Abstract

The first case of COVID-19 was reported in Ukraine in March 2020. The Ukrainian Government led a nationwide response to combat the disease, engaging with a wide range of health partners. The WHO Country Office in Ukraine worked with the Government to help mobilize society and the entire health sector in the response. This report outlines WHO's contribution to this work, which provided assistance specific to COVID-19, while also supporting health reform and maintaining essential health services, including in conflict-affected areas in the east of the country. WHO supported national coordination, risk communication, vaccination and other health interventions under the 10 pillars of Ukraine's COVID-19 Country Preparedness and Response Plan. WHO continues to provide critical support on COVID-19 in Ukraine, at the time of Russian Federation invasion of Ukraine in 24 February 2022.

Keywords

COVID-19; UKRAINE; EUROPE; HEALTHIER POPULATIONS; EMERGENCIES
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Foreword

The WHO Country Office in Ukraine was involved in the country’s COVID-19 response even before the pandemic was declared a public health emergency of international concern. In Ukraine, the pandemic led to significant revision of the Country Office’s priorities. The Office supported the Ministry of Health and the Public Health Centre of the Ministry of Health in responding to the evolving situation. The pandemic revealed the strength of the Country Office in adapting to a new reality quickly and efficiently. We are also proud to have been the part of the external evaluation of WHO Ukraine Country Office COVID-19 response and activities. The first of its kind within WHO, the evaluation demonstrated the impact of WHO’s work in saving lives and improving health outcomes during this challenging period.

WHO’s support to Ukraine in the 10 strategic areas outlined in the Country Preparedness and Response Plan was revised during the first two years of the pandemic at the same time as the conflict in the east of the country from 2020. The Country Office worked with local and international health institutions to manage the two crises in the country through coordination involving Ukraine’s health cluster.

A significant part of the work consisted of increasing the polymerase chain reaction testing capacity of regional laboratory centres. With the financial support of partners, equipment and reagents were procured, and laboratory workers were trained to use the equipment in the testing procedures. Ukraine significantly improved its testing capacity in all regions, from 200 tests per day at the beginning of March 2020 to about 80 000 by April 2021.

WHO health professionals in Ukraine worked with local health-care workers in frontline hospitals to provide a wide range of COVID-19-related education services, patient counselling, clinical management, oxygen therapy and deliveries of personal protective equipment with instructions on its proper use. The WHO team visited regional hospitals and laboratories to monitor the needs of health-care workers and offered targeted support and recommendations to the health-care system on coping with COVID-19. Another essential part of WHO’s contribution to the COVID-19 response was mental health training for health-care workers and patients, to help them cope with the stress due to the uncertainty of the pandemic.

In 2022, health professionals around the country continue the COVID-19 response under extraordinarily difficult circumstances. The Russian Federation invasion of Ukraine had created a new health crisis. The WHO Country Office is continuing its work on COVID-19 while maintaining basic health services in this conflict setting. In line with WHO’s global vision of better health worldwide, the WHO Country Office Ukraine will continue to do everything in its power to support better health outcomes for the people of Ukraine at this time.

Dr Jarno Habicht
WHO Representative and Head of the WHO Country Office in Ukraine
In 2020–2021, WHO reinforced its support to patients and health care workers in Ukraine. By adapting its work practices to the new reality of the pandemic, WHO provided life-saving interventions that increased access to health-care services for patients with COVID-19, made possible by financial support from our donors.

The number of WHO personnel working at the Country Office in 2020–2021 was increased to meet the new challenges of the pandemic, and WHO increased the number of teams working in the field to monitor the situation in the regions and to support local laboratory centres. Continuous engagement with local health authorities allowed WHO to ensure coordination among regions.

Essential equipment for addressing COVID-19 was delivered throughout Ukraine. In coordination with partners, WHO delivered more than 1.8 million items of personal protective equipment to hospitals in all regions of Ukraine, audited oxygen capacity at 471 hospitals and provided modern oxygen equipment to 255. Much of this activity was conducted at the start of the pandemic, when personal protective equipment, ventilators and oxygen concentrators were in short supply. WHO also delivered equipment to regional laboratories to increase the number of polymerase chain reaction tests that could be performed.

Risk communication has played a major role throughout the pandemic, with dissemination of up-to-date, accurate information. The importance of this tool cannot be overstated, as it allows individuals to take control of their own health, be safe and protect their families. The topics covered by campaigns have included wearing masks, vaccination and providing appropriate messaging for health-care workers to communicate with patients.

WHO continues to work with the Government of Ukraine to combat COVID-19, although its work is hampered by the current conflict, and WHO has activated an emergency response to the escalated crisis. Now, more than ever, it is critically important to maintain essential health-care services, including for COVID-19, to the population of Ukraine.

Mr Guillaume Simonian
WHO Health Emergency Programme Lead Ukraine
WHO COVID-19 Incident Manager Ukraine
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Acronyms

CPRP  Country Preparedness and Response Plan
IHR   International Health Regulations (2005)
IPC   infection prevention and control
OCDC  Oblast Centre for Disease Control and Prevention
PCR   polymerase chain reaction
PPE   personal protective equipment
TB    tuberculosis
UPHC  Ukraine Public Health Centre
WHO CO WHO Country Office
Introduction

In 2020–2021, the WHO Country Office (WHO CO) supported the Government of Ukraine in developing and implementing a comprehensive response to the COVID-19 pandemic, which has reduced the severity of the impact of the pandemic. Nevertheless, the disease significantly affected Ukraine, in terms of both lives lost and disruption to citizens’ lives and livelihoods. This report outlines WHO’s contribution to the COVID-19 response in Ukraine up to December 2021. WHO’s programmes, emergency deliveries and operational support to combat COVID-19 are organized under the 10 strategic pillars of Ukraine’s Country Preparedness and Response Plan (CPRP).

