program and make funding decisions, based on recommendations from the Technical Advisory Panel, chaired by WHO. In addition, the World Bank will serve as the FIF's trustee and host the Secretariat, which will include technical staff seconded from the WHO.



Screenshot from the Financial Intermediary Fund (FIF) for Pandemic Prevention, Preparedness, and Response website.

“The COVID-19 pandemic has been a seismic shock to the world, but we also know that the next pandemic is a matter of when, not if. The suffering and loss we have all endured will be in vain unless we learn the painful lessons from COVID-19 and put in place the measures to fill critical gaps in the world’s defences against epidemics and pandemics. The FIF is one of those key measures, and WHO looks forward to fulfilling its technical leadership role in advising the FIF Board on where to make the most effective investments to protect health, especially in low- and middle-income countries”

Dr Tedros Adhanom Ghebreyesus

WHO Director-General

“COVID-19 has highlighted the pressing need for action to build stronger health systems. Investing now will save lives and resources for the years to come. We welcome the broad support from the international community for this new, multilateral financial intermediary fund at the World Bank to help low- and middle-income countries and regions become better prepared for global health crises and are pleased to have been able to proceed quickly in establishing the fund.”

David Malpass

World Bank Group President

The FIF was developed with broad support from members of the G20 and beyond. Over US\$ 1.4 billion in financial commitments have already been announced and more are expected in the coming months. So far, commitments have been made by Australia, Canada, China, the European Commission, France, Germany, India, Indonesia, Italy, Japan, Republic of Korea, New Zealand, Norway, Singapore, South Africa, Spain, the United Arab Emirates, the United Kingdom, the United States, the Bill & Melinda Gates Foundation, the Rockefeller Foundation, and Wellcome Trust.

For more information, click [here](#).

Strengthening preparedness for respiratory pathogen pandemics

COVID-19 and other recent respiratory pathogen outbreaks have shown that preparedness planning is critical to mitigate their impact, and that responses to these events are most efficient when countries' systems and capacities are harmonized.

In April 2022, the [International Health Regulations \(2005\) COVID-19 Emergency Committee](#) noted that countries should prepare for a future respiratory pathogen pandemic, and WHO should provide support and technical guidance. That same month, WHO published a [Policy Brief](#) outlining a new integrated approach and concrete steps for countries to conduct their respiratory pathogen pandemic preparedness planning, including reviewing lessons from their COVID-19 response and establishing a committee to kickstart the planning process. This new integrated approach calls for harmonization in efforts for respiratory pathogens, allowing countries to efficiently use resources, increase coordination and reduce duplication of efforts.

In May 2022, WHO began the process of developing the 'Respiratory pathogens: Pandemic Preparedness Guidance', in close collaboration with Member States and partners. This upcoming global guidance draws on lessons learned from previous emergencies, and outlines key actions, capacities and resources needed for countries to plan and prepare better for future respiratory pathogen pandemics. In particular, the guidance focuses on five key areas: emergency coordination, surveillance, clinical care, community protection and access to countermeasures.



A nurse in Somalia working in a COVID-19 isolation facility. Credit: WHO/Somalia

As part of the Guidance development process, WHO hosted in July 2022 a **virtual country technical briefing to discuss respiratory pathogen pandemic preparedness and inform guidance development**. Representatives from 81 countries across all six WHO regions – including ministries of health, agriculture and justice, intergovernmental organizations, NGOs, hospitals and academia – attended the briefing. They jointly discussed:

1. lessons learned from the COVID-19 pandemic and how these could inform future preparedness in the context of health security and health systems; and
2. experiences, current gaps and good practices in pandemic planning.

Discussions also emphasized the necessity to ensure multi-sectoral involvement in the planning process, the importance of full implementation to address capacity needs, and the need to identify ways to have an agile pandemic response that places communities at its heart.

Building on the key takeaways from the July briefing, **consultations led by WHO regional offices are currently underway with countries** to further inform the development of the global guidance. Academia and policy makers will also be engaged in an upcoming meeting planned on the sidelines of an international conference (planned end of September), with specific focus on research priorities and monitoring for respiratory pathogen preparedness.

Upon finalizing these consultations, **WHO plans to publish the "Respiratory pathogens: Pandemic Preparedness Guidance" by December 2022**. Other products, country and partner engagement actions are also currently being undertaken, to support the rollout and implementation of the Guidance. Ultimately, it is expected that the Guidance will offer countries and partners a new approach that streamlines respiratory pathogen pandemic preparedness and the planning process, thereby helping response to future respiratory pathogen outbreaks.