The impact of COVID-19 in Ukraine has been significant. By the end 2021, three and a half million COVID-19 cases had been confirmed, with nearly 90 000 deaths. Kyiv City was the region with the largest number of confirmed cases, followed by Odessa and Kharkiv oblasts. The regions with the highest mortality rates due to COVID-19 per 100 000 population were Kyiv City, Lviv and Chernihiv. The impact of the disease in conflict areas, which until February 2022 were confined to the east of the country, has been difficult to measure; however, high case positivity rates (percentage positive of those tested) indicated a high number of infections.

At the beginning of the pandemic, Ukraine experienced significant shortages of equipment and medical supplies, including masks, protective suits and ventilators. Capacity for laboratory testing was also limited, and the conflict in the east hampered efforts to contain the virus. In this context, WHO worked with the Ministry of Health and the Ukraine Public Health Centre (UPHC), other Government agencies, international partners, donors and local actors to plan and strengthen the Ukrainian health care system.

Initially, WHO’s work on health emergencies preparedness, both internationally and within Ukraine, formed the basis for a detailed national response to the pandemic, and WHO’s global strategic preparedness and response plan for COVID-19 set the agenda for an effective national response. WHO’s Health Emergencies Programme team agreed on local priorities with health authorities,
international partners and local actors, ensuring coordinated action. The WHO CO worked with Government agencies and partners to develop Ukraine’s CPRP and supported its adaptation. The Plan describes the objectives, policies and actions for the COVID-19 response, the responsible Government authorities and other bodies and actions to be taken by WHO, which are in turn coordinated with those of a wide range of local and international health-related humanitarian organizations, through the Ukrainian Health Cluster.

Four versions of the CPRP were updated during 2020–2021 according to evolving needs and collaborative review. The first plan was released in March 2020, shortly after the first COVID-19 case was recorded in Ukraine; subsequent versions were issued in June and September of that year and in May 2021. The updates were based on lessons learnt, including from a WHO-facilitated COVID-19 intra-action review. Continuous review has ensured a comprehensive framework for effective coordination among WHO and its partners across the country.

WHO worked with numerous government departments, international partners and local organizations in providing support to Ukraine. For example, WHO supported the Government in developing and implementing its national plan for deployment of vaccine and vaccination. Considerable progress was made in vaccinating the population against COVID-19 in 2021. WHO briefed Government departments on international COVAX registration and provided training in vaccination for local health-care workers. WHO also participated in public information, such as the national postal service campaign to increase vaccine uptake among the elderly and round-table discussions with local community leaders on delivering COVID-19 vaccinations to priority groups organized with the Coalition for Vaccination. By the end of 2021, over 27 million doses of COVID-19 vaccine had been administered.

This report details the main contributions of the WHO CO to Ukraine’s COVID-19 response in 2020–2021, including collaboration with partners.
Pillar 1: National coordination, planning and monitoring
Pillar 1 of Ukraine's CPRP has three objectives: ensuring international policy coherence, supporting strong national leadership and managing effective implementation of programmes. WHO plays a leading role in the United Nations health response as chair of the Medical and Health Response Working Group, ensuring that programmes and financial activities are consistent within the United Nations system and that work in the health response is not duplicated. WHO also monitors procurement and other critical activities to ensure that they are as efficient as possible.

WHO also supported COVID-19 response activities by national and regional stakeholders by working with the Ministry of Health, UPHC, the Office of the President of Ukraine, the Vice-Prime Minister and the National Security and Defence Council of Ukraine.

Internationally, in accordance with the International Health Regulations (2005) (IHR), WHO facilitated information-sharing between Ukraine and other WHO Member States throughout the pandemic. To coordinate procurement of essential supplies, WHO worked with international partners and donors within the United Nations Interagency Coordination Group. In coordination with the United Nations Development Programme, WHO provided procurement related technical assistance and tools for calculating humanitarian needs to the Office of the Vice-Prime Minister. In this way, WHO worked to coordinate the health response as a conduit between all Government and nongovernmental agencies operating in Ukraine, as the main health related United Nations agency.

Key achievements

Inter-agency cooperation

WHO guided the COVID-19 response with other United Nations agencies and partners in providing evidence-based technical interventions.

National cooperation

WHO assisted health authorities and other national institutions in coordination and planning, case investigation, infection prevention and control (IPC) and other aspects of the COVID-19 response. WHO provided expert advice to the Ministry of Health and the UPHC on activities to prevent, detect and respond to COVID-19 health threats. WHO and the United Nations Development Programme provided technical assistance and support for the procurement dashboard of the Office of the Vice-Prime Minister for European Integration.
Ukraine COVID-19 CPRP design and updates

WHO provided comprehensive support in building the CPRP framework for coordination. The CPRP was released in March 2020 and updated four times according to the country’s needs and the evolving situation during 2020–2021. Many WHO-led trainings and technical reviews of programming fed into the CPRP review process. For example, a simulation exercise (SiMex) for key Ukrainian public health officials in February 2020 provided preparedness and readiness mapping of COVID-19 cases.

Increased awareness of the International Health Regulations

In the early stages of the pandemic, WHO provided workshops on the IHR. More information on WHO’s activities at points of entry and the IHR is provided under pillar 4.

Translations of technical guidance

WHO provided Ukrainian translations for national and international stakeholders of COVID-19-response-related documentation, information on IPC, public health and social measures and for the intra-action review in January 2021.

Coordination in eastern conflict areas

In 2020–2021, WHO worked through the Ukrainian Health Cluster to deliver pandemic relief in the eastern oblasts affected by conflict. The Health Cluster is the main coordinating mechanism for maintaining health services in conflict-affected areas, involving more than 70 humanitarian organizations. WHO delivered polymerase chain reaction (PCR) tests, personal protective equipment (PPE) stocks and related supplies to Luhansk and Donetsk non-government-controlled areas to increase daily testing capacity in those regions.

Trust-building

WHO oversaw a project for social cohesion and peace-building to address localized conflicts, including community dialogue and mediation, in Odesa, Dnipropetrovsk, Donetsk, Luhansk, Chernivtsi, Lviv and Kirovograd oblasts.
As a family doctor in Kyiv, Inna Novikova is exposed to potentially infected patients. When the COVID-19 pandemic began, she knew her risk was high but continued to see patients. Although she followed all the recommended protocols, she contracted COVID-19.

“I was suffocating. I had fatigue and a severe sore throat that felt like a dagger”, Inna said. She was exhausted by simple actions, such as holding a spoon up to her mouth to eat. A digital X-ray revealed bilateral pneumonia, a possible complication of severe COVID-19.

As a medical professional, Inna is frustrated by those who fail to follow basic precautions such as wearing a mask and following recommendations for social distancing. “The problem exists, and it’s big. Not believing is like ignorance of the law. There is no excuse.”

As a COVID-19 survivor, Inna has experienced first-hand the indiscriminate nature of the pandemic. “The disease is impersonal, like an accident. It can happen to anyone…. Nobody is safe from it.”
Pillar 2: Risk communication and community engagement
As the COVID-19 pandemic spread around the world, so did a wave of public concern about the nature of the disease. People wanted to know how it spreads, its symptoms and how to stay safe. Are antibiotics effective in preventing and treating COVID-19? Will the virus die off when temperatures rise? Can COVID-19 vaccines be trusted? WHO tried to answer these questions through risk communication; however, rumour and misinformation also circulated alongside legitimate health information from worldwide medical authorities.

In Ukraine, WHO attempted to provide the best information to citizens and the best practices to health-care workers as part of the COVID-19 response, in cooperation with regional and local stakeholders. Messages were based on the most recent research on COVID-19, community engagement strategies and feedback. The fact-based messaging was customized for specific communities.

Emergency risk communication played a central role in the emergency response, helping to minimize deaths, cases of disease and disability due to COVID-19. Information was quickly and transparently exchanged between health authorities, front-line health workers, the general public and other stakeholders. Individuals who have adequate information about a disease can make informed decisions to mitigate risks and protect themselves and their families. Emergency risk communication involves social and mass media awareness campaigns, social mobilization, health promotion and stakeholder and community engagement.

**Key achievements**

**COVID-19 behavioural insights survey and behavioural change campaign**

In May 2020, WHO conducted a survey of adults in Ukraine to better understand their knowledge, perceptions of risk, behaviour and levels of trust regarding COVID-19. The results provided better understanding of perceptions and led to action to address individual behaviour through WHO’s emergency risk communication. It also supported decisions by the Ministry of Health and UPHC. The survey allowed WHO Ukraine to:

- identify a group of people with little perception of risk and poor adherence to safety measures against COVID-19;
- understand “pandemic fatigue”, which was used in national response strategies;
- design the WHO digital information campaign, such as a Facebook message-testing campaign for people with little perception of risk, which reached one million viewers.
The resulting behaviour change campaign reached:

- 15 million people in the locations most affected by COVID-19 (Kyiv, Lviv, Chernivtsi, Odesa Volyn, Ivano-Frankivsk, Khmelnytskyi), who received 18 000 educational materials distributed during the initial pandemic period;
- more than 20 million people in 19 Ukrainian cities via public displays of practical COVID-19 information on billboards and in supermarkets;
- more than five million people via awareness campaigns on the Kyiv metro, buses and trams.

“I had no idea that I had COVID”, said Natalia Cherkasy, a social activist based in Nesvatkove, Ukraine. “I just got knocked down. I fell asleep and woke up because I was shaking.”

Natalia recalled that it was Friday night when she decided to get tested. “On Sunday, the chief doctor called me and said, ‘Congratulations.... You have COVID’."

“I was shocked! I thought she was joking”, Natalia said.

The doctor provided comprehensive care, starting on the first day. “She asked me to call her right away if my condition changed.”

Natalia also began to worry about the health of her child. She had already lost one daughter, who died at the age of 2 from pneumocystis pneumonia.

Natalia also faced discrimination. “When you find yourself in a difficult situation, you want understanding and compassion from people. And when you do not receive it, this is a turning point for you and your loved ones”, she said. “We are not immune to anything.”
Educational communications for front-line health-care workers

Communicating with front-line health-care workers has been key to protecting this critical workforce and mitigating the spread of COVID-19. WHO provided posters on topics such as hand hygiene, oxygen safety and effective use of PPE to hospitals and health facilities across Ukraine. Educational materials on COVID-19-related stigmatization and work-related burn-out offered support to staff on mental health and psychosocial support.

Key points:

- 53 COVID-19 hospitals received educational communication packages at the beginning of the pandemic (April–May 2020).
- 50 COVID-19 hospitals received material on IPC, PPE, mask usage and hand hygiene in the summer of 2020.
- Educational materials on oxygen safety were delivered to hospitals that treated COVID-19 patients throughout Ukraine. Video instructions on proper use of biomedical equipment were also distributed for medical workers and engineers.
- Thousands of educational posters on medical mask use were delivered to Ministry of Health focal points for HIV/tuberculosis (TB) across the country to help prevent any increase in transmission during the COVID-19 pandemic.
- More than 30 digital packages had been published in Ukraine by 2021, reaching more than one million people on topics such as reducing COVID-19-related stigmatization, safety in the workplace and IPC.

Digital information campaigns, messaging and video products

The WHO CO created timely, targeted information resources and made them available on Facebook and on the social media pages of partners. Starting with proper wearing of a mask in January 2020, new topics were added each month in response to the evolution of the pandemic, community engagement and educational needs.

The topics included:

- how COVID-19 affects pregnancy, disability and the elderly;
- home care instructions for caregivers and infected individuals;
- physical distancing and social isolation;
- safe grocery shopping;
- alcohol use and COVID-19;
- self-management of rehabilitation and respiratory techniques after COVID-19;
- differences between seasonal influenza and COVID-19;
- explanation and promotion of contact tracing;
- COVID-19 safety at election polling stations;
- healthy holidays (diet, travel, alcohol and mask use).
WHO provided information in various forms, including digital education packages and videos. For example, WHO developed eight comprehensive information packages (with 35 sets of messages) to support targeted COVID-19 awareness campaigns, in partnership with the Ministry of Culture and Informational Policy and the UPHC. The campaigns reached more than 240,000 people on WHO platforms, with an overall estimated reach of six million on various Government platforms.