Timeline for the development of the 'Respiratory pathogens: Pandemic Preparedness Guidance'



INITIATE² – an international partnership to design the future of pandemic emergency response

As the COVID-19 pandemic has shown, epidemics of infectious diseases spread faster and further than ever, demanding urgent and coordinated responses to address the immediate health needs of a population. With this in mind, in June 2021, the World Food Programme (WFP) and WHO launched **INITIATE²**, a 5-year initiative which brings together multiple humanitarian actors, NGOs, UN agencies, Member States, as well as research and academic institutions, to develop **innovative and standardized solutions to improve readiness and response capabilities in health emergencies** involving infectious diseases.

Bringing together multidisciplinary teams and building on past experiences including from COVID-19, INITIATE² designs and develops standardized technical solutions to logistical challenges, and trains logistics and health responders on their installation and use. These solutions include medical facilities, temporary medical installations and laboratories.

INITIATE²'s first project aims at **developing a rapidly deployable, easily transportable, extendable, self-contained and self-sufficient treatment centre for infectious diseases**, including COVID-19 and other respiratory diseases, that can be used as a standalone solution, but which can also integrate sustainably into on-site health services. This project aims to:

- Greatly **reduce the time needed** to open an infectious disease treatment centre, which usually takes weeks, to close to 24 hours thereby enhancing the first containment phase and reducing possible outbreaks spreading; and
- **Ensure standardization** across the layout and specificities of treatment centre's buildings, to offer patients the same quality of care, comfort and infection prevention and control standards in all intervention areas, across the world.

To design this infectious diseases treatment centre, the INITIATE² core solution team, which comprises a small group of partners started by visualizing the journey of different users to and through the facility and detailing its necessary characteristics. This included the need to offer humanized care and ensure rapid deployment, environmental sustainability, and inclusiveness. The list of characteristics was then passed on to architects who are using it to design the optimal treatment facility.

The resulting treatment centre prototype should be ready by November. It will be then **tested in full-scale simulation exercises in the first quarter of 2023**, first at the UN Humanitarian Response Depot (UNHRD) training centre in Brindisi, Italy, then in interested countries, among which possibly Malawi and Guinea. Moving forward, **this treatment centre could be deployed in any country across the world in case of an outbreak of infectious diseases**, allowing for a speedy response and the swift containment and treatment of patients. Overall, INITIATE² will enable the wider humanitarian community to join forces to be better prepared for future outbreak and offer the best services for patients.

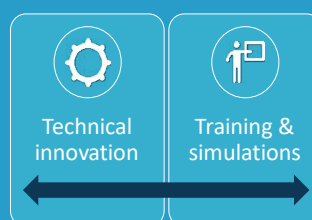
“WHO is working with Member States on strengthening the architecture for health emergency and pandemic preparedness, response and resilience, with the objective of building robust and flexible platforms for coordination and collaboration that can harness national capacities. This means, among other things, investing in healthcare infrastructure and facilities, including for surge capacity, as well as in health emergency workforce. INITIATE² with its two pillars of innovation and training exemplifies the organization's efforts in building resilient health systems.”

Dr Ibrahima Socé Fall

WHO Assistant Director-General for Emergencies Response

For more information, click [here](#).

INITIATE² | workstreams



INITIATE² is based on two interconnected workstreams: technical innovation, for the design and development of standardized technical solutions; and training and simulation, for the development of standardized procedures and response capacity.

INITIATE² learns from the field and feeds to the field

INITIATE²'s workstreams, Credit: WHO

Co-managed by WFP and WHO, INITIATE² is made possible by the engagement of multiple actors including: Alima, Bring Hope Foundation, Doctors with Africa, the Directorate-General for European Civil Protection and Humanitarian Aid Operations at the European Commission, the Food and Agriculture Organization, the Federal Department of Foreign Affairs of Switzerland, GOAL, the International Committee of the Red Cross, the International Federation of the Red Cross, represented by the Norwegian Red Cross, the International Rescue Committee, the International Organization for Migration, Medair, Medical Aid Films, Doctors Without Borders, Save the Children, Samaritan's Purse, UNICEF, USAID and World Vision International.

OpenWHO celebrates 7 million enrollments, showing the need for knowledge on COVID-19 and public health

The WHO is celebrating a new milestone in online learning: 7 million enrolments in [OpenWHO.org](https://openwho.org)'s free public health courses!