WHO developed video animations and digital packages to address COVID-19 risk perception, individual safety and behaviour, which reached hundreds of thousands of people in Ukraine. Several unique video series, including WHO evidence-based messaging, were created and shared in engaging ways. They included an Ask WHO series, which explained COVID-19 facts; a One day with WHO series, which explained the Organization’s goals; and a People recovered from COVID-19 series, featuring residents in various Ukrainian oblasts to promote safe behaviour.

Ukrainian famous singer Alyona Alyona participates in WHO video to support campaign against COVID-19 discrimination.
Text on the image: “Discrimination is a stigma that has become an action” Source: WHO Ukraine on Facebook
Pillar 3: Health surveillance, rapid response teams and case investigation
Testing, isolating, tracing and treating: these four actions form the backbone of WHO’s COVID-19 response in Ukraine.

Through testing, infected individuals are identified, then temporarily isolated to receive treatment without the risk of contaminating others. Contact-tracing then quickly reveals whether the patients were in contact with others before they were identified, allowing new cases to be swiftly contained and treated. WHO’s contribution to health surveillance in Ukraine has helped to save lives throughout the pandemic and also mitigated the economic impact of social distancing.

Collection of real-time information about the progression of the disease in the population is essential to surveillance and containment. WHO contributed to Ukraine’s capability in this regard by sharing new technologies and providing trainings.

Information management and sharing of information among institutions are also essential. The WHO CO produces daily situation reports in collaboration with the UPHC to provide national and international partners with essential epidemiological public health data.

**Key achievements**

**Data collection and analysis**

WHO supported 12 priority oblast centres for disease control and prevention (OCDCs, formerly oblast laboratory centres) of the Ministry of Health in conducting in-depth epidemiological situation analyses. This included support in the use of data to plan effective action. WHO trained OCDC epidemiologists in compiling and analysing selected indicators and in producing monthly situation reports, which were used by OCDC directors in regional emergency meetings.

**Surveillance**

Epidemiologists in rayons (sub-regional districts) were given access to an electronic integrated disease surveillance system to record cases, patient data and case investigations. In another initiative, a potential COVID-19 information technology surveillance project was tested, with digital cameras in places of high population density, such as metro stations and shopping centres, to verify adherence to the Ministry of Health’s public health and social measures. A mobile application, *Diy vdoma*, was developed to support COVID-19 patients isolating at home.
**Contact-tracing**

WHO worked with the UPHC in drafting standard operating procedures for contact-tracing. The Ministry of Health adopted a resolution to approve recommendations for self-isolation, medical care and follow-up for contacts of confirmed COVID-19 cases. As part of this initiative, WHO established a pilot contact-tracing project in collaboration with the Chernivtsi and Odessa OCDC leadership team, in which more than 200 contact tracers and epidemiologists from all the raions in the two oblasts were trained in use of WHO’s GoData contact-tracing application. A central GoData server was established, and all the contact tracers received the electronic equipment and smartphones necessary to use the system.

**Medical detectives**

Liudmyla Slobodianyk is a doctor who specializes in epidemiology, with master’s degrees in public health and epidemiology. “Epidemiologists, in a way, are medical detectives”, she explained.

Dr Slobodianyk is working with WHO in COVID-19 surveillance. “With the numbers in hand, we have to apply all knowledge about the disease, about the country, features of work and age groups, the behaviour of people and so on”, she said. “All that data could provide some substantial, significant findings.”

She added that it is essential to keep a thorough record of present investigations and possible outbreaks in the future. “There are no borders for infections, viruses or bacteria.”
**Situation reports**

WHO also supported Ukraine’s epidemiological surveillance by contributing to sharing information among health institutions. WHO published over 500 daily COVID-19 situation reports in collaboration with the UPHC. Monthly analytical reports on the COVID-19 epidemiological situation were produced by WHO, to be shared with the leaders of OCDCs for their use and further distribution. More than 300 IHR notifications were disseminated according to IHR conventions. WHO also produced COVID-19 preparedness and response reports every month or every two months on implementation of the CPRP.

**Education**

In collaboration with OpenWHO, WHO’s web-based, knowledge-transfer platform that offers online courses, the WHO CO established a dedicated site for Ukrainian content with the WHO Regional Office and headquarters and the UPHC. The online courses include COVID-19 surveillance, COVID-19 epidemiology, IPC during COVID-19 outbreaks and application of electronic integrated disease surveillance for COVID-19 data management. The courses were developed locally or translated from the WHO catalogue. The WHO CO added a WHO e-learning platform to the UPHC educational platform, which has 70,000 subscribers, ensuring that a significant pool of health-care workers are reached. OpenWHO continues to provide up-to-date training.

Contract-tracing training at Chernivtsi OCDC of the Ministry of Health
Pillar 4: Points of entry, international travel and transport

As the COVID-19 outbreak spread across the world, authorities implemented social distancing measures and temporarily shut down borders within and between countries on the basis that the better prepared countries are for epidemiological crises, the less disruptive they will be.

WHO’s Health Emergencies Programme team ensures effective implementation of the IHR to stop international spread of viruses. The regulations define countries’ rights and obligations in handling public health emergencies that could cross borders.

As part of Ukraine’s CPRP, WHO worked with the Ministry of Health, UPHC and other public authorities to strengthen adherence to the IHR in the context of the COVID-19 pandemic. In 2021, WHO supported the Ministry of Health in conducting a Joint External Evaluation, in which national and international experts assess adherence to the IHR. WHO also conducted training workshops at points of entry into Ukraine, both on site and online, including visiting facilities.