This all-time record participation comes as the COVID-19 pandemic and other health emergencies continue to affect communities across the globe, generating demand for trusted and accessible public health knowledge. OpenWHO course enrolments have surged more than 4000% in just over two and a half years, increasing from 160 000 in January 2020 to 7 million in August 2022. The most dramatic surge came in the first half of 2020, driven by the search for information about the COVID-19 pandemic, which continues to account for more than three-quarters of all course enrolments.

The OpenWHO platform hosts courses on [166 public health topics](#), including trainings to support the response to disease outbreaks such as cholera, COVID-19, Ebola, Marburg virus, monkeypox, plague and polio. Trainings on conducting a response to ongoing events related to health emergencies, such as food insecurity or the crisis in Ukraine, are also available.

Courses are available in 65 languages – with the most recent addition being [Georgian](#) – to ensure communities can access and easily understand life-saving public health information in their native languages. This includes 19 of the 20 most spoken languages worldwide as well as the official languages of 44 of the [46 least-developed countries](#) worldwide.

To date, over 3.7 million course certificates have been issued to OpenWHO learners, who have shared more than 55 000 digital badges on social media to celebrate their achievements.

Showing the positive impact of the learning platform, OpenWHO's global community of learners shared examples of how they benefited from OpenWHO courses during the recent open webinar celebrating OpenWHO's [5th anniversary](#).

“I would like to thank everyone who contributed to developing this wonderful idea and providing this valuable information for free.”

Feedback from OpenWHO learner

“I have learned many things about the COVID-19 pandemic from courses of the OpenWHO programme. It literally helps me to speak with my local community. Because I am a pharmacist, I have been asked so many questions about risk, possibilities and about medications and I have shared the knowledge that I got from professionals from these courses.”

Feedback from OpenWHO learner

“We want to make it as easy as possible for people across the world to access the trusted, science-based public health information that they need. Equity is the cornerstone of our learning response to health emergencies.”

Heini Utunen

Acting Head of the WHO Health Emergencies Programme's Learning and Capacity Development Unit, which manages the OpenWHO platform

OpenWHO is open to all, anytime, from anywhere. [Start learning today.](#)

mental health - clinical management - cholera - health & peace - risk communication - antimicrobial resistance - leadership - health systems resilience - tuberculosis - private sector engagement - monkeypox - emergency management - surveillance - infection prevention & control -

7 MILLION COURSE ENROLMENTS

data collection - digital health - neglected tropical diseases - infodemic management - influenza - One Health - health inequality monitoring - vaccine safety - community engagement - COVID-19 - tobacco regulation - plague - disaster risk management - after action review - malaria - & more!



OpenWHO.org

#LearningSavesLives

OpenWHO surpassed 7 million enrolments in its free online courses in August 2022. Credit: WHO

WHO's COVID-19 Response Funding in 2022: Delivering science, solutions and solidarity to end the acute phase of the pandemic

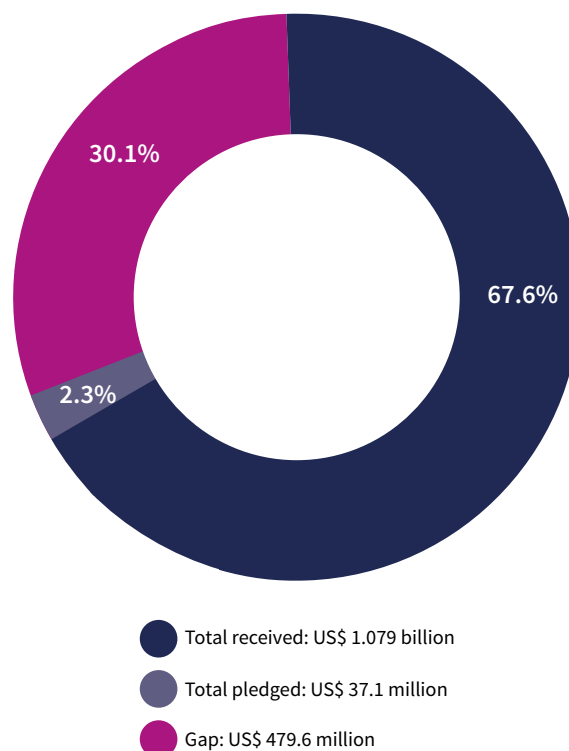
[WHO's Global Health Emergency Appeal for 2022 \(GHEA\)](#)

contributes to our strategic target of 1 billion people being better protected from health emergencies. This new annual appeal covers WHO's requirements to meet urgent emergency and humanitarian health needs for every region, including the COVID-19 response.