Key achievements

Joint External Evaluation

In March 2021, WHO conducted an orientation workshop for 36 representatives of national institutions as a first step in a Joint External Evaluation of Ukraine’s IHR capability. This was followed by a self-evaluation phase in April, in which Ukrainian experts considered their country’s capability in 19 technical areas, from legislative mechanisms to vaccination coverage and emergency response operations. WHO supported national technical officers in completing their reports between April and July in about 40 working group meetings. The reports
were reviewed and circulated to all stakeholders as a booklet before a Joint External Evaluation mission in Kyiv between 29 November and 3 December. Ukraine received more than 80 recommendations from independent external experts on improvements in the 19 technical areas.

**Field visits**

WHO visited facilities at points of entry, such as in Odessa region, with representatives of the national IHR coordinator. Odessa’s airport, seaport, ground crossings and laboratories were visited. The visit included sub-national authorities, such as the regional state administration and regional departments of the State Service on Food Safety and Consumer Protection. Information obtained during the visit was incorporated into the Joint External Evaluation report.

**Workshops**

WHO supported online workshops organized by UPHC on the WHO assessment tool used at designated points of entry. WHO facilitated two workshops on IHR core capacity at points of entry and held discussions with staff of organizations
working in the sector, such as the State Service on Food Safety and Consumer Protection, the State Border Service and the State Customs Service.

**One Health**

To contain current outbreaks and prevent future epidemics, WHO globally promotes the One Health approach to integrating public health management, animal health and environmental management. For International One Health Day in 2021, the WHO Country Office developed a factsheet on the implementation of the One Health approach in Ukraine. WHO also collaborated with UPHC colleagues on the development of an educational course for doctors on foodborne and vector-borne illnesses.

**Regional support**

WHO in Ukraine also facilitated a workshop in Kazakhstan in October 2021, on the “multisectoral coordination mechanism operational tool”, which supports national authorities in improving coordination in the management of health threats arising from the interaction of humans, animals and the environment.
Pillar 5: Laboratories
National laboratories are at the forefront of detection, tracing and containment of COVID-19. WHO offered support to laboratories in the form of assessing facilities, recommendations, staff training, translations, grid monitoring and procuring equipment. WHO worked with the Government and a network of partners to ensure that Ukrainian laboratories are safe and their efficiency is optimal. WHO’s support for increasing the capacity of Ukraine’s laboratories during COVID-19 resulted in tremendous gains in PCR testing rates in a network of State, municipal and private facilities. In March 2020, the laboratories had the capacity to run only 200 tests per day, while, by April 2021, the capacity had increased to about 80 000 tests a day, through a robust network. Rapid identification of infections in the population saved many lives.

**Key achievements**

**Support for development of the national COVID-19 sequencing strategy**

Building national capacity for whole-genome sequencing was a priority. The technique improves detection of different variants of the virus for analysis of the national epidemiological situation. WHO supported whole-genome sequencing of more than 1500 SARS-COV-2 samples from Ukraine at international reference laboratories.

**Action plan for scaling up COVID-19 laboratory testing**

In April 2020, WHO analysed how Ukrainian PCR testing capacity could be increased rapidly with existing resources. The action plan included investment in public laboratories and engagement of the private sector. The resulting strategy, endorsed by the Ministry of Health, included standard operating procedures, personnel training and purchase of consumables to increase both capacity and quality. A huge increase in testing capacity was achieved during the following year.

**Procurement**

WHO procured the necessary equipment to increase PCR testing rates, starting with “One-step RT-PCR” kits and two biosafety cabinets in April 2020. These supplies contributed substantially to increasing testing rates during the following year. WHO equipped 28 laboratories with high-throughput diagnostic and biosafety equipment, reagents and other supplies and also supported establishment of a mobile high-throughput PCR laboratory for rapid scaling-up of testing and diagnostic capacity during outbreaks.
Training for health-care workers

Between July 2020 and April 2021, WHO provided 24 on-site training workshops in biosafety, biosecurity and PCR testing for 420 laboratory professionals in 19 oblasts, increasing capacity at facilities. During the same period, 473 laboratory specialists attended online workshops on WHO’s laboratory biosafety manual.

“We thank the WHO Regional Office for Europe, the EU delegation to Ukraine for the assistance they have provided since the beginning of COVID-19 pandemic to our laboratories and health-care system.”

Viktor Liashko, Deputy Minister of Health and Chief State Sanitary Doctor of Ukraine

Increasing PCR testing capacities

The beginning of the pandemic was a challenge for everyone, including Natalia Rodyna, Deputy Director of the Kyiv Regional Laboratory Centre of the Ministry of Health. She reported that very few people were trained in PCR diagnostics.

“Maybe at first someone was scared [of COVID-19], someone would panic.”

She learnt the new procedures and ensured that, one by one, everyone around her also did. Each new person to join the team was paired with a trained professional who showed them the protocols. Training and persistence led to a point when, “everything is seamless: all the approaches to protecting yourself in the workplace and how to protect others if you leave the lab.” She said, “The level of professionalism of each specialist today is much higher.”

Natalia said her team is passionate about what they do, that they have a “true calling”. Since the pandemic began, however, few have been able to take a proper holiday. “I want to wish them more patience, more optimism, not to panic in any situation.”
Seven years ago, Volodymyr Zhdanov helped move his laboratory out of the conflict zone and into Severodonetsk. He thought it would be a temporary relocation. “We didn’t believe until the very end that it would happen, that there would be a laboratory at all, that we would work”, he said. “The main resources remained in Luhansk. It was difficult to start active work here.”

That’s when WHO stepped in to help. The priority was ISO certification for the laboratory, a daunting task for any facility and a challenge for one so recently relocated and lacking resources. However, the laboratory earned ISO certification in a record 18 months. “Even in Europe, more developed laboratories, they do not have time to get the standards so quickly”, Volodymyr said, expressing pride in his team.

By the time the first COVID-19 cases appeared in the region, the relocated Luhansk laboratory was ready for PCR diagnostics, with equipment provided by WHO in December 2019. This significantly increased the laboratory’s capacity to isolate and detect the virus safely.