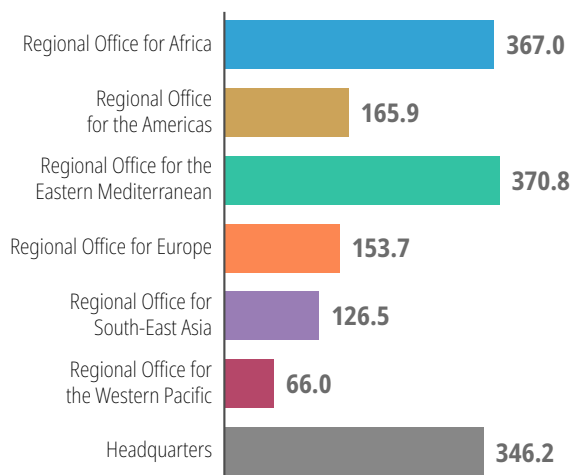
In WHO's GHEA 2022, published in March 2022, WHO called for US\$ 2.7 billion to serve people around the world in **the most vulnerable settings, including US\$ 1.59 billion for ending the acute phase of the COVID-19 pandemic**. Two years of COVID-19 have stretched health systems, societies and supply chains, leaving vulnerable communities with less capacity to cope. The world is witnessing a significant increase in the number of people requiring humanitarian assistance – up from 235 million in 2021 to 274 million in 2022.

Thanks to the generosity of donors, investments in WHO's COVID-19 response have helped slow the pandemic's destructive path and enabled the introduction of life-saving tools. But we have not yet addressed the inequities in access to these tools among many of the communities and countries that need them most. As of 19 September 2022, WHO has received **US\$ 1.079 billion** in support of its COVID-19 response and **US\$ 37.1 million** have been pledged. WHO's current funding gap against funds received and pledged is **US\$ 479.6 million**.

Data as of 19 September 2022



WHO COVID-19 budget by major office (US\$ million)



TOTAL US\$ 1.59 billion

WHO's COVID-19 budget broken down by Access to COVID-19 Tools Accelerator (ACT-A) pillar (US\$ million)

ACT-A Pillars	Total
Diagnostics and therapeutics	214.3
Vaccines	189.8
Health systems and response connector	332.7
Research and development	753.7
Total	1596.1

This section showcases new or updated guidance and publications related to COVID-19 published by WHO in the past month (as of 15 September 2022).

COVID-19 policy briefs

More than 2 years since cases were first reported, the COVID-19 pandemic remains an acute global emergency. Many governments face uncertainties about how to prioritize at a time when the pandemic appears to be in transition but when the risk of emergence of new variants and future surges remains real.

To assist national and global efforts to end the COVID-19 emergency worldwide, WHO updated the COVID-19 [Global Preparedness, Readiness and Response Plan](#) in 2022 and outlined two strategic objectives. First, **reduce the circulation of the virus by protecting individuals, especially vulnerable individuals** at risk of severe disease or occupational exposure to the virus. Second, **prevent, diagnose and treat COVID-19** to reduce deaths, disease and long-term consequences. These combined strategies can save lives and livelihoods. To provide actionable approaches to meeting these objectives, **WHO has produced six short policy briefs that are based on previously published technical guidance**. They outline essential actions that national and sub-national policy makers can implement for the following:

- [COVID-19 testing](#)
- [Clinical management of COVID-19](#)
- [Reaching COVID-19 vaccination targets](#)
- [Maintaining infection prevention and control measures for COVID-19 in health care facilities](#)
- [Building trust through risk communication and community engagement](#)
- [Managing the COVID-19 infodemic](#)

WHO Member States are in different situations with regard to COVID-19 due to a number of factors such as population-level immunity, public trust and access to vaccines and therapeutics. These policy briefs will provide the basis for an agile response as countries continue to confront the pandemic while consolidating the foundation for a stronger public health infrastructure and [strengthening the global architecture for health emergency preparedness, response and resilience](#).



Good practice statement on the use of second booster doses for COVID-19 vaccines (18 August 2022)

This good practice statement has been developed based on the advice issued by the Strategic Advisory Group of Experts (SAGE) on Immunization at its meeting on 11 August 2022. Declarations of interests were collected from all external contributors and assessed for any conflicts of interest. Summaries of the reported interests can be found on the [SAGE meeting](#) webpage and [SAGE Covid-19 Working Group webpage](#). The guidance is based on the evidence outlined in this document, which was presented to SAGE on 11 August 2022.