By 2021, the laboratory was performing up to 750 COVID-19 tests daily. “With the doctors who provide direct medical care to those who are sick, our specialists are next to them, at the forefront in the fight against coronavirus infection”, said Volodymyr.
Pillar 6: Infection prevention and control
PPE and hygiene stations help to mitigate the spread of COVID-19 in medical facilities. WHO provided more than 250 facilities with such equipment and also education for health-care workers, including training, webinars and instructional material, to encourage safe work practices.

WHO’s support was part of a multi-level effort to control the spread of COVID-19 in Ukraine. At national level, WHO supported the Ministry of Health in implementing and approving relevant regulations and helped to establish national IPC standards aligned with international best practices. For front-line health facilities, WHO provided up-to-date PPE, medical equipment and training in IPC.

Key achievements

Delivery of PPE and consumables

In 2020–2021, WHO delivered more than 1.8 million PPE items, including more than 500 000 isolation gowns, 200 000 respirators, 700 000 gloves and 100 000 goggles to Ukraine. More than 3300 hand-hygiene stations were established in COVID-19 hospitals, and more than 7.7 million medical masks were delivered. Other items included sterile barriers kits and other IPC equipment.

Education for health-care workers

WHO trained more than 7000 health-care workers in IPC on-site and online. More than 190 technical support visits and on-site training courses were conducted in hospitals designated to care for COVID-19 patients, including training in PPE use and hand hygiene.
WHO thanks health-care workers

In the early months of the COVID-19 pandemic, a plane arrived with essential PPE supplies for Ukrainian hospitals, and WHO gratefully acknowledged the support of the donors and also all health-care workers at risk of infection.

Dr Arkadii Vodianyk, WHO Infection Control Specialist, highlighted the dedication of a particular doctor in an infectious disease hospital. “She is 78 years old and in a high-risk group for severe COVID-19 infection”, he explained. The doctor attends 20 patients a day with the assistance of one other medical professional. “Such dedication to work and mobilization of effort at the most critical moment is absolutely impressive”, said Arkadii.

Front-line health-care workers learnt new protocols and treatments quickly in order to guide their patients through COVID-19. WHO is deeply grateful and inspired by the selfless dedication they show to their patients, while protecting their own health and that of their families.
Health-care workers face the challenge of COVID-19

Anna Galish is an infectious disease specialist at Ternopil Municipal Hospital. She described working conditions during the early months of the COVID-19 pandemic: “You come home, go to bed, open your eyes, go to work again, and realize that the same thing awaits you. But you do not leave work at work. Sick at heart, you see the difficult patients, thinking of various ways to help them and extra actions to be done. It is hard, but, if we do not do it, then who will? This is our calling, our duty”.

For respite and a change of scenery, Anna travelled to the forest, far from the city. She said that she wanted to be reassured that life continues outside of the hospital. “We need to learn to think outside of work... to draw energy from outside.”
Pillar 7: Case management
Mortality and long-term illness are real risks for patients with COVID-19. Informed clinical care, however, significantly reduces those risks and promises life beyond the virus, even in severe cases. Careful case management is therefore crucial, as is supporting health-care workers in guiding patients through this aggressive, contagious virus.

By continuously improving clinical standards and approaches, WHO supports high-quality health care for all those with COVID-19. This is especially important for the elderly, patients with respiratory ailments and other vulnerable populations. The WHO CO has assisted health-care workers in Ukraine by offering expertise, support and supplies, assessing oxygen and ventilation capacity at hospital facilities and helping to strategize continuity plans for patients with chronic disease.

Key achievements

Clinical guidance and up-to-date evidence for health-care workers

Throughout the pandemic, WHO has provided cutting-edge research and information for Ukrainian medical staff, including:

- **A clinical care toolkit**: A hands-on, evidence-based WHO guide, *Clinical care for severe acute respiratory infection: COVID-19 adaptation*, was translated, printed and distributed to over 450 hospitals in Ukraine dedicated to care for COVID-19 patients. The toolkit was written for intensive care clinicians in low- and middle-income countries and provides a primer for managing adult and paediatric patients with severe acute respiratory infections. WHO consultants led online instructions in Ukrainian on the toolkit.

- **Living guidance**: A Ukrainian translation of WHO’s up-to-date recommendations for clinical management of COVID-19 patients, WHO’s *COVID-19 clinical management: living guidance*, provides comprehensive, holistic advice for optimal long-term health care.


- **OpenWHO course**: WHO translated the course, *Clinical management of patients with COVID-19* into Ukrainian. The seven modules of the course address a wide range of conditions resulting from COVID-19, including cognitive and communication impairment, physical deconditioning and difficulty in completing activities of daily living.
Oxygen supplies

The only effective treatment for severe COVID-19 patients is oxygen. Initially, the extent of oxygen equipment in Ukrainian hospitals was unknown. With financial support from the Government of Germany, WHO worked with hospitals to determine their requirements for oxygen therapy. Within 3 weeks during the second wave of the virus, WHO assessed all 433 COVID-19-dedicated hospitals and recommended that the Ministry of Health increase capacity, particularly in heavily affected areas, and increase electrical power to support oxygen therapy. WHO provided essential oxygen equipment to 255 hospitals in 2020–2021.

“Participation in the audit made me think about aspects of oxygen supply that did not even come to mind before.”

Krokosh Volodymyr Mykhailovych, Director, Sniatyn Central District Hospital, Ivano-Frankivsk
Caring for patients

“When the COVID-19 department was opening, we needed specialists to work here, so I moved”, said Olga Slobodyanyuk, a nurse at Chernihiv Regional Hospital (a community, non-profit enterprise). “There was no doubt. We took the Hippocratic oath”, she said.

When she first arrived on duty in October 2020, there were 20 patients in the department. Almost all of them were on oxygen therapy, and some were on life support. “For me, it was a very difficult year, not physically, but emotionally, because patients come at a very young age. There are patients who die.”

She explained that patients first ask, “When will I get better?” and then “When will I be able to remove this oxygen mask and breathe adequately?”. “I always say that everything will be fine, that we must always hope for the best”, she said. “They smile. ‘When will this better come?’, they ask.” “Neither today nor tomorrow, but it will come. You have to believe’, I tell them.”

Health-care workers at risk of COVID-19

“I got sick when I was on vacation”, said Ihor Kuzin, an anaesthesiologist and chief of an intensive care unit. “When my temperature rose on the first day, I didn’t pay much attention to it. But when the next day I lost the sense of smell and taste, I immediately realized that it was COVID-19”, he said.

He was sometimes so weak that he could not walk 30 metres. “I just had to sit on a bench somewhere... wait, sit a little, so that later I could reach my entrance. This, of course, is very difficult psychologically and physically and morally.”

But Ihor feels that experiencing COVID-19 first-hand helped him to understand the needs of his patients better. “I think that after this epidemic... we will all come out a little different”, he said.
Pillar 8: Operational support and logistics
WHO supported the Ukrainian health-care system from the first days of the pandemic. Working with technical experts and pillar leads, WHO assessed local requirements and procured the necessary supplies. The deliveries saved lives.

During the COVID-19 pandemic, WHO received increasing numbers of orders and more complex requests. International shipping and distribution were affected by border closures and also by national and regional administrative processes. WHO worked in difficult circumstances to fulfil the requests.

WHO procured and imported supplies from both international and national sources and also managed distribution in the country. They handled the complex processes for importation, shipping and customs clearance, liaised with Government authorities and coordinated with service providers. Once supplies arrived in the country, WHO managed their storage in central warehouses and distributed them directly to hospitals.

WHO’s work in logistics does not finish with delivery but includes management of equipment warranties and maintenance with a comprehensive tracking and reporting system.

**Key achievements**

**Purchases and delivery of health products**

With donations from WHO’s financial partners, the WHO CO procured more than US$ 17 million of health products for the Ukrainian health-care system between February 2020 and April 2021:

- **Local purchases**: US$ 13.6 million were spent on local health products.
- **Sizeable deliveries**: Just less than 1000 m³ and 143 tonnes of medical goods were delivered to the WHO warehouses in Ukraine, excluding goods paid for by WHO and delivered directly to beneficiaries by local suppliers.

**Health facilities supported**

More than 300 hospitals in all oblasts received direct support from WHO in 2020–2021.
**Support for infection prevention and control**

WHO supported pillar 6 of the CPRP in 2020–2021 by delivering more than 1.8 million PPE items, including more than 500 000 isolation gowns, 200 000 respirators, 700 000 gloves and 100 000 goggles. More than 7.7 million medical masks were also delivered.

**Support for laboratories**

Support for pillar 5 comprised provision of the equipment necessary to build a high-throughput, mobile COVID-19 laboratory in a container, which was quality-assured according to WHO standards.

**Support for oxygen supplies**

WHO supported Ukraine in case management (pillar 7) by delivering oxygen plants to health facilities and mobile platforms, as well as other equipment. By April 2021, six oxygen plants, more than 300 oxygen concentrators and 70 ventilators had been delivered in Ukraine. WHO directly supported 255 hospitals with essential oxygen equipment in 2020–2021.
WHO’s standardized information technology management system

To provide integrated information for the management of multiple providers and beneficiaries, WHO developed a standardized information technology management system and interface for the emergency supply chain. The simple, user-friendly system facilitates information-sharing and reporting on operations and also streamlines accountability and compliance and can provide timely alerts and reports. The system enhances operations by ensuring closer coordination among multiple stakeholders.
Pillar 9: Maintaining essential health services and systems
Ukraine’s health-care system was comparatively resilient in the face of COVID-19, and WHO supported maintenance of this system throughout the pandemic. For example, at key turning points in the COVID-19 response (late summer 2020, winter 2020–2021 and spring 2021), WHO supported Ukraine in organizing surge planning to prepare for strains on the health-care system.

WHO also assessed the impact of COVID-19 in areas such as TB services. Working with the UPHC and other partners, WHO ensured continuation of these services, with systematic collection and analysis of TB data at regional and local levels, while at the same time scaling up TB diagnostics and medical reform. A major challenge was to improve TB diagnosis and treatment to achieve national and international TB targets. Similarly, WHO monitored all 24 oblasts, Kyiv and four other cities to assess the impact of COVID-19 on maintaining essential HIV testing and treatment.

WHO reviewed immunization practices in 2020, and WHO’s Vaccine-Preventable Diseases and Immunization team developed a monthly technical brief for health authorities and personnel on progress in routine immunization coverage in regions.

**Key achievements**

**Mental health**

WHO has been at the forefront of a number of mental health initiatives during the pandemic, for both patients and health-care workers. These included forming and training community mental health teams throughout Ukraine to deliver services for people with moderate-to-severe mental health conditions.

In 2020–2021, WHO extended its programme to train 21 community mental health teams in 19 oblasts, including four teams in Donetsk and Luhansk. WHO covered the operational costs of the teams until 1 July 2021, after which they were funded by the Ukraine national health service. From 1 July, 61 community mental health teams in various oblasts applied for a newly established service package that was part of the programme of medical guarantees, providing mental health services to 4000 people.

**Primary health care**

In 2021, WHO assessed the primary health care service package within the programme of medical guarantees in 250 facilities online and 33 in person.
Tuberculosis

From August 2021, the WHO CO and the WHO Supranational Tuberculosis Reference Laboratory led an expert TB laboratory support mission in Ukraine. The mission provided technical support, requested by UPHC, to improve the standards and procedures of the Ukrainian TB laboratory network. Deliverables in the final quarter of 2021 included a handbook for clinical practitioners on the availability and interpretation of TB laboratory services.