[Read guidance](#)



Impact of COVID-19 on Human Resources for Health and Policy Response: the Case of Belize, Grenada, and Jamaica (14 August 2022)

This report informs and analyzes the impact of COVID-19 on health workers' occupational health and safety concerns, working conditions, as well as policy responses to address these issues and to increase human resources for health (HRH) surge capacity in Belize, Grenada, and Jamaica. The report also describes elements related to HRH and COVID-19 vaccination in selected countries and shares the experiences from Belize, Grenada, and Jamaica (members of CARICOM), which represent different areas of the Caribbean. The report will also inform the HRH Action Task Force and its contribution to technical cooperation and HRH management support. The target audience includes policy-makers, academics, and researchers on addressing health worker issues during health emergencies.

[Read guidance](#)



Certification of deaths during pregnancy, childbirth, or the puerperium where confirmed or suspected COVID-19 is a cause of death (8 August 2022)

The purpose of this guide is to facilitate the certification of confirmed or suspected COVID-19 as a cause of death of women during pregnancy, childbirth or the puerperium. It is intended as a brief summary of the key points of international guidelines on certification of cause of deaths, as applied to this population: it should always be read in conjunction with the [International Guidelines for Certification and Classification \(Coding\) of COVID-19 As Cause of Death](#). [The WHO Application of ICD-10 to deaths during pregnancy, childbirth and the puerperium: ICD-MM](#) is also a helpful reference.

[Read guidance](#)

For more information on WHO's publications, click [here](#).



GOARN

For updated GOARN network activities, click [here](#).



Emergency Medical Teams (EMT)

For updated EMT Network activities, click [here](#).



WHO case definition

For the WHO case definitions for public health surveillance of COVID-19 in humans caused by SARS-CoV-2 infection, published July 2022, click [here](#).



WHO clinical case definition

For the WHO clinical case definitions of the post COVID-19 condition, click [here](#).



EPI-WIN

For EPI-WIN: WHO Information Network for Epidemics, click [here](#).



WHO Publications and Technical Guidance

For updated WHO Publications and Technical Guidance on COVID-19, click [here](#).

Epidemiological Update

For 14 September 2022 Weekly Epidemiological Update, click [here](#). Highlights this week include:

- An update on the circulating SARS-CoV-2 variants of concern (VOCs), including their geographic spread and prevalence.
- The COVID-19 epidemiological update at the global and regional levels.

For more information on COVID-19 regional response:

- [African Regional Office](#)
- [Regional Office of the Americas](#)
- [Eastern Mediterranean Regional Office](#)
- [European Regional Office](#)
- [South-East Asia Regional Office](#)
- [Western Pacific Regional Office](#)

News

- [WHO responds to The Lancet COVID-19 Commission](#)
- [WHO Director-General congratulates Togo on becoming first country to eliminate four neglected tropical diseases](#)
- [Half of health care facilities globally lack basic hygiene services – WHO, UNICEF](#)
- [Celebrating sexual health for benefits throughout life](#)
- [New strategies to tackle and end STI epidemics](#)
- [Joint Statement: Call for increased political commitment and accountability in preparation for the 2023 United Nations High-Level meeting on Tuberculosis](#)
- [WHO makes new recommendations for Ebola treatments, calls for improved access](#)

Highlights

- AFRO/WHO publishes the latest [Africa Infodemic Response Alliance \(AIRA\) report](#) on Infodemic Trends:
 - COVID-19 vaccine placebos
 - Menstrual irregularities caused by vaccine shedding
- [Let's talk about long-COVID](#): Dr Mike Ryan, WHO Executive Director for Health Emergencies, speaks about the long-term impacts of COVID-19 infection and disease, and stresses the need to support post-COVID condition patients
- [COVID-19 – we have the tools to protect ourselves and protect others](#): “Learning to live with COVID-19 doesn’t mean we pretend it’s not there. It means we use all the tools we have to protect ourselves, and protect others,” WHO Director-General Dr Tedros



Science in 5 is WHO’s conversation in science. In this video and audio series WHO experts explain the science related to COVID-19. Transcripts are available in Arabic, Chinese, English, French, Farsi, Hindi, Maithili, Nepali, Portuguese, Russian and Spanish.

[mRNA technologies](#) (2 September)

mRNA technologies: what is their future and scope, and what are the challenges that countries might face in rolling them out? With Dr. Soumya Swaminathan

[Hepatitis outbreak in children](#) (26 August)

WHO’s Dr Philippa Easterbrook gives a situation update on the recent hepatitis outbreak affecting children including possible causes and steps parents, caregivers and countries should take.