HIV

WHO monitored 24 oblasts, Kyiv and four other cities to assess the impact of COVID-19 on HIV treatment and testing services. WHO also jointly developed simplified patient pathways and testing algorithms with service providers and UPHC to expand access and optimize HIV testing and treatment services.

Routine vaccination

Health-care workers were supervised by WHO and the UPHC in routine immunization and surveillance. By April 2021, 381 health-care workers had participated in these services.

Social distancing

As part of enforcement of public health and social measures, 25 regions were monitored during the January 2021 lockdown.

Support for children

To assist parents in speaking to their children about COVID-19, a book *Actions for heroes* was developed by the Inter-Agency Standing Committee, which includes WHO. The book covered nine topics to help caregivers talk to children about the disease. It has been translated into more than 132 languages, including Ukrainian.
Marharyta Abramova has been a nurse for 20 years in a region of military conflict and humanitarian crises. She works as a family nurse practitioner at the primary health care centre in Kramatorsk.

COVID-19 added additional stress. “I felt I couldn’t handle all this paper reporting and the workload. But eventually, things worked out, due to self-improvement”, Marharyta said.

Her patients also suffer from physical and mental health conditions due to the conflict, relocation, employment instability and uncertainty. A WHO-supported mental health training programme helped Marharyta to treat patients holistically while also protecting her own health. WHO has supported training and supervision to improve the management of common mental health conditions in primary health care with the resources of WHO’s international Mental Health Gap Action Programme.

Marharyta initially practised the stress-management techniques on herself, which she compares to the aeroplane safety instruction to put on an oxygen mask before assisting others. She has also applied her new skills in treating her patients.

During one home visit, she treated a woman whose child had died. “The mourning period, as we were told in training, lasts six months”, Marharyta said. “She told me what was troubling her”, adding that it was the first time she was applying her newly acquired psychosocial training to a patient. “You should establish unbroken eye contact. Never judge. And give a person the possibility to talk”, she added.

With the onset of COVID-19, WHO moved training and follow-up supervision to an online platform. With more information about stress, anxiety, depression, suicidal thoughts and substance use, health-care workers have been better able to support vulnerable populations during this time.
Pillar 10: COVID-19 vaccines
While the race to develop a safe, effective vaccine was still on, the WHO CO laid the groundwork for a national vaccination programme against COVID-19 in Ukraine. WHO experts worked with national health authorities and health-care facilities to assess and procure resources, develop an evidence-based national vaccination strategy and negotiate legal and regulatory issues.

Once vaccines became available, in 2021, the WHO CO helped to manage the supply chain, train medical professionals to store and administer the vaccines and monitored vaccine safety and waste. In 2021, WHO contributed to training over 19,000 health-care workers to deliver COVID-19 vaccines. Training was given in a cascade approach, by 350 regional trainers working in 28 regional hubs.

WHO also strategized ways in which vaccines could be delivered to health-care facilities in conflict-affected areas, and a network of cooperation and coordination extended exponentially throughout these zones during the pandemic. The work of thousands of individuals in transport and logistics preceded every vaccination.

**Key achievements**

**National vaccine deployment and vaccination plan**

WHO supported the Government of Ukraine in developing the national vaccine deployment and vaccination plan against COVID-19 and to complete all the required documentation for COVAX registration and support. Plans for preparedness for vaccine safety crises were developed in 24 oblasts and Kyiv City, with the technical and developmental support and cooperation of more than 250 participants.

**Training for health-care workers**

Training of the first 50 mobile vaccination teams began in February 2021. Subsequently, a cascade approach was used, in which trainers were trained to train other health-care workers. WHO technical experts continued to provide support to regional trainers through a dedicated chat group. By the end of 2021, almost 75% of the health-care workers who delivered COVID-19 vaccines had been trained in this programme.
Vaccination

In 2021, over 9 million people were fully vaccinated with support from WHO. Medical professionals were vaccinated early, 3000 having been vaccinated by April 2021. Health-care workers, including regional coordinators, trainers and mobile and outreach teams, received distance supervision from WHO and the UPHC for COVID-19 vaccination.

Monitoring vaccine safety

From May 2021, WHO visited all 24 regions and Kyiv City to support and monitor implementation of the COVID-19 vaccination campaign.

Purchase and delivery of equipment

WHO delivered essential equipment and supplies for vaccination to health-care providers. WHO developed two vaccine-product specific toolkits, namely for AstraZeneca/Oxford AZD1222 (ChAdOx1-S [recombinant]) COVID-19 vaccine and Pfizer-BioNTech COMIRNATY® (BNT162b2), for service delivery personnel involved in COVID-19 vaccinations in Ukraine. PPE was delivered for national and regional training, with handouts on injection safety. In Dnipropetrovsk oblast, two buses were donated to improve access to target vaccination groups.

Communication and community campaigns

WHO participated in the national postal service campaign to increase vaccine uptake among the elderly and also in the Coalition for Vaccination, consisting of nongovernmental organizations. The coalition conducted a series of roundtable discussions to engage local community leaders in ensuring COVID-19 vaccination of priority groups. More than 4000 participants attended vaccination roundtables through Zoom, YouTube and Facebook broadcasts. A joint WHO and the Parents for Vaccination nongovernmental organization event marked European Immunization Week in Ukraine.

Information management

A website dedicated to information on COVID-19 vaccination was launched by Ukraine’s Ministry of Health, with WHO support, as well as a dashboard on vaccination.
“Viruses do not distinguish between rich and poor, small and big”, said Khristina Pivnyak, an immunization nurse in Chevonoerad, Lviv oblast. “Infectious diseases can suddenly change our lives.”

Building on her experience with parents who were hesitant to vaccinate their children against common childhood diseases, Khristina helped demystify fiction about COVID-19 vaccines. “Each conversation with a patient is an opportunity to share the facts”, she says in a video created by the WHO European Region to celebrate European Immunization Week 2020.

Vaccination is a cornerstone of universal health coverage, the third of the United Nations Sustainable Development Goals, and one of the most cost-effective health interventions.
The WHO Regional Office for Europe

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

